Individuals & Societies

A PRACTICAL GUIDE STUDENT BOOK

IB Skills

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International Baccalaureate
Baccalauréat International
Bachillerato Internacional

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

As IB learners we strive to be:

INQUIRERS
We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

KNOWLEDGEABLE
We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

THINKERS
We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

COMMUNICATORS
We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

PRINCIPLED
We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

OPEN-MINDED
We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

CARING
We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

RISK-TAKERS
We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

BALANCED
We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

REFLECTIVE
We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.

Contents

How to use this book

As well as introducing you to the 4 key concepts and 12 of the related concepts in the Middle Years Programme (MYP) individuals and societies course, this book will also help you practise all the skills you need to reach the highest level of the MYP assessment criteria.

This book has been divided into chapters on key and related concepts. Throughout the book you will find features that will help you link your learning to the core elements of the MYP.

On the first page of each of the related concept chapters you will find:

- the topics you will be focusing on
- the inquiry questions you will be considering
- a checklist of skills you will practice
- a glossary of any difficult terms
- a list of the command terms you will come across.

You will also see a list of other concepts that relate to the chapter. You should keep these in mind as you work.

Each related concept chapter is divided into three topics that help you explore the concept through a variety of activities. Some activities can be done individually while others may be done with a partner or in a group.

Here are the other features that you will come across in the book:

GLOBAL CONTEXTS

For each activity you will see an indication of a global context that is the focus of that activity. Global contexts help organize inquiry into six different areas.

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

These global contexts indicate how the activity is relevant to your life and the real world.

ATL SKILLS

Alongside global contexts, each activity includes an ATL skills focus. There is an emphasis on the particular skill listed in each box, but you will also be using and developing other skills too.

TIP

Throughout the chapters you will see additional information to help your understanding of a topic or activity.

TAKE ACTION

These boxes suggest practical applications of a topic or activity that can make a difference in your life or the lives of others.

QUICK THINK

These boxes provide questions to challenge your thinking. Your teacher may use them for a class discussion.

INTERDISCIPLINARY LINKS

As an MYP student you are encouraged to use skills and knowledge from different subject areas in your learning. Look out for these boxes which provide links to other subject groups.

CHAPTER LINKS

These boxes direct you to other chapters that relate to a topic or activity.

WEB LINKS

These boxes include websites and search terms for further reading and exploration.

LITERARY LINKS

These boxes provide information about books and films that relate to the topic.

Introduction to IB Skills

Welcome to individuals and societies for MYP 4/5.

This book will help you develop and apply individuals and societies knowledge and skills, through the use of activities and authentic, real-life tasks.

MYP individuals and societies encourages you to respect and understand the world around you and equips you with the necessary skills to inquire into the factors that have an impact on individuals, societies and environments. These include historical, contemporary, geographical, political, social, economic, religious, technological and cultural factors.

This chapter explains what the key concepts are that relate to individuals and society. It then goes on to explain the twelve related concepts that are the essence of individuals and society.

Key concepts

In the Middle Years Programme (MYP), each subject area has key concepts that are used as a framework for knowledge. They are powerful ideas that we explore through different topics to try to understand the world around us. In MYP individuals and societies, there are four key concepts that we use as the basis for study. These key concepts are:

- time, place and space
- change
- global interactions
- systems.

You will read more about each of these key concepts in the next chapters.

Take a moment to consider these four key concepts and why they might be labelled as concepts.

Individuals and societies: Key concepts	Characteristics or features of a concept
■ Time, place and space	■ Timeless
■ Change	■ Universal
■ Global interactions	■ Intangible
■ Systems	

The key concepts and their characteristics

Key concepts also encourage you to think outside your subject area to see how topics are connected to each other. Topics that can be studied under the same key concept will have similarities in their fundamental principles. Look at the diagram below to see how the key concept of systems can be studied in different subject areas.

Figure 1.1 How systems can be studied in different subjects
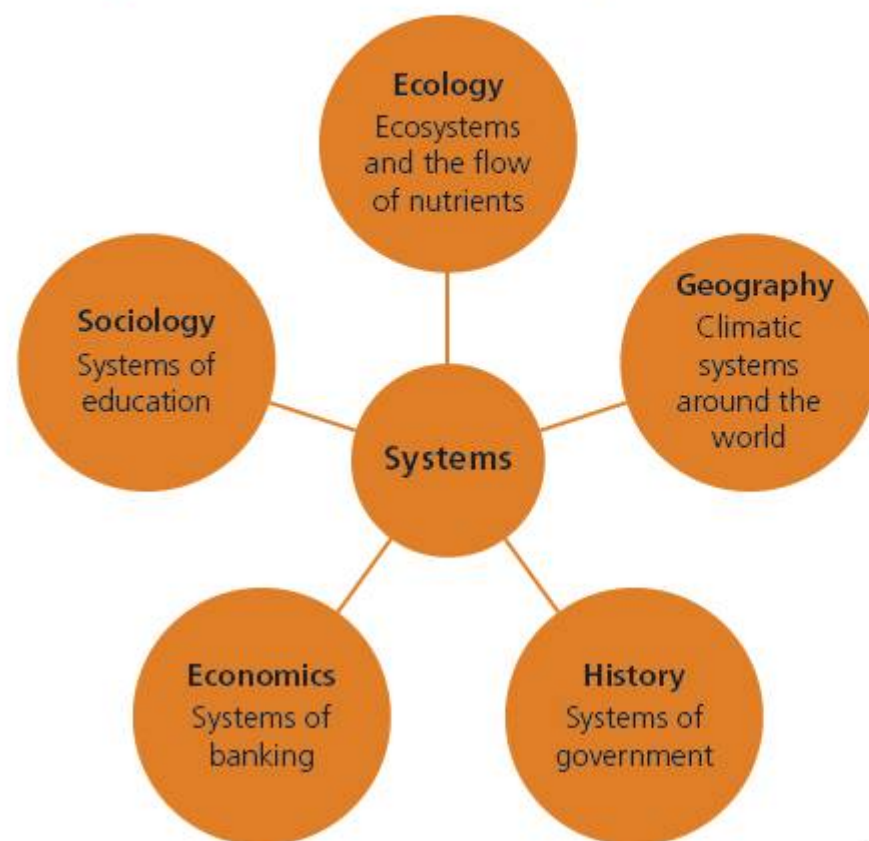
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While the facts for each of these topics will be very different, the terminology and main ideas will be quite similar. In the MYP, explaining each key concept often requires breaking it down into smaller ideas. These smaller ideas are called related concepts.

Related concepts

Let's stay with our example of systems. Each of the diagrams below shows a different type of system. Think about what these systems have in common with each other and share your ideas with a partner.

Figure 1.2 Different types of system

(a)
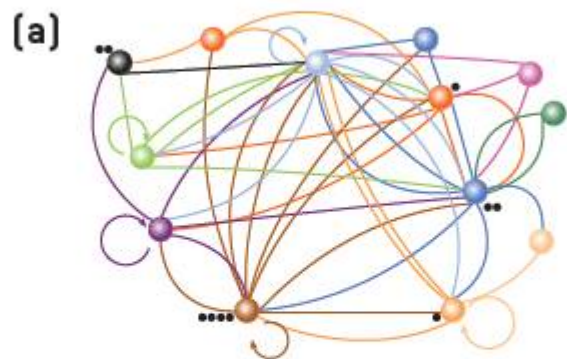
A system of employee evaluation

(b)
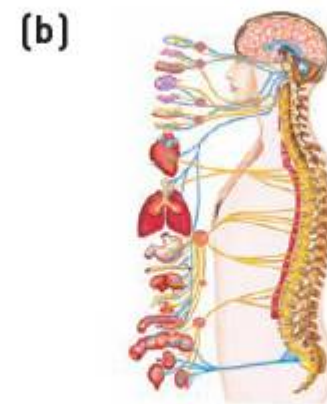
Spinal cord system

(c)
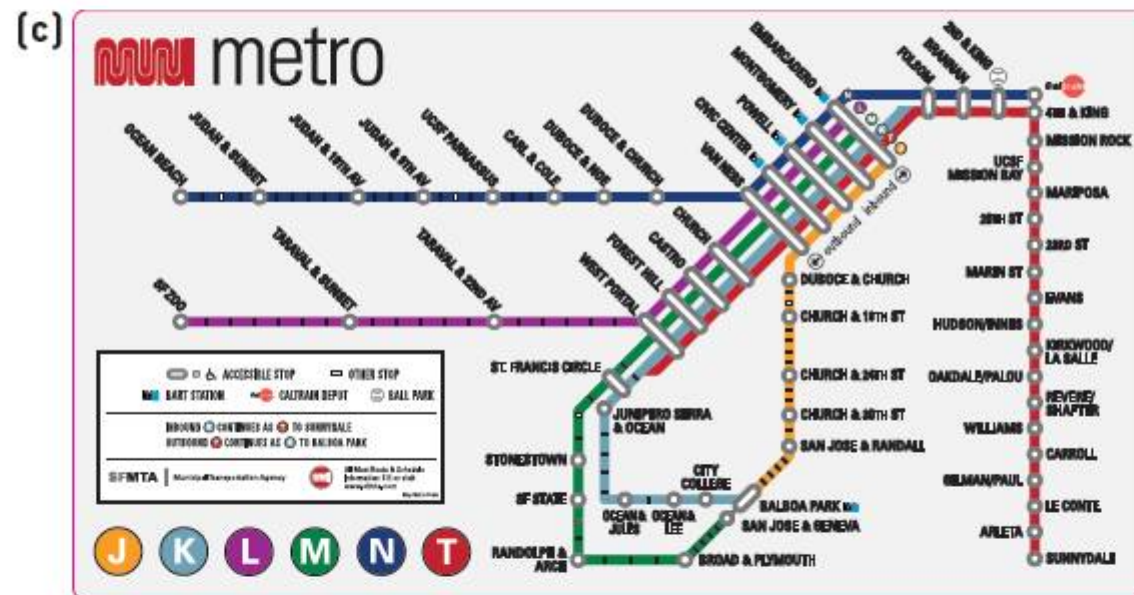
Transport system

Now look at the words in the box below. With your partner try to describe how these three different systems might work using these terms.

Model	Networks	Scale	Structure
Interdependence	Sustainability		Processes

These are known as related concepts. They are still big ideas, but they help us to explain and analyse the even bigger key concept of systems. These related concepts are a shared vocabulary that you would use if you were trying to explain banking systems, ecosystems or systems of government. The word "conceptual" means "related to concepts".

Learning skills

Now that you have an understanding of what "conceptual" means in the phrase "conceptual learning", let's look a little bit more closely at the word "learning". You know that you have been learning all your life. Firstly, you began in settings such as your home and neighbourhood. Then, your learning became more formal as you started school. Learning in the MYP is primarily inquiry-based learning. This means that you are encouraged to ask questions in order to understand the many ways that individuals and societies interact to form the world as we know it. Your learning will continually cycle through three different phases:

Figure 1.3 The three-stage learning cycle

Inquiry

Ask questions. It's the only way you are going to find out exactly what you want to know. Think about what you already know and what you want to know. Your curiosity is one of your best assets as a student.

Action

An important part of conceptual learning is action. Action in the MYP might involve learning by doing, service learning, educating yourself and educating others. Sometimes you may choose not to act, based on newly acquired knowledge and understandings. Remember to think of the learner profile characteristic of being principled in your actions and make responsible choices.

Reflection

As a learner, you will become increasingly aware of the way that you use evidence, practise skills and make conclusions. Reflection in your learning helps you to look at the facts from a different perspective, to ask new questions and to reconsider your own conclusions. You may then decide to lead your inquiry in a different direction.

Inquiry learning can be frustrating. There is not always a "right" answer; sometimes conclusions may be uncomfortable or may conflict with what you want to believe; and you will come to realize that there are no "endpoints" in learning. As an MYP student, learning through inquiry, action and reflection is central to your education and forms the foundation of acquiring knowledge and conceptual understanding.

Conceptual learning is:	Conceptual learning is not:
■ learning through inquiry	■ learning only through memorization
■ taking action to understand the world around you	■ trying to find the "right" answer
■ using knowledge to understand big ideas	■ passively accepting everything you read/hear/see.
■ making connections through concepts across different subjects.	

The characteristics of conceptual learning

Knowledge

The concepts of "systems" or "global interactions" are not physical entities, but can certainly be explained to someone using specific examples from different subject areas. This is where your knowledge of facts is essential. Without the support of specific knowledge, facts and examples, it is very difficult to understand and explain key concepts and related concepts. In the MYP, your teachers have a choice as to what facts and examples they will use to help develop your understanding of key concepts.

Figure 1.4 **The role of knowledge in supporting conceptual understanding**

Knowledge, facts and examples

Related concepts

Key conceptual understanding

The use of knowledge, facts and examples will be different in every MYP classroom but they will all lead you to an understanding of the key and related concepts in the subject group of individuals and societies.

Global contexts

Now that you know what the key and related concepts are, let's focus a little more on the knowledge, facts and examples that will help you understand, explain and analyse them. The MYP calls this part of the curriculum global contexts. The global context is the setting or background for studying the key and related concepts. It is easy to think that the global context is the choice of topic in your course of study. There are six global contexts:

- identities and relationships
- orientation in space and time
- personal and cultural expression
- scientific and technical innovation
- globalization and sustainability
- fairness and development.

🌐 GLOBAL CONTEXTS

The choice of global context is influenced in several different ways.

Scale—study of a concept at an individual, local or global level.

Relevance—your education needs to be relevant for you and the world you live in, and this will influence the choice of context.

International-mindedness—IB programmes aim to develop internationally minded students and this is supported through using a variety of contexts to understand concepts.

Do students have an influence over what global context is chosen? Absolutely—that's the reason why MYP individuals and societies courses look different all around the world. The contexts that are relevant for you may not be relevant for a student studying in another country or even in another school in your own country. What all

MYP Individuals and Societies courses do have in common is the goal of deepening your understanding of the individuals and societies key concepts. All of the elements discussed play an integral part in conceptual learning, as demonstrated in Figure 1.5.

Figure 1.5 The different parts of conceptual learning

These construction materials represent knowledge such as facts, people, places and events

These tools represent ATL skills

These plans represent the global context (what sort of building should be built and why)

This building represents conceptual understanding

Approaches to learning (ATL) skills

As a student, you are developing a range of skills to help you learn and process significant amounts of knowledge and understanding. Some skills are very specific to particular subjects while others are ones that you use every day in every class, and will ultimately use for life. The skills that you learn through the MYP allow you to take responsibility for your own learning. There are five groups of MYP skills:

ATL SKILLS

Thinking skills

Social skills

Communication skills

Self-management skills

Research skills

Depending on the subject, you might focus more on one or two areas than on others. As you move through the MYP and mature as a student, the focus will also move through different skills to consolidate your ability. Read through the outline of ATL skills below, taking some time to reflect on where and when you have learned, practised or mastered different skills. Also, think about which skills you still need to learn, practise or master.

Thinking skills	Critical thinking—the skill of analysing and evaluating issues and ideas.
	Creativity and innovation—the skill of exercising initiative to consider challenges and ideas in new and adapted ways.
	Transfer—the skill of learning by making new connections and applying skills, knowledge and understanding to new situations.
Social skills	Collaboration—the skill of working cooperatively with others.
Communication skills	Interaction—the skill of effectively exchanging thoughts, messages and information.
	Literacy—the skills of reading, writing and using language to communicate information appropriately and write in a range of contexts.
Self-management skills	Affective skills—the skills of managing our emotions through cultivating a focused mind.
	Organization—the skill of effectively using time, resources and information.
	Reflection—the skill of considering and reconsidering what is learned and experienced in order to support personal development through metacognition.
Research skills	Information and media literacy—the skill of interpreting and making informed judgments as users of information and media, as well as being a skillful creator and producer of information and media messages.

Approaches to learning (ATL) skills

It would be impossible to focus on all these areas in just your MYP individuals and societies course in years 4 and 5, so we will be selecting specific skills to learn, practise and master in this book.

Summary

Look back to Figure 1.5 on page 6. You have discovered that conceptual learning happens when you use the inquiry cycle, develop your ATL skills and increase subject knowledge. These three factors work together to develop detailed understanding of the four key concepts in individuals and societies: time, place and space; change; global interactions; and systems. While the content of individuals and societies courses will look different in every MYP classroom, there is always the same focus on conceptual learning to construct a deeper understanding of the big ideas in life and the world around us.

Introducing key concept 1: time, place and space

- How can time, place and space combine to support my understanding of events affecting individuals and societies?
- How is my history located in time, place and space in the context of local, national and global events?

ATL SKILLS

✓ Consider ideas from multiple perspectives.

✓ Consider the ethical, cultural and environmental implications of issues.

GLOSSARY

Macro large-scale.

Micro small-scale.

Perception the way that an event, idea or person is understood. There can be several different perceptions of the same event, idea or person.

COMMAND TERMS

Compare and contrast give an account of the similarities and differences between two (or more) items or situations, referring to both (or all) of them throughout.

Discuss offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.

Reflect think about deeply; consider.

Introducing time, place and space

The key concept of time, place and space is a large and complex one, simply because it has three ideas all connected to each other. It is virtually impossible to study one of these ideas by itself without referencing the other two. Imagine studying a list of dates in time—they would have no meaning or relevance for you if you didn't know what events they referred to (place) and the impact that these events had (space). Connecting these three ideas together into the key concept of time, place and space provides a relevant context for what you are learning but it does require you to reflect in three dimensions about the topic that you are studying.

For example, in the local environment in which you live, you might examine the flow of river systems. Studying this topic to understand the key concept of time, place and space will involve inquiry questions such as those in Figure 2.1 on the following page.

Figure 2.1 Inquiry questions for exploring time, place and space

Time:
- What did this river system look like 200 years ago?
- What will it look like 200 years in the future?
- Why will it look like this?

Place:
- Who lives here?
- Why have they chosen this place for settlement/industry/recreation?
- How is the land used?
- Who owns the land?
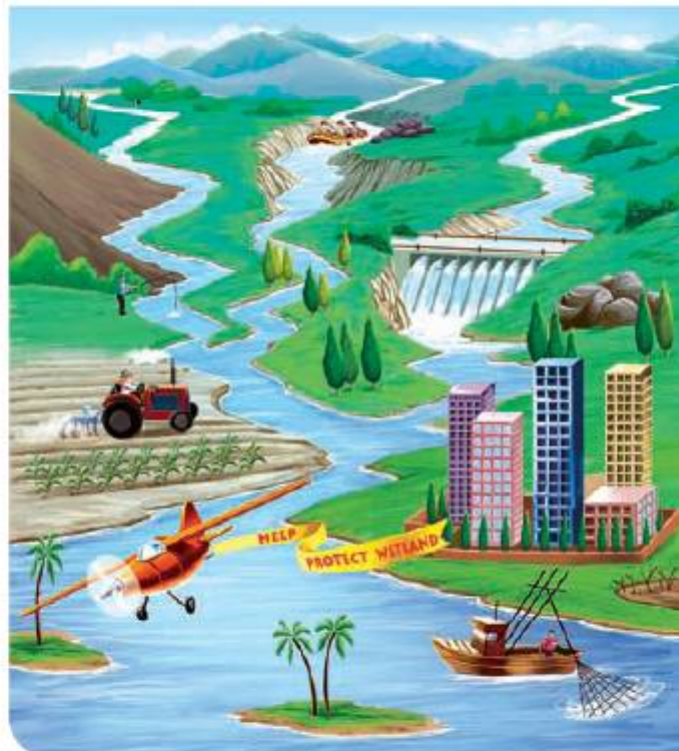
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Space:
- What are the geographical features of the area?
- How large is this area?
- What processes go through this space?

Probably without realizing it, you link these three ideas together all the time. Recalling events in your life or places that you enjoy going to will enable you to connect time, place and space.

Why are time, place and space important?

Each topic you study will contain elements of time, place and space, and will involve looking at how they relate to and influence each other. Learning how people connect and form societies is about understanding place. Knowing how individuals and societies change and interact throughout history is connected to time. Where a society is located and how it functions is connected to space.

QUICK THINK

Reflect on an event in your life that has significance. It could be a memorable holiday, a difficulty that you overcame or a personal achievement. Consider:

- Time—when did this event occur? What was significant about the time? This could relate to the age you were or the month the event occurred.

- Place—where were you when this event happened?

- Space—why did the event happen in that place?

TIP

To develop a detailed knowledge of topics in MYP individuals and societies, you will need to be able to classify them in time, place and space as a way of understanding how, why and where events happen.

Time

Time is an important factor in everyday life. You may have a school day regulated by timed periods of learning. Maybe you play in a sports team that has timed intervals of play. Perhaps time is something you are always running out of. Our relationship with time can be on a **micro** scale of the minutes and hours in a day, or it can be on a **macro** scale of the amount of time humans have been on planet Earth. Figure 2.2, below, gives you a sense of perspective about the length of human habitation on Earth in relation to the time the Earth has been in existence. If the Earth's 4.5 billion-year history was scaled into 24 hours, humans would only make an appearance at less than two minutes before midnight.

Figure 2.2 The history of Earth, scaled down into a single day
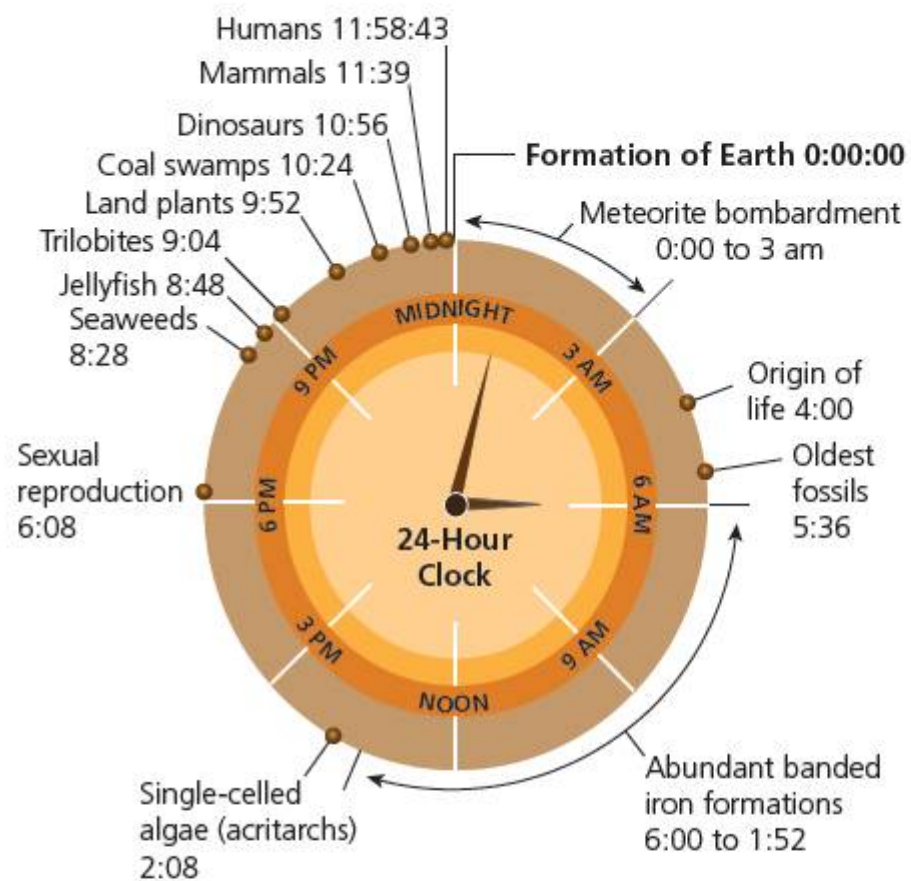
Time is divided into periods using different formats, depending on what is being studied. For example, Figure 2.3 shows time divided by geological periods, which could be used by someone studying prehistory.

WEB LINKS

Figure 2.3 A geological timescale of the development of living things

Fossil Record

millions of years ago	era	period	events
0 / 1.8	Cenozoic	Quaternary	evolution of humans
50	Cenozoic	Tertiary	mammals diversify
100	Mesozoic	Cretaceous	extinction of dinosaurs / first primates / first flowering plants
150 / 200	Mesozoic	Jurassic	first birds / dinosaurs diversify
250	Mesozoic	Triassic	first mammals / first dinosaurs
	Paleozoic	Permian	major extinctions / reptiles diversify
300	Paleozoic (Carboniferous)	Pennsylvanian	first reptiles / scale trees
350	Paleozoic (Carboniferous)	Mississippian	seed ferns
400	Paleozoic	Devonian	first amphibians / jawed fishes diversify
450	Paleozoic	Silurian	first vascular land plants
	Paleozoic	Ordovician	sudden diversification of metazoan families
500	Paleozoic	Cambrian	first fishes / first chordates
550 / 600 / 650	Late Proterozoic	Precambrian	first skeletal elements / first soft-bodied metazoans / first animal traces

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Division of time is also influenced by culture and significant events. In some countries, ruling families or royalty are used to divide time, such as the Ming Dynasty in China or the Elizabethan Era in England. The period of the Industrial Revolution was named after the developments in industry and manufacturing during the late 18th and early 19th century.

The way that time is measured provides an insight into the perspective of a certain event. For example, if you remember an event based on your age, it shows a personal connection to that event that might exist only for a small number of people. Events that have national or global significance are often indicated with time on a larger scale. Events such as the terrorist attacks in New York and London are often recalled only by the date that they occurred. Cities have streets and avenues named after the dates of important elections, revolutions or triumphs. These represent the significance of these dates as marker points in the history of a country.

Being able to discuss the relevance of an event in connection to the time period when it happened is an important skill in MYP individuals and societies.

Arts

In arts, different types of music occur during different time periods for example, Punk. Artists are also classified according to different periods such as the Impressionist era.

Sciences

In sciences, time periods may be based on the geological scale, evolution of mammals or important scientific discoveries.

Space

The concept of space prompts us to examine the value that we attach to a particular location. It is a description of the landmarks or features in an area that then help us define place. Figure 2.4 gives some examples of how we might use the word "space". Can you think of any other instances?

Space relates to where and why places and landscapes are located.

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Figure 2.4 How we use the word "space"

"I need more space!"

"Have you got any space for me to use?"

"You need to survey the space between the two trees."

Whenever we talk about "space", we need to define exactly what we mean. We could be referring to a certain amount of square metres, or defining an area using coordinates on a map. Sometimes we refer to virtual space, which might be available memory storage on a cloud drive or a digital platform where an online meeting may take place.

Within the concept of space, it is also essential to understand the interactions that occur in that particular area. These interactions, connections and processes are facilitated and influenced by the space that they occur in.

Compare and contrast the influence of different spaces on interactions between people.

- **Government offices** and **co-workers**
- **Park** and **neighbours**
- **Chat room** and **online friends.**

STEP 1   Create a short conversation with a partner for each of the three spaces.

STEP 2   Share your conversations with another group of students.

STEP 3   In your group **discuss** the following questions:

- How does space impact language?
- How does space affect the people working or spending time there?

Once you have defined a space, the next step is to investigate the relationship that people have within that space. When you understand this relationship, then you have knowledge of what makes a **space** a **place**.

🌐 **GLOBAL CONTEXTS**
Orientation in space and time

🧠 **ATL SKILLS**
Self-management
Consider ethical, cultural and environmental implications.

Place

Place is a location (space) in the world that has personal and emotional significance to you, a family, a society or a population. This idea of personal and emotional significance starts with the place that you know best, and often this place is your home. Think of how you might refer to your home: "That's my place,", "Our place is next door to the park." The identification of a specific place is done through reference to other locations that are more well-known.

In the film *The Wizard of Oz*, Dorothy is whirled away to another land by a tornado. Her constant desire to return home is a good example of the strong emotional attachments we have to specific places.

You have knowledge of your favourite places—the locations that you feel the most comfortable in. This network of favourite places tends to expand as we get older, move homes, go to university or travel to work in a different location. The value and meaning of place is the emotional connection that a person has with a location.

When exploring the importance of place, we need to consider the connection with time. Often the longer the association we have with a place, such as a childhood home, the greater its importance

"There's no place like home."

to us. Similarly, the more time a place has existed for, the greater the significance to people; the many historical sites around the world that people visit are a good example of this connection.

Activity 2   The significance of time and place

In a group of 3 or 4, discuss this image of a kitchen from the ruins of the ancient village of Pompeii in Italy. What significance would it have had in the year AD75, a few years before Mount Vesuvius erupted? How has the interaction between time and place influenced the significance of this space?

Common household items such as kitchen utensils take on immense historical significance when they are excavated after being buried for many centuries. Can you imagine items from your house such as plates or pots being considered important? What about if they were discovered in hundreds of years' time?

Can you think of other examples where personal articles such as clothing, tools, letters or toys have historical importance because of their relationship to an event or time period?

Kitchen pots found in a house in Pompeii
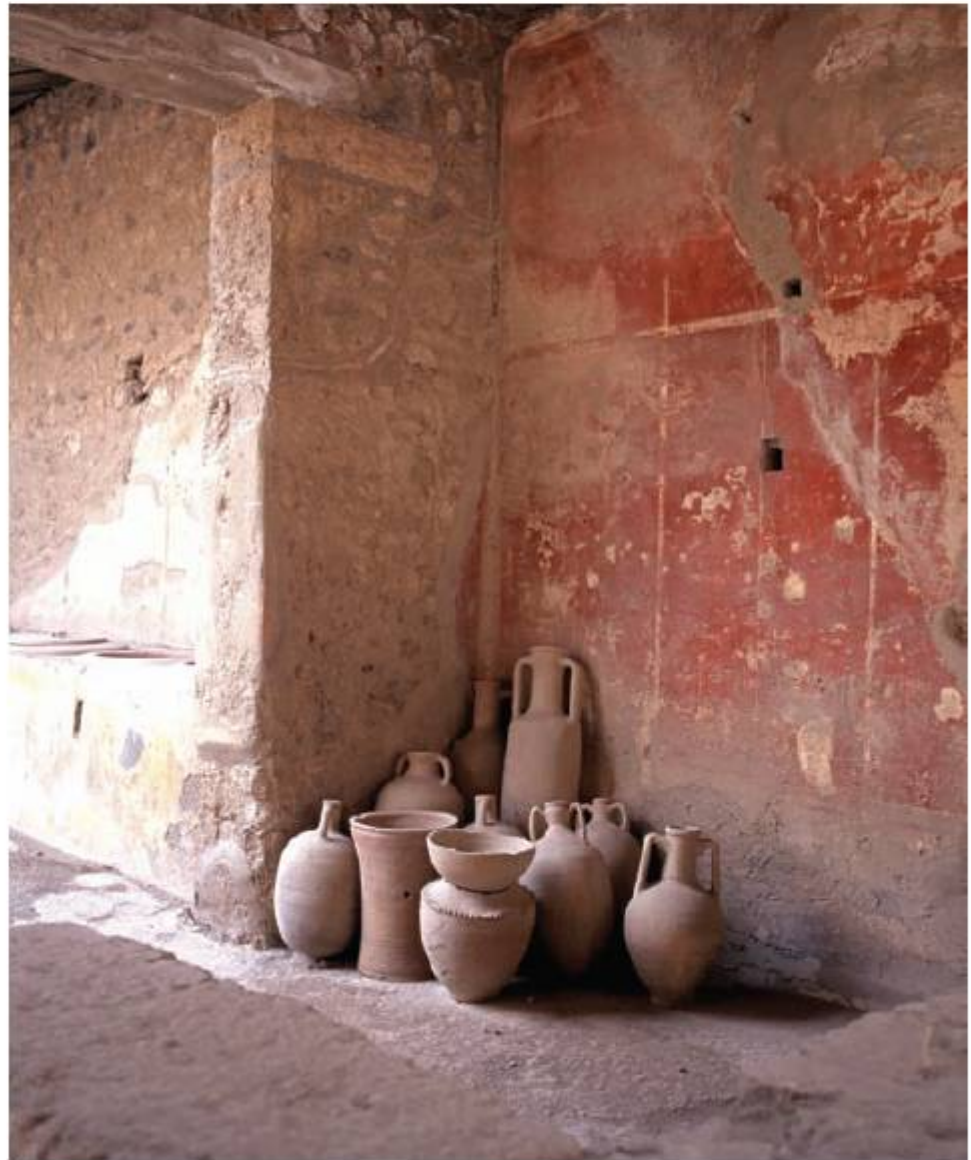
GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Thinking
Consider ideas from multiple perspectives.

WEB LINKS
Learn more about the eruption of Mount Vesuvius and the cities of Pompeii and Herculaneum at www.bbc.co.uk. Search for "history Pompeii".

TAKE ACTION
Imagine that your life was going to be studied by future populations 500 years from now. What personal and household objects would you choose that have importance in your life? Create a virtual time capsule using pictures or drawings of these objects. It will be interesting to "open" your time capsule 20 years from now.

Conflict of place

Conflicts can exist when people have different ideas about the importance of a place. Often, this sort of conflict occurred during the ages of exploration where explorers landed on a new continent, claiming the land for themselves without acknowledgment of the existing connections between indigenous populations and the land that they lived on.

Conflict of place still exists today. It can happen on a local scale, for example, neighbours disagreeing on the location of a boundary fence. It also happens on a global scale; think about the concept of national borders. Struggle for control of a place is a struggle between differing beliefs about the meaning of ownership.

The combination of time, place and space can provide the opportunity for development and change. This could be in the form of new ideas, inventions, disasters or revolutions. It may be helpful to think about these three ideas as required ingredients for development. The differences in scale and quantity of time, place and space will influence the sorts of developments that take place.

For example, to understand why poverty occurs, it is essential to be able to analyse the influence of time, place and space. Being able to evaluate the constraints of a location can help in planning appropriate use and occupancy of a space. This evaluation can also provide knowledge of why poverty exists in certain locations for certain communities. Knowledge of the factors that cause places to experience repeated and prolonged poverty can help people to propose innovative solutions to try to break that cycle.

LITERARY LINKS
The film *The Truman Show* explores the concept of an artificially constructed place and the influence that it has on habits, expectations and perceptions.

Summary

MYP individuals and societies is about understanding the complex connections between people and environments. You have learned how connections are formed by the locations that they are in (place and space) and the influences of the cultural time period. The combination of time, place and space gives us marker points in our own personal histories, as well as in histories of cultures and societies. You should now be able to consider and analyse the events that you learn about in the context of time, place and space.

References

Middle Years Programme. *Individuals and Societies Guide*. May 2014.

Introducing key concept 2: change

GLOSSARY

Continuity maintaining a status or action without change.

Implications the conclusions or consequences that flow from a given idea, situation, characteristic or action.

Malleable something that can be adapted, changed or moulded.

State in the context of this chapter, state refers to the condition that someone or something is in at a given time.

Introducing change

On one level, the world is a simple place. Only two things can occur: either things change or they stay the same. This simplicity dissolves, however, when we start asking why things change or stay the same, or how they change or stay the same, or even which things change and which things, if any, do not. This is where change gets complex, but also interesting.

Change and **continuity** help us to understand our place in history. We label time periods (for example, classical, medieval, modern eras), political, social and cultural movements (progressive era, romantic era) and even generations (baby boomers, generation X, generation Y) in order to help us see the continuities within these eras and the changes that occur between them. What are some of the essential continuities within the time periods, movements and generations listed above? (Or you may wish to think of your own examples.) What are some of the essential differences between the time periods, movements and generations?

We can also consider how change applies to MYP individuals and societies.

COMMAND TERMS

Formulate express precisely and systematically the relevant concept(s) or argument(s).

Justify give valid reasons or evidence to support an answer or conclusion.

Suggest propose a solution, hypothesis or other possible answer.

Change involves moving from one state to another

Almost everything we know of or can imagine has the potential to move from one state to another. We can see this at work in the human activities and institutions that are a key focus of the individuals and societies subject area.

- countries can be at war and move to a state of peace
- economies can be growing and move to a state of recession
- societies can use resources unsustainably for a time and then move to more sustainable use.

Any of these changes can also occur in reverse order.

Activity 1   Change in individuals and societies

Try to think of other instances, from the different individuals and societies subjects, of things changing from one state to another. Using the bullet points above as an example, the changes of state would be:

- war ⟷ peace
- growth ⟷ recession
- unsustainability ⟷ sustainability.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Brainstorm to generate ideas.

Change is universal, inevitable and constant

While some things seem to change more frequently and faster than others, eventually even the most slowly evolving things change (the shape and location of continents, for instance). Therefore, we can say that change is constant, not in the sense that it always proceeds at the same pace, but in the sense that it is always happening somewhere to most things.

This does raise questions, however, about the balance between change and stability.

If something cannot go on forever, it will stop.

Economist Herbert Stein

A major issue in individuals and societies is considering what exactly is meant by human nature. In other words, what unchanging characteristics do we share that make us human? Some argue that human nature possesses unchanging characteristics such as:

- rationality
- fear of death
- desire for freedom.

These things never change, or change so slowly that it hardly matters.

Others argue that we make up ideas about human nature, often in order to serve our own purposes. For instance, someone who says that fear of death is fundamental to human nature may just be saying this to support their desire for a strong government, arguing that it is necessary to protect us from killing one another.

> *Whoever wishes to foresee the future must consult the past; for human events ever resemble those of preceding times. This arises from the fact that they are produced by men who ever have been, and ever shall be, animated by the same passions, and thus they necessarily have the same results.*
>
> Niccolo Machiavelli

CHAPTER LINKS

When we talk about equity, we are suggesting that, at some level, humans are all the same in terms of dignity (ie, the respect and honour they deserve) and that fairness and justice therefore demand that we are all treated in a way that accords with our basic dignity. The UN Declaration of Human Rights represents one attempt to describe how all people should be treated based on their shared dignity (see chapter 12 on trade for more information).

Activity 2   What is human nature?

STEP 1 Formulate a view of human nature.

- What fundamental characteristics do we share that make us human?
- Are those characteristics unchanging or is human nature at least somewhat malleable?
- What type of characteristics do we share? Physical? Mental? Spiritual? Moral? Emotional? Are we made in the "image of God"? Do we share certain "human rights" given to us by nature or God?
- If you adhere to a religious or philosophical tradition, you may want to reflect on what that tradition has to say about human nature.
- What are the implications of your view of human nature for how we should live as individuals and organize our communities?

STEP 2 Make a Mind Map with "human nature" in the middle. You may want to make the main branches coming out of human nature the various types of characteristics—physical, mental, spiritual, moral, emotional—that humans could possibly share. You can then continue to explore the question of human nature by adding branches, "twigs" and "leaves" to mirror and extend your thinking. Use the example below as a starting point to create your own diagram.

Mind Map Guidelines

- Start image of topic, Center at least 3 colors
- Clarity — hierarchy, order (1 2 3), outlines
- Links
- Use Colors — Emphasis, images, codes (a), dimension (b)
- Style — personal, develop
- Keywords
  - print, case (UPPER and lower)
  - lines — for each (word, image alone), connect (center, radiate out)
  - organised — central (thicker — more important), outer (thinner — less important)
  - style — organic, free flowing, length (same as word image)

A Mind Map® on human nature

- **Shared rights**
  - Right to life (e.g. to not be killed)
  - Right to earn and keep property
    - Human nature (what makes us human?)
      - Shared experiences
        - Fear of death
        - Desire to meet our needs and wants
        - What about people who are not conscious?
  - If we have these rights, where do they come from?
    - Higher being?
    - Nature?
    - Human-generated ideas?

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Thinking
Use Mind Map® to generate ideas and questions.

The causes, processes and consequences of change

This is where the concept of change gets interesting. Think about the pattern of cause and effect. One event, the cause, leads directly to another event, the effect, and the effect represents some type of change. However, when we look more closely at cause–effect relationships, we find more to them than one cause leading to one effect. Instead, we often see multiple causes setting in motion processes that have multiple effects or consequences. Those consequences can later become causes themselves, starting new processes all over again. In MYP individuals and societies, a main concern is trying to clarify causes, processes and consequences. Many debates about history involve arguments about which causes set in motion which processes and with what consequences.

Activity 3 — Structured thinking

Because the relationships between causes, process and consequences can be complex, it helps to have some strategies to help you organize your thinking. A simple table can help you.

STEP 1 Choose an event that you have studied where there has been a significant change. This could be a war, natural disaster or a new law. It could be on a local or global scale.

STEP 2 Look at the table below, which contains an example of causes, processes and consequences of the First World War.

Cause	Process	Consequence
Cause(s): An event, development or idea that leads to other events, developments or ideas. It does not have to be the only cause (and probably won't be, as most changes have multiple causes).	**Process:** Try to describe the process that led from the cause(s) in column one to the consequence(s) in column three. This allows you to articulate the relative importance of causes and the possible relationships between them.	**Consequence(s):** At least one event, development or idea that results from the cause(s) in column one.
▪ Assassination of heir to throne of Austria-Hungary by Serb nationalist ▪ System of alliances that draws in all countries when Austria-Hungary declares war on Serbia after assassination	In the years before the first world war, a system of alliances developed in Europe, with Germany, Austria-Hungary and Italy on one side and Russia, France and Great Britain on the other. This system of alliances ensured that what would otherwise have been	Outbreak of the First World War

• Instability in Austro-Hungarian Empire (desire by some nations to break away) • German fear of Triple Entente (felt surrounded), especially modernizing Russian army	a regional war between two states, Austria-Hungary and Serbia, caused by the assassination of the heir to the Austrian throne by a Serb nationalist, became a wider war as countries came to the aid of their allies (Germany to Austria-Hungary and Russia to Serbia).	

Change analysis table—the outbreak of the First World War

"The Chain of Friendship"—a cartoon depicting the web of alliances of the First World War

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STEP 3 Create your own table for your chosen event. Start by filling in the consequences column. The consequence is the main effect or result from the event.

STEP 4 Fill in the causes column. List all of the causes that you can think of when recalling information about your event.

STEP 5 Fill in the process column. This is where you might hypothesize or develop an idea about how the various causes worked together to bring about the consequence. This part is important because it gives you the chance to try to understand the complex relationships between the causes, and understand the concept of change.

STEP 6 A flow chart like the one shown here can also help clarify your thinking about causes, processes and consequences. Make a flow chart for your event.

Flow chart showing the causes of the First World War

```
                        System of
                        alliances ──┐
                                     ▼
                              European
                                war
                                  ▲
Assassination        Regional conflict
of heir to Austrian ─▶ between Austria-─┘
throne by Serb        Hungary and
nationalist           Serbia
```

TIP

Primary sources in history were produced by people living through the events in question, or they constitute raw data from those events (for example, the percentage of Jews living in Germany in 1933). Secondary sources are written by historians after the events and give the author's interpretation of them.

It would be possible to list causes going further and further back until we get to the origins of the universe and existence—which, after all, is the cause of everything. At some point, however, we need to draw a limit around our inquiry. How we do this is a matter of judgment as to which are the most important causes, and also depends on things like the amount of time we have for research or the extent of our knowledge and sources. Sometimes people might disagree on where to begin the inquiry into a given change. Take an inquiry into the causes of the Holocaust, for example. Historians disagree on how far we should look back for the causes. For example, we could focus on two completely different periods of time:

1. The Middle Ages, so we can unearth the deep roots of anti-Semitism in European culture.

2. The 19th and early 20th centuries, and the new racial theories that arose out of misinterpretations of Darwinism.

The limits we choose to draw around an inquiry into change are in part based on our knowledge of the context in which a given change occurred. In other words, it helps to know a lot about the area into which you want to inquire.

Choose a given change that is relevant to individuals and societies. Imagine that you wanted to conduct an inquiry into the causes, processes and consequences surrounding this change. **Suggest** limits for this inquiry in terms of time, place and space. Be sure to **justify** the limits you propose. You may want to use a table, like the one below about the Holocaust, to help you organize your thinking.

TIP

This activity shows the importance of knowledge. If you want to inquire more deeply into an issue or event, you will be in a much better position if you already know as much as possible about the context surrounding it. In the case of the Holocaust, knowledge of European history would be very helpful in planning an inquiry into the causes and processes that led to it.

The change you want to investigate (this can include events, as well as developments)	Limits of the inquiry in terms of time	Limits of the inquiry in terms of place and space	Limits of the inquiry in terms of specificity
Holocaust	From the Middle Ages to the end of the Holocaust in 1945. This allows for inquiry into the deep roots of anti-Semitism in European culture. Pogroms occurred in medieval times and examples of anti-Semitic beliefs can also be found going back to the Middle Ages. Going back further than this would remove the inquiry too far from the cultural context of modern Europe. Anti-Semitic actions or ideas from earlier than the Middle Ages would at any rate be filtered through to modern Europe by medieval interpretations.	The European continent as a whole, given that, by the high Middle Ages (1000ce) it was fairly unified culturally. As the inquiry gets closer to the Holocaust, narrow the focus more to central Europe, especially the German-speaking countries of Germany and Austria, since it was from these countries that Hitler and others who led the Holocaust emerged.	Given limitations on time and access to primary source documents, I will study key secondary works on the Holocaust, plus a limited number of key primary sources that, because of their importance, are easily accessible in print or on the web. The scope of my sources will reflect the fact that I have roughly 50 hours to dedicate to this inquiry.

Suggested limits for inquiry when investigating the causes of the Holocaust

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Thinking
Gather and organize relevant information to formulate an argument.

CHAPTER LINKS

The intentional/unintentional distinction connects change to the key concept of systems. Many of the systems we study in individuals and societies—such as political, economic and social systems—are highly complex. Each individual person in a system is a part—so if millions of people are involved in a given system, it will have a high level of complexity based on that fact alone. If any of those parts changes, it can lead to changes throughout the system. See chapter 5 on systems for more information.

QUICK THINK

Choose a change that is relevant to individuals and societies. Discuss the extent to which it was intentional or unintentional. Consider the role of unintended consequences in your discussion.

TAKE ACTION

Consider ways that you could take action to create change that is intentional and positive. What possible unintentional changes might arise from your actions?

The different types of change

Natural and artificial change

An artificial change comes from human action while a natural change comes from non-human factors. Many changes that we study in individuals and societies result from a mix between natural and human-made causes. For example, wars, revolutions and economic depressions can be traced back to natural and human-made causes. Food shortages can be caused by social upheaval but they can also occur because of human-made causes such as unwise government policies or civil war.

Intentional and unintentional change

Our actions do not always lead to the changes we intend. Other people and things often intervene to disrupt our plans. You may intend to improve your mood by getting a good night's sleep but your neighbour's intention to play loud music could prevent that and change your mood for the worse rather than the better. Or a violent storm could disturb your sleep. In either case, your mood changed for the worse, but the change was not intentional. If, on the other hand, you get a good night's sleep, then we might say the improvement in your mood represents an intentional change. This distinction gets quite complex when we look at important changes that involve larger groups.

Did the outbreak of the First World War result from human intention? Given that so many different actors with various intentions were involved, it is difficult to say. Certainly we have evidence that some were more eager for war than others. A major job of historians is to try to determine the intentions of those involved in such a change. This includes clarifying how conflicting intentions among actors may result in outcomes that no one intended. Leaders on both sides in the First World War (and most wars, for that matter) intended a quick victory with limited sacrifice of lives. Unfortunately, the intentions of these opposing forces actually helped create a very different outcome than the one they intended.

Positive and negative change

Judging whether a given change is positive or negative is often interesting and challenging and a clear answer one way or the other is elusive. In English there is a saying that "every cloud has a silver lining" to express the idea that even changes that seem negative may have some positive effects. In fact, we often act to try to salvage positive results from negative changes. The Holocaust, for instance, was an unspeakably awful event but some people tried to salvage some small good out of it by arguing that it would make us more determined and vigilant to "never again" allow genocide to happen (a prediction that has unfortunately turned out to be false).

Because change is such a fundamental concept, it applies across all subject areas.

Sciences

The sciences study changes in the physical world. Technology results from innovation, which is a kind of human-driven change, aimed at improving methods and products.

Language Acquisition

Languages themselves evolve over time while language also allows us to narrate change, both real and imagined.

Arts

Like language, the arts themselves evolve over time, as artists vary their styles and methods. Within individual works, artists use change to dramatic effect, either across time (as in music, drama, film and dance) or across space, as in the visual arts.

Physical and health education

Physical education is concerned with changing our body to improve fitness. In addition, physical activities involve constant change, as participants move in order to accomplish the goals of the game or performance.

Mathematics

Mathematics provides us with tools for measuring the rate of change across space and time.

Summary

In this chapter you have explored the key concept of change in order to understand its essence and its characteristics. You have learned what it is about change that especially interests us in MYP individuals and societies. This should aid you in your future inquiries into specific changes, as you will know to focus on causes, processes and consequences. You will also be able to consider intentionality and the balance between natural and artificial causes, all the while keeping in mind the overall value of the change.

References

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Introducing key concept 3: global interactions

INQUIRY QUESTIONS	■ What effect is an increasingly connected world having on our ability to solve global issues?
	■ How does the interaction between culture, values, ethics and aspirations affect individuals and societies?
ATL SKILLS	✓ Consider ideas from multiple perspectives.
	✓ Make fair and equitable decisions.
	✓ Formulate factual, topical, conceptual and debatable questions.

GLOSSARY

Accessibility the distribution of hubs in a network.

Duress pressure or threat.

Hub a major centre of a network.

Link a connection between different hubs in a network.

Manifesto a public document describing aims or objectives, often from a political organization.

COMMAND TERMS

Compare and contrast give an account of the similarities and differences between two (or more) items or situations, referring to both (all) of them throughout.

List give a sequence of brief answers with no explanation.

Outline give a brief account or summary.

LITERARY LINKS

The film *The Gods Must Be Crazy* is set in Botswana and takes a comic look at the interaction between different cultures.

Introducing global interactions

Global interactions is the key concept that explores how we communicate and exchange goods and services with people and environments across borders around the world. Our increasingly connected world means that we have much greater awareness of global events, issues and processes than ever before. It's amazing to think that it was only in 1876 that the first telephone call was made by Alexander Graham Bell, and now it is possible to make a telephone call to and from almost anywhere in the world. The developments of air travel, shipping, broadband cable and satellites all help the transportation and transmission of products, services, people, and ideas and information all over the world.

New ways of exploring and using natural resources have increased the complex interaction between people and the natural environment. Technology has helped us to extract fossil fuels in previously inaccessible locations. Improvements in agriculture have increased crop harvests and allowed us to grow fruits and vegetables in locations that are not the traditional environments for these plants. Science and medicine have benefited from the interaction between humans and different environments, too. Areas of rich biodiversity have supplied us with everything from cures for diseases to inspiration for architectural design. Cultural exchanges of music, food, film, art, dance and literature have resulted in collaborations and fusions of different styles from all around the world. However, do these interactions bring positive benefits to people and environments? Or are they one-sided transactions, with someone or something always suffering in the exchange?

Why global interactions are important

Most of us benefit from the wonders of an interconnected world. But interconnections and interdependence always come with costs. We may now be able to reach all corners of the planet in different ways to develop new ways of living but this is causing the depletion of natural resources, the loss of natural diversity, the exploitation of people and unsustainable growth.

Many millions of global interactions happen every day. For example, trade of resources involves the interaction of global markets and economies. Migration of people involves the interaction of cultures and diversity of languages. Cooperation and conflict over national borders involves the interaction of government systems and ideologies.

To gain a deep understanding of global interactions as a concept, think about the interdependence of a relationship, how complex it is and the result of the transaction (conflict or cooperation).

Interdependence

The foundations of global interactions are the links that exist between people and the environment—interactions that involve the extraction of resources to support our basic needs. People are dependent on the environment to supply shelter, food, water and protection. Beyond basic needs, people use the environment for the infinite number of goods and services that form and feed individuals and societies. Historically, people were dependent on the environment in their immediate surroundings to satisfy their basic needs. Today, we use environments all over the world to supply us with goods and services.

Interdependence between individuals and societies is also a key part of an interaction. For example, trading goods between countries means that one country depends on the resources available in another

Global interactions focuses on the connections between individuals and communities, as well as their relationships with built and natural environments, from the perspective of the world as a whole.

MYP 2014: 17

Interaction and interdependence are not the same thing. Two people or groups can have an interaction but they don't have to depend on each other.

country, while the providing country also depends on the purchasing country for income. That dependence might be something quite fundamental—for example, the USA's energy networks depend on the creation and transmission of energy supplies from Canada. Other interactions are based on wants rather than needs. For example, one country may have decided that it wants to develop industries for electronics manufacturing. However, it will have to import raw materials from another country to support this industry.

Interdependence is an interaction where all the groups involved rely on each other. When you are studying global interactions, think about what industries or processes are dependent up on that interaction taking place.

Global interactions are more than just interactions between people, businesses or governments. They are also the interactions that take place between populations and the environment that they rely on to supply them with essential needs. The sustainability of these environments depends on the responsibility of the users. Will people only use what they need or will they take more to sell through trade and to gain more power through increased development?

QUICK THINK

Describe the process in figure 4.1. What kinds of global interactions and influences could be happening?

Figure 4.1 The transition in resource consumption from basic needs to satisfying desires

How are these different from needs?

Basic needs   Wants

Development

What happens as a country develops?

What are the basic needs of a person or a country?
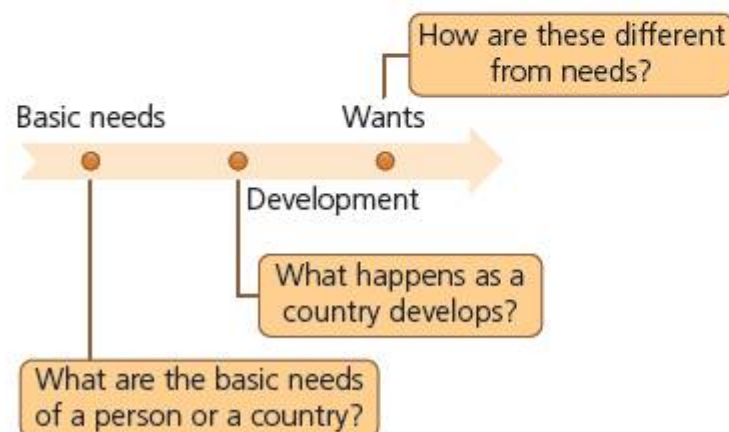
Global interactions focuses... on the many ways that people come into conflict with and cooperate with each other.

MYP 2014: 17

Complexity

Examining the vast amount of ways that people come into conflict and cooperate with each other involves studying complex global interactions. There is a huge variety in the complexity of these infinite interactions. An interaction may involve a simple transaction of goods for money. A more complex interaction may involve the interconnection of transport networks, manufacturing and trading markets between various countries around the world.

Consider trade agreements between countries, which are often very intricate. They may be based on deals regarding trading resources but often also include agreements on immigration, taxes or legal rights. These interactions may involve significant bargaining between governments as they try to reach a position that is in the interests of their country.

In your study of global interactions, you will notice similarities to the key concept of systems (see chapter 5). Like systems, interactions take place within a series of networks. These networks have **hubs** and **links** with different sorts of **accessibility**, as demonstrated in the table below.

Hub	Link	Accessibility
Airport	Flight routes	Located throughout regions, serving a large number of people
Stock exchanges	Financial transactions, trades in stocks and bonds	At least one per country but maybe more, depending on the type of financial exchange taking place
Lakes	Rivers	Distribution dependent on the land and climate

Examples of hubs, links and accessibility

Activity 1   Interactions on different scales

STEP 1   Compare and contrast the images below and think about what interactions might be taking place. What sort of interactions could they be? Who is involved in these interactions? In the United Nations image, consider why there are so few women.

Major shipping routes around the world

journeys
<10 20 50 100 200 500 1000 2000 >5000

©The Royal Society
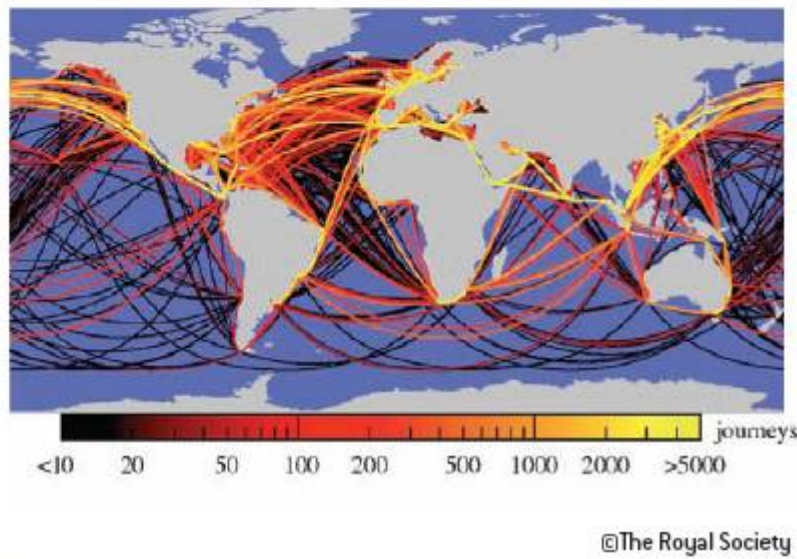
Second session of the United Nations General Assembly in New York (1947)

STEP 2   Consider how people and environments are impacted by these interactions. What sort of impacts are they?

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Consider ideas from multiple perspectives.

Conflict and cooperation

The word "interaction" implies some sort of acknowledgment, cooperation or conflict between individuals or groups. Interactions involving a trade or an exchange of ideas are generally based on cooperation, after negotiations have taken place. However, if the needs or resources of the countries change, the relationship between the trading partners may need renegotiation. Where international cooperation can turn to conflict is when one country wants to change or break a deal and the other country doesn't. As resources become scarce, possibilities for conflict increase and countries may wish to break or change existing interdependent relationships.

Activity 2 — The "rules" of trade

You are part of a United Nations committee that has been formed to develop guidelines for countries entering into agreements on trade. What guidelines will you develop that will support countries in achieving a "fair deal" in the negotiation?

Outline your rules in a one-minute speech or list them as a manifesto.

Consider how you will define the term "fair deal" in the context of negotiations. How could this term be influenced by culture?

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Social
Make fair and equitable decisions.

Power, trade and responsibility
Power

The word "interaction" implies a transaction of goods or services but it is quite a neutral term. We don't know if the interaction is fair, ethical or carried out under duress. We therefore need to think about the power relationships between groups when learning about global interactions. You will also need to understand how you define the meaning of terms such as "ethical interaction" and "fairness".

Any sort of interaction is about a power relationship. Your friend may have something that you want and they are willing to trade it with you for something you have. How badly you want something will influence what you are willing to trade for it. Your friend may be aware of this and take advantage of you.

The use of power in a global interaction will depend on the type of resource or service being traded, as well as the value and the complexity of the interaction. Look at the historical global interaction shown in Figure 4.2. How would you explain how power is being used or abused here?

Fair trade agreements require open communication

Country 1 buyer ⟷ Country 2 seller

How do you know if this interaction is fair?
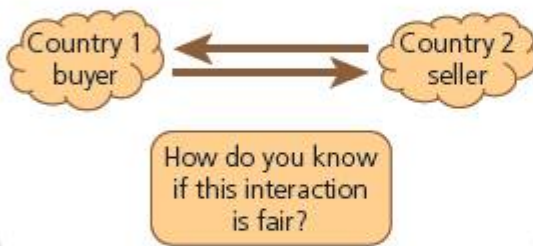
Figure 4.2 The triangular trade routes between Europe, West Africa, the West Indies and North America
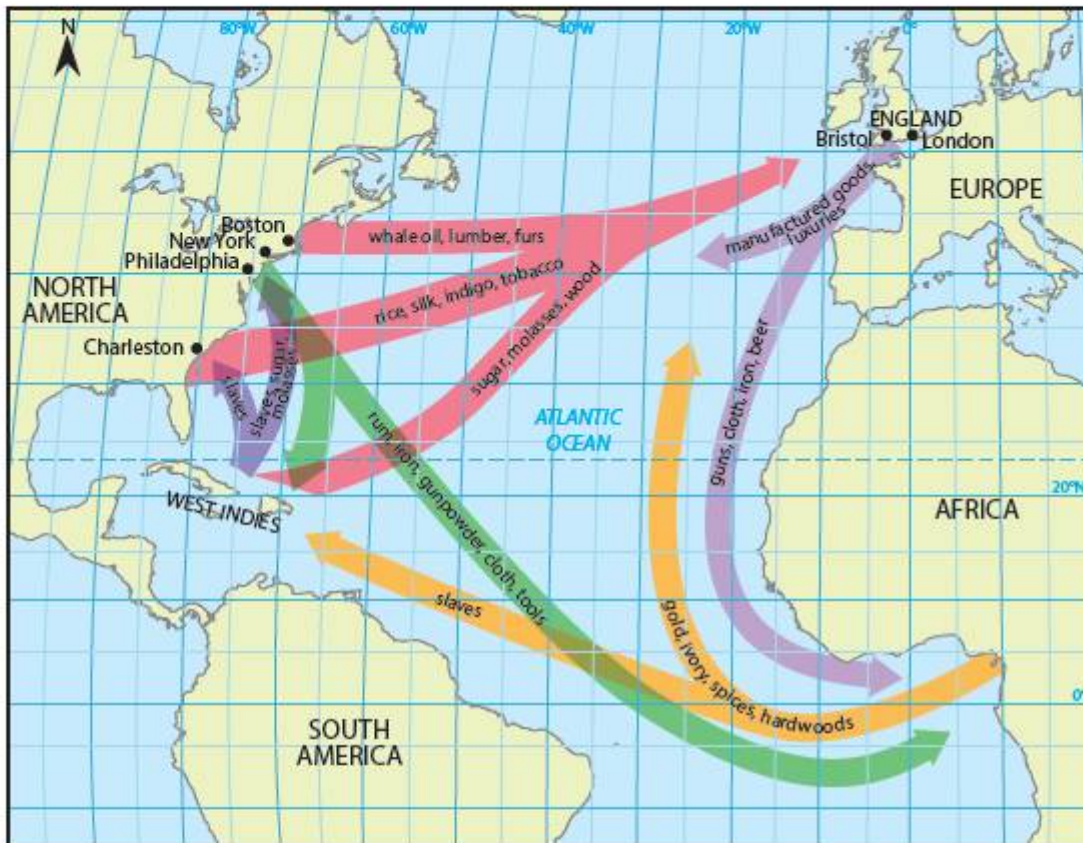
Trade

Global interactions inevitably involve some type of trade. Trade can be the very simple exchange of goods for money or it can involve a much more complex series of exchanges including ideas, resources, knowledge and laws. Consider the interaction between power and trade. Do all trade deals happen under the same sort of conditions?

The many trade agreements that exist between groups of countries signify the cooperation that has occurred in coming to an agreement where each member feels that they are benefiting from the relationship.

QUICK THINK

When have you been involved in some sort of exchange or trade of ideas? Did all the people involved in the interaction mutually benefit?

Activity 3 — Research into trade groups

Research one of the trade groups from the list below. Compare natural resources, Gross Domestic Product (GDP), location and population of five member countries. How do you think these different characteristics have influenced each country's strength of negotiation in agreements?

- World Trade Organization (WTO)
- North American Free Trade Agreement (NAFTA)
- European Union (EU)

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Formulate factual, topical, conceptual and debatable questions.

Responsibility

In any relationship, there are certain rights and responsibilities held by the people involved. When looking at global interactions, there is the additional factor of different perspectives on rights and responsibilities in relation to culture. The responsibility or obligation to behave in a certain way in an interaction is influenced by cultural background. Disagreements may occur in an interaction when there is a misunderstanding between the roles and responsibilities. If these disagreements are not addressed, then there is the potential for a global interaction to become one that is based on conflict rather than cooperation.

Think about responsibility in the context of two countries that share a common border. Country A decides to build a dam that stops river water flowing to Country B. Country B is angry about this and claims that Country A needs to act responsibly when managing water resources. Country A replies that it is acting responsibly by making sure that its citizens have access to water through the building of a dam.

Another example of international responsibility is when a state or country suffers a natural disaster. Consider what responsibilities neighbouring states or countries have to help people who are suffering.

Summary

You have explored how global interactions are increasing in their scale, complexity and variety. You are part of these complex threads of global interactions—perhaps you listen to the world news on the radio, eat a food that comes from another continent or use your smartphone to message a friend on the other side of the world.

Generally, we don't analyse the effects of using these resources and services that involve people in other parts of the world but we do need to think about the impact of the world's increased interdependence. The many ways that people come into conflict or cooperate with each other and the environments they live in are all part of the study of individuals and societies. Understanding the reasons why an interaction exists helps us to understand the needs and wants of individuals.

Being able to analyse the complexity and balance of power in global interactions can help us to make choices about how we can live as responsible, globally-minded citizens.

References

Middle Years Programme. *Individuals and Societies Guide*. May 2014.

QUICK THINK

What is your opinion of the situation between Country A and Country B?

CHAPTER LINKS

See chapter 8 on choice to further explore responsibility in the context of financial aid between countries.

Introducing key concept 4: systems

INQUIRY QUESTIONS	▪ How do scale and complexity interact to describe human and environmental systems? ▪ What is my role and influence in the systems I am a part of?
ATL SKILLS	✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding. ✓ Present information in a variety of formats and platforms.

GLOSSARY

Component a part of an object, machine or system.

Dynamic changing, moving or evolving.

Equilibrium a state of balance or harmony.

Hierarchy organization or ranking of groups, individuals or objects.

Interconnectedness the types of links between different systems.

Introducing systems

Systems are the basic organizing method of everything in our world, connecting living and non-living things. Systems operate on a huge variety of scales—from minute systems within the cells of organisms to the vast cyclical systems of the Earth's ocean currents. Systems have existed since the beginning of time and there are an infinite number of them. Humans are also responsible for creating, maintaining, enhancing and being a part of systems. You may have a simple system for organizing recycling in your kitchen. Airports have systems for tracking arrivals and departures of planes and passengers. Your country has a system for electing officials at a local, regional and national level.

Today the network of relationships linking the human race to itself and to the rest of the biosphere is so complex that all aspects affect all others to an extraordinary degree. Someone should be studying the whole system, however crudely that has to be done, because no gluing together of partial studies of a complex nonlinear system can give a good idea of the behavior of the whole.

Physicist Murray Gell-Mann

COMMAND TERMS

Compare and contrast give an account of the similarities and differences between two (or more) items or situations, referring to both (or all) of them throughout.

Construct display information in a diagrammatic or logical form.

Create evolve from one's own thought or imagination, as a work or an invention.

Identify provide an answer from a number of possibilities. Recognize and state briefly a distinguishing fact or feature.

List give a sequence of brief answers with no explanation.

Select choose from a list or group.

James Lovelock, a scientist and environmentalist, proposed the theory that the entire Earth is a single system, involving an **interconnectedness** between all living and non-living things. The Gaia theory, named after the Greek goddess representing Earth, claims that all living things work together to maintain a stable atmosphere, biosphere and water cycle that continues to support life.

Why systems are important

Systems are the fabric of networks, which are a part of maintaining the natural environment, ensuring financial transactions flow around the world and helping societies to function within a set of written and unwritten rules.

Understanding the fundamentals of systems, how they can change and the impacts that they have is an essential part of understanding the world that we live in.

Scale

Scale relates to the physical dimensions of a system, the furthest boundaries that it reaches. Of course, systems interconnect with each other, but we can use scale to help us focus on a system or a part of a system at a particular level.

It is also possible to think of the same sorts of systems at different scales. For example, a financial system for a small business will have the same basic operating principles as a financial system for a multinational corporation. However, they are operating at very different scales.

The diagrams in Figure 5.1 show two similar systems operating at very different scales. The fundamental elements of both systems are the same—energy and heat transfer, the role of light and the impact on plants. What is obviously different is the size, or scale, that the system is operating at.

Figure 5.1 **The greenhouse effect at very different scales**

3. Now warmed, the objects give off long-wavelength IR light.

2. Everything in the greenhouse absorbs short-wavelength IR light and becomes warmer.

4. In turn, the glass absorbs the long-wavelength IR and warms up. It gives off long-wavelength IR, which mostly shines back into the greenhouse.

1. Short-wavelength infrared radiation (IR) light from the Sun passes through the glass.

Sun
Atmosphere
Earth
Atmosphere

Complexity

When systems interconnect with each other, they form networks and can become larger and more complex systems. Look at the simple diagram in Figure 5.2 showing a food web.

Figure 5.2 A comparison between a simple linear food chain and a detailed food web

Primary production and heterotrophy

Higher trophic levels

© ACIA, 2004
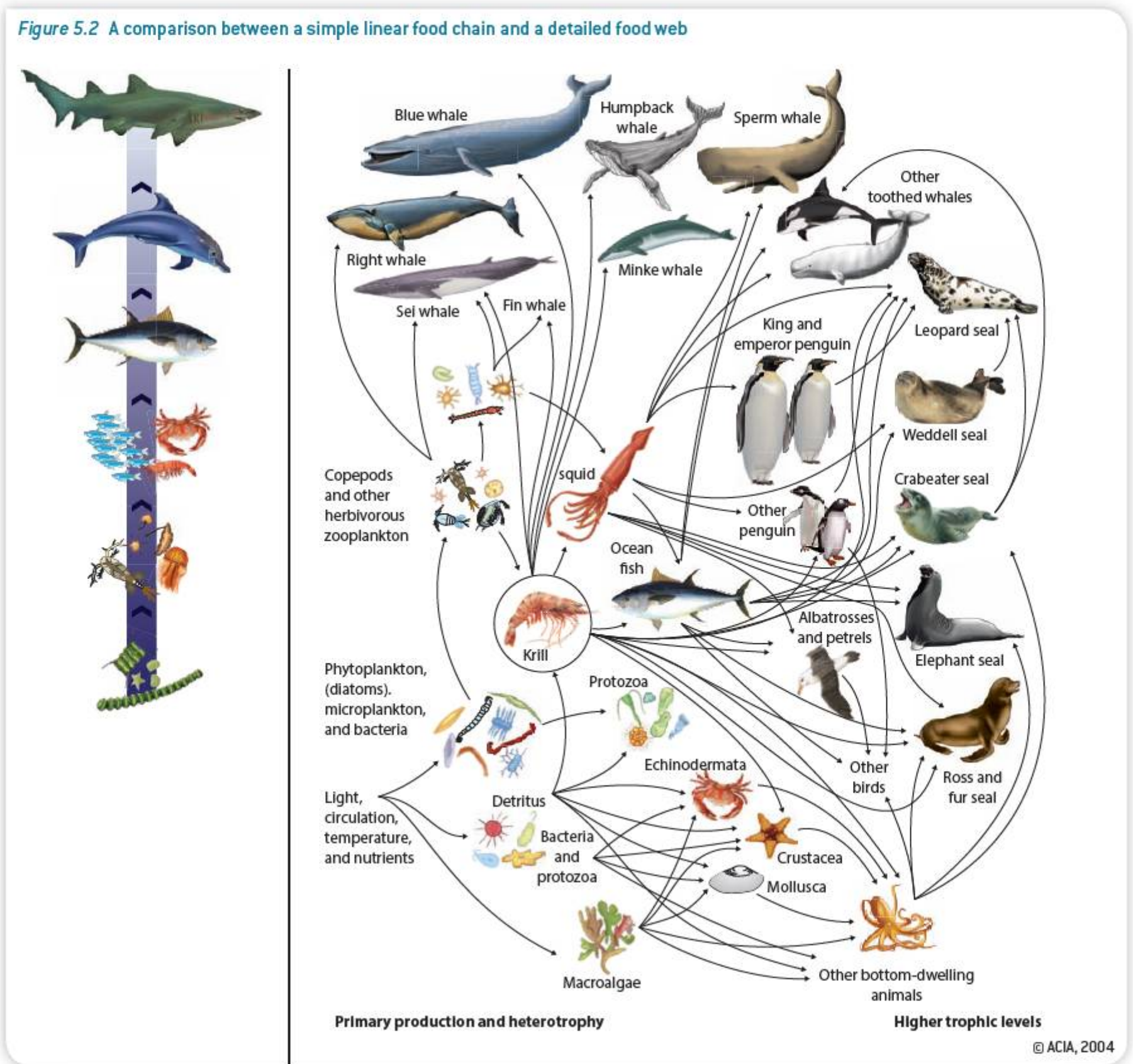
The diagram on the left represents the basic systems of predators and prey in an ocean system. The diagram on the right shows the much more complex food web. Documenting systems at a simple level helps us get a basic understanding of how they operate. In order to understand the complete system, we have to look at the complexities of the system itself. Things that make a system complex are the number of components (parts), inputs, outputs and vulnerability.

Activity 1 — Documenting a system

Select a system in your life that delivers an essential service to you. You could choose:

- food production
- water, electricity or gas supply
- education system
- communication systems.

TIP

You may need to do some research into your local provider of water, electricity or gas services if you choose one of these systems.

STEP 1 List all the different parts of the system, then rank them in terms of importance or influence.

STEP 2 Construct a representation of this system. Some ideas to consider include:

- drawing
- creating a model
- using a metaphorical story.

STEP 3 Check that you have included a way to represent scale and complexity.

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

Inputs and outputs

Every system has inputs and outputs. Inputs refer to things that are needed to start the processes in a system. Outputs are things that are produced from the system. Outputs can be as diverse as waste products (an output of a digestive system) or something that has value (for example, an iPod produced as an output from an electronics assembly system). The original input of all systems on Earth is the Sun. Without the Sun, no system would exist.

The amount of inputs and outputs in a system depends on its scale and complexity. In human-made systems, there are desirable as well as undesirable outputs. Think of a manufacturing system; the desirable output is the product (an iPod, a car, a T-shirt) but undesirable outputs from these systems might include toxic waste, gas emissions or faulty products.

In human systems, control over these inputs and outputs can help to ensure sustainability. In naturally occurring systems, changes to inputs and outputs can have impacts on varying scales, from extinction of individual species to changes in biome locations.

👤 Activity 2   From Earth to eye

Choose an electronic product that you use regularly and trace the origins of each of the components needed to produce the product. Your product could be a mobile phone, iPod, MP3 player, stereo system, hand-held game, etc.

TIP
You will probably not be able to identify every part in your product or find out where it has come from but try to locate at least seven different materials.

STEP 1   Identify the different parts of your chosen product.

STEP 2   Research the production process, including the sourcing of raw materials.

STEP 3   Create a poster that shows the connections in production systems that turn raw material into your electronic product.

STEP 4   Where are the people? Be sure to identify the different jobs that exist because of the production of your product.

STEP 5   Compare and contrast your system with another classmate who chose a different electronic product. What are the similarities and differences in systems?

🌐 **GLOBAL CONTEXTS**
Scientific and technical innovation

🧠 **ATL SKILLS**
Research
Present information in a variety of formats and platforms.

Vulnerability

Systems, with their combination of living and non-living parts, constantly try to achieve equilibrium. If a system is in equilibrium, it implies that there is a required amount of inputs for the system to operate, and the outputs are sufficient so that they don't overwhelm the system. Think back again to our ocean food web. The "output" at the top of the system is the shark. If there were too many sharks, they would deplete the amount of fish, which would then affect the amount of algae.

When looking at the vulnerability of a system, we often consider the negative effects of a system change. It is easy to imagine what could be the possible negative effects if there was a break in your bicycle chain and the system of pedalling to make the wheels go around no longer worked. Sometimes vulnerabilities in systems are exploited. For example, weaknesses in accounting and taxation systems can mean that there are opportunities for tax evasion. Alternatively, a change in farming systems to reduce reliability on synthetic fertilizers and an increase in the use of organic farming methods could result in more sustainable food production.

In sociology and psychology, systems of behaviour are examined closely to try to understand social habits in order to promote healthier lifestyles or encourage people to buy products. Changes in these systems are engineered in order to achieve a positive effect on people's lifestyles.

TAKE ACTION

Can you identify a system change that could help you lead a healthier lifestyle? It could be establishing a routine (a type of system) of regular physical activity or learning to cook a healthy meal.

Creating, assessing and maintaining a system

Creating a system means that you need to have an understanding of the inputs that are available and to know what the desired outputs are. Your system will most likely interact with other systems, so you also need an understanding of what this interaction will look like.

Assessing and maintaining a system involves understanding the scale, complexity, inputs, outputs and connections with other systems in a network. You need to be able to evaluate areas of weakness or vulnerability and predict what changes could happen to your system. It is inevitable that change will happen, and how a system reacts to change is a measure of its flexibility and sustainability.

Consider different systems of belief that exist around the world. They involve a set of rules, both written and unwritten, as well as rituals, important texts, sacred sites and a hierarchy of people in positions of power. In order to be sustainable, systems of belief have had to have flexibility as part of a changing world.

Sustainability

A sustainable system is one that is in equilibrium. However, because systems are dynamic and complex, they are very vulnerable to change. Most of the topics that you will read about connected with

sustainability look at the interaction between environmental systems and systems generated by people. When these systems work in harmony, sustainability can occur.

Networks

The vast interaction between different systems results in a complex network of interactions. Networks can exist physically as well as virtually. Cities are excellent examples of complex networks delivering food, water and electricity, removing waste, transporting people and facilitating trade. Changes to one system will naturally affect the way that the network interacts with another system, resulting in a shift in the operation of the network. Consider what your role is as an individual in a network.

Interdependence

The study of systems implies that there is always some degree of interdependence between the different components of a system. Without need, there would be no cause for interdependence. Within ecosystems, need is based on getting nutrients, water and shelter in order to survive and reproduce. The complex food web in Figure 5.2 highlights the related concept of interdependence.

Summary

You have considered how systems are all around us, a part of us and connected with everything that we do. People use, create, change and destroy systems everywhere, every day. By becoming actively aware of systems, you are more likely to reflect on their use and impact in your life. Your heightened sense of how systems function can help you understand both the simple and complex relationships in the world around you.

Systems exist because there is a need for one component to rely on another. If a system is labelled as "poor" or "inefficient", it is worth remembering that even inefficient systems exist in the first place because there has been a demand.

References

Gell-Mann, M. 1995. *The Quark and the Jaguar*. St. Martin's Griffin; iii edition. Quoted on www.cut-the-knot.org/books/Quark.preface. shtml.

I'm caught up in the system.
You can't change the system.
It's just the way the system is.
Just get it out of your system.
Examples of common references to systems in our daily lives.

INTERDISCIPLINARY LINKS
Sciences

Interdependence is similar to the concept of symbiosis, which you may have learned about in sciences. Many plants and animals have a symbiotic relationship; one species is dependent on another for protection or nutrients. Some species also live on one another, for example, lichen growing on trees. Another possibility is that one species benefits at the expense of another (a parasitic relationship).

CHAPTER LINKS

In chapters 9, 14 and 15, you will read about a variety of systems in different contexts. Think about these systems using the ideas of scale, complexity, inputs and outputs, and sustainability in order to understand what makes systems.

Conflict

INQUIRY

TOPIC 1 Water demands
- How is freshwater stored and distributed throughout the world?
- How could demand and supply of water lead to conflict?
- Will the conflicts of the 21st century be over water?

TOPIC 2 The Arab Spring
- What systems of government were people rebelling against?
- How did technology interact with ideologies?
- Does conflict about political systems also connect with conflict of culture?

TOPIC 3 New Zealand Maoris
- What are some different types of land ownership?
- How is citizenship connected with land ownership?
- Is it possible to have peaceful negotiations about conflict over territory?

ATL SKILLS

✓ Read critically and for comprehension.

✓ Manage and resolve conflict, and work collaboratively in teams.

✓ Create novel solutions to authentic problems.

✓ Use and interpret a range of discipline-specific terms and symbols.

✓ Use appropriate strategies for organizing complex information.

✓ Apply existing knowledge to generate new ideas, products or processes.

✓ Apply skills and knowledge in unfamiliar situations.

✓ Access information to be informed and inform others.

✓ Draw reasonable conclusions and generalizations.

RELATED CONCEPTS

Causality   Power   Governance   Ideology
Innovation   Competition   Development

GLOSSARY

Catchment the area of land where the water is channelled to a river.

Collage a collection of images layered together to create a piece of art.

Empathy the ability to understand the feelings of someone else.

Finite a resource that has a set amount available.

Indigenous original inhabitants of a place.

Soundscape a piece of artwork for the ears. It is made up of music and sounds that make the listener feel a certain mood or emotion related to an event.

COMMAND TERMS

Compare give an account of the similarities between two (or more) items or situations, referring to both (or all) of them throughout.

Construct display information in a diagrammatic or logical form.

Design produce a plan, simulation or model.

Evaluate make an appraisal by weighing up the strengths and limitations.

Synthesize combine different ideas in order to create new understanding.

Introducing conflict

Conflict has been a part of people's lives from the beginning of time. Conflict exists in a huge variety of different forms and levels of severity. You have probably already experienced conflict at least once today and will no doubt experience it over and over again in your life.

The severity of a conflict is usually what draws our attention. A disagreement or a misunderstanding is a conflict but does not usually gain your attention or get labelled as a "conflict". If this disagreement escalates into something involving more people, violence or threats, then the conflict is more severe.

All conflict can be classified into just a few categories no matter where in the world this conflict is occurring. It is useful for you when you are studying conflict to consider what type of conflict it is. This will help you to see a conflict from the different perspectives of the people involved.

Type of conflict

There are three main types of conflict—conflict over ideas, resources and territory. If you have a disagreement with your parents over what time you should go to bed, what sort of conflict is this? You have an idea in your mind of what time you need to go to sleep but your parents will have other reasons as to why you should go to bed at a certain time. This sort of conflict is over ideas.

Conflicts over resources occur when there is a particular demand for a resource or when a resource becomes scarce. Sometimes, a resource that we think is plentiful in one region may be scarce in another. Oil is an example of this—plentiful in the Middle East region but scarce in Southern Europe. Conflict over resources can start from disagreement about access, extraction, use of the resource or even the by-product of a resource.

Headlines featuring examples of different types of conflict

You are likely to be able to list many conflicts that have occurred over territory throughout different periods of history. Think of the Roman Empire expanding across Europe, or the Mongolian Empire claiming

land so that it could extend across Asia. Territory and resources are closely linked; claiming new territory gives access to new resources. Studying conflicts involving territorial claims will challenge you to reflect on the concept of ownership and how land can be owned or claimed by a person or group.

Severity of conflict

The type and impact of a conflict are linked with its severity. A disagreement occurring between you and your friend over what film you want to watch is considered a conflict. However, it is not a particularly severe conflict and it probably doesn't involve a lot of other people.

A conflict between two different political parties in a country will probably be a more severe conflict, however. It may just involve some debates in the country's parliament, but if the conflict becomes more severe, it may even become a civil war involving many more people than just those in the two political parties.

Peace

It is impossible to study conflict without considering the role of peace. Peace is an achievement that very few countries have managed to hold on to for an extended length of time. Sometimes, the existence of peace simply means that there is absence of any physical fighting. Understanding how peace has been established or maintained is a part of understanding why there is conflict.

In this chapter you will be concentrating on three main topics:

- conflict over **water resources**
- conflict over **ideas**
- conflict over **territory**.

TOPIC 1

Water demands

Conflict over resources occurs especially when that resource is rare or finite. Resources such as precious metals, minerals or diamonds are all rare and finite. Many countries need these resources but only a few countries have them. The extraction of these resources is often what causes conflict. A resource such as water is finite. It is something we all need and expect to have access to. However, increased population and the use of water for irrigation and industry have meant that this resource is becoming scarce. The difference between resources such as water and gold is that water is essential to human survival, whereas gold is not.

If the wars of [the 21st] century were fought over oil, the wars of the next century will be fought over water.

Ismail Serageldin, former vice-president, World Bank

The downstream dilemma

As a resource, water has some peculiarities. It is a finite resource, as there is a limited amount of it in our world, but unlike some other finite resources, it is stored in many different forms and in a huge variety of locations. A country's oil resources can be estimated through drilling and geological mapping of the reserves stored underground or under the ocean. A country's water resources can fluctuate depending on the season and use by other countries. Water can be stored as ice in the form of glaciers. It could also be stored in the form of rivers, lakes and in underlying rocks. This resource is an essential need of all the inhabitants of the world but it wasn't until 28 July 2010 that the United Nations declared safe and clean drinking water and sanitation to be a human right.

Management of water resources is something that varies considerably in different countries. International management of water can cause significant conflict, especially when water resources for one country flow through another. There are many places where countries have to negotiate with each other over the use of water as it flows through different communities. Inevitably, countries upstream have more influence on countries downstream in a river system. Control over a water resource can be a very powerful negotiation tool. In Southern Africa, one of the main sources of water is the Limpopo River, which rises in Botswana, flows north-east towards Zimbabwe before turning south-east through Mozambique towards the Indian Ocean. The Limpopo and its tributaries form the borders between South Africa, Botswana and Zimbabwe.

Figure 6.1 The catchment area for the Limpopo River
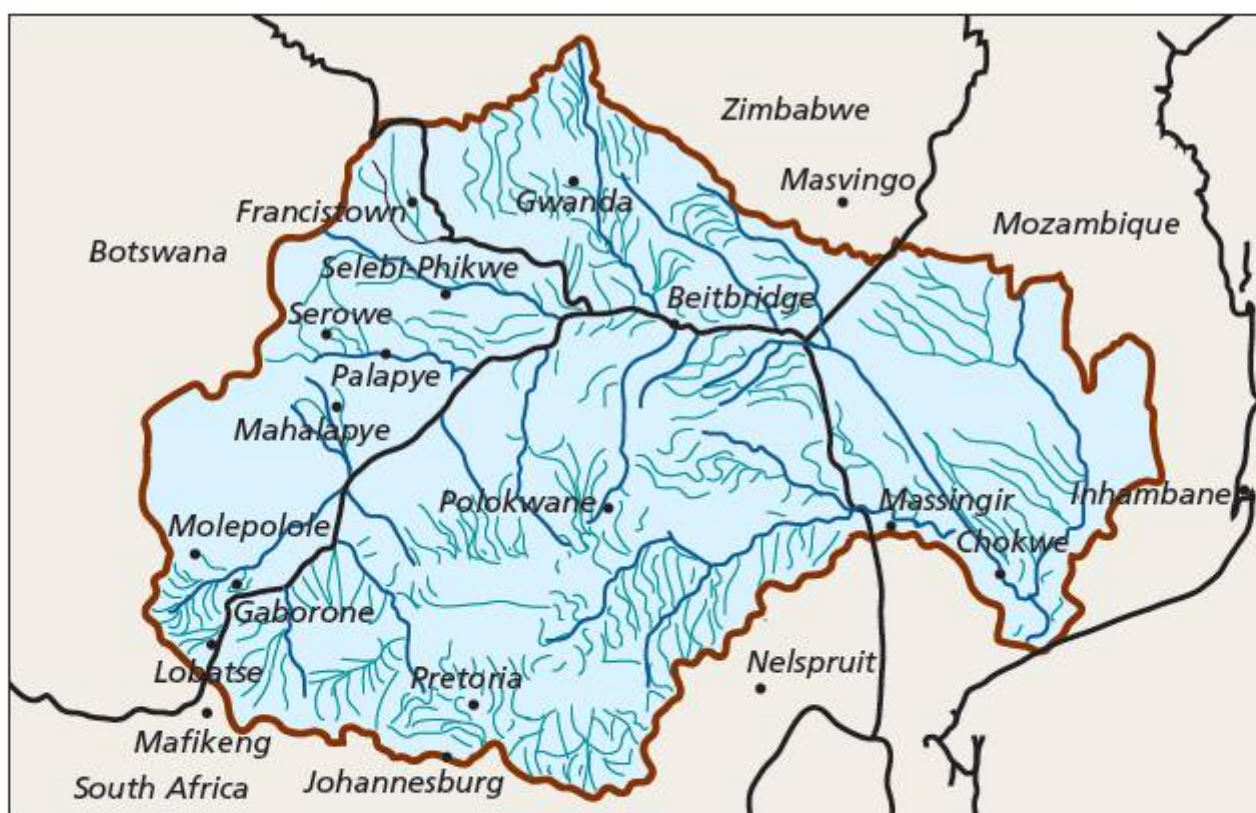
Activity 1 — Water conflict and cooperation

This activity requires you to gain knowledge about a specific river system. You will then **compare** the possible issues of conflict arising out of this system with two other river systems. By working in a group of three, you can divide up the research tasks and then compare results.

Choose three of the following river systems for your group to investigate:

- Murray-Darling Basin, Australia
- Ganges River, India
- Colorado River, USA
- Rhine River, Germany
- Amazon River, Brazil
- Nile River, Egypt

To make it easy to compare information, make sure that you are all collecting similar details.

STEP 1 Create a list of 10 facts about the river system that you will find out. This could include length, number of countries or states the river flows through, population in the river **catchment**, number of dams, hydroelectricity generation, existing conflicts, etc.

STEP 2 Set up a template or online shared document where you can collect your information.

STEP 3 Check that you have also included a place to record your sources.

STEP 4 Choose three different comparisons to make across the river systems. Note down what is similar and what is different. For example, you could compare water volume, type of use, and river management systems.

STEP 5 After you have compared the three river systems, hypothesize why these similarities and differences exist.

STEP 6 Share your comparisons with other groups in the class.

WEB LINKS
Search online for "OpenEtherpad", a programme that can help you collect and share your information.

TIP
To hypothesize means to make an educated guess. You will need to use your knowledge and logical reasoning to come up with a theory as to why there are similarities and differences between these three river systems.

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Communication
Read critically and for comprehension.

Demands of industry

Certain rivers have the potential to provide huge amounts of energy for a country in the form of hydroelectricity. As a renewable resource, hydroelectricity can provide significant benefits for a country while helping it to reduce its dependence on fossil fuels. However, the infrastructure that is needed to generate hydroelectricity comes at significant cost to people and the environment. Using rivers as a way to generate energy can cause conflict among communities, as well as conflict with groups dedicated to preserving a natural river system. Countries often have to weigh up generating renewable energy against the cost of a river's ecosystem or the relocation of communities.

One of the most well-known and largest hydroelectric projects is the Three Gorges Dam located on the Yangtze River, in China. This project has set many construction records in terms of the size of dams but it has also displaced approximately 1.2 million people and had significant impacts on ecosystems.

LITERARY LINKS
Gain an understanding of the history of development along the Colorado River by reading Jonathan Waterman's book *Running Dry: A Journey from Source to Sea Down the Colorado River*.

Activity 2 — Annotated physical model of the Three Gorges Dam

Working in groups of 3 or 4, design and construct an annotated model that shows the impact of the Three Gorges Dam.

A model is a representation of an area being studied. An annotated model includes detailed labels, highlighting specific areas of concern.

Your model must explain:

- conflict between the construction of the dam and communities
- conflict between the construction of the dam and ecosystems
- conflict between advocates for the dam and opponents of the dam.

INTERDISCIPLINARY LINKS
Design
Creating a physical representation of an event requires careful planning. Your knowledge of the design cycle will support you greatly in this activity. Consider what you know about the testing and use of materials in creating a product, and apply these strategies in the process of creating your model.

STEP 1 — Researching the issue
Using the three areas of conflict listed above, research the specific details of the construction of the dam and the conflicts it has caused.

STEP 2 — Planning the model
Think about the design and construction skills you have learned in other subjects. Consider:

- what materials you can use
- the skills of group members

TIP
You could use materials such as plastic bottles, cardboard boxes, Styrofoam, matchsticks, clay, wire, papier mâché. Make sure you build your model on a firm base.

- how much time you have
- additional resources you can use (for example, access to the art room, advice from the design teacher).

STEP 3 **Designing the model**

It is essential to create a sketch map and plan of the model first. At this stage, you should also test out the construction techniques that you are planning to use.

STEP 4 **Creating the model**

Check that each person in your group knows what they are responsible for in the construction of the model.

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Social
Manage and resolve conflict, and work collaboratively in teams.

WEB LINKS
To learn more about how water has been involved in conflicts, view the timeline at www.worldwater.org and click on the tab "water conflict".

WEB LINKS
Learn about specific examples of how lack of access to water impacts lives by going to www.wateraid.org and searching for "What we do".

Safe access to water

Restricting or blocking a community's access to water has been used throughout history as a way of escalating or winning a conflict. In some cases, safe drinking water has been intentionally contaminated by people retreating from an area as a way to cause sickness amongst the invading forces. The restriction of access to water can have impacts on a community's health, financial and political stability and development.

Worldwide, approximately 1 in 10 people don't have access to safe drinking water. This means that they have to use whatever water they can find or travel many kilometres to get clean water. The impact that this has on people's lives is significant and can include unemployment, loss of education and shorter life expectancy.

There have been many attempts at developing innovative solutions to help improve people's access to safe water. Some of these innovations relate to purifying water, others relate to improving access to water. In Activity 3, you will consider inventions that could help communities in their quest for their basic human right of accessing this resource.

In this role play, you are required to make a presentation to the following brief:

Role	Innovator working for a non-governmental organization that helps promote access to clean water
Audience	Investors
Format	2-minute presentation (can include PowerPoint, Prezi, audio)
Topic	Proposal for investment in a product or programme that improves a community's access to safe drinking water

There are two possible options to complete this activity. Follow the flow chart below depending on which option you choose.

Flow chart showing invention solution options

I have my own invention/solution

1. Create a specification sheet that documents your invention, where it should be used, how much it costs and how it would be implemented/installed

2. Get your specification sheet checked by your teacher

3. Get feedback on your solution/invention from your peers or other experts

4. Create your presentation to market your product

5. Present

I want to promote an existing invention/solution

1. Check that this invention/solution is specific and innovative

2. Decide where in the world it would be most appropriate to apply this invention/solution

3. Get feedback from your peers about your proposal

4. Create your presentation to market your product

5. Present

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Thinking
Create novel solutions to authentic problems.

The Arab Spring

The Arab Spring is the name given to the dramatic uprisings that occurred like a chain reaction throughout the Middle East region, beginning in December 2010. Activists for democracy used the power of social media to connect, unite and organize protests against suppressive regimes. The conflict over ideas was not new but the way that it unfolded highlights the impact that social media can have in harnessing crowd power. The conflict of ideas—between government structures and human rights—led to massive change that was closely followed, supported and condemned by many people around the world.

The spark

Conflict over ideologies is not new. As individuals, we all have our own beliefs about how people should act, governments should rule and what we should be allowed to do. This is influenced by the society we grow up in, and develops over our lifetime.

Groups of people have been fighting over ways to govern for thousands of years. Clashes in ideas about government are generally related to power and expectations of what duties the government has towards the people of the country.

The uprising in Northern Africa and the Middle East has highlighted the clash between a dictatorial style and the rise of democracy and greater freedom for citizens. What was new about this ideological conflict was the way people used technology to share information, collaborate and organize themselves to bring about change.

In order to understand the clash of ideologies, the following activity looks at the difference between some common methods of governance.

Activity 4 — Summary chart of types of government

Use the resources available to you (library, internet) to complete this summary table of five different types of government. Four have been allocated. You may choose the fifth type of government you would like to research.

	Democracy	Dictatorship	Aristocracy	Theocracy	Your choice…
Main beliefs					
Examples of countries with this type of government					
Possible areas for conflict					
Further questions arising from research					

In the "questions" row, try to include a variety of factual and debatable questions. Examples of factual questions are:

- When did this type of government first appear?
- How are leaders elected in this type of government?

Examples of debatable questions include:

- Is there a link between culture and government?
- Could one type of government suit all countries?

🌐 GLOBAL CONTEXTS
Fairness and development

🧠 ATL SKILLS
Communication
Use and interpret a range of discipline-specific terms and symbols.

Use of connections

The sense of outrage sparked by protests in Tunisia in December 2010 generated change throughout the region. The map in Figure 6.2 shows the countries that were affected by citizens demanding a change in government during this time period.

Figure 6.2 **Countries involved in the Arab Spring**

- ■ Government overthrown ■ Civil war ■ Protests and governmental changes
- ■ Sustained civil disorder and governmental changes (Bahrain)
- ■ Major protests ■ Minor protests ■ Related crises outside the Arab world

Many countries experienced change, some of them more extreme than others. While Saudi Arabia only experienced minor protests, countries such as Tunisia, Libya and Egypt had their governments overthrown and Syria descended into civil war.

Significant mention was made of the role of social media to connect the organizing base of younger citizens in each of these countries. The use of technology by people willing to innovate and bring about change led to many of the conflicts of the Arab Spring.

Activity 5 — Fishbone graphic organizer

Using a fishbone graphic organizer, such as the one below, choose four of the countries involved in the Arab Spring and document some of the key events, dates and people involved.

Write the country name in each orange box, and on each cluster of "bones", write the key information related to the country you have chosen.

A fishbone diagram showing how separate sections of information are connected to one topic or event
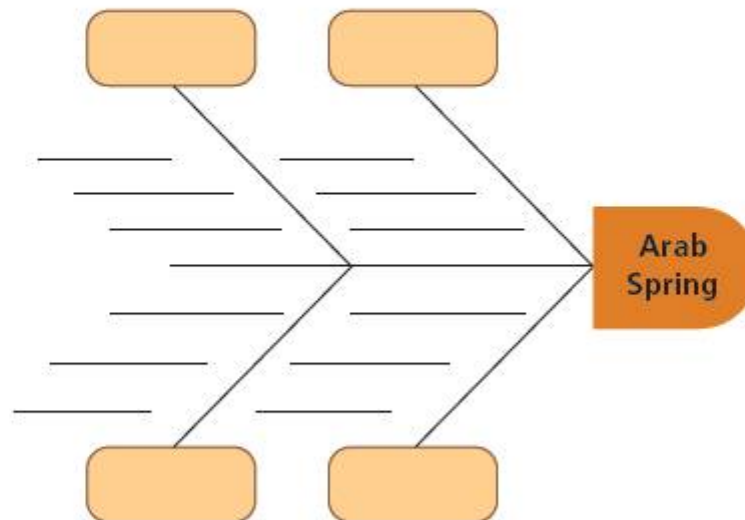
Arab Spring

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Self-management
Use appropriate strategies for organizing complex information.

Ongoing change

When reflecting on the method and pace of change, ask yourselves: Why now? Why this period in time? What were the factors that came together to spark a change in governments in several countries at the same time?

If we consider conflict in relation to the key concept of time, place and space, it is possible to analyse how events in a certain time period, happening at a certain location, can lead to a dramatic shift in the status quo. The conflict in the Arab Spring demonstrates the success of using technology and getting a critical mass of people to participate. Why might dramatic change like this be more difficult to achieve with other global issues such as protection of the Earth's biodiversity or reducing poverty? Reflect on what you have learned about conflict so far as you complete the next activity.

Activity 6   Recipe for change

STEP 1 Choose a global issue that is important to your group. For example:

- Access to education
- Access to safe water
- Eradicating malaria
- Ending poverty

STEP 2 Review your ideas from this chapter to **evaluate** why conflicts arise and innovative ways that enable them to be resolved.

STEP 3 Create a list of all the "ingredients" you need to bring about a change or resolution to your global issue.

STEP 4 Consider how much of each ingredient you might need—this is important in a recipe!

STEP 5 Write down your recipe and share it with other groups in the class.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Apply existing knowledge to generate new ideas, products or processes.

New Zealand Maoris

As the British Empire continued to expand, countries such as Australia and New Zealand were quickly claimed as soon as British explorers landed there. The inhabitants of these countries—Aborigines and Maoris—were not considered citizens or even humans from the same species as the British. Any claim that they had to land ownership was ignored and, of course, conflict between the different groups occurred. This is not a unique story; conflict has been occurring between invading groups over many thousands of years. What is significant about the New Zealand Maoris is the negotiations that took place to resolve the conflict over their territory.

The invaders land

During the 17th and 18th centuries, European empires spent time and resources on expanding their territory. Sailing around the globe and discovering new countries held a certain amount of daring adventure, as well as being a vital part of the expansion process. Voyages south of the equator saw the European discovery of New Zealand by Dutch explorer Abel Tasman.

His first encounter with the Maoris, the native inhabitants of New Zealand, was fairly hostile. The Maoris were not afraid to defend their territory and they considered the Europeans as enemy invaders. For the Maoris, the sight of the European ships and white-skinned people sailing towards them is similar to us seeing spaceships land and aliens walk out of them. They were suspicious of the European explorers, fearing an attack on their territory and resources.

Painting by Augustus Earle (1793–1838) showing the structure of a waka, a Maori canoe

WEB LINKS
Read a description of the encounter between Abel Tasman's crews and the Maoris at www.nzhistory.net.nz. Search for "First contact with Maoris".

Activity 7 — Create a collage or soundscape

Create a piece of art based on an historical event. You will have to use your skills of **empathy** to understand the feelings and emotions of a character and your design skills to plan and execute your artwork.

Choose one of the roles below:

- Crew member of Abel Tasman's exploration
- Maori teenager from the settlement of Wharewharangi Bay

Create a **collage** or **soundscape** that reflects your experiences and emotions on encountering a new territory. Write answers to the following two questions to provide some background to your collage or soundscape:

1. What are the significant experiences and emotions of your chosen role that inspired your collage or soundscape?
2. Why did you choose specific sounds or images?

TIP

For a collage you can choose images that directly relate to the topic or you can choose parts of images, fabrics, colour and texture to create a sense of emotion related to the event. Aim for your collage to be between A4 and A3 size.

For a soundscape you can mix different music tracks together or you can record specific sounds that are related to the location of the event. Aim for your soundscape to be 2–3 minutes long.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Thinking
Apply skills and knowledge in unfamiliar situations.

Concept of ownership

Before European settlement in New Zealand, Maori land was communally owned. This means that a group or community had responsibility for and held claim to a certain area. Once New Zealand became a colony and part of the British Empire, the way that land could be owned was changed to Crown Law—the law of the British Empire.

The conflict between these two different systems of land ownership angered Maori people. They had to go to court to claim their ownership over land that they had been using for hundreds of years. From a British perspective, the Maoris didn't own the land as their laws of ownership were different to British law.

Activity 8 — Speech on defining land ownership

This activity is based on consideration of the following two questions:

- How is "land ownership" defined?
- What is the impact of differing views on ownership?

STEP 1 Spend 10 minutes brainstorming what you think about how land ownership is defined. Consider:

- How is land measured?
- How far below the surface do you own?
- Who decides who owns land?
- What is the difference between individual and communal ownership?

STEP 2 Research three different examples of land ownership. This might be three different perspectives in one country, or three examples from different places around the world.

STEP 3 Evaluate the information you have found with your initial brainstorm.

STEP 4 Prepare an informational speech lasting 5–6 minutes on your research. Be sure to answer the two key questions using specific examples from your research.

Practise your speech before giving it to the class.

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Research
Access information to be informed and inform others.

Success in negotiation

The outcome of conflicts usually depends on the ability to negotiate an agreement of peace or cooperation. If an agreement is negotiated to the satisfaction of all the parties involved, then there is less chance of the conflict arising again. Negotiating a resolution to conflict involves a delicate balance of trading and power to try to reach an agreement.

In 1840, representatives of the British Empire and Maori chiefs signed the Treaty of Waitangi. This treaty was intended to resolve conflict by recognizing the land ownership rights of Maoris and awarding them full citizenship of the British Empire. This type of treaty between conquering countries and indigenous inhabitants was quite unusual; very few other indigenous people had resolved conflict with this success early in the history of contact.

Compare the conflict negotiation that Maoris experienced with another group of indigenous people. Which group had greater success? Justify your answer with relevant and specific examples.

Possible groups:
- Aboriginal Australians
- First Nations of Canada
- Native Americans
- Kayapo people, Brazil

STEP 1 Carry out initial research to decide which group you might choose. Ensure that there is enough relevant and reliable information.

STEP 2 Write research questions to structure your inquiry. When comparing the negotiations of the two groups consider the impact of land, ownership and citizenship. You may also want to consider the effects of the negotiations over an extended period of time. Remember, short-term success in negotiation does not always mean a long-term gain.

STEP 3 Research in depth and make sure that you accurately record your sources of information.

STEP 4 Plan out your essay, choosing between three and five main areas of analysis for both groups of people. For example, you could compare how initial contact occurred between indigenous people and explorers. Other possibilities could include:

- negotiation techniques
- involvement of international organizations such as the United Nations or Human Rights Watch
- concepts of land ownership
- changes to culture.

STEP 5 Draft, revise and edit your essay before publication.

TIP

To research detailed information you need to have a wide variety of inquiry questions. Begin with questions that will lead to factual information such as: "When did this population first experience conflict with another group?" or "Who were the key people involved in negotiations?"

Once you have located the facts, use more probing research questions to **synthesize** your information. An example: "Why do Aboriginal Australians have a life expectancy that is approximately 16 years less than the average Australian?"

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Draw reasonable conclusions and generalizations.

Summary

You have learnt how understanding conflict involves an examination of the causes and contexts of events. You will have to use your skills of empathy in order to be able to understand the different perspectives of the people involved in a conflict. Severity of a conflict is connected to the cause of the conflict, as well as the willingness for resolution. In order to prevent destructive conflict, it is important to understand how peace is established and maintained in communities.

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INQUIRY QUESTIONS

TOPIC 1 Women's rights

- Which countries granted women the right to vote before 1920?
- What are the differences between social, political and economic equality?
- Is the development of a country inextricably linked to the status of women?

TOPIC 2 League of Nations

- Why was the League of Nations established?
- How can international cooperation support development of countries?
- Is the United Nations needed as much as the League of Nations?

TOPIC 3 Communist China

- What are the main principles of communism?
- How were the Five Year Plans meant to boost levels of development?
- Can development happen to a country without causing negative impacts?

ATL SKILLS

- ✓ Use appropriate strategies for organizing complex information.
- ✓ Draw reasonable conclusions and generalizations.
- ✓ Collaborate with peers and experts using a variety of digital environments and media.
- ✓ Use appropriate forms of writing for different purposes and audiences.
- ✓ Consider ethical, cultural and environmental implications.
- ✓ Formulate factual, topical, conceptual and debatable questions.
- ✓ Use a variety of media to communicate with a range of audiences.
- ✓ Manage and resolve conflict, and work collaboratively in teams.
- ✓ Apply skills and knowledge in unfamiliar situations.

RELATED CONCEPTS

Civilization   Conflict   Cooperation   Significance
Governance   Power

GLOSSARY

Confluence the coming together or union of several things.

Exponential increasing or changing rapidly.

Meticulous careful and precise, great attention to detail.

Nation state a country inhabited by people sharing the same culture, language and history.

Quota a set amount or portion assigned to a particular group.

Reparations money paid from one country or organization to another as a form of compensation.

Women's suffrage the right to vote.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure. Identify parts and relationships, and interpret information to reach conclusions.

Compare give an account of the similarities between two (or more) items or situations, referring to both (or all) of them throughout.

Design produce a plan, simulation or model.

Justify give valid reasons or evidence to support an answer or conclusion.

Summarize abstract a general theme or major point(s).

Synthesize combine different ideas in order to create new understanding.

Introducing development

Development is the process of change for the better in terms of resources, wealth or population. It can happen over different periods of time, influenced by political, social and economic circumstances. For example, development in recognition of equal rights can lead to change in the status of women. Development of new medical interventions or understanding of nutrition can lead to rapid growth in population. Development inevitably comes with costs as well as benefits; evaluating these will require you to reflect on the influence of culture, identity and values.

Think of the situations or topics you have studied where the word "development" was used. Did it have a positive meaning? For example, "Thanks to the development of new diagnostic tests, cancer is now detected earlier and can be more effectively treated." Alternatively, the term can be used as a measure of goal setting: "The development of a country's economy depends on the ability to increase the number of people in full-time employment."

To understand how and why development happens, and its ongoing effects, the topics in this chapter will be looking at the special set of circumstances in time, place and space that have caused development to happen.

Time has special consideration when studying development. Think about the length of time it has taken for developments to go from printing newspapers in the 17th century to the development of the commercial internet since the mid 1990s. Development is happening at an ever increasing pace, whether it is the speed at which poorer nations are lowering their infant mortality rate, or the pace at which richer nations are integrating faster ways of communication and transport. Your knowledge of ==exponential== curves will be a useful guideline to remember that the rate of development is happening at ever increasing speeds.

QUICK THINK

Can you think of instances when "development" is used with negative connotations? Here's one example: "The development of systematic repression meant a loss of freedom of speech for most of the population."

Figure 7.1 Increase of the world population in developing and industrialized countries

World population development
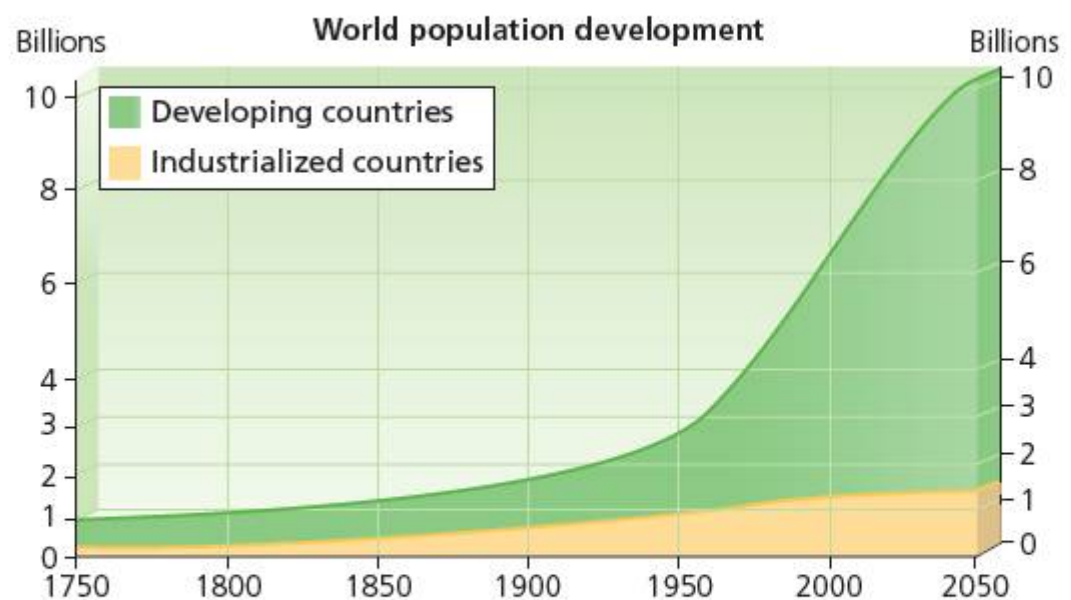
The three topics in this chapter are based on historical milestones that have an ongoing impact on our development and the development of our communities and countries. While you are learning more about these developments, reflect on the historical time period and various locations that these developments occurred in. It is also important to consider how these developments may be occurring currently but in different circumstances.

Women's rights

The history of women's rights is very different depending on the location. The factors that led to women having the right to vote are linked closely to the culture of a country (place). Today, debate relating to the rights of women includes a focus on achieving access to roles in government, equal salaries and positions of responsibility in companies.

The right to vote

New Zealand was the first country to allow women the same voting rights as men. But why was it in this country and time period that women were granted the right to vote (although women didn't have the right to stand for election)? It is important to analyse the **confluence** of time, place and space when we compare the advancement of **women's suffrage** around the world. As you begin to explore this issue in more depth, you will see that even making the basic classification of men and women having the right to vote does not give you a completely clear picture. In some places, only certain women are allowed to vote, depending on factors such as their age, employment status, or whether they own property.

Activity 1 — Fact finding on women's suffrage

STEP 1 In a group of three, select one country each to research from the the options below, and complete the table.

Country	Year that women were fully enfranchised (they could vote **and** stand for parliament)	Type of government at that time	Three other significant events occurring in the country at that time
Australia			
Spain			
United Arab Emirates			

STEP 2 Compile your data as a group so that you all have access to the information. You might like to use a shared online document for taking notes. Be sure to accurately record your sources as you research.

STEP 3 Create a Venn diagram, as shown opposite, to synthesize your information. Each circle represents one of the countries. The areas that overlap contain facts that the countries have in common.

STEP 4 Analyse your information and propose two statements that explain the impact of time and place on the right for women to vote.

STEP 5 Share your results with other groups in the class. Did you have similar conclusions about the effects of time and place on the rights of women?

Venn diagram
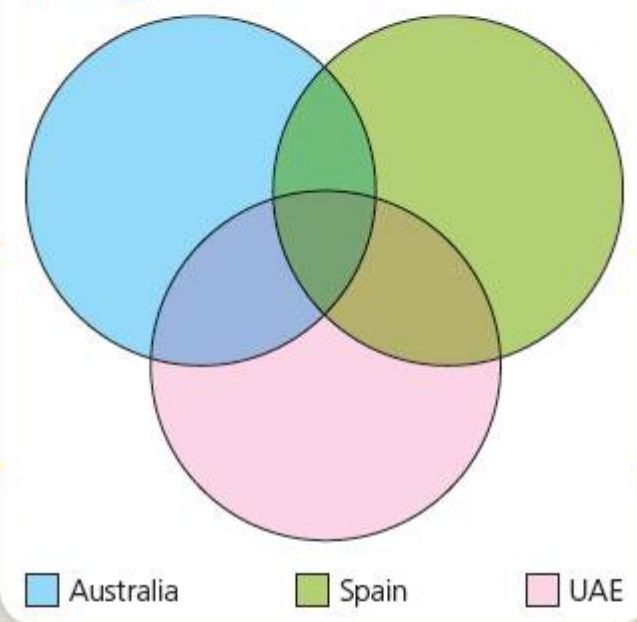
☐ Australia   ☐ Spain   ☐ UAE

🌐 **GLOBAL CONTEXTS**
Fairness and development

🧠 **ATL SKILLS**
Self-management
Use appropriate strategies for organizing complex information.

Quotas

As a way of actively overcoming gender imbalance in governments some countries have introduced quotas to ensure a certain number of parliamentary members are women. Some companies have also followed this strategy, introducing percentages of women required to be partners, managers or members of the executive board. Introducing quotas for government or in private industry has always been a source of debate. It can be argued that it is a way to speed up the process of having gender equality and representation. On the other hand, others argue that the person gaining election or the job position should be the most suitable candidate, regardless of their gender.

As you are researching this issue, be aware that quotas have also been used to try to promote involvement and inclusion of minority groups, for example, representation in governments of indigenous people, university admission places available for those with specific social needs, or employment of people with disabilities. Could the same arguments for or against quotas be used for women as well as other minority groups?

You work for a company that is considering introducing quotas for women in management positions. This is something you feel very passionate about (either for or against the issue). On your way to your office, you happen to step into the elevator with the Chief Executive Officer (CEO) of the company. You take the opportunity to try to convince her or him of your point of view during the two-minute elevator ride.

STEP 1   Consider your initial position on the issue and why you believe this. What examples do you already know about that would support your case? What further information do you need to find out?

STEP 2   Research your cause using inquiry questions generated from Step 1. Choose information and examples that will directly connect with the CEO of the company.

STEP 3   Prepare your speech; your structure and organization must be meticulous. You only have 2 minutes so you have to make the most of your time. State your position clearly and use your strongest arguments at the start of your speech.

TIP

Think about what the top priorities of the CEO might be: to make a profit; to gain more customers; to be innovative; or to have happy employees? Once you know this, you will be able to use examples that will persuade the CEO of your opinion.

STEP 4   Rehearse your speech in front of friends or family. In reality, you may not have this luxury because you never know when you will meet someone who you want to influence.

STEP 5   Be passionate with your arguments. This is an issue you feel strongly about, so don't be afraid to let the CEO know that you truly believe in this cause.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Draw reasonable conclusions and generalizations.

Feminism today

It is possible for women to have rights in some areas but not in others. If we evaluate the rights of women in categories such as social, political and economic rights, then we can form a clearer idea of where inequalities may still exist. For example, in a country or region, women may be accepted as partners in business or industry (economic rights) yet still have to obtain the permission of a male relation to travel abroad (social rights).

An imbalance in rights often comes from the historical and cultural context of a country or region. Look back at your learning in Activities 1 and 2. What do you know about the history and culture of different countries that influences the rights women have?

LITERARY LINKS
Read *Looking for Alibrandi* by Melina Marchetta or watch the film version to see how the protagonist, Josie, struggles with her identity both as a young woman and an Italian-Australian finishing high school. Think about how the rights of girls and women are connected to culture, and the expectations of families, schools and governments.

Activity 3 — Are all rights the same?

STEP 1 With a partner, brainstorm the different rights that a female adult has in the country in which you live. You might like to start with researching whether your country has a Bill of Rights that would give some of these details.

Categorize them in a table like the one below. An example has been suggested in each column.

Social rights	Political rights	Economic rights
■ The right to marry and divorce	■ The right to stand for election in local government	■ The right to open a bank account

STEP 2 Compare the rights for adult females in your country with the rights of adult males in a different country. This could be somewhere you have travelled or lived. Add another column to your chart to document similarities and differences.

STEP 3 For the second part of this activity, you will analyse the information from the two sources in the web links box that talk about the future of feminism. Read the source material, keeping in mind the table of different rights that you have collated.

⌬ WEB LINKS

Go to www.ted.com and search for "Courtney Martin Reinventing feminism".

Search www.cnn.com for "Where are all the millennial feminists? by Hannah Weinberger".

STEP 4 Combine with another pair of students and discuss the two sources. Do you agree with what the authors are saying? Are any of their comments contradictory to what you have in your table?

STEP 5 With your partner, create a multimedia presentation that gives your opinion in answer to the question: "Do we still need feminists?"

Use a graphic organizer to create a storyboard or draft for your presentation.

Check that you have included the following:
- introduction
- brief history of feminism
- examples of different types of economic, social and political rights
- your opinions on the future of feminism, supported by specific examples.

TIP

A multimedia presentation could be a Prezi, vodcast, animation, PowerPoint with voice-over, or a short film. Remember to make your product:
- concise
- visually appealing
- clearly structured
- balanced in its use of visuals, voice-over and text.

STEP 6 Combine with another pair of students and exchange presentations. Provide comments and constructive feedback.

🌐 **GLOBAL CONTEXTS**
Fairness and development

🗣 **ATL SKILLS**
Communication
Collaborate with peers and experts using a variety of digital environments and media.

TOPIC 2

League of Nations

"The dog of war" muzzled by the League of Nations

The League of Nations evolved at the end of the first world war with the signing of the Treaty of Versailles, a peace treaty between the Allied countries and Germany. The 1920s marked a change in the structure of Europe as political boundaries began to be redrawn, based on the development of nation states rather than empires. The League of Nations was a radical idea, marking the development of an independent organization that monitors the relationships between different countries. The development of this sense of global responsibility remains important today.

The formation of the League of Nations

At the end of the first world war, Europe was a dramatically changed landscape. European empires were in decline, and the USA was gaining global recognition as a political and economic power.

At the signing of the Treaty of Versailles, countries involved in the war wanted to set out a series of agreements in order to prevent this sort of major tragedy ever happening again. Part of the treaty was to try to regain some of the money lost through investment in the war by making Germany pay reparations and accept the blame for causing the conflict.

It was thought that the creation of an organization solely dedicated to maintaining world peace would prevent this kind of tragedy ever happening again. The League of Nations was the result, and it set out to promote peace by protecting religious and ethnic minorities, supporting health initiatives and tracking arms trading, all of which seemed necessary in the development of a just and peaceful world.

STEP 1 If you need to, familiarize yourself with Twitter. You can see what 140-character "tweets" look like by reading some of those posted by different individuals and organizations. You can read twitter feeds without signing up for an account. Try viewing feeds from journalists Mona Eltahawy (search for "Mona Eltahawy Twitter") and Garance Franke-Ruta or the twitter feed from Wikileaks.

STEP 2 Choose an historical figure from the list below. Create a series of "tweets" to represent their experiences and reactions at the signing of the Treaty of Versailles and the establishment of the League of Nations.

French Prime Minister Georges Clemenceau	US President Woodrow Wilson
British Prime Minister David Lloyd George	Italian Prime Minister Vittorio Orlando

TIP
Tweets are only 140 characters long so they must be concise and accurate. This is similar to the telegram technology that was used during this period. Telegrams were priced per word so people used as few as possible.

"The Big Four"—from left to right, Lloyd George of Great Britain, Orlando of Italy, Clemenceau of France, and Wilson of the USA

🔗 WEB LINKS
In order to get some inspiration and historical accuracy, go to www.eyewitnesstohistory.com and search for "Treaty of Versailles" to read eyewitness accounts.

STEP 3 Read and respond to the tweets that your classmates have written on behalf of their chosen historical person. When writing and responding, try to be as historically accurate as possible and get "inside" the personality of your historical figure.

🌐 **GLOBAL CONTEXTS**
Identities and relationships

🧠 **ATL SKILLS**
Communication
Use appropriate forms of writing for different purposes and audiences.

Country representation

A significant part of the League of Nations' work involved supporting the development of countries through promoting the rights of minority groups and increasing access to education, water supplies and health services. It was felt that by providing services that supported these needs, it would reduce the chance of conflict.

Global cooperation today and into the future

Do the goals of the League of Nations sound familiar? The United Nations Millennium Development Goals have similar ideals. The League of Nations identified these factors as being important for a country's development as a peaceful nation. If there were no conflicts over resources, citizens were in good health and minority groups weren't persecuted, then a country would have little reason to go to war. It is interesting to note that almost 100 years after the League of Nations set these goals, the United Nations also established targets to help alleviate poverty, improve equality and support development.

CHAPTER LINKS

Consider how these measures of development are connected to choice (chapter 8) and conflict (chapter 6). The two chapters help to explain how lack of access to basic needs causes conflict and how choice is connected to the way we relate to other communities of people.

WEB LINKS

You can learn more about the Millennium Development Goals at www.un.org. Search for "MDG".

Activity 5 — Making decisions about development

You are a member of an organization that will fund an aid programme to alleviate poverty in Liberia in the next five years. There is only enough money to focus on one programme, so you must make a decision between:

- vaccinations for all children under the age of 5
- provision for one fresh-water well per village
- free education for all children of primary school age.

STEP 1 Make notes on the following questions to record your thinking process about each programme option.

Ask yourself:	
Why yes?	What are the advantages of each programme?
Why not?	What are the disadvantages of each programme?
What else?	What other information might you need before you make a decision?
Way to go!	How could you implement your chosen idea?
And now?	How could you measure if your programme has been effective on a country's development?

Prepare a one-page paper to summarize your decision and justify the reasons behind it. Remember to:

- use formal language—check the glossary to see if there are relevant words you should be using
- write using the third person—this means you don't use "I" or "we"
- check that you have included specific reasons to explain your decision
- revise and edit your work before submitting it.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Self-management
Consider ethical, cultural and environmental implications.

LITERARY LINKS
George Orwell's *Animal Farm* is well known for the quote: "All animals are equal but some animals are more equal than others." How does this view of equality apply to what you know about development? Reading *Animal Farm* will help you with the concepts of the next topic in this chapter.

Tracking development around the world

The outbreak of the second world war was seen as a failure of the League of Nations to prevent conflict. However, between 1939 and 1945, the League continued to document measures of development, collecting statistics on employment, health and education from countries around the world. This work highlighted that there were, and still are, vast inequalities in how individuals and societies meet their basic needs.

Today, the role of documenting development has been taken on by the United Nations, which replaced the League of Nations in 1945. Different measures of development have been used by historians, economists, geographers, sociologists and high school students to try to understand the impact of growth and change around the world.

As you learn more about development, reflect on the following inquiry question: What are we striving for and why is it important?

Activity 6 — "The Development Race" magazine article

Role	Statistical analyst
Audience	Grade 10 geography students
Format	Magazine article (800 words)
Topic	Development

TIP
Watch Hans Rosling using his statistics at www.ted.com. Search for "Hans Rosling: Let my dataset change your mindset".

Thanks to the vast statistical resources available, you can find out more about the pace of development.

STEP 1 Choose one country from each column to research.

Column A	Column B
USA	Botswana
Qatar	China
Argentina	Sweden

WEB LINKS
www.gapminder.org allows you to manipulate a huge variety of statistics to learn more about the development of countries over time. You can generate animations of the statistics as well as compare and contrast data. There is a short tutorial to help you understand how to use the site.

STEP 2 Go to www.gapminder.org and spend some time familiarizing yourself with how the site works.

STEP 3 Write five inquiry questions that will help you learn more about the impacts of development when you **compare** these two countries. You might like to include questions that investigate statistics related to health, life expectancy and infrastructure. Creating a comparative table will help you record your data. See the example below:

Question	Country 1 – USA	Country 2 – Botswana
What is the infant mortality rate?		
What is the literacy rate for females?		
How has access to doctors changed over time?		
How has access to clean water changed over time?		
How has the gap between the most wealthy and least wealthy citizens changed?		

STEP 4 Using the data and answers to your inquiry questions, write a comparative report on the impact of development between the two countries. First, describe the impact of development in each country then compare them. Has one country experienced more development over time than the other? Have there been negative impacts of development?

STEP 5 Include at least three visuals to support your opinion. These could be screenshots from Gapminder or you may locate other sources. Remember to cite all sources for your article.

STEP 6 Work with a partner to revise and edit your article. Refer back to the specified format and audience—have you met this specification?

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Research
Formulate factual, topical, conceptual and debatable questions.

Communist China

The development of China, from the periods of great dynasties, Mao and the rise of communism through to its position today as a global superpower, is a study in the influence of time, place and space on a country's progress. When you investigate this topic, be sure to think carefully about how you can classify the impacts of development.

Portrait of Mao Zedong by Zhang Zhenshi

Changing rule in China

In the first part of the 20th century, China went through several major changes of political systems and leaders. It was a period that marked the end of the rule by dynasties, the establishment of rule by military leader Chiang Kai-shek, followed by communist rule under Chairman Mao Zedong in 1949.

Chairman Mao, ruler of the People's Republic of China, was inspired by Marxist theories and focused his attention on the development of agriculture in China. Through land reform Mao redistributed land ownership to allow more people of the peasant class to own and farm their own land. The idea was to promote an increase in agricultural production and create jobs in the countryside.

LITERARY LINKS
The film *The Last Emperor* documents the life of Puyi, China's last Emperor. It covers events in the first half of the 20th century, showing the series of dramatic changes in China's political systems.

WEB LINKS
Learn more about Marxism at www.marxists.org.

Activity 7 Produce a political poster

You are a member of Chairman Mao's communication team responsible for informing peasants that they are eligible for land, machinery and animals. Design a poster that promotes this plan.
Your poster must:
- be factually accurate
- communicate a message without using words (many peasants were illiterate)
- be able to be reproduced quickly and cheaply (remember, there were no inkjet printers in the 1950s).

STEP 1 Using the guiding points above, generate a list of inquiry questions to guide your research.

STEP 2 Complete a draft of the poster.

STEP 3 Work with a peer to review each other's posters. Use the checklist above in the process. You can also use phrases such as:

- "I notice that . . ."
- "I wonder why you . . ."
- "It's effective that you have . . ."
- "Have you thought about . . .?"

STEP 4 Produce your final poster, taking into account the feedback from the peer review process.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Communication
Use a variety of media to communicate with a range of audiences.

A new generation

As Mao's regime marched on, new reforms and programmes were introduced to try to boost the development of China. Mao looked to Russia and Europe as models of industrialization; he considered that industrialization was a measure of development and so this was the path that China had to follow.

The first Five Year Plan was introduced in 1953 as a way of promoting the development of heavy industry. In 1958, the second Five Year Plan was announced, also known as the Great Leap Forward. The specific focus on heavy industry came at the expense of China's development in other areas. Can you predict what happened?

QUICK THINK
What measures would Mao have used to record the progress of industrialization? What statistics are used today to record the development of a country?

WEB LINKS
Learn more about the Great Leap Forward at www.historylearningsite.co.uk (search for "Great Leap Forward"). You will need to know more about this event before starting Activity 8.

Activity 8   **Play about commune life**

STEP 1 Using the web link above, find out about life on a commune in Maoist China.

STEP 2 In a group, develop a short play that highlights some of the advantages and disadvantages of living on a commune. Focus on the social aspect of communes: the interaction between families; decision-making; meeting the pressures of achieving targets set by the government.

Before writing your script, identify three ideas that you would like your audience to understand once they have watched your play.

STEP 3 As you write your script, consider whether you want your play to represent one point of view about Maoist China or whether you will represent both advantages and disadvantages of living on a commune. This will influence the dialogue and emotions of your characters.

STEP 4 Rehearse your play, making revisions to the script if necessary.

STEP 5 Perform your play for another group and check what their understandings are after the performance. Were you successful in communicating the main ideas that you listed in Step 2?

INTERDISCIPLINARY LINKS

Arts

Students who have taken drama or performance classes can share their skills with the group to help you succeed with this activity.

Language and Literature

Skills that you have developed in your language and literature classes will help with writing the dialogue for your play.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Social
Manage and resolve conflict, and work collaboratively in teams.

One of many construction sites in Beijing

Development costs and benefits

Development through industrialization and modernization is ongoing in China today. Processes surrounding production, agriculture and urbanization all have positive and negative aspects.

Think back to what Mao's goals were when he became the leader of China. Did he achieve those goals? At what cost? Recently, discussions about development have included a focus on food security. If a country cannot provide for its people, how can development continue? Investments by richer countries to purchase land in poorer countries as a way of removing food shortages has raised questions about development in one country at the "expense" of another.

WEB LINKS
Visit www.guardian.co.uk and search for "Chinese food security may be motivating investments in Africa".

Activity 9 — Surveying what the people think

STEP 1 **Design** a survey that seeks to learn what young people's views are on the development of the country in which you live. Your survey must collect information about:

- standard of living
- role of government
- the meaning of development
- predictions for the future
- access to services such as education and health.

Check that the questions in your survey are relevant to the final part of this task.

> **WEB LINKS**
> You can use free online survey generators such as www.surveymonkey.com or www.surveyplanet.com.

STEP 2 Decide on the most efficient way to administer your survey. Will it be through short interviews, online, or on paper?

STEP 3 Plan how you will collate and evaluate the survey responses. This will depend on the type of question you ask and the format of the survey.

STEP 4 Hand out the survey to a suitable audience and collect the responses.

STEP 5 Evaluate the results that you have. Are they what you were expecting? Do they differ from your views of what you think development means? Write a summary of your survey results evaluation to share with your classmates.

> **GLOBAL CONTEXTS**
> Fairness and development

> **ATL SKILLS**
> **Thinking**
> Apply skills and knowledge in unfamiliar situations.

> **INTERDISCIPLINARY LINKS**
> **Mathematics and Sciences**
> Graphing skills that you have developed in mathematics and science will equp you with some different ways to collate and analyse your survey data.

> **LITERARY LINKS**
> Learn more about the changing face of China's country villages and the increase of factory cities in the non-fiction book *Factory Girls: From village to city in a changing China* by Leslie T. Chang.

Summary

You have learned that development is the idea of change to improve our way of life. It occurs when there are a specific set of circumstances (time, place and space) as well as a need to grow. You have explored measures of development including tracking income, access to services, education, employment and life expectancy. You have learned that development of a country is connected to the treatment of its citizens, the type of government it has and the actions of its

leaders. Our personal definitions of development relate to expectations from our cultures—what we should have access to, our rights and our expectations for the future.

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INQUIRY QUESTIONS

TOPIC 1 Environmental ethics

- How did the environmental protection movement start?
- How are our choices influenced by our ethics?
- Should everyone have the same ethical beliefs?

TOPIC 2 Saving Ecuador's rainforests

- What resources are extracted from Ecuador's rainforests?
- What choices do you make about your local environment?
- How can we decide the "right" way to protect fragile resources?

TOPIC 3 International aid

- What are the different types of aid?
- How do people choose which charitable causes to support?
- Should wealthy nations always help poorer nations?

ATL SKILLS

✓ Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

✓ Use appropriate forms of writing for different purposes and audiences.

✓ Create novel solutions to authentic problems.

✓ Read critically and for comprehension.

✓ Collaborate with peers and experts using a variety of digital environments and media.

✓ Draw reasonable conclusions and generalizations.

✓ Demonstrate persistence and perseverance.

✓ Make fair and equitable decisions.

✓ Create references and citations, use footnotes or endnotes and construct a bibliography according to recognized conventions.

RELATED CONCEPTS

Community   Development   Innovation
Management and intervention   Power   Relationships
Sustainability

GLOSSARY

Advocate someone who speaks up on behalf of an issue, person or group.

Ethics a branch of philosophy that studies the concepts of "right" and "wrong".

Fact sheet a collection of relevant data, statistics and details to give an overall view of a person, place or issue.

Hindsight understanding a situation only after the event has happened.

Obligation a duty that has to be done.

Transcript a record of everything that is said in an interview.

COMMAND TERMS

Design produce a plan, simulation or model.

Measure obtain a value for a quantity.

Summarize abstract a general theme or major point(s).

Synthesize combine different ideas in order to create new understanding.

Introducing choice

This chapter is about choosing to act in a responsible way. Responsibility and choice are words that you might find a bit surprising to read in a book about individuals and societies. Perhaps you would have expected to hear more about "responsible choices" in connection with service projects or <mark>obligations</mark> you have as a student. However, responsibility is a key factor in how we make decisions based on the knowledge that we have.

When we study the concept of choice in individuals and societies, we need to consider the scale of our investigation or inquiry. There are different levels of choice: choices we make as individuals, family choices, choices within communities, governmental choices for our nation. With the world's ever-increasing connectedness, the idea of choices having a global impact is growing.

Consider the cartoon in Figure 8.1 below; one aspect of choice means taking action to make ourselves safe—but we must also consider how our actions affect others. What choices are being made by the people in the illustration?

QUICK THINK

What's the most important choice you have in life? How do you know you have to make this choice?

Figure 8.1 Our choices are often connected to maintaining a safe environment

'I'm glad the hole isn't in this end'
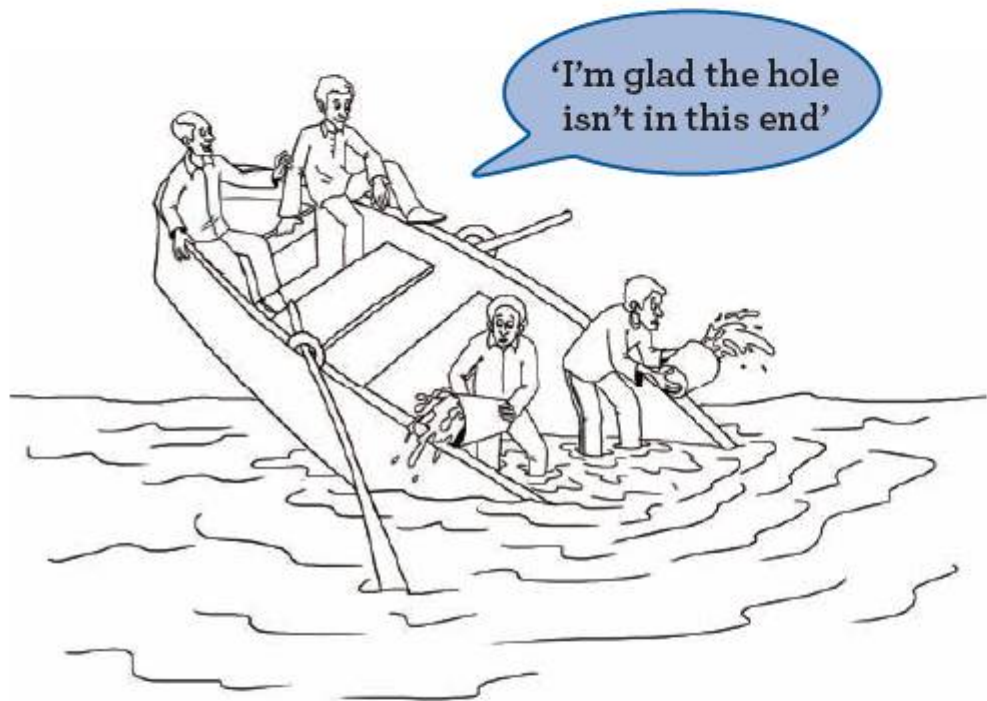
This chapter will focus on challenging you to think about what is ethically and morally the "right" thing to do. When investigating decisions made by leaders, it is important to consider the context in which the decisions were made. Too often, we use the benefit of <mark>hindsight</mark> to make a judgment about the impacts of someone's choice.

We also need to remember that our understanding of choice changes over time as our understanding of the world increases. Think about

the very basic example of seatbelts in cars. When seatbelts were first installed in cars, they were considered optional and there were no laws surrounding their use. Now, it is commonplace for countries to require that seatbelts must be worn and parents are considered irresponsible if they choose not to make their children use them.

Your choices involve deciding whether to fulfil obligations that your family or community ask of you. People in power have obligations to be responsible, but power can also sway our moral values. Studying these relationships is an essential part of understanding our choices and responsibilities as individuals in the societies we live in.

Whether you choose to act or not on your knowledge is a reflection of what you accept responsibility for. As you read through the topics, reflect on how you would choose to act in a similar situation.

TOPIC 1

Environmental ethics

The branch of environmental ethics rose to prominence with the publication of Rachel Carson's *Silent Spring* in 1963. In her book, Carson wrote about the harmful effects of spraying pesticides in unrestricted doses, killing birds and other animals. Her writing challenged readers to think about their obligation to protect the environment and animals; to be an advocate for these parts of the planet that don't have a "voice". Aldo Leopold, John Muir and Paul Ehrlich were also early proponents of writing about ethical concerns related to human use of the environment.

> A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.
>
> Aldo Leopold

WEB LINKS
You can read more about Rachel Carson at www.rachelcarson.org.

A useful introduction to ethics can be found in the app "Ethics: A graphic guide", written by Dave Robinson and Chris Garratt. You can find the app at www.itunes.apple.com.

Activity 1 Interview transcript

In pairs, create a short transcript (500–800 words) of an interview between a journalist and a key person in the field of environmental ethics. The information in the interview should help the reader understand why this person chose to become involved in environmental ethics and what their impact has been.

WEB LINKS
For a useful starting point in your research on people who work in environmental ethics, search for "50 people who could save the planet" at www.theguardian.com.

STEP 1 Choose who your interview will be based around. Here are some suggestions to get you started:
- Marina Silva
- Al Gore
- Wangari Maathi
- David Suzuki
- Rachel Carson

STEP 2 Design your interview questions. Remember to include questions that ask what, when and who, as well as why and how.

STEP 3 Research your chosen subject and try to imagine what their likely answers would be.

TIP
If you are having difficulty finding out information, then consider changing the person you have chosen.

STEP 4 Write your transcript.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Research
Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

Hundreds of protestors linked with environmental group 350.org attempt to get their message across at the 2008 UN Climate Meetings in Poland.

©350.org

The choice for activism

As awareness of the importance of the environment gained momentum during this period, so too did the protest movements. People chose to speak up more about the rights of animals, preservation of wilderness areas and the sustainable use of resources. Different sorts of methods were used to try to raise people's awareness of the effects that human activity was having on the environment. Organizations such as Greenpeace and the Sierra Club aimed to create a critical mass of members who would help bring about change in the way people interacted with the environment. Other organizations used tactics such as protests, demonstrations and sabotage to try to communicate their ideas about protecting the environment.

WEB LINKS
You will find a great slideshow of different environmental protests if you search for "The Outrageous History of Environmental Protests" on www.huffingtonpost.com.

At the core of many debates over land use is the conflict between the demand for resources, the price people are willing to pay and the value that local communities place on their resources. Think back to topic 1 in chapter 6 and the conflicts that occur over access to water. Consider how our demands may influence the choices we make about the environment that supports us and if they override our sense of responsibility towards future generations. In some circumstances, taking responsibility and attempting to change behaviour is in direct contradiction to the beliefs of the community that we are part of. For example, Rachel Carson was directly criticized by people in her community for her stand against the spraying of pesticides but she persisted with her research and advocacy for the environment.

Activity 2 — Speak out, stand up

Choose an environmental issue that you are passionate about and have a direct connection to. It can be at any scale—local, national or even global.

Create a press release that gives your view on the issue.

Writing a press release

Press releases are written by companies and sent to newspapers, radio and TV stations to communicate the views of the company on a certain issue. Your press release should:

- be 300–500 words in length
- give essential facts
- clearly state the opinion
- use facts to support arguments
- be written in short, succinct sentences.

WEB LINKS
You can find some good examples of press releases online. Go to www.mediacollege.com and search for "press release" to see the format and a sample.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Communication
Use appropriate forms of writing for different purposes and audiences.

Becoming an advocate

If we choose to take responsibility for protecting our local environment, how do we go about doing this? There are several parts of the process of becoming an environmental advocate. Consider Figure 8.3 as you complete the next activity.

Figure 8.2 **The first steps to becoming an advocate**

STEP 1

Often, the first step is to increase our knowledge of the issue, the people or environments involved, political influence, social or economic demands and the influence of our moral beliefs.

STEP 2

If it's an issue that we feel directly connected to, the next step is to raise awareness within the local community. This could be done through a press release, speaking to people in community meetings or posting a newsletter or flyer.

STEP 3

Often, supporting a cause involves raising money for it, which can be used to fund research programmes, generate a national park or support salaries of people responsible for preserving a region or species.

STEP 4

Taking action may also involve changing your own behaviour and that of people around you. For example, if you would like to be an advocate for improving air quality and reducing the number of cars on the road, then you should be making use of public transport, riding a bike or walking to get around your neighbourhood.

STEP 5

Advocating an issue means that you have to make a choice about how you communicate your message to a particular audience. Ensuring that people understand why the environment needs protecting is part of the job of an advocate. You also have to decide who you want to get your message across to. Is it the local government, people in your community or your peers at school?

Activity 3 — Becoming an advocate

STEP 1 Choose an issue that you would like to become an advocate for. It could be the same issue that you chose for Activity 2 but it needs to be something that connects with your interests and experiences.

STEP 2 Decide who you think would be a relevant audience to learn about this issue.

STEP 3 How are you going to communicate your message? You need to make sure that it is relevant for the issue and the audience.

Research, create and communicate your message as an advocate.

Below is an example of some potential issues, audiences and formats for communication. You can use it as a starting point for ideas. It's easy to remember the acronym RAFT—Role, Audience, Format, Topic—to check that you have covered the essential parts of the project.

RAFT	Example 1	Example 2	Example 3
Role	Advocate	Advocate	Advocate
Audience	Parents and students	High school students	Local community (children and adults)
Format	30-second commercial available on the school website	Poster	Flyer
Topic	Reduce traffic congestion by encouraging carpooling	Collection of spare pens, pencils and notebooks for local volunteer tutoring programme	Reduce rubbish in local park

Points to consider include:
- Parents will probably make the decision about carpooling but students can be very persuasive. How could a commercial be made for an audience of students and parents?
- Creating a commercial can be a lot of fun but for this product to be successful, you have to be good at "selling" a solution by highlighting the benefits for the people involved.
- What makes an eye-catching poster? What makes you stop and read a poster on the wall? Where would you place these posters? Make sure poster messages are always brief.
- These examples are all things that are in the local neighbourhood. You can become an advocate for something on the other side of the world but sometimes it's easier to start with advocating for an issue that directly affects you and where you live.

STEP 5 Measure the impact of your message. You might like to create a survey, get feedback from a peer or use a method such as monitoring increasing donations to your cause.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Create novel solutions to authentic problems.

Saving Ecuador's rainforests

For hundreds of years, some countries have used and exploited the natural resources of other nations without much thought for the effects on future generations. It can be difficult to decide who is accountable in these situations; is it the country with the raw materials, the government or corporation paying for the resources, the consumer who is willing to pay for the resulting products—or a combination of all three?

Setting the scene

In 2010 Ecuador's president Rafael Correa made the announcement that Yasuni National Park, an area of incredible biodiversity, would be preserved and protected from oil drilling if the Ecuadorean government received donations of $3.6 billion over 13 years. These donations were to come from government pledges from countries around the world, and would be held in a trust fund managed by the UN Development Programme. In return, the Ecuadorean government would pledge never to drill for oil in the Yasuni National Park. In 2013, President Correa ended the initiative claiming lack of support from the global community.

WEB LINKS

Go to www.bbc.co.uk and search for "Ecuador's Amazon drilling pledge" to learn more about this topic.

CHAPTER LINKS

In chapter 7, you read about the process where countries such as China are purchasing land in other countries to guarantee their own food supply. It can be argued that China is acting responsibly towards its own citizens by attempting to secure a guaranteed food supply, or you could take the view that each country has a responsibility to ensure that everyone in the world has access to basic needs such as food.

Despite its failure, Ecuador's initiative was a new type of strategy for land preservation, engaging the rest of the world in the issue of maintaining biodiversity. What prompted the government of Ecuador to act in this way?

Activity 4   Ecuador fact sheet

Create a fact sheet on Ecuador that includes the following details:

- geographical location
- population
- annual Gross Domestic Product (GDP)
- literacy rates and access to primary and secondary education
- natural resources
- imports and exports
- government structure.

Paying for protection

The idea of choosing to donate money for preservation of another country's environment is a fairly original one. It challenges our ideas of the spheres of responsibility that were discussed at the start of this chapter. It is easier to make a choice about improving or supporting something that is in our home or neighbourhood. We are much more likely to look after something if we have to see it every day. It also makes us think about the idea of responsible choices and time. Taking responsibility and reducing our environmental footprint right now may not have any impact on the planet that we will notice in our lifetime but it could make a vital difference in the future.

Ask yourself, would you pay money to prevent something happening that you perceive as negative? Would you spend money on bike insurance just in case your bike was stolen? Would you pay someone not to damage your house? The idea that we are all responsible for preservation of biodiversity is something that many people would agree with, but the idea of asking for money to not carry out an action could sound threatening. In preparation for Activity 5, work with a partner to complete a pros and cons (positives and negatives) table of your thoughts around the actions of Ecuador and the attempt to gain support for protecting the Yasuni National Park. Use the headings provided in the sample table below. Also consider what the reactions might have been from different groups, such as other governments, oil companies and environmental groups, when they heard about Ecuador's decision.

WEB LINKS
Compare global footprints through the story map at www.storymaps.arcgis.com; go to the Gallery page and search for "global footprint".

Pros	Cons	Questions
Why you think this idea is positive	Why you think this idea may not be successful	What further information would you like to know?

Activity 5 — Newspaper podcast

Create a podcast lasting 3 to 5 minutes reporting on Ecuador's announcement of the initiative to preserve the Yasuni National Park and summarize current information about the progress of the initiative. Has it succeeded?

STEP 1 Write your inquiry questions to help frame your research. Consider some of the following points:
- What was the announcement that Ecuador made?
- When did it happen?
- Who made the decision?
- Why did Ecuador decide to use this method?
- What has happened after one year?
- What has happened after three years?

STEP 2 Conduct your research to answer your inquiry questions. Remember to document your sources as you research.

WEB LINKS
Visit www.aljazeera.com, www.bbc.co.uk or www.abc.net.au and search for podcasts on topics that are of interest to you.

STEP 3 Listen to some podcasts to see how they are structured. There are three suggestions in the web links box.

STEP 4 Your podcast is going to be for a news service, which means you have to produce factual, unbiased reporting. When you are writing your script, be sure to report facts and opinions without showing bias towards one side or another.

STEP 5 Record your podcast. This may take several attempts and may need some editing. Make sure that you have allowed yourself enough time to record and edit the podcast. To record your podcast, you could use software such as Garage Band, Audacity or Podomatic. Alternatively, you can read your script to your classmates.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Communication
Collaborate with peers and experts using a variety of digital environments and media.

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Making local or global choices

The concept of making responsible choices is not a new one. However, Ecuador's position has raised the question of where the boundaries of responsibility lie. If we use resources that come from another country, are we responsible for the way resources are managed in that country? Are there new ways to take or show responsibility? The actions of Ecuador may also challenge what we perceive as appropriate solutions to problems. Sometimes innovative solutions can feel uncomfortable as they may be different to what we believe is appropriate.

The previous two activities in this topic have required you to report on the issues factually but without giving your opinion. This next activity focuses on the skill of persuasive writing, presenting detailed knowledge to support your position on an issue.

Activity 6 — Persuasive response essay

An essay is usually completed in two main stages: first the research, then the writing and editing. You need to divide your time so you have roughly half the time for research and half for editing.

STEP 1 This is a persuasive essay, which means you have to convince the reader that your opinion is correct. Dissect the essay question: "Problem solver or money maker: Is this the 'right' way to protect a nation's natural resources?"

Be sure to consider the following terms within the question:

- "**Problem solver or money maker**" shows the two extreme views that people might have about Ecuador's decision to protect the Yasuni National Park. You might agree with one or the other, but you might also like to propose another view.
- "**Right**". The fact that this word is in quotation marks indicates that there will be debate around what people consider is "right". It's up to you in your essay to provide a definition of what you consider is "right".
- "**Protect**". The use of the word "protect" could be defined as meaning to preserve a resource for ever. You might also like to consider whether "protect" could also mean to use something in a sustainable way.

STEP 2 Spend 10 to 20 minutes brainstorming what you know about the topic, what you believe and what else you need to find out.

STEP 3 Conduct initial research. This may mean looking at the inquiry questions you have written in Step 2 and finding out the answers to help confirm your opinion on the matter.

STEP 4 Write your thesis statement. This should be to two sentences that summarize your position in relation to the essay question.

STEP 5 Plan out your essay, highlighting areas where you need more information. You might like to draw up a planner like the one below.

Thesis statement:		
Supporting point 1:	Details:	Questions:
Supporting point 2:	Details:	Questions:
Supporting point 3:	Details:	Questions:

STEP 6 Research, using the questions in your planner to guide your inquiry. Always document your sources while you are researching.

STEP 7 Review your research and start writing. Sometimes it is easier to write the body paragraphs of an essay first.

STEP 8 Edit and revise your response. If possible, ask a friend to review it. Check that you have answered the question and that you have followed the guidance of the assessment directions.

STEP 9 Submit your essay.

🌐 **GLOBAL CONTEXTS**
Globalization and sustainability

💬 **ATL SKILLS**
Thinking
Draw reasonable conclusions and generalizations.

International aid

As soon as a natural disaster or war is reported on the news, we can predict what will happen next with aid agencies; there will be a call for donations to help those who have been affected by the crisis. This sort of aid, known as emergency aid, is a way that we can immediately help those who are affected by the crisis. Our donations of money or items such as food and clothing are collected and distributed by different aid agencies. In some circumstances, we are also able to contribute our labour and expertise, especially if the natural disaster has happened near where we live.

Different types of aid

Emergency aid is just one example of the way that individuals, organizations and countries choose to take action and help individuals and societies.

There are three main types of aid:

- non-governmental organization aid
- bilateral aid
- multilateral aid

Non-governmental organization aid	Aid provided by non-governmental organizations (NGOs) such as World Vision, Doctors Without Borders and Oxfam. This sort of aid includes: ■ Emergency aid during disasters. This is sometimes called humanitarian aid. ■ Child sponsorship. ■ Funding for community programmes.
Bilateral aid	This is aid where money is given by the government of one country to the government of another country. It could be a one-time gift or a pledge of regular annual support.
Multilateral aid	This sort of aid is where a government gives money to organizations such as the World Bank or the United Nations who then distribute it to other countries.

Types of aid

> **⚡ TAKE ACTION**
> Could you help if there was a natural disaster in your neighbourhood? Empower yourself to be able to take responsibility in such a scenario by completing a first-aid course or joining a community group that helps out in times of crisis.

Activity 7 — Mapping activity tracking international aid

You will be creating an annotated map that shows six examples of the three different types of aid. The example below illustrates that Canada provided aid to Afghanistan in 2007–8 to help more than 7 million children under the age of 5 get vaccinated against polio.

Bilateral aid from Canada to Afghanistan, 2007–8

2007–8 Canada to Afghanistan (bilateral aid) – aid from Canada supported more than seven million Afghani children under the age of five to be vaccinated against polio.

STEP 1 Research examples of different types of aid. You can scan newspaper articles, UN reports, or the websites of charities and aid organizations such as World Vision or Water Aid. You need to find:
- two examples of NGO aid
- two examples of bilateral aid
- two examples of multilateral aid.

In addition, make sure you record the recipients, donors, the year the aid was given and the reference for your statistics.

To help you collect information, you might like to create a table like the one below:

Type of aid
Details
Recipient
Donor
Year
Reference

TIP

You will come across a lot of data when researching different types of aid. Practise your scanning skills to quickly assess if a source is useful or relevant. Use persistence to locate all the relevant information to make sure that your annotated map is complete and clear.

STEP 2 Locate a copy of a world map. You can find outline maps of the world by doing an Internet search for "world map outline".

STEP 3 For each example of aid, label the relevant countries on the map and draw an arrow between them showing the direction from donor to recipient.

STEP 4 Annotate the arrow to explain the type of aid and year of donation. You could do this using a legend.

STEP 5 Compare your map with a group of your classmates. Do you notice any similarities in the flow of aid around the world?

🌐 **GLOBAL CONTEXTS**
Identities and relationships

💭 **ATL SKILLS**
Self-management
Demonstrate persistence and perseverance.

A success story

Some countries have been constant recipients of aid for many years. Other countries have proved to be aid "success stories", managing to reduce the extra support given to them. Alternatively, there have also been various initiatives that have called for richer countries to choose to provide more aid and support to poorer countries in an attempt to eradicate global problems such as infant mortality or to improve access to education.

Both strategies—severely decreasing or increasing aid—have met with various degrees of success and failure. Supporters of aid reduction argue that increasing shared responsibility has made recipients of aid less accountable for their actions.

You might recall the Millennium Development Goals mentioned in chapter 7. In a sense, these were a statement of what we, as an international community, should choose to take responsibility for and work towards. They required a dramatic increase in aid, support and cooperation between governments, requiring us to broaden our sphere of responsibility, more than at any other time in human history.

One success story that involved a global effort with responsibility accepted and shared by governments, organizations and individuals was the eradication of smallpox, which you can learn more about in chapter 17. This achievement marked a great leap forward in international cooperation and collaboration, and there have been continued attempts to repeat the success in attempts to combat malaria and polio.

🔗 **LITERARY LINKS**
There are many opinions on the most effective method of distributing aid. Read Dambisa Moyo's book *Dead Aid* to learn why she believes that bilateral and multilateral aid should be reduced.

🔗 **WEB LINKS**
You can learn more about the campaign to eradicate smallpox by visiting www.cgdev.org. Search for "Case 1 Eradicating Smallpox".

Role	Representatives of an aid project
Audience	Donors
Format	Multimedia presentation 6–8 minutes
Topic	A successful aid project

STEP 1 Form a group of 3 or 4 students.

STEP 2 Research an aid program that has had long-term success. You could use your information from Activity 7 as a starting point.

STEP 3 Your goal is to create a presentation about this programme to potential supporters. You should highlight the successes of your programme and explain how monetary donations will help you continue or expand your successes.

STEP 4 Prepare and rehearse your presentation, making it not longer than 10 minutes. You will be presenting to the rest of the class who will take on the role of potential donors.

STEP 5 After all the presentations, have a class vote. Which aid programme would receive your money? What were the compelling reasons that inspired you to support this programme?

TIP

Long-term success is usually measured over five years or more. Be sure to choose a project that has been in place for at least this period of time and has been effective in supporting positive change.

You can begin research on successful aid projects by visiting some of the websites of NGOs. Government aid websites also document successes of bilateral aid.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Social
Make fair and equitable decisions.

Choice and global interactions

While the world is changing at an ever-accelerating pace, global interactions are also increasing. We are becoming more aware of what is happening in places a long way from where we are. Thanks to sophisticated computer modelling, predictions can be made on what the world will look like if we continue at current rates of production and consumption. The question is: What responsibility do you have for choosing the best for future generations and the world that they need to live in?

The final activity for this chapter will challenge you to reflect and synthesize the information you have researched to form your own opinion on what you think you need to take responsibility for in the future.

WEB LINKS
You can learn more about global footprints and measure your own global footprint at www.footprintnetwork.org and search for "GFN".

Activity 9   What should the future look like and what are you responsible for?

Consider the choices that you can make for future generations and the world that they will live in. What are three actions that you can choose to take responsibility for in order to live more sustainably?

STEP 1 Review your notes and resources from this chapter. Brainstorm what you think could be the three actions you will choose to do. Some suggestions are noted below to help get you started but you should include your own ideas and try to be as specific as possible.

- recycling 100% of all household waste
- support of local industries
- support of local volunteer programmes
- having a vegetarian diet
- growing 30% of your own food.

STEP 2 Create a 45-second commercial that advertises one of the areas of responsibility you have chosen. Imagine that this commercial is going to be shown on national television.

STEP 3 Show your commercial to your classmates.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Research
Create references and citations, use footnotes or endnotes and construct a bibliography according to recognized conventions.

TAKE ACTION
Consider the areas of responsibility in your life. Use your knowledge and skills from Activity 9 to create a blog or vodcast to try to encourage responsibility among your peers.

LITERARY LINKS
Many books and films are about the future of our planet. You might like to watch *Avatar* as part of this study. Saci Lloyd has written *The Carbon Diaries 2015*, set in the UK, about a teenager growing up in a world where everyone has a carbon ration. The second novel in the series is *The Carbon Diaries 2017*.

Summary

You have learned that choice, responsibility, ethics and cooperation are closely interlinked. You have also explored how our choices are influenced by our lifestyles and the demands of our communities. Responsibility ranges from local to international; individual responsibility tends to be more local, whereas the responsibility of NGOs tends to cross international boundaries. Some of the most difficult choices we have to make are the ones where we might not benefit directly from the decision. Choices about our lifestyle to minimize impact on the environment require us to think about future generations.

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🔴 **KEY CONCEPT FOCUS**
SYSTEMS

INQUIRY QUESTIONS

TOPIC 1 Resources and economic systems

- What are some different products that are manufactured in your country?
- How do economic systems operate?
- Are centralized or decentralized systems more effective for supplying us with what we need?

TOPIC 2 Choices and consequences

- What resources are essential to people in your community?
- How do your needs influence the choices you make?
- Should our economic systems be developed for the future?

TOPIC 3 Entrepreneurship, environment and culture

- What is entrepreneurship?
- How do cultural values influence our use of resources?
- Why are there different beliefs of sustainable use?

ATL SKILLS

✓ Apply skills and knowledge in unfamiliar situations.

✓ Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media (including digital social media and online networks).

✓ Demonstrate awareness of media interpretations of events and ideas.

✓ Consider ethical, cultural and environmental implications.

✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

✓ Read critically and for comprehension.

✓ Change the context of an inquiry to gain different perspectives.

✓ Create original works and ideas; use existing works and ideas in new ways.

RELATED CONCEPTS

Choice   Values   Culture   Sustainability

GLOSSARY

Abstract something that is abstract exists in thought or ideas but does not have a physical presence.

Confirmation bias a phenomenon in which we look for evidence that supports what we think we already know or believe and ignore evidence that goes against this.

Continuum a range of things that are slightly different from each other and that exist between two distinct states.

Desertification a process in which land becomes increasingly dried out and infertile (ie, it becomes more and more desert-like).

Product in the broadest sense, a product is something humans make to satisfy a need or want.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure. Identify parts and relationships, and interpret information to reach conclusions.

Demonstrate make clear by reasoning or evidence, illustrating with examples or practical application.

Examine consider an argument in a way that uncovers the assumptions and interrelationships of the issue.

Interpret use knowledge and understanding to recognize trends and draw conclusions from given information.

Investigate observe, study, or make a detailed and systematic examination, in order to establish facts and reach new conclusions.

Introducing resources

What do you want in life? That is a difficult question, and you may not feel you can give a full answer just yet. Whatever the answer turns out to be over time, you will need resources to obtain it, just as you also need resources to get the things you need (for example, food and water, shelter, clothing). Resources are about as basic as it gets. You need them to ensure your survival, but you also need them to help you live a good life, however you come to define it.

For instance, let us assume that you decide that part of living a good life involves getting further education after secondary school. Consider just some of the resources you would need to fulfill this want. Take a look at Figure 9.1.

Figure 9.1 **What do you need to get a good education?**

LAND—not just the land on which the school or college you attend might be located, but also all land from which the natural resources come that go into building and maintaining that institution and its facilities, from the metals and wood for the buildings, to the sources of energy used to run it.

CAPITAL—the buildings and all of the equipment in them, including books and computers, constitute the resource of capital and are also important to your studies.

LABOUR—not just your labour as a learner but also that of your teachers and those who keep the institution running smoothly.

ENTREPRENEURSHIP—someone had to establish the institution to begin with, had to bring the land, labour and capital together in a way that made it a functioning place in which people could learn. Whoever did this was using the resource of entrepreneurship. Those who use innovation to try to improve the institution are also exercising entrepreneurship. Entrepreneurs organize resources to produce goods and services—in this case, the service of helping people learn. This often involves the application of creativity and ingenuity to try to find ways to produce goods and services more efficiently or to come up with entirely new kinds of products.

So, resources are fundamental. Without them you would have no life at all, which would make the possibility of a good and fulfilling life that goes beyond mere survival virtually impossible. This isn't to say that resources are all you need for a good life, but they are an important part of what you need.

Perhaps the fundamental issue we face as individuals and as societies when it comes to resources is that they are limited, while our ideas about what we want to do with them tend to be unlimited. This raises some challenging questions and issues, which the MYP Individuals and Societies course tries to address, both by providing information that can help with decisions about what we want, and by assisting with the development of strategies for achieving these objectives once they have been identified.

TOPIC 1

Resources and economic systems

This section looks at how people use economic systems in an attempt to allocate finite resources. In this context, when it comes to resources, societies have three basic questions they need to answer:

- What products should we make and how much of each product should we produce?
- How should we make our products (ie, how should we combine our resources to produce goods)?
- Who should get the products we make (ie, based on what criteria, such as wealth or fairness, should products be distributed)?

Over time, humans have developed different approaches to answering these questions. These approaches form the basis of different economic systems.

Economic systems exist on a continuum. Look at Figure 9.2; nearly all economic systems in the world today exist somewhere between these two extremes. Economic systems are an answer to the question of what we should do with our resources.

TIP

Capitalist or free-market economies (decentralized decision-making) allow private individuals and businesses to decide how resources should be used. In centrally planned economies (centralized decision-making), governments decide how resources should be used (the terms "socialist" or "communist" are sometimes used).

Figure 9.2 The continuum of economic systems

Centralized decision-making	← →	Decentralized decision-making
Command systems in which a central governing body answers the three basic questions		Free market systems in which individuals, interacting in the market place, answer the three basic questions
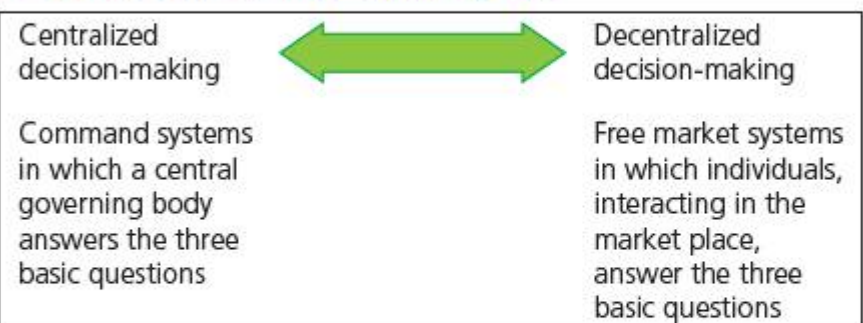
Find a news article related to economics, and identify which of the three basic questions about resources, listed above, is being addressed in it (it could be all three). Explain how the basic questions about resources apply to the article.

Create a diagram that shows the information from your news article. You might like to include symbols and images to explain the answers to the three basic questions.

REFLECTION   In this activity you are practising a very important skill, that of applying what you have learned to new contexts. This is challenging because the questions that you are applying are quite **abstract**. The more you practise applying an abstract idea to real-life situations, the easier it will become. At first, you will want to check with your teacher that your attempts to apply the idea (in this case the idea that the three basic questions above govern our use of resources) are accurate.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Apply skills and knowledge in unfamiliar situations.

System components

In chapter 5 we looked at how systems are sets of interacting or interdependent components that form an integrated whole.

Systems are highly complex for two basic reasons. Firstly, they often have a huge number of components. The basic components of an economic system are the government, firms and households, but each of these components has many individuals within it. Our global economic system has billions.

The second reason why systems are so complex is that they usually interact with each other. Economic systems, for instance, interact with political systems, for example when a government's economic policy is affected by politicians' concerns about being popular with voters. Moral and religious systems also interact with economic systems, such as when households make decisions based not just on economic criteria, but on moral and religious ones as well.

Activity 2 **Analysing economic systems**

For this task, you will need information on how economic systems are supposed to work in theory and also how they actually work in practice.

STEP 1 Conduct your own research into economic systems. Use sources such as textbooks, encyclopedias, and websites to find descriptions of the two basic economic systems mentioned in Figure 9.2. You need to find a theoretical example as well as an example of where this system currently operates.

STEP 2 As you study these descriptions, note down how each system attempts to answer the three key economic questions in practice. In doing so, you will need to:
- analyse these systems. Break them down in order to determine what is essential about them in the way they determine how to use resources.
- explain how the different parts of each system relate to each other—for example, producers, consumers and governments.
- interpret the information you find about these systems in order to reach conclusions about how they answer the three questions of resource allocation.

STEP 3 Organize your information into a table like the one below to aid your analysis by making the differences between the two systems more directly comparable.

	Centralized: theory	Centralized: reality	Decentralized: theory	Decentralized: reality
Government type		Give example of country		Give example of country
What products are made and how much of each product?				
How are resources sourced to make products?				
Who are the consumers?				
Summary				

STEP 4 Review the information you have collected and create a "bottom line" sentence. This is a final summary of your opinion on the two different economic systems. Begin with "The bottom line is ..."

STEP 5 Share your summaries and bottom lines with your classmates.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Research
Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media (including digital social media and online networks).

TOPIC 2

Choices and consequences

Whatever system we use as a basis for making decisions about resources, our decisions, and the actions that flow from them, can have some unexpected results. We might find that a particular way of using our resources did not in fact achieve the goals we had hoped.

Alternatively, although our main goals may have been achieved, some unintended and unforeseen consequences may also occur. Figure 9.3 gives an example of planned and unforeseen consequences of an economic decision.

Figure 9.3 **Consequences of high imported steel tariffs**

	Foreseen consequences	Unforeseen consequences
A government puts high tariffs on imported steel	- price of steel increases - domestic steel companies are protected, along with the jobs of those who work in the companies	- high price of steel has a negative impact on industries that use large quantities of it, such as the auto industry - the jobs protected in the steel industry are offset by job losses in industries that rely on steel, such as the auto industry

How might a decision you make about resources have unintended results? You may choose to use the resource of labour by staying up all night studying for a test. Your intended consequence is a good result. However, exerting too much labour on preparing the night before may leave you too tired to perform well on the next day. The unintended consequence is a poor result.

A more productive decision would be to distribute the labour you direct towards studying over many shorter sessions during the unit, rather than one long one the night before the test.

Sometimes the unintended and unforeseen consequences of our decisions regarding how to use resources turn out to be positive rather than negative. A classic example of this can be seen in the way the free market approach to resource allocation works.

As explained by economist Adam Smith in his book *The Invisible Hand*, individuals within the free market system pursue their own selfish interests for material gain. To the extent that they are successful, they meet this primary objective and this constitutes an intended consequence of their actions.

Smith argued that an unintended positive consequence also results from people pursuing self-interest, however, in that such pursuits lead to a higher level of communal prosperity. Smith gave this phenomenon a name, "the invisible hand", which reflected its unintended and "unseen" nature.

Activity 3 — Resource choices and unintended consequences

This activity asks you to look in more detail at the unintended consequences of resource choices.

STEP 1 Search online for the article "How Washington Ruined Your Washing Machine" (*Wall Street Journal*) by Sam Kazman.

WEB LINKS
Search for "consumerfed Americans want appliances standards to drive down cost of home energy" to read an article about consumer desire for more energy-efficient appliances in the US.

STEP 2 After reading it carefully, use the following inquiry questions to develop your understanding of the themes:
- What choices about resource allocation were made in the situation described? (Think of this in terms of the three economic questions: what products should we make, how should we make them and who should get them?)
- Who made these choices?
- What goals did those who changed the resource allocations hope to achieve?
- What unintended consequences resulted from the changes in resource allocation?
- Why did these unintended consequences occur?

STEP 3 Examine this issue more closely by reading about the survey mentioned in the last paragraph from the point of view of the Consumer Federation of America, the organization which conducted the poll.

STEP 4 After considering all the perspectives, prepare a two-minute persuasive speech explaining to what extent you agree or disagree with the author's critique of the survey.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Research
Demonstrate awareness of media interpretations of events and ideas.

The Copenhagen Consensus

The Copenhagen Consensus was established to evaluate the most effective way of helping some of the world's most needy populations. It operates on an economic principle of cost-benefit analysis to try to generate the greatest successes by using money in the most efficient way. In slang terms, this could be described as how to get "the biggest bang for your buck".

The first Copenhagen Consensus conference was held in 2004 and the Copenhagen Consensus Center was established in 2006, supported by the Danish government. Similar to the UN's Millennium Development Goals, The Copenhagen Consensus Center highlights what it considers to be the ten most important issues that are affecting global development. Experts examine these issues and their related policies, and then create recommendations for governments and aid organizations.

As you have learned in your analysis of economic systems, they were developed based on answers to three big questions but they are also influenced by politics and culture. The recommendations from the Copenhagen Consensus Center may come from the perspective of cost-benefit analysis but does this always mean that the recommendations take into account differences in culture or politics?

As we move beyond the UN Millennium Development Goals, the Copenhagen Consensus Center could provide the next set of goals for individuals and countries to strive for. This could impact policies that your government makes or even the employment opportunities that will be available to you when you graduate school.

Activity 4   Resource use and values

Reflect on your values, or the things that you judge to be most important in life.

STEP 1 Spend 10 minutes creating a Mind Map® of all the resources and experiences that are important to you. These could also be things you plan to have or do in the future.

STEP 2 Highlight or underline resources and experiences that might conflict with your beliefs. For example, you may wish to fly around the world but you know that flying is not very environmentally friendly.

STEP 3 Put an asterisk beside resources or experiences that you would be willing to give up if it meant more people could access this resource. For example, you may choose not to own a car but be a part of a car sharing scheme.

Write a three-sentence summary that shows your opinion on resources, choice and personal values.

STEP 5 In a group of 4 or 5 students, share your summaries and discuss similarities and differences in your opinions.
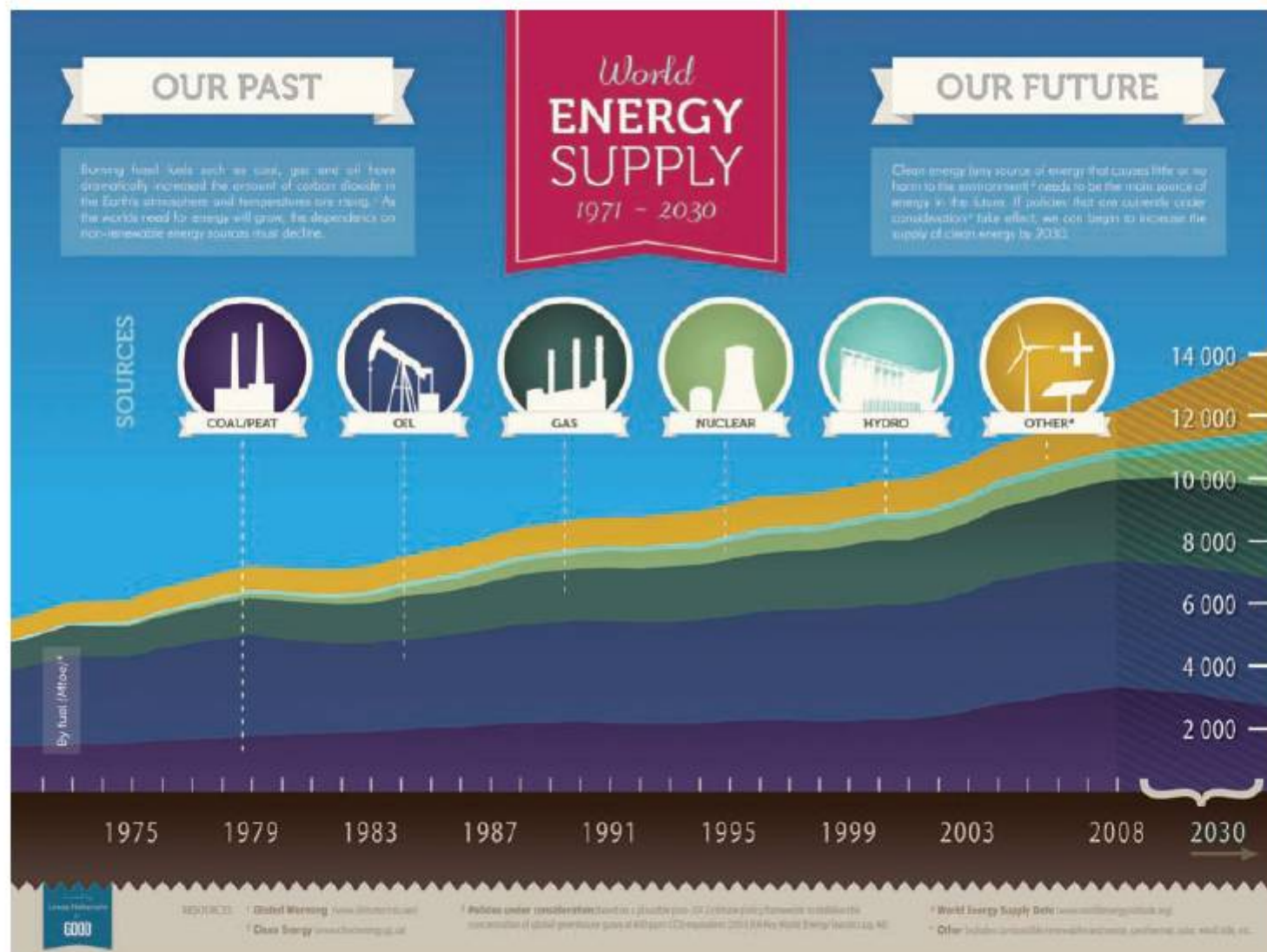
🌐 **GLOBAL CONTEXTS**
Globalization and sustainability

💬 **ATL SKILLS**
Self-management
Consider ethical, cultural and environmental implications.

TOPIC 3

Entrepreneurship, environment and culture

Figure 9.4 World energy supply 1971–2030

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For much of human history, wood was the main resource used to produce energy. Since the beginning of the industrial revolution, fossil fuels—coal, oil and natural gas—have mostly replaced wood as the key resources in producing energy (see Figure 9.4). People switched to using fossil fuels when they discovered they were more efficient than wood, because the same amount of energy could be generated with much smaller quantities.

The entrepreneurs who pioneered the use of fossil fuels helped raise our standard of living by allowing us to produce energy more efficiently, giving us more energy overall with which to heat our homes, run our vehicles and power our factories. Using the amount of energy we do today with trees instead of fossil fuels as our main resource would not only be technically impossible (for example, cars don't run on wood), but it would cause us to very quickly deforest the Earth. Of course, use of fossil fuels has significant impacts on the environment, including land degradation and climate change. Partly for these reasons, entrepreneurs are continuing to search for cleaner and more efficient energy sources. Wind and solar, for instance, represent energy sources that are quite clean, but not especially efficient at this point. Nuclear power, on the other hand, is highly efficient but, at least in the case of accidents, not especially clean.

∞ INTERDISCIPLINARY LINKS

Design

Innovation is a key concept from MYP design. When entrepreneurs try to improve the methods by which we use resources (for example, designing an engine that burns fossil fuels more cleanly) or the products that come from resources (for example, making it possible for us to get energy from cleaner sources such as wind and solar), they are engaging in innovation. How can you use what you are learning about entrepreneurship, innovation and resource use here to enhance your work in your design course?

🏃 TAKE ACTION

How could you improve the methods by which you use energy, in order to contribute to greater efficiency and sustainability?

∞ WEB LINKS

Go to www.econlib.org and search for the encyclopedia article on energy.

Another way in which entrepreneurs use innovation to make the best use of resources is by improving the machines that use energy—from cars to planes to computers—so that they do so more efficiently (ie, so that they can do the same things as before but with less energy). For instance, a car produced today can drive many more miles on the same amount of fuel as a similarly sized car produced fifty years ago. In fact, by 2002 the US economy as a whole could produce the same value of goods (one inflation-adjusted dollar's worth) using about half the energy it did in 1949.

Analyse an innovation in terms of how the entrepreneurs involved used the three resources of land, capital and labour in new and improved ways. Choose a new technology to focus on and use the table below to help you organize your thinking.

TIP

Opposition to change can come from a variety of sources and for different reasons. Be sure to consider local governments, community groups and companies when researching this area.

Remember that impacts can be both positive and negative.

STEP 1 Form a group of 2 or 3 students to learn more about entrepreneurship in action.

You could look at new products or technologies in the fields of energy, engineering, science or medicine.

STEP 2 Each person in your group needs to research a new product or technology.

STEP 3 As a group, complete the table below with the results of your research. The table includes an example to show the sort of information you need to find out.

Old technology	New Technology	Reason/Need for change	Any opposition to change?	Impact on sustainability and standard of living
Fossil fuels for energy	Use of windpower	■ increasing energy demands ■ environmental damage from use of fossil fuels ■ increasing cost and scarcity of fossil fuels	■ opposition from powerful companies invested in creating energy from fossil fuels ■ people who oppose the building of wind turbines claiming visual pollution	■ impact on bird life when wind turbines are built in areas with large bird populations ■ cleaner air from reduced fossil fuel power plants

🌐 GLOBAL CONTEXTS
Scientific and technical innovation

💭 ATL SKILLS
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

Using resources sustainably

There is tension between raising our standard of living and using resources sustainably. One aspect of the improved standard of living that entrepreneurs have made possible is that death rates have fallen dramatically over the past hundred years. This means that the global population has risen dramatically and so has the demand for goods and services. Although we can produce goods and services more efficiently than ever before, the demand and variety of these goods and services has outpaced this efficiency. Entrepreneurs continue to work to create goods and services from new technologies but philosophers, economists and social scientists are also grappling with the bigger questions of understanding what drives people's expectations for these products. Think back to your Mind Map® that you created in as part of Activity 4 on p. 98. If you know that living sustainably means that you need to use less resources and consume less goods and services, would you be able to make a lifestyle change?

Finding the correct balance between improved standards of living on a global level and sustainable use of resources has proved to be challenging and controversial. This has been the case for two main reasons.

Firstly, we know that the issue of unsustainable resource use is real and urgent, but exactly how urgent? How long will fossil fuels last? How much climate change will occur and how harmful will it be? How ultimately damaging to the environment are our current land use choices? To what extent are we overfishing the Earth's waters, degrading its soils, and depleting its fresh water reserves? These are just some of the questions regarding sustainability of resources about which disagreement exists.

Secondly, values play a role in how we view the trade-off between standard of living and sustainability. Making decisions about how to balance sustainability and improvement in living standards is very difficult.

Resources and the environment

Preserving the environment plays a major role in ensuring sustainability. How we use our resources will help determine our success at environmental preservation and, by extension, sustainability.

Environmental impact is a concern when it comes to efficient resource use. If a given production process negatively impacts the environment, its efficiency is undermined due to the destruction of resources. For instance, we know that excessive fossil fuel use in the production of energy today causes climate change. If this climate change leads to <mark>desertification</mark> in the future, then we could say that this future destruction of land resources undermines the efficiency of current energy production because it adds to the quantity of resources "used" as a result of that process (not just the fossil fuels that were used but also the land that will become unfertile). Negative environmental impacts increase the quantity of resources used in the production process and reduce efficiency. If the value of the resources destroyed in the production process is greater than the value of the goods produced, then we would say that the goods were not worth producing.

Many people hope that entrepreneurs can help us with this issue by finding ways to produce goods, such as energy, using methods that have low environmental impacts and are therefore efficient, not only in terms of the resources they use to produce a given quantity of the goods, but also in the resources they destroy or degrade in doing so.

WEB LINKS
For a discussion of these issues go to www.ted.com and search for "Bjorn Lomborg: Global priorities bigger than climate change".

TIP
The concept of energy return on investment (EROI) measures the amount of energy used to obtain a given amount of energy from a particular energy source, for example, oil, wind or solar. How can EROI help us make decisions about how to use resources to obtain energy?

WEB LINKS
Go to www.carbonbrief.org and search the blog post "Energy return on investment—which fuels win?" for an in-depth discussion of this measurement.

Activity 6 — Entrepreneurship, agriculture and land use

You will complete a Visible Thinking Strategy that involves three stages—I read, I think, I wonder.

STEP 1 Search online for an article titled "Our fading footprint for farming food" by Matt Ridley.

STEP 2 I read: Scan the article for information related to corn production in the US. This is often measured as yield (the amount of corn grown) per acre.

STEP 3 Create a diagram that represents the change in corn production between 1870 and 2010 in the US.

STEP 4 I think: How do you think entrepreneurs influenced this change in corn production? List your ideas underneath your diagram. You can also collaborate with another student for this part of the activity.

STEP 5 I wonder: The penultimate paragraph of the article mentions biofuels. How do you think the production of biofuels might influence farming and entrepreneurship in the future?

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Communication skills
Read critically and for comprehension.

CHAPTER LINKS
Both nature and culture differ across time, place and space (see chapter 2). For instance, the presence of rivers allowed for the rise of advanced cultures in the ancient world in a few select places (Egypt, Mesopotamia, India and China). Culture can also affect nature. The scientific and technological approach to the world arose out of European (place) culture in the early modern period (time) and has given human beings the power to alter and use nature in previously unimaginable ways.

Resources and culture

A hunter-gatherer who saw oil bubbling out of the ground 15,000 years ago would likely have considered it a nuisance to be avoided.

A member of a tribe that used canoes might view it as a useful substance for patching holes.

An engineer living in the 20th century would see a potential source of fuel and many other products, which the engineer's company could extract from the ground in large quantities using drilling technology, and sell to others using transportation technology.

Cuff and Goudie, *The Oxford Companion to Global Change*.

Culture, especially in the areas of knowledge and beliefs, has a profound impact on the way we interact with resources. Since cultures are different across time and place, the way humans interact with resources also differs across time and place. Consider the above example of how a specific aspect of culture—knowledge (particularly scientific and technological knowledge)—impacts our interactions with resources, in this case oil.

Notice how technical knowledge plays a role in how each of these people view and interact with the same resource. The hunter-gatherer has very little interaction with the resource of oil because he does not view it as something that can be used to meet his needs, and he lacks the technology to use it. The tribal member has limited interaction with the same resource, using it in small quantities and in its raw form, to meet a particular need. The 20th-century engineer has significant interaction with oil, extracting it in massive quantities, processing it in a variety of ways to change it from its crude form, and using it as an input for a huge number of products.

TIP

Knowledge involves information that we have good reason to think is true. When it comes to resource use we need to know about the resource, we need to know that it can be used in certain ways, and we need to know how to extract it from nature and use it.

This example focused on how knowledge plays a role in people's interaction with resources. Values and beliefs also play a role as well in how we interact with resources. Of course, the knowledge aspects of our culture and the values and beliefs aspects of our culture are closely connected, with knowledge sometimes affecting our values and beliefs, and values and beliefs in turn sometimes influencing what we "know".

Consider oil and the 20th century engineer. If this engineer worked for an organization that was focused on environmental protection instead of an oil company, he or she would likely respond somewhat differently to the discovery of oil bubbling out of the ground. Instead of focusing on extracting and marketing the resource, this engineer might immediately begin thinking of ways to ensure that the surrounding environment would be protected in the event of drilling, or might want to prevent any drilling at all if he or she felt the surrounding ecosystem was fragile.

👤 Activity 7 — What do you know?

Choose one of the examples below, or select another example of a valuable resource.

In your example, select three people connected to this resource and complete the table on the following page.

Choose one of the resources listed below (either oil or coral reefs), or select another valuable resource. Select three people connected to your chosen resource. Analyse the resource in terms of what the people involved know, believe and value about the resource.

Use a table such as the one suggested to help you organize your thinking.

Example 1: Oil
In the "person" column in your table you could have:

- an engineer working for an oil company
- an engineer working for an environmental NGO
- a member of an indigenous tribe living in the rainforest where the oil was discovered.

Oil production

Example 2: Coral reefs
In the "person" column in your table you could have:

- a tourist visiting the Great Barrier Reef in Australia
- an employee at the Great Barrier Reef Marine Park Authority responsible for the protection and management of the coral reef
- a coal exporter wanting to dredge the seabed around the coral reef to create new ports.

The Great Barrier Reef

Person	Knowledge: What does the person know about the resource?	Beliefs and values: What does the person believe about the resource? How might their judgments about what is important in life affect their views of the resource?	Confirmation bias: How might the person's current knowledge, values and beliefs distort their view of the resource?	Interaction: How might the person's knowledge, beliefs and values impact their interaction with the resource in question (eg, oil/coral reef)

The interaction between humans, their culture and resources can also go in the other direction. Resources can have a significant impact on culture. Most cultures have a sense that certain areas belong to them and put a high value on keeping those areas or, if they have lost them, on regaining them. Many cultures also place value on the idea of expanding their territories. While there are likely to be numerous reasons why cultures value their homelands and territorial expansion, the desire to keep or gain access to desirable resources is usually a key factor. This tendency has contributed to the high value that many cultures place on military strength. It is valued not just for the heroes it produces and their exploits of glory, sacrifice and victory, but also for the access to resources that it ensures. The scarcity of resources (nature) may have contributed to the warlike nature of many human cultures.

Investigate a culture (past or present) and try to determine how aspects of that culture, especially in the areas of science, technology and values, affect the way that its people interact with resources.

Describe the culture in terms of knowledge and values, especially those that may relate to how that culture interacts with resources (see diagram opposite for a visualization of how this process works). Then discuss the impacts the culture has on resources and the perception it has as a result of the cultural lens (knowledge and values) through which it views resources.

Use a table similar to the one in the previous activity "What do you know?" to organize your thinking on this task. Substitute a culture for the individuals in that activity.

The impact of culture on the way we interact with resources
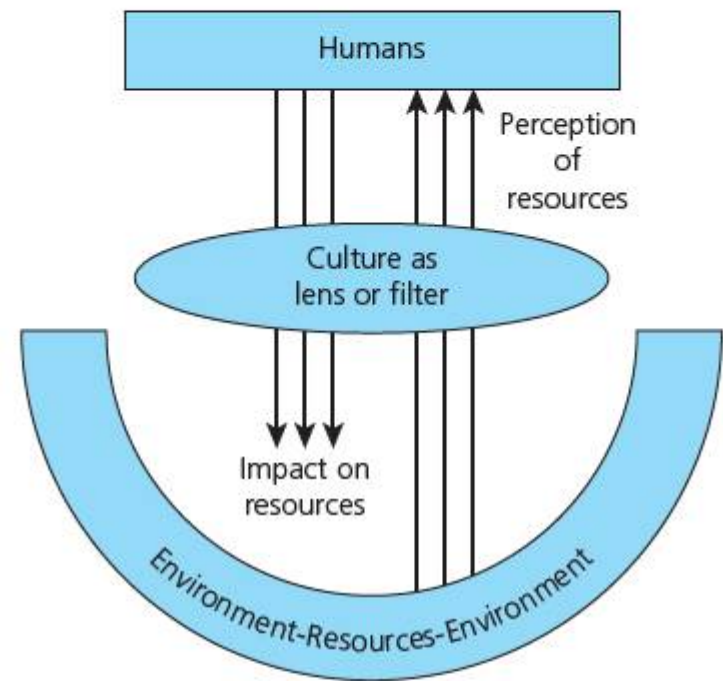
The *Oxford Companion to Global Change* edited by Cuff and Goudie. 2009. Oxford University Press. Fig. 2, p. 534. Reproduced with permission.

🌐 **GLOBAL CONTEXTS**
Scientific and technological innovation

🧠 **ATL SKILLS**
Thinking
Create original works and ideas; use existing works and ideas in new ways.

Summary

In this chapter you have explored the concept of resources, looking at how we make decisions about how to use them and the intended and unintended consequences of those decisions, including on the environment. You have also considered how the resource of entrepreneurship relates in a special way to the three basic questions. Finally, you inquired into the relationship between culture and resources, considering how culture affects resource use and how resource availability affects culture.

As you have conducted this inquiry into resources you have practised the crucial skill of applying general knowledge and understanding to specific situations. You have located, organized and analysed a variety of information, read challenging texts critically, considered different interpretations of the same issue, and reflected on the relationship between resources and their values, including how this relationship can affect people's view of resource issues.

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⦿ **KEY CONCEPT FOCUS**
CHANGE

TOPIC 1 Scientific discoveries of longitude, planets, time

- How was longitude measured?
- How do scientific discoveries influence our understanding of the world around us?
- Are there still discoveries to be made about how we measure time?

TOPIC 2 Geographical discoveries—the "new" world

- What were some resources discovered in the "new" world?
- How does exploration affect our view of culture?
- Should explorers have obligations to protect the cultures they come into contact with?

TOPIC 3 Technological discoveries

- What resources have influenced the inventions of new technologies?
- How have changes in communication influenced culture?
- What would the world be like if every person had access to the Internet?

ATL SKILLS

✓ Read critically and for comprehension.

✓ Use a variety of media to communicate with a range of audiences.

✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

✓ Understand and implement intellectual property rights.

✓ Use appropriate strategies for organizing complex information.

✓ Apply skills and knowledge in unfamiliar situations.

✓ Present information in a variety of formats and platforms.

✓ Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media (including digital social media and online networks).

✓ Draw reasonable conclusions and generalizations.

RELATED CONCEPTS

Development Globalization Networks Innovation
Growth Knowledge Culture Social interactions

GLOSSARY

Catalyst something that causes or promotes change.

Consequence the effect of change. Consequences are often described as short or long term, positive or negative.

Historiography the principles and theory of history.

Rate of change describes how fast something changes.

Vernacular the common language of a country or region.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure; identify parts and relationships, and interpret information to reach conclusions.

Compare give an account of the similarities between two (or more) items or situations, referring to both (or all) of them throughout.

Design produce a plan, simulation or model.

Develop improve incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state.

Organize put ideas and information into a proper or systematic order.

Predict give an expected result of an upcoming action or event.

Show give the steps in a calculation or derivation.

Introducing causality

Causality is the concept of cause and effect.

A simplistic way of understanding causality is to think "if one event happens, then a second event will happen as a result of the first event happening".

Of course, issues are a lot more complicated than this. In your understanding of the key concept of systems, you have already looked at how a change in a part of the system affects other parts of the system. Looking at the related concept of causality through the key concept of change, we are seeking to understand the <mark>catalyst</mark>. A catalyst can be an action or event that initiates change. It could be an action from a person, for example the action to assassinate US president John F Kennedy, or it could be an event such as a natural disaster. What initiates change and what are the impacts?

Figure 10.1 A surprising event brings about change, which in turn has impacts on people and environments
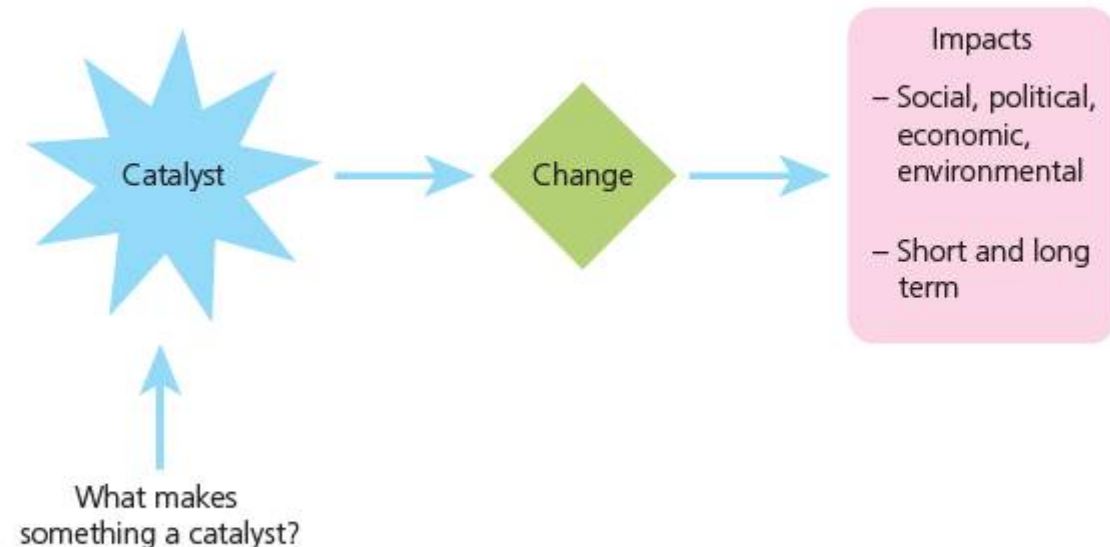
Understanding causality by itself is quite artificial. The key concept of change comes into play when we look at both parts of causality: what causes the change and what are the effects of the change?

Many changes are initiated by the desire to improve ourselves. This could be connected to basic needs. For example, changing the way we gathered food to ensure a better supply. Think back to what you read in chapter 7 on development and how these were examples of people trying to improve their living conditions. Change may also be driven by a difference in ideologies such as the use of revolution to initiate an alternative government system. Change is brought about with the intention that there will be specific effects. However, not all effects can be accurately predicted and there are always unpredicted <mark>consequences</mark>.

The Greek philosopher Heraclitus is known for saying: "You can never step into the water of the same river twice." In other words, the flow of life means that change is always happening and while we can't go back

and redo something, we can certainly recognize that many changes have similar causes. Being able to step back from a complex situation and analyse the causes of change is challenging. Experts can often carry out this task if they have a sense of detachment towards the situation. It is much more difficult if you are being directly affected by the change.

Historians use the concept of causality in the study of **historiography**. Historiography is the way that history has been written about a particular event. When you combine this with the idea of causality, it means that historians are studying all the sources of a particular event in order to understand what caused it. Naturally, there is disagreement among historians about the exact causes of events in history. How far back in history should you go to establish what caused an event?

The cartoon in Figure 10.2 is an example of how historians look at causality. All of these events occurred in the lead-up to the first world war, but can you really say if one single event was the catalyst?

The topics in this chapter are centred around significant discoveries. The first two topics explore past discoveries while the third topic is about discoveries affecting your future. See if you can reflect on circumstances that have prompted you to change something significant in your life. What was the catalyst? What were the effects? Were they effects that you were expecting?

Figure 10.2 Many events could be labelled catalysts for the First World War

Scientific discoveries of longitude, planets, time

Between the 16th and 18th centuries in Europe, significant changes were occurring in the way that people understood the world around them. Traditionally, religious philosophy and texts had been prominent in explaining natural phenomena such as the changing phases of the Moon. Scholars looked to historic religious texts to explain what they saw, but the writings of Copernicus began to challenge religious explanations. What made people begin to question what had previously been accepted for centuries?

Explaining the world around us

When you look up at the sky and think about the movement of the Earth, stars and Moon, what do you know about this? How do you know that the Earth revolves around the Sun? Do you look at something strange happening in your world and wonder how to explain it? In many places in Europe, up until the 15th century, people looked to religious texts to explain things, such as why it snows, and why the ocean tides change from one season to another.

Create a profile for the scholar Nicolaus Copernicus that describes his work.

STEP 1 **Develop** inquiry questions that will guide your research. As well as standard biographical details, you will need to have questions that prompt inquiry into the work that he did and the reasons behind his investigations. Remember, as part of causality, we want to learn the causes of an event, as well as the effects.

STEP 2 Record your information and sources using a format such as Cornell notes or a graphic organizer.

STEP 3 Create a profile of Copernicus using your information. This could be in the form of a webpage, a poster or a newspaper article.

WEB LINKS

Cornell notes are a structured form of note-taking. You can learn more about the structure, and even create your own Cornell note-taking frameworks, by doing a quick internet search.

TIP

Always think carefully about the **audience** when choosing your format. Make sure you have a clear idea in your mind of who is going to be reading your profile.

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Communication
Read critically and for comprehension.

Copernicus and further questions

What caused Copernicus to challenge long-held beliefs about the way the universe was structured? He was daring to challenge respected scholars and religious authority when proposing his theory. His proposal that the Sun was the centre of the galaxy challenged the traditionally held view that the Earth was the centre of the universe (see Figure 10.3).

This new way of scientific inquiry involved processes of hypothesizing, observing, recording and calculating to make a claim about specific knowledge.

Figure 10.3 A diagram developed by Copernicus to show the location of the planets in relation to the Sun

INTERDISCIPLINARY LINKS
Sciences

Consider what steps you follow when conducting a scientific experiment. How do you know that these steps will mean that you have reached a logical conclusion based on the results of your experiment?

Activity 2　Newsflash—"The Sun is the centre of the universe!"

Working with a partner, create a newsflash (a "breaking news" report) lasting 2–3 minutes that communicates this significant finding by Copernicus.

STEP 1 You will be flexing the construct of time for this task as you are creating a newsflash for TV or radio, neither of which had been invented when Copernicus was alive. However, the information is something new and revolutionary, so think about how you will present it to your audience.

STEP 2 Use inquiry questions to guide your research. Think about the five Ws and an H to check that you have all the vital information—"who", "what", "when", "where", "why" and "how".

STEP 3 Working with your partner, structure your information in a way that is relevant to the audience. What will they want to know first? What is most important?

STEP 4 Practise your newsflash to check for clarity and timing.

STEP 5 Film or record your newsflash and then share it with your classmates.

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Communication
Use a variety of media to communicate with a range of audiences.

Science for the ordinary person

Copernicus wasn't the only one embracing this new trend of scientific inquiry during this time. Astronomy, physics, mathematics and chemistry were all developing as fields of study. Organizations were set up to enable innovative ideas to be shared and new discoveries in science to be made. The use of the printing press allowed publications to be printed more rapidly and for less cost. Some of the scientific publications at the time were written specifically for the general public, using terms that people would understand, as well as being written in the vernacular as opposed to Latin.

Activity 3　Pamphlet on a scientific discovery

Role	Historian
Audience	Students aged 10–12 years

Format	3–4 page pamphlet including:
	■ at least 4 visuals
	■ definitions of specific vocabulary terms
	■ correctly formatted bibliography
Topic	Choose one from the following list (all between the 15th and 18th centuries):
	■ a scientist
	■ a significant scientific publication
	■ a centre for scientific study

STEP 1 Spend some time doing initial research to see which topic you might choose. This could involve talking to your classmates, your teacher, reviewing your notes or researching in the library.

STEP 2 Once you have chosen your topic, think about the audience you are writing for. What information would they like to know about your topic? Use this to write your inquiry questions to help guide your research.

STEP 3 As you carry out your research, check that you are also collecting suitable visuals for your pamphlet. These must be referenced just like any text resources.

STEP 4 Write up your information, keeping in mind the audience for your pamphlet.

STEP 5 Arrange your information in an eye-catching format. Make sure that your visuals have captions so that your audience knows what they are looking at.

STEP 6 If possible, share your pamphlet with students aged 10 to 12 and get their feedback on your work.

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

TOPIC 2

Geographical discoveries—the "new" world

During the Age of Discovery in the 18th century, inventions and improvements in methods of navigation led to exploration further afield. Explorers embarked on voyages to discover what was beyond the horizons where land could no longer be used as a location

reference. These explorations brought different cultures into contact with each other, resulting in an exchange of ideas and resources.

Why explore?

When English mountaineer George Leigh Mallory was asked the question "why did you want to climb Mount Everest?" by a *New York Times* journalist in 1923, he replied: "Because it's there".

Although Mallory's quote is from the 20th century, it might just as easily have applied to the mindset of explorers during the 18th century. European explorers were taking advantage of these scientific discoveries to aid their journeys, but the desire to explore wasn't just limited to Europeans. For thousands of years, other communities have been navigating using stars and water currents to journey across the ocean.

Why did people want to venture into places they had never travelled to before? Think back to what you know about the desire for resources and the motivation to satisfy basic needs. Were these the catalysts for exploration, or was the motivation similar to what you read in George Mallory's quote?

> *Everest is the highest mountain in the world, and no man has reached its summit. Its existence is a challenge. The answer is instinctive, a part, I suppose, of man's desire to conquer the universe.*
>
> George Mallory

WEB LINKS
You can learn more about navigation techniques using stars and water currents by searching online for "Polynesian navigation".

Activity 4 — Prezi—"The world as we know it"

Create a visual presentation using a tool such as Prezi or Popplet that analyses the change or differences in our knowledge of global geography. For example:

- compare world maps from three different time periods   OR
- compare world maps from three different cultures.

STEP 1 If you haven't used presentation software before, familiarize yourself with the format and structure. With your partner, analyse some of the presentations on Prezi or Popplet and consider what functions are effective in communicating information.

WEB LINKS
Go to www.prezi.com to download the software or go to www.popplet.com to sign up and view some of the different presentations.

STEP 2 Decide which path you want to take for the assignment—either world maps from three different time periods, or from three different cultures.

STEP 3 Your analysis must include:

- how the maps were generated
- when they were generated
- cultural influences
- comparison with the other maps.

Based on this, develop inquiry questions that will help you locate these maps and the information about how they were created.

STEP 4 Record your sources as you research. Remember that your map may have a different origin than the information that describes how it was created. It is important to acknowledge your sources for academic honesty.

STEP 5 Organize your information into the format you have chosen.

STEP 6 Show your presentation to your classmates.

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Research
Understand and implement intellectual property rights.

Effects of exploration

CHAPTER LINKS
Look back at the information and activities in the chapter on conflict (chapter 6) and compare how different indigenous people were affected by the arrival of European explorers.

Regardless of the causes of exploration, the effects were wide-ranging and long-lasting. When explorers landed on the shores of a country that hadn't been previously visited by people from their country, there was an immediate interaction between different cultures, languages, ideas, knowledge, animals, plants and people. These interactions ranged from hostile and deadly to welcoming and collaborative.

Traditionally, this age of exploration is called the "Age of Discovery", implying that places such as the Americas, Australia and the Pacific Islands were previously unoccupied. We know that they were occupied at the time of European exploration, but the cultural difference frequently resulted in conflict around land ownership and the status of citizens in these countries.

Activity 5   **Flow chart of exploration**

Create a flow chart that documents:
- one explorer (for example, Christopher Columbus, Captain James Cook, Ferdinand Magellan)
- an invention that assisted in their exploration (for example, the compass, sea clock, sextant, calculation of longitude)
- one of their voyages
- the interaction with another culture during their voyage.

A flow chart is similar to a timeline; it shows a chronological progression of events, using boxes and arrows. Flow charts can be used to track predicted outcomes, but yours will show events that have already happened.

STEP 1 Choose an explorer you would like to research. The list included here is only a suggestion—you might prefer a different author. Remember that you have to document the effects of meeting a different culture, so keep this in mind when you are making your choice.

STEP 2 Write inquiry questions that will guide your research. Base these on the bullet points of what you have to include in your flow chart.

STEP 3 Record your information using a graphic organizer or Cornell notes.

STEP 4 Create your flow chart on paper or in a digital format.

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Self-management
Use appropriate strategies for organizing complex information.

New depths

What is left to explore on Earth? Are new discoveries still possible? New inventions in transportation allow exploration of parts of the planet that have been previously inaccessible for humans. These include ocean depths, journeys in the upper atmosphere and travel into the Earth's crust. What purpose do these explorations have? Think back to what motivated scientific discoveries and explorers. Are there similar catalysts for our modern-day explorers? If there are similarities in causes, could this mean that new discoveries may have similar impacts?

WEB LINKS
www.flowchart.com is an online tool that allows you to create flow charts.

Activity 6 — Summarize and predict—then, now and next

Compare past discoveries and exploration with future exploration. What can you predict based on knowledge of the past?

STEP 1 Form a group of two or three students.

STEP 2 Summarize your information from the first two topics, analysing what you consider the most significant causes and impacts of scientific discoveries between the 15th and 18th centuries.

STEP 3 Repeat the summary and analysis process for exploration between the 15th and 18th centuries.

STEP 4 Using these two summaries, have a discussion in your group about possible causes and impacts of future exploration. You might like to consider events such as deep-sea exploration, space tourism and the explorations of the Mars rover, Curiosity.

LITERARY LINKS
Learn more about the interaction between technology and exploration by watching the film *The Dish* about the Apollo 11 mission to land on the Moon. Remember that the technology used in this mission was inferior to the computational power in a smartphone.

Watch the film *Gravity* and consider the risks that are part of exploring outside our natural environment.

STEP 5 Summarize your discussion in the form of a chart of causes and effects, like in the example shown.

Cause and effect flow chart

Scientific discoveries	Exploration	Future exploration
Causes	Causes	Causes
Effects	Effects	Effects
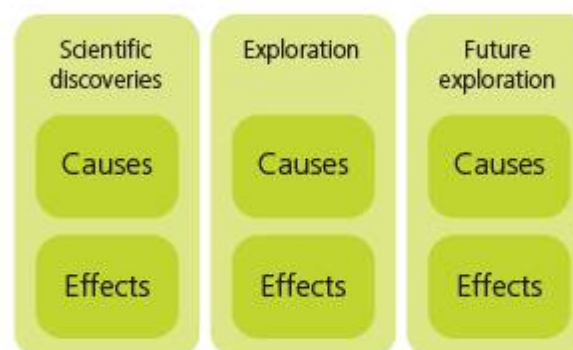
STEP 6 Write a concluding paragraph that identifies the key points of the chart.

STEP 7 Share your predictions with other groups. Are there similarities?

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Thinking
Apply skills and knowledge in unfamiliar situations.

TOPIC 3

Technological discoveries

This topic will require you to reflect on technological innovations that you use every day. What prompted these items to be invented? What was the catalyst? The consequences of these many technological innovations have been both positive and negative, and the final activity challenges you to predict what possible changes could occur in the future. The increasing rate of change means that we are experiencing these impacts sooner and on a wider scale.

Making a phone call

When Alexander Graham Bell first made a phone call, it was to his assistant Thomas Watson, saying, "Mr Watson, come here, I want to see you." The date, 10 March 1876, marked the beginning of a new way of connecting individuals and societies around the world. As shown in Figure 10.4, the telephone of Bell's invention evolved through rotary phones to digital phones and then to the mobile telephone. Now, mobile phones are used for much more than making a simple phone call. They can take a photo or video, allow us to chat face-to-face, or search the internet, and there are apps for our every need.

Figure 10.4 The evolution of the telephone

Activity 7 — Back to the future

Create a multimedia timeline that documents the changing "face" of mobile telephones.

Your timeline must include:

- history—why the mobile phone was invented, when it was first developed for commercial use, what it cost, what it looked like, how it worked
- social impact—influences on people's lifestyles
- alternative uses—the role of apps, use of mobile phones for banking, use of mobile phones in countries that may not have a comprehensive landline network.

Timeline format

This task requires you to focus on the skill of representing information in multimodal forms. This means that you have to access, use and generate information in a variety of formats.

A multimedia timeline means that you can combine audio, visual and text sources to create something that is appealing for your audience. You can use different programmes to create this such as PowerPoint or Keynote, or you can create a short film.

- **Text:** This is probably what you are most familiar with using and producing. Remember to consider who your audience is for your presentation and adjust the style and tone of your language so that it is appropriate.
- **Audio:** Consider using audio resources for the activity. Interview friends or family members about their use of mobile phones.

TAKE ACTION

Expand your knowledge of the environmental impacts of making mobile phones. Are you able to find a phone that has been ethically made?

WEB LINKS

Online software options for creating multimedia presentations include Prezi (www.prezi.com) and Meograph (www.meograph.com).

- **Visuals:** These can include video, as well as graphics. You could represent statistics on phone use in chart format or use images of different mobile phones in your presentation.

Using information ethically

Activity 7 requires you to use information ethically. Firstly, you have to accurately acknowledge all the sources that you use. Your teacher will be able to advise you on the required way to do this as there are several recognized formats that can be used.

Secondly, if you are interviewing or filming someone, it is ethical to ask permission to film or record them. Be sure to inform them when the recording starts, and to tell them how you are planning to use the information.

The Internet

The mobile phone was a technological innovation that connected people in ways that had never occurred before. Most people couldn't think of other possible ways through which the world could communicate, but the invention of the internet had a dramatic impact. Initially, the internet was designed for communications between universities and for use by the military but it soon began to be available for civilians. From the 1990s, it became possible for people with a telephone connection, a computer and a modem to connect to the internet and use it for emails, chat, phone calls and accessing the World Wide Web.

👤 Activity 8   The internet—cause and consequence

The global context and skills used in this activity are similar to Activity 7, but this time you will be transferring your skills to a different presentation format and completing this task on your own.

Role	Technology journalist
Audience	Your classmates
Format	PechaKucha
Topic	The internet: Cause and consequence

Role

As a journalist, you are interested in finding out the causes and consequences of the internet. It is important in your research that you are able to cover a wide range of consequences or impacts; remember to think about political, social, economic and environmental impacts.

Audience

The audience for your presentation is your classmates. This means that you need to carefully select material that is both relevant and interesting for them. If you are bored by what you are researching, your audience is also likely to be bored when you present it to them. Consider the role that the Internet plays in your life and the impact this invention has had on you.

Format

PechaKucha is a unique format that originated in Tokyo. It is a very strict, concise way of communicating ideas but it can be challenging. It certainly requires careful selection of information and images and requires a great deal of practice before you deliver your presentation.

> **⊙ WEB LINKS**
> Learn more about PechaKucha and view a presentation in this format at www.pechakucha.org.

Topic

Because you are looking at cause and consequence, you will need to demonstrate your understanding of the related concept of causality and the key concept of change. Remember that change doesn't happen without a catalyst, and sometimes the impacts of change are not originally intended.

> **🌐 GLOBAL CONTEXTS**
> Scientific and technical innovation

> **💬 ATL SKILLS**
> Research
> Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media (including digital social media and online networks).

The future

If you think back to the introduction to this chapter, you read that change happens with causes and consequences. The catalyst for change can be hard to pinpoint and is something that is frequently debated by historians. It is important to recognize what circumstances lead to change and to practise predicting what the impacts of change can be, both short-term and long-term.

Consider this in the context of technological innovation. What could be the next big invention that has an impact on how we communicate, live, produce food, cure diseases or interact with our climate? What impact will this invention have on individuals and societies?

> **⊙ INTERDISCIPLINARY LINKS**
> Design
> Why do some designs succeed and some fail? Use your knowledge of design to analyse some inventions that have had a significant impact on the way we live our lives while others have vanished into obscurity.

Activity 9 — The impact of the Internet

Design a survey that tracks the impact of using the Internet for students from age 10 through to age 18.

STEP 1 Consider exactly what you want to find out.
Some possible options are:

- use of social networking
- communication skills
- use for learning
- entertainment.

WEB LINKS
A popular type of survey scale is called a Likert scale. You can research more about this by searching for "Likert" online.

STEP 2 Think about how you would survey participants in your study. Remember that theoretically you will be tracking them from when they are 10 years old to when they are 18. This means that the type of survey you use must be suitable for students from that whole age range.

TAKE ACTION
Work with your technology department at school to put your survey into action, tracking student use of the internet.

STEP 3 How will you record and analyse your results? Survey questions that are open-ended mean that you will get very different data. If you use a type of scale for responses, what will this scale be?

STEP 4 Predict what your data would show if you carried out your survey for the next eight years. For example, think about how you currently use the internet in comparison to students who are 10 years old and students who are 18 years old. What changes in technology might take place during the years you are surveying this group?

STEP 5 Create your final product. This should include:

- proposed research focus and justification
- a sample of the survey and an explanation of why you chose the particular format
- a prediction of survey results and justification for making that prediction.

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Thinking
Draw reasonable conclusions and generalizations.

Summary

Learning about causality means that you have to be able to identify catalysts for change and the effects that they have. Change is a neutral term, but when looking at change in a specific context you will be able to identify positive and negative effects over both the short term and long term. Effects of change can be seen in the way we explore and interpret the world around us. It is inevitable that the future will bring about change in scientific discoveries, our knowledge of the world and our use of technology. The effects of these changes will be felt on a personal, local and global scale.

11 Poverty

INQUIRY QUESTIONS

TOPIC 1 Defining poverty

- What are some ways that poverty is measured?
- How does space and place influence the way that poverty is defined?
- Can there be one definition of poverty that applies to all nations?

TOPIC 2 Causes of poverty

- What are some social causes of poverty?
- How are social systems and poverty connected?
- Is poverty caused by individual circumstances or is it a result of a social system?

TOPIC 3 Strategies for addressing poverty

- What economic strategies have been used to address poverty?
- Why has poverty decreased over time?
- Will there always be poverty in the world?

ATL SKILLS

✓ Change the context of an inquiry to gain different perspectives.

✓ Collect and analyse data to identify solutions and make informed decisions.

✓ Use appropriate strategies for organizing complex information.

✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

✓ Create novel solutions to authentic problems.

RELATED CONCEPTS

Equity   Consumption   Values

GLOSSARY

Abstract something that is abstract exists in thought or ideas but does not have a physical presence.

Benchmark a standard or point of reference that allows us to compare things and assess progress.

Correlation this exists when two things have a relationship; they seem to exist together (for example, human rights and democracy).

Equity the quality of fairness.

Intangible something that does not have a physical presence, cannot be touched.

Socioeconomic the interaction of social and economic factors.

COMMAND TERMS

Discuss offer a considered and balanced review that includes a range of arguments, factors or hypotheses.

Explore undertake a systematic process of discovery.

Investigate observe, study or make a detailed and systematic examination, in order to establish facts and reach new conclusions.

Understanding poverty

Poverty is fairly easy to define in the <mark>abstract</mark>. Things get difficult, however, when we try to set real-world criteria for it. Poverty exists when people are unable to consume at an adequate level, but what constitutes an adequate level of consumption? People need to be able to consume at a level that meets their basic needs for survival. They need to have enough clothing, shelter and food to stay alive. Most of us, however, would say that just staying alive is not adequate. People need and deserve more. So what do people need beyond basic necessities in order to rise above poverty?

Absolute and relative poverty

It helps to consider two different definitions of poverty: absolute poverty and relative poverty.

- **Absolute poverty** is measured in terms of the basic necessities people need to survive. If you don't have those necessities, you are living in absolute poverty.

- **Relative poverty** defines poverty in relation to an average standard of living. By setting a level of poverty in relation to an average standard of living, we are considering what is possible given our current situation. We might say that someone living in a high-income country today lives in poverty if he or she does not have access to education up to age 18, as well as to good medical care, on top of basic necessities. This is realistic, given that most people in richer countries have these things. It would not be realistic, however, to say that someone living 200 years ago was living in poverty because they did not have these things, because at that time no one had access to a good level of medical care and very few had access to advanced education.

The idea of relative poverty allows us to take into account time, place and space when defining poverty. This includes accounting for differences in the economic progress and prosperity of communities. If a person of average income in a given country does not have access to advanced education and sophisticated medical care, then it is probably unrealistic to make lack of access to those things <mark>benchmarks</mark> of poverty in that country. On the other hand, defining poverty in relative terms also allows us to aspire to more than just basic survival for all people.

Poverty is an issue that has always been a major concern to humanity. Human history can be seen in part as a battle to overcome poverty. Our ancestors struggled to stay just above conditions of absolute poverty and, in times of famine, war or natural disaster, could easily find themselves unable to meet their needs, with their survival threatened as a result.

The good news is that we are making progress. We can celebrate the amazing success of the past few hundred years, lifting billions of people out of absolute poverty and raising the average standard

of living to a point where we can begin talking about poverty as something more than simply not meeting basic needs.

The bad news is we have some way to go—much remains to be done in overcoming poverty. Over one billion people worldwide still live in absolute poverty. The number living in relative poverty is a more contestable issue, but many feel that we should be able to make further improvements towards eradicating both absolute and relative poverty.

INTERDISCIPLINARY LINKS

Mathematics

Mathematics provides us with statistical tools to track poverty and to develop strategies for addressing it.

Science and technology

Science and technology have made massive contributions to human well-being, allowing us to produce goods and services more efficiently and thereby enabling huge numbers of people to live above the poverty line.

Arts and Language and Literature

The arts and literature often make poverty, and issues related to it, such as inequality and injustice, their theme.

Language Acquisition

Learning languages helps foster the communication needed to address poverty at the global level.

TOPIC 1

Defining poverty

As we have noted, one of the key issues related to defining poverty is whether to define it absolutely or relatively. Levels of poverty change across time and are different across place and space. The idea of relative poverty exists partly to take into account these changes and differences, while absolute poverty gives us a standard for comparing different times and places in terms of their levels of poverty.

Absolute poverty

One of the advantages of the concept of absolute poverty is that it gives us a stronger basis for comparison across time, place and space. If we can agree on the basic necessities for survival, then we can look at people's living standards anywhere in the world and at any time in history, and make a judgment as to whether they are living above or below the poverty line.

Absolute poverty leaves us with a very low standard (according to the World Bank, absolute poverty exists when a person lives on less than $1.25 per day). The United Nations Development Program tries to set our sights higher, while still giving us a universal standard for measuring poverty, through its human poverty index (HPI). The HPI measures the percentage of people in a country who are not able to meet their basic needs by determining the percentage of the population without access to safe water and the percentage of children who are underweight for their age. It then goes beyond these most basic needs to measure education (the percentage of adults who are illiterate) and health (the percentage of people who do not reach the age of 40). This is still a fairly low standard, however, and we may want to set our goals higher, hoping that doing so will allow us to lift the standard of living for more people than just those in absolute poverty.

Relative poverty

Thinking of poverty as relative brings with it a number of challenges too. The main difficulty is settling on an agreed definition of relative poverty, which requires us to make value judgments. How do we determine what goods and services a person should have access to in order to be considered adequately provided for?

One way of setting a relative poverty line is to determine how much a person would have to spend to stay out of absolute poverty, for example, to pay for food, shelter, clothing and utilities, and then add some monetary amount on top of that. How much to add is still a contestable point, but it avoids having to determine the exact goods and services people need (for example, do people really need a television, dishwasher or access to extra-curricular activities for their children?).

However, it could be argued that discussions about goods and services are necessary, because in order to address the issue of poverty in an effective way we need to have an accurate understanding of the problem.

Some people take the position that relative measures of poverty based on income can lead to false impressions of the magnitude of the problem, especially in developed countries. For example, the way the USA measures poverty has led to an estimate that about 35 million people in the country live in poverty (roughly 11% of the population). This seems like a high number for such a wealthy country. Some critics of this approach to measuring poverty point out that the typical impoverished person in the USA has quite a high standard of living in absolute terms, with large percentages living in adequate housing and owning cars, air conditioners, TVs, video game consoles and kitchen and cleaning appliances. They argue that setting the poverty line too

QUICK THINK
How has the time and place you live in affected your current level of prosperity or poverty, and your future chances of living a prosperous life? Imagine yourself in a different time and place and consider how that would affect your chances of living in or avoiding poverty.

Most governments have developed a measurement for poverty that is relevant for their country. In the US, the poverty threshold is defined as when a family has to spend more than a third of its weekly income on food.

high leads to a misunderstanding of the problem and causes society to divert resources from other worthy objectives, including helping those who are truly impoverished.

The related concept of values applies to poverty because we may think that those who lack things we believe are important live in poverty. Values also lead to a broader way of understanding the concept of poverty as being a lack of anything, not just material goods, considered important or desirable. We sometimes hear people speak of a poverty of intangible things such as imagination, language, mind or spirit.

Before tackling Activity 1, study the arguments below for and against setting a high poverty line.

Arguments against a relatively high poverty line	Arguments for a relatively high poverty line
- If we define poverty as some percentage of average income, for instance, then we ensure that some people will always be "poor" because there will always be people at and below that percentage (say 40%) of average income, no matter how much the economy grows and no matter how well off those at that 40% threshold find themselves. - Continuing to claim that people whose living standards are quite high in absolute terms are living in poverty will lead to distortions in our policy decisions and resource allocations (ie, we might direct too many resources towards fighting poverty and not enough towards other pressing issues). - Poverty and inequity are two distinct concepts and mixing them up in this way will lead to misallocation of resources.	- This allows us to raise our standards in line with overall economic progress. Given the wealth in developed countries today, shouldn't our expectations for minimum acceptable standards of living be quite high? - Raising the poverty threshold in line with increasing average incomes is one way to help us focus on the issue of inequality between rich and poor. If inequality is growing because people at the bottom end of the income scale are earning a smaller and smaller percentage of the country's overall income, and our poverty threshold is set at some percentage of average income, then we would see more people falling into "poverty", alerting us to growing inequality and mobilizing us to do more.

Activity 1   Setting the poverty line

Drawing on the arguments above about where to set the poverty line, as well as your own thoughts about the issue, discuss where to set the poverty line. You can write this as a reflective piece or conduct a discussion (see Chapter 14 on sustainability for guidelines on conducting a seminar on an issue like this). As you develop your ideas, you may want to consider the following questions:

- What is the relationship between poverty and equity? Is it important to keep those two concepts separate, or are they inseparably linked? Is it possible to successfully address poverty while still having large inequities in a society? Is it possible to successfully address inequity, while still having widespread poverty?

- Should the poverty line be set more according to an absolute measure of poverty or a relative one?
- Should societies focus more on equity of opportunity or equity of outcomes?
- To what extent might your **socioeconomic** position in a society influence your position on this issue?
- What questions or further information would help you develop your position on this issue?

You may want to organize your arguments into a table like the one below.

Arguments for a higher poverty line	⟶ What about somewhere in between?	Arguments for a lower poverty line
▪ Allows us to raise our expectations in line with overall economic progress		▪ Keeps us from overestimating the extent of poverty and allows us to focus resources on more pressing issues

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Thinking
Change the context of an inquiry to gain different perspectives.

Setting benchmarks for poverty, usually called the "poverty line", is an important part of a government's job. Where this line is set has wide-reaching consequences for individuals, families and community groups, as well as government organizations. From an individual perspective, if a person earns less than what the government says is needed to be above the poverty line, they may have access to special services. For example, they may have the opportunity to access free health care, be able to get financial aid for education, or claim food stamps to supplement their groceries.

If a child is in a family that is considered below the poverty line, the government may provide special after-school education and care programmes, as well as benefits such as free public transportation or dental care. Public and private organizations may use the poverty line as a way of deciding who is eligible to access their services.

From a government perspective, setting the poverty line and measuring the amount of people below it is a vital statistic to support planning of the budget and to determine what services a government will fund for poverty-affected citizens. Setting and measuring the poverty line influences policy decisions related to economics, health, welfare, education and employment.

STEP 1   Choose two countries and investigate how they define and measure poverty. You may wish to select countries in different regions of the world, or nations that are geographical neighbours.

STEP 2   Start with the government websites of the selected countries to discover how they define and measure poverty. As you research, be sure to record your sources.

STEP 3   Organize your information into one fact sheet for each country. Use bullet points, graphs, images and diagrams to explain how poverty is defined and measured. On a separate sheet of paper, create a reference list of your sources.

WEB LINKS
Search online for "poverty scorecards" for examples of how poverty is measured in different countries. www.uniteforsite.org includes links to sample questionnaires.

STEP 4   As a class, create a 'gallery' of your fact sheets by displaying them on a wall. Take a walk through the gallery, viewing the different information people have collected.

STEP 5   Reflect on what you saw during your gallery walk. You could do this as a discussion with a partner or you could write a paragraph on something that you found most surprising in the gallery.

GLOBAL CONTEXTS
Fairness and Development

ATL SKILLS
Research
Collect and analyse data to identify solutions and make informed decisions.

TOPIC 2

Causes of poverty

There can be many factors that cause poverty, which we will explore in this topic. Start by considering whether individual or cultural characteristics explain the causes of poverty. While some people see this as "blaming the victim", others argue that it allows us to identify ways in which those struggling with poverty can help themselves and become the opposite of victims by taking action to improve their situation.

- **For individuals**: Helping ourselves can be in the form of a good work ethic, persistence, and avoiding self-destructive behaviours such as drug and alcohol abuse. The opposites of these—poor work ethic, lack of persistence, and self-destructive behaviour—would therefore be seen as possible causes of poverty.

- **For societies**: At the cultural level, the views of the world shared by certain groups might contribute to behaviours that cause poverty. For example, high levels of corruption are often found in countries that have higher levels of poverty,

so groups who accept corruption could therefore contribute to poverty.

Figure 11.1 Potential individual and cultural causes of poverty

Economic, social and political causes

Exploring how larger economic, social and political forces can affect the quality of life of individuals reminds us of the interconnectedness of our world (see Figure 11.3). Decisions and actions by governments, international bodies, corporations and non-governmental organizations in faraway places can impact individuals and communities through the countless economic, political, social and cultural connections at work in our world. Conversely, decisions and actions by individuals and communities can impact how successfully they are able to respond to larger forces.

One concern with individual and cultural approaches to explaining poverty is that it may place too much blame on those in poverty and overlook factors beyond their control that cause them to be impoverished. One remedy for this is to focus on factors outside the individual or group—factors over which people in poverty have very little, if any, control. These may include aspects of the economic system in which they find themselves.

One explanation for widespread poverty in developing countries, for example, is that these countries participate in a global trading regime that is unbalanced. In chapter 4 you reflected on the idea of fairness in relation to trade, specifically connected to global interactions. Developing countries produce primary commodities such as crops or minerals, while developed countries produce manufactured goods. Because primary commodities have volatile prices and tend to be relatively cheaper than manufactured goods, developing countries find it hard to prosper, as they are selling relatively cheap products and buying relatively expensive ones. The people living in those countries will therefore be more susceptible to poverty because of the larger economic system in which they find themselves.

Another example can be found in the ==correlation== between countries with economic systems that are free-market based and data that suggests lower levels of poverty (see Figure 11.2). This would suggest that a less free economic system could be a cause of higher levels of poverty.

Social and political systems may contribute to poverty as well. A social system with high levels of sexism or racism, for instance, could make it difficult for women or people of underprivileged racial groups to escape poverty. In the same way, a political system that granted excessive power to wealthier groups could make it difficult for the less well-off to advance by ensuring that the economic system favoured the already wealthy. An alternative view is that a political system with generous welfare benefits can cause people to choose not to work if they find that the amount they receive from the government is comparable to, or even greater than, what they could earn by working. If the relative definition of poverty is high enough, this choice could keep them in poverty—at least, as defined by their government—for the long term.

Figure 11.2 Economic freedom and development

Economic Freedom and Standard of Living

GDP Per Capita, Measured by Purchasing Power Parity (PPP)

$40,253 $33,428

$15,541

$4,359 $3,926

| Free | Mostly Free | Moderately Free | Mostly Unfree | Repressed |

2009 Index of Economic Freedom Score

Economic Freedom and Human Development

U.N. Human Development Index

0.95   0.92   Correlation: 0.63

0.80

0.62   0.59

| Free | Mostly Free | Moderately Free | Mostly Unfree | Repressed |

2009 Index of Economic Freedom Score

Figure 11.3 Economic, social and political causes of poverty

Economic factors
Less free economic systems have lower levels of GDP per capita and lower levels of human development

Political factors
Wealthy and powerful use the state to ensure that their economic interests are favoured to the detriment of the rest of the population

Poverty

Economic factors
Unbalanced international trading regimes make it difficult for some nations to develop

Social factors
Racism or sexism can make it difficult for marginalized groups to prosper

Poverty and time, place and space

We can also look at the causes of poverty in terms of time, place and space. Where individuals and groups are located, and when they happen to be alive, can impact their chances of finding themselves in poverty.

Figure 11.4 Causes of poverty linked to time, place and space

Lack of access to resources

Isolation caused by natural barriers or lack of transportation infrastructure

Poverty

Geographic characteristics that discouraged the development of complex civilizations (eg, lack of domesticable plants and animals)

Possession of abundant mineral resources leading to corruption, conflict and lack of growth in other industries
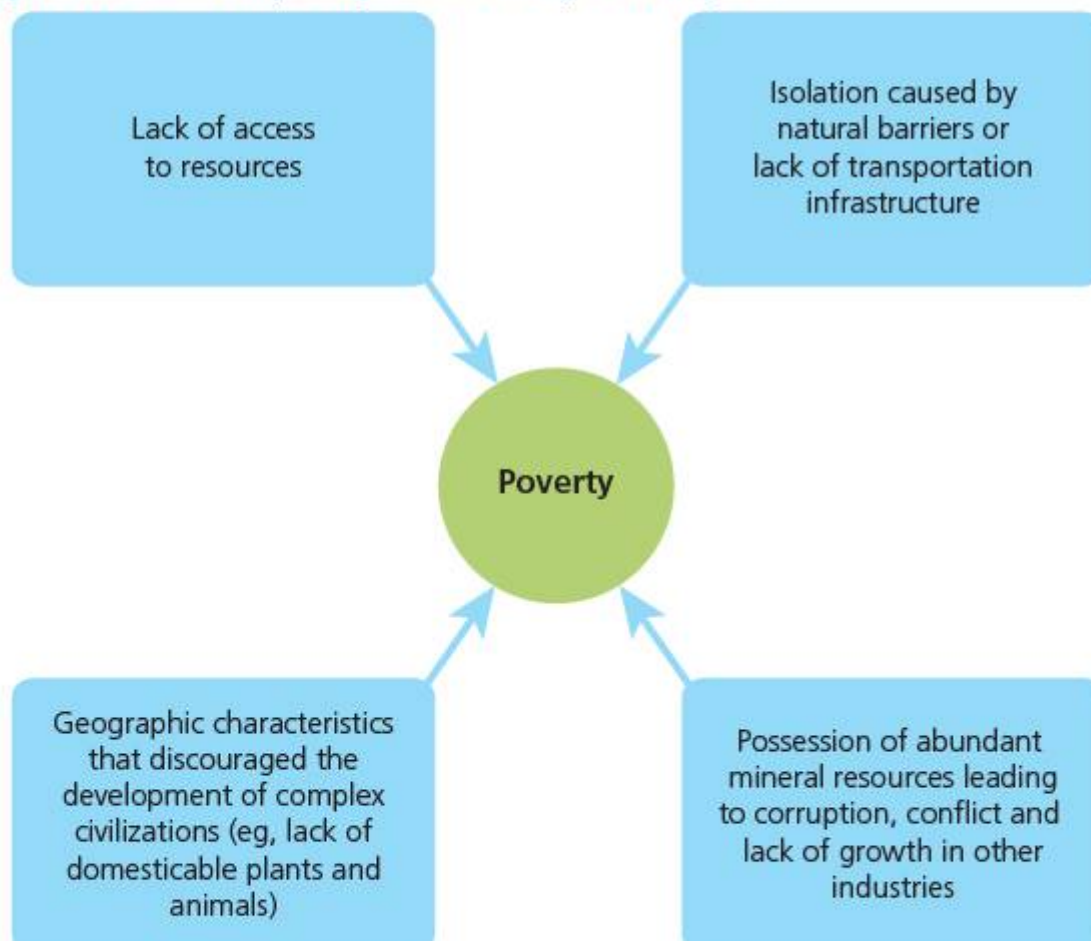
CHAPTER LINKS
See the discussion in the chapter on resources (chapter 9) about how our choices about resource allocation can have unintended consequences.

We can look at the quantity and quality of resources in the contemporary world as well, but some places with very few resources, such as Singapore, have low levels of poverty while places rich in resources, such as the Democratic Republic of Congo, have high levels of poverty. Other aspects may play a role in poverty outcomes too. For example, places that are isolated by natural barriers or poor transportation links may experience higher levels of poverty as a result of lack of access to trade.
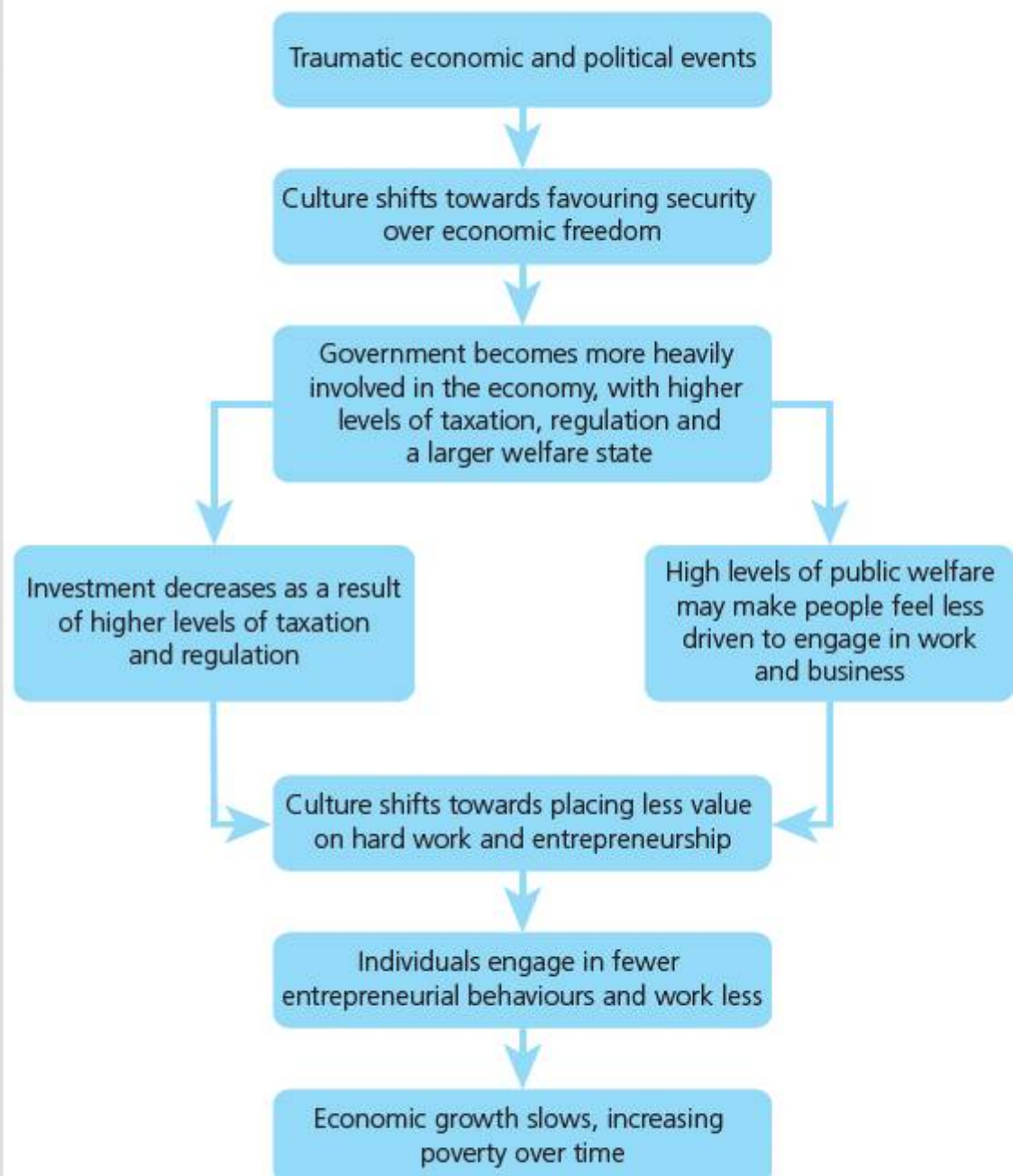
Combined factors

Because of the complexity of individuals and the societies they form, it can be necessary to combine all the potential causes detailed above, and perhaps some others as well, in order to explain poverty accurately. There are many ways in which three general sets of explanations for poverty might interact with each other. Relationships among the causes of poverty can be highly complex

When systems are broken, like the ones that we're seeing around the world, it's an opportunity for invention and for innovation.

Jacqueline Novogratz, founder of Acumen Fund, in her 2009 TED talk on escaping poverty.

Figure 11.5 Example of combining different approaches (individual/cultural characteristics, political/social/economic factors, time/place/space factors) to understanding the causes of poverty

Traumatic economic and political events

Culture shifts towards favouring security over economic freedom

Government becomes more heavily involved in the economy, with higher levels of taxation, regulation and a larger welfare state

Investment decreases as a result of higher levels of taxation and regulation

High levels of public welfare may make people feel less driven to engage in work and business

Culture shifts towards placing less value on hard work and entrepreneurship

Individuals engage in fewer entrepreneurial behaviours and work less

Economic growth slows, increasing poverty over time

and linked together in long chains of causation. This reminds us, as we discussed in chapter 3 on change, of the need to put limits on our inquiries, in this case the inquiry into the causes of poverty. Figure 11.5 shows a sample scenario in which multiple factors combine to increase poverty.

👤 Activity 3 — Real-life causes of poverty

Explore how a variety of factors, from the individual to the global level, come together to affect levels of poverty. Choose a specific time and place and **investigate** the causes of poverty there. This can be a historical or contemporary situation. Your focus can be broad (a country or region) or narrow (a city or neighbourhood). Your research question is: "What are the causes of poverty in _____?"

Start by developing an action plan for how you will go about answering this challenging question. An action plan allows you to develop a coherent set of steps for completing a complex, open-ended task. Start with the final step of your project, the presentation of your answer to the research question. Then consider the steps you will need to take in order to get to your final product. Use a structure like the one below to organize your planning.

Task to complete (concrete actions to take)	Resources needed	Date for completion	Evidence that task is complete (ie, what does the completed task look like if it is done well?)

Choose an appropriate format (written report, presentation, video, poster) to present your findings. As you are analysing the causes of poverty, consider your focus. Are you focusing on:

- individuals?
- culture?
- social, political and/or economic systems?
- issues related to time, place and space?
- some combination of these?

You are likely to find multiple causes of poverty, so you may want to use some kind of graphic organizer, such as a flow chart, to help you clarify the relationships among the causes.

> **🔗 LITERARY LINKS**
> *The Other Path*, by Hernando de Soto, provides a real-life example of this task. De Soto investigated the causes of poverty by doing extensive fieldwork among the poor in Lima, Peru.

> **🌐 GLOBAL CONTEXTS**
> Globalization and sustainability

> **🗣 ATL SKILLS**
> Self-management
> Use appropriate strategies for organizing complex information.

Is poverty a trap?

A "poverty trap" or "poverty cycle" is where people, groups or even whole countries find themselves stuck in poverty. It is based on the insight that many of the barriers to escaping poverty are connected in ways that cause them to feed off each other. For example, if a country has low levels of economic growth, its people will have low incomes, meaning they will save less, and less money will be available for investment in new productive activities. This keeps growth low and allows the cycle to continue. In the same way, people with low incomes can often only afford basic levels of education and health care. The resulting poor health and lack of skills and knowledge impede their productivity, leading to low incomes and starting the cycle all over again.

On an individual level, a person could lose their job. As a result of being unemployed, they would not be able to improve their skills through on-the-job training. At the same time, they may not be able to afford more education because of their lack of income. If the unemployment lasted long enough, they could find it difficult to get hired, as prospective employers became concerned about their lack of recent training and education. The continued lack of income from being unemployed could make it difficult for them to get adequate medical care, housing and nutrition, making it even more of a struggle for them to look for work or pursue some type of education. If they had children, they might find it a challenge to get adequate
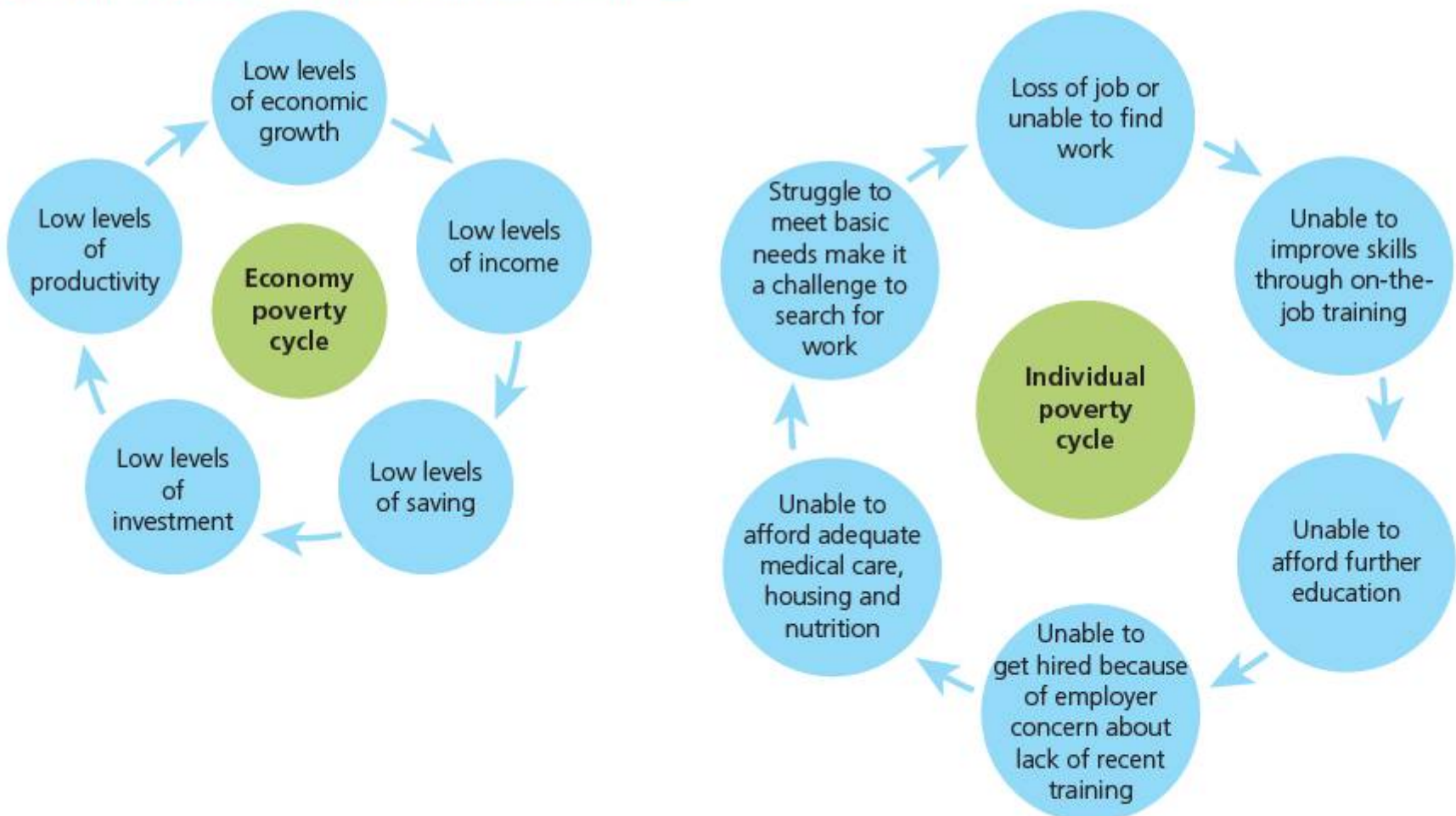
Figure 11.6 The poverty cycles for economies and for individuals

medical care, housing, nutrition and education for them as well. This might make the cycle intergenerational, as the children would be much more likely to live in poverty after beginning life with these disadvantages. Both types of poverty cycle are illustrated in Figure 11.6.

Activity 4 — Applying the poverty cycle

STEP 1 Start by reviewing the explanation of the causes of poverty that you developed in the previous activity.

STEP 2 When you have done this, compare the explanation that you found with the information about poverty cycles presented in Figure 11.6. Use a Venn diagram to illustrate the comparison.

STEP 3 Consider that since you carried out your investigation in Activity 3 you have acquired new information (about the poverty cycle). Do you think that you need to revise your original explanation? This skill is an important part of critical thinking and is a common part of being a researcher.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Research
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

TOPIC 3

Strategies for addressing poverty

Many people have high ambitions when it comes to ridding the world of poverty. The Columbia University professor of economics Jeffrey Sachs wrote a book called *The End of Poverty*, in which he laid out his ideas for doing just that. One of the UN Millennium Goals called for halving world poverty between 1990 and 2015, a goal that was actually achieved five years ahead of schedule, in 2010. Evidence suggests that we can significantly reduce poverty or even end it completely.

WEB LINKS
Go to www.huffingtonpost.com and search "Jonathan Lewis top 10 recommended books for combating poverty".

The relationship between causes and solutions

The question of how to reduce or end poverty is as controversial and complex as the question of what causes poverty. This is because causes and solutions are closely linked. If you believe that the causes of poverty are to be found in individual behaviour and choices, then you would likely focus your solutions on changing the behaviour and choices of people in poverty. If, on the other hand, you believe that the causes of

poverty are to be found in aspects of the economic or social system, then you would focus on policies that would change that system. If you believed that the poverty cycle was at work in perpetuating poverty, then you would focus your solutions on breaking that cycle.

Of course, two people who agree on the causes of poverty might disagree on possible solutions.

Let's say that two observers agreed that individual behaviour and choices were key contributors to poverty, as shown below:

Youth worker's opinion	Politician's opinion
"In my opinion, we should be solving poverty through education. We should run campaigns in schools about the dangers of drugs and alcohol abuse. We should be championing the benefits of working to encourage young people into jobs. And we could run a programme where ex-convicts visit the community to help young people stay out of prison."	"Education is nice but I'm not sure it's enough. We also need to cut back on welfare benefits. This will encourage people to find work. The jobs they take will allow them to learn skills that help them escape poverty."

In the same way, two observers who felt that racism was keeping certain groups in poverty might propose different solutions to the problem:

Businessman's opinion	University professor's opinion
"I think we should go for the 'colour blind' approach to tackle racism here. If someone comes for a job interview at my company, then their race should not come into account. I require all my staff to ignore race when evaluating prospective employees."	"Certain groups have been historically discriminated against because of their race and are discriminated against even today. We should make sure that they receive preference for things like employment and seats at educational institutions. Positive action is the only way to overcome deep-seated prejudices."

Note how, as with the causes of poverty, different types of solutions are often linked. In the first example above, the politician wanted to change the values of individuals in poverty by lowering welfare payments so they would be more motivated to seek work, where they could then develop skills and habits that would further aid them in escaping poverty. This is an example of changing the larger systems within which poverty exists so that the values, behaviours and choices of individuals in poverty also change.

Given that causes and solutions are closely tied, we can use the same framework for organizing proposed solutions to poverty as we did for its causes. Solutions can focus on the people in poverty, attempting to change habits and behaviours in ways that make it more likely for them to escape poverty. This could extend to encouraging changes in the cultural context, such as a greater appreciation for hard work and responsible personal behaviour. Solutions to poverty can also focus on addressing factors that are not directly under the control of those in poverty themselves, such as aspects of the economic, political and social systems in which the impoverished find themselves. Finally, solutions can centre on issues of time, place and space, — trying to address a lack of resources, for instance, or dealing with the consequences, such as conflict and corruption, that often come from having large quantities of valuable resources.

Activity 5 — Ending poverty

STEP 1 Review the poverty situation you analysed earlier in this chapter.

STEP 2 Assume the role of a government policy maker in the location you studied.

STEP 3 In your role as a government policy maker, complete a reflection using these questions:

- what else do I need to understand about the poverty situation in order to propose a solution to it?
- where do I want to focus my solution?
- individuals?
- culture?
- social, political and/or economic systems?
- issues related to time, place and space?

At this stage, you are brainstorming possible ideas so you might like to use your Mind Map® skills.

STEP 4 Choose one idea from your Mind Map® and develop it further using **SMART** objectives:

S – be **specific** about what you want your solution to achieve

M – how will you **measure** the impact of your solution?

A – how do you know if your solution is **achievable**?

R – explain how your solution is **realistic**.

T – outline the **timeline** for developing, implementing and measuring your solution.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Create novel solutions to authentic problems.

TAKE ACTION
As you develop solutions, consider which ones you may be able to act on.

Summary

In this chapter you have explored the concept of poverty, focusing on the issues of how to define it, what causes it, and how to end it. As you have done so, you have had the opportunity to learn some important skills that apply throughout the Individuals and Societies subject area and beyond. You have learned to make logical, reasoned judgments and to consider their ethical implications. You have learned that one way to do this is to imagine yourself in various situations in order to better consider how the judgments you make may affect people. You have learned to research the things governments do, such as measure poverty, and you have applied general, theoretical knowledge about poverty to real-life instances of poverty, trying to understand the role of time, space and place in the causes of and solutions to poverty. This has involved developing novel solutions for authentic problems, a crucial skill that you will need throughout your life.

References

De Soto, H. 1989. *The Other Path*. New York, NY, USA. Harper & Row (Basic Books).

Sachs, J. 2005. *The End of Poverty*. New York, NY, USA. Penguin Books.

INQUIRY QUESTIONS

TOPIC 1 Trade and equity

- What is the connection between specialization and trade?
- How is equity measured?
- Is all trade fair?

TOPIC 2 Benefits and problems of trade

- What are some benefits of trade?
- How does trade impact resources?
- Should there be rules applied to trade?

TOPIC 3 Peace and trade

- What is the role of transport networks in trade?
- How are trade and peace connected?
- Could increased trade really mean an increase in peace?

ATL SKILLS

✓ Apply existing knowledge to generate new ideas, products or processes.

✓ Read critically and for comprehension.

✓ Access information to be informed and inform others.

✓ Identify primary and secondary sources.

✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

✓ Paraphrase accurately and concisely.

RELATED CONCEPTS

Values   Resources   Sustainability   Equity   Peace

GLOSSARY

Efficiency producing goods or services with as few resources as possible.

Interconnectedness systems have this characteristic when they have many connections within them and with other systems.

Specificity the level of precision and detail.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure; identify parts and relationships, and interpret information to reach conclusions.

Describe give a detailed account or picture of a situation, event, pattern or process.

Explain give a detailed account including reasons or causes.

Investigate observe, study or make a detailed systematic examination, in order to establish facts and reach new conclusions.

Introducing trade

What would life be like if you were limited to owning and using only things that you could make yourself? Unless you had training in wilderness survival, you would probably struggle to meet your basic needs and stay alive. Long ago, people recognized that some individuals were better at doing or making certain things than others and that, if people could focus their efforts in areas where they were especially productive (something called specialization), the whole community could benefit because more goods and services would be produced overall. People could then exchange what they were good at producing for things they were less skilled at making. Trade and economic growth were born. In addition, specialization allowed humans to do many things for which they previously had not had time. Trade freed us up from trying to survive, so that we could do all of the other things that we value. Whatever your interests are—sports, music, the arts, religion, science—you would have a lot less time for the things you value if it were not for trade.

As with most innovations, however, new issues arise along with the benefits that trade brings. It is true that when individuals and groups trade, the overall level of prosperity usually increases. But these gains may not be distributed equally and, for some individuals and groups, may even lead to losses. The issue of unequal gains, or losses, from trade is especially pressing in today's global economy.

Given that trade is desirable, we need to be aware that various factors and conditions can encourage or disrupt it. Some of these factors are under our control, but others are not. One area of particular concern regarding trade is its impact on the environment. Along with the physical sciences, various disciplines in individuals and societies explore this issue, trying to identify the type and extent of the impact of our trading activities on the environment and, where problems are identified, trying to offer solutions.

TIP

Prosperity is the opposite of poverty and refers to being well off, especially in material terms.

INTERDISCIPLINARY LINKS
Sciences

Given the huge volumes of trade in the world today, some environmental impact is bound to occur. The physical sciences, using mathematical tools of analysis, can provide data that help us measure the environmental impact of trading activities.

Trade and equity

Trade is an interaction that involves the exchange of something. Trade occurs on all levels, from the individual (between two people) to the global and, because of its reliance on resources, it shows the interconnection and interdependence of the natural world and the larger human community.

It is easy to see how trade increases prosperity on a personal level. At this point in your life, you probably spend much of your day at school and not on hunting and gathering your food. It is likely that your parents buy the food you need. They probably get the money to buy food by selling to others some good or service that they produce. In other words, your family engages in trade in order to feed itself. This frees up time for you to attend school and develop knowledge and skills that will likely allow you to earn much more in the future than if you had not been able to attend school because you had to spend most of your time obtaining food. Your ability to trade for food, and many other things, is crucial to raising your level of prosperity.

A similar thing happens when countries trade. Trading with other countries allows a country to focus on producing certain goods and services because it is good at making those particular goods and services, and because they are valued by others, thus allowing it to increase its prosperity. Just as you on school, a country can focus on producing the products that will make it most prosperous and then buy the rest of the products it needs on the world market.

The complexity of our interconnections with each other is often so great that the effects of those connections can be difficult to understand. Activity 1 will help you simplify those interconnections so that you can begin to think about the effects of trade, and what life would be like without it.

TIP

Equity involves concerns about fairness or justice. We know that trade makes us wealthier as a whole but a major equity issue is that of how gains from trade are distributed.

🔗 CHAPTER LINKS

See chapter 11 for more on poverty and prosperity. Human experience has shown that lack of trade almost guarantees poverty.

👤 Activity 1   Where would we be without _____?

In this Activity, you will investigate the consequences of a country being cut off from trade. You will consider what effect it has on the country that is isolated, and also the effect on other countries that cannot trade with the isolated country.

STEP 1 North Korea's communist government significantly limits its people's ability to trade with other countries. **Investigate** North Korea in terms of the living standards of its people. Focus especially on the goods and services available (or not available) to them.

STEP 2 As you investigate, take notes on the impact of limiting trade. You might like to organize this under headings such as "political", "social", "economic", and "environmental".

STEP 3 Choose a continent or country that is not one in which you live, and imagine that it is completely cut off from the rest of the world. Conduct research to identify some important resources, products, ideas or knowledge that originated on that continent.

STEP 4 Consider what would be missing from your life as a result of this country or continent being cut off from the rest of the world. Describe how your life would be different without those things. Use a table like the one below to organize your thinking.

Resource, product, idea, knowledge that originated on the continent/in the country	Effect on my life if it did not exist How would my life be different without this thing?

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Apply existing knowledge to generate new ideas, products or processes.

In some cases, national economies are complex and the increased prosperity from trade might not flow to all people equally. It may even make some people poorer while it makes the nation as a whole richer. This stems from two main causes:

1. Since a country produces multiple products, some people will be involved in making products that are more highly valued than others. Those people will receive greater rewards as trade increases and they can sell more of their valued products in other countries as well as in their own.

2. Some people may be involved in producing goods and services that other countries can produce more efficiently and cheaply. As trade increases, these people may find their business losing out to foreign competitors who can now sell in the country at a cheaper price.

While most economists argue that free trade leads to increased prosperity for the nations involved, free trade remains controversial because of the unequal distribution of its gains and the losses that some individuals and groups experience because of it. These losses can draw quite a bit of attention. Job layoffs in a given industry, for instance, often get coverage in the news.

Finding the exact causes of prosperity can be difficult. A major challenge in MYP individuals and societies is that, because we are studying people and their societies, we cannot usually undertake laboratory experiments. We need to conduct our investigations in the real world instead. But in the real world, unlike in the laboratory, it is difficult to isolate and manipulate variables to see what kind of effect they have.

Activity 2 — A real-life laboratory experiment

In this activity you will look at two real-life situations that, unusually, did provide almost laboratory-like conditions in which to study variables.

STEP 1 Read the article "The Two Koreas and the Two Germanies: Close to a Laboratory Experiment" at www.econlib.org, for a description of how the former East and West Germany and North and South Korea have provided us with almost experimental conditions in which to study the effects of capitalism and communism.
With a partner, discuss what the independent and dependent variables would be for this experiment.

STEP 2 In pairs, create a comparative table that allows you to take notes on all four countries. You can see a suggestion below. You may have to use additional sources to find this information.

	North Korea	South Korea	East Germany	West Germany
Population				
Land size				
Type of government				
Main economic system				
Brief description of culture				
Who had the stronger economy and why?				

STEP 3 If this was an experiment, identify what the dependent and independent variables would be.

STEP 4 With your partner, write a brief summary of your table as though you were summarizing the results of an experiment.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Communication
Read critically and for comprehension.

Increased choice of products

Increased trade also allows us a wider choice of products. Imagine what your local grocery store would look like if it could only source its products from within a 100 km radius. You would have a very limited choice of food and drink. Your local supermarket likely contains products from all over the world, an amazing variety made possible by the high level of trade in the world today.

Activity 3 — Shrinking the world

Imagine that the above example was a reality and your local grocery store and restaurants could only source their food from a 100 km radius.

TAKE ACTION
Write a proposal to create a food garden at your school. Include plans for different types of fruit and vegetables, sourcing garden materials and maintenance.

LITERARY LINKS
Author Barbara Kingsolver set a challenge for herself and her family to live for a year only on food that they could grow themselves or source locally. You can read about their experiences in the book *Animal, Vegetable, Miracle*.

STEP 1 Look at a map of your town or area and draw a circle to indicate the 100 km radius. You could do this using a tool such as Google Maps.

STEP 2 Do a quick audit—are there any food production facilities within the radius? Or, are there any places that could be converted to supply food? Look for farms, factories, water and open land. Working with a partner, create a list of all current food options within the 100 km radius.

STEP 3 Do you have enough food? Will you be eating the same foods? Make a list of foods no longer available to you and changes you might have to make to your diet.

STEP 4 With your partner, create three ideas for generating more food within the 100 km radius area. Make sure that your ideas are possible.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Research
Access information to be informed and inform others.

A small-town lawyer in the 19th century had little competition

Encouraging improvements in skills, knowledge, specialization and technology

Trade not only allows us to be more efficient given our current levels of skills, knowledge and technology, it also pushes us to improve on those things in two key ways—competition and increasing market size—so that we become even more efficient.

Imagine the best lawyer in a small town in the 19th century, when transportation and communication networks were limited. He may have very little, if any, competition from other lawyers and so, even though he is a fine attorney, may not feel much urgency to increase his skills and knowledge, as he gets plenty of business from his small-town clients.

One day, however, the railway links this town to the big city, with its many lawyers. Trade in the area of the law profession has opened up, giving the lawyer's previous clients new options.

Some of the lawyers in the big city may offer skills and knowledge that the small-town lawyer cannot. This could prompt our lawyer to work harder at increasing his skills and knowledge, making him a better attorney in the process. He may also feel pressure to lower his prices, causing him to work more efficiently so as to maintain his profits. These are the positive effects of competition: better quality products produced with greater efficiency. They can be observed at all levels of economic activity, from the individual to the global.

As well as increasing competition for the small-town lawyer, the arrival of a rail connection to the city would give him access to potential clients in the city, increasing the size of his market. With a larger market to serve, he may decide to expand his practice, bringing in a second attorney who specializes in an area of law with which he is less familiar. He could now focus more on those areas of law in which he is most expert, while his partner could focus on her areas of expertise. The larger market has allowed the firm to increase its efficiency through specialization. This phenomenon is fostered when trade and, as a result, market size increase.

In this activity, you will research contemporary or historical examples of the benefits of trade. Work with a partner or in a group of three.
Try to find one example of each benefit from the following list:

- lower prices
- more efficient allocation of resources
- increased access to resources
- increased access to finished products
- increased efficiency through increased competition.

For your examples, focus on countries where trade has increased in the recent past. Suggestions include China, India, the Asian Tiger countries (Hong Kong, Singapore, South Korea, Taiwan), some Latin American countries (Peru, Chile, Colombia, Brazil), and South Africa after the fall of apartheid.

As with Activity 2, the challenge is to isolate the variable of increased trade to be sure that it, and not other factors, led to a given benefit.

For this reason, use secondary sources, such as newspapers, magazines, videos, journals and books, where the authors have already done the work of isolating the variable of trade. In your group, brainstorm key search words and phrases to help locate information.

You may also want to focus on historical examples, where historians and social scientists have had more time to sift through information and data to try to isolate the variable of increased trade.

For instance, the collapse of communist states in Eastern Europe increased levels of domestic commerce and international trade in many of those countries. This is an example of a country or region that has benefited from increased access to resources.

For each example, explain the connection between increased trade and the benefit that flowed from it. How did increased trade lead to that benefit?

A table like the one below may help you organize your information.

	Country/Region	How this happened	Benefit
More efficient allocation of resources			
Increased access to resources			
Increased access to finished products			
Increased efficiency through increased competition			

TIP

When researching economic issues, primary sources consist of raw data, even if you did not collect the data yourself. For instance, the economic data put out by the World Bank would constitute a primary source. Once someone interprets that data it becomes a secondary source. Often primary data and secondary interpretations are combined in the same source, for example, a newspaper article that cites countries' GDP statistics.

Problems of trade

As well as benefits from trade, there are also drawbacks. While the benefits appear to be real and widespread, the losses and disadvantages can fall quite heavily on particular industries, communities and countries, causing considerable struggle for the people involved. This is one reason why governments restrict trade.

Losses in certain industries

Trade may cause some firms and their employees to be harmed if it opens them up to competition from more efficient producers. The small-town lawyer in our example may see his business shrink and his profits fall, especially in the short term, as a result of new competition from firms in the big city. While the townspeople in general will be happy with their new access to more legal services at lower prices, the lawyer himself may struggle to see the benefits of increased trade in his profession, at least until he has been able to adjust to the new situation. Circumstances like these play themselves out all the time across the world.

Dependence on foreign products

Some people argue that countries should limit trade to avoid becoming too dependent on other countries for certain important products and risk losing access to these products. This argument is often made around strategic industries, such as producers of military hardware.

Different production standards

Different production standards also sometimes raise concerns. If one country has higher standards for the production of its goods than another, then that country may hesitate to trade with countries that produce lower standard goods. This issue can arise in a number of different areas, such as standards regarding the environmental impact of specific goods (for example, the amount of pollution released into the environment in the production process), certain substances that end up in specific goods (for example, lead paint in toys, hormones in meat), and the conditions of those who work in the production process (for example, the use of "sweatshops" with very poor working conditions).

Inequity between developed and developing countries

A major area of concern involves the trading relations between developed and developing countries, which may not be equal for a number of reasons. As a result, the benefits of trade may flow more to developed nations than developing ones. For instance, some

Factory in South-East Asia

developing countries rely heavily on primary commodities such as crops, metals or minerals. They may find themselves in a position of over-specializing in these goods, and this can cause a number of problems. For one, primary commodities tend to be relatively cheaper than manufactured goods. They also tend to have more volatile prices. This means that countries selling primary commodities in exchange for manufactured goods may find themselves at a disadvantage in global trade, struggling to keep up with countries whose economies are more diverse and struggling to predict their economic performance from year to year in the face of volatile prices for the products they sell. On top of this, developed countries often give relatively high subsidies to their own domestic producers of primary commodities in order to protect them from foreign competition, particularly in farming. This makes it difficult for producers of those commodities in developing countries to compete.

Multinational corporations

A particular area of focus within the larger issue of trade between developed and developing countries is the role that multinational corporations (MNCs) play when they invest in developing countries. While these firms increase economic activity in the countries where they invest—providing jobs, increased tax revenues for governments and increased choice and lower prices for consumers—some argue that the drawbacks associated with them may offset the benefits they bring. For instance, MNCs may only hire low-skilled workers at low wages, bringing in high-skilled workers from outside the country.

They may also use their large size and considerable financial resources to influence governments in ways that benefit them, but perhaps not the population as a whole, such as negotiating low tax rates for themselves. They may also have a harmful effect on the environment. In countries where there are few regulations to keep the environment clean, companies may choose to pollute rather than spend money on avoiding it. They may also extract valuable resources from the host country, taking most of the profits gained. This leaves the country in a less environmentally and economically sustainable position.

In this activity you will investigate some of the consequences of trade.

TIP

Many of these practices have raised controversies that have been published in newspaper and magazine articles. The companies themselves may have also published press releases and webpages to address concerns. When you are researching, be sure to carefully analyse and compare your sources for reliability, usefulness and bias.

STEP 1   Choose one of the following examples of the multinational corporations whose practices have raised concerns.
- Chevron in Ecuador
- Coca-Cola in India
- Nike in Indonesia
- Nestlé in Borneo
- Cadburys in Ghana

STEP 2   Research the situation further to understand what type of trade problem occurred. Choose from the list:
- concentrated losses (eg, to certain industries)
- over-dependence on foreign countries for key products
- differing product standards
- over-reliance on primary commodities by developing countries
- negative impacts from multinational corporations.

When you have identified the trade problem, create a flow chart of your notes to show causes and consequences with the specific details.

STEP 3   Compare your flow chart with those of your classmates. Did you find similar examples of trade problems in different multinational corporations or countries?

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Research
Access information to be informed and inform others.

How can we evaluate trade?

When we widen our scope from particular cases to look at how trade has affected entire countries, regions or even the globe, we are, of course, dealing with even more daunting levels of complexity. Here we should recall the need to set limits on our inquiry into change, by setting boundaries in terms of time, place, space and specificity.

In terms of time, we would want to start our inquiry at a point in time when trade increased or decreased, as a change in the level of trade is what interests us. We would then want to allow for a reasonable amount of time for the effects of the increase or decrease to take hold.

In terms of place and space, we would want to be clear about the geographic entity we were looking at. Do we want to analyse and evaluate the effects of trade on a city, state or province, country, region, continent, or even the entire world?

The most difficult aspect of our inquiry to define is probably specificity. To some extent, this will be determined by the type of community we choose. We can be more specific in terms of trade's effects on a small community such as a town or city, versus a large community such as a country (although data about smaller communities can be harder to obtain). We will be limited by the evidence available to us. We can stay at a more general level by looking at economic data—for instance, the levels of GDP, unemployment and inflation during the time frame under consideration. We could also use the research process to look for certain general categories of benefits and problems like the ones we identified earlier in this chapter. We could look, for instance, for evidence of falling prices in certain products or for impacts related to the involvement of multinational corporations.

Balancing primary and secondary sources

It is important to exercise caution when using both primary and secondary sources in your research. When it comes to primary sources, which in this case would mostly constitute raw data, we need to remember that the gains from trade tend to be widely dispersed while the losses tend to be concentrated. This means that the gains will likely be easy to spot in economic data, while identifying the losses may require further investigation—for instance, into press reports or into secondary works by researchers with similar goals to ours.

Caution is also required when using press reports as a source of research, however. The media tends to focus on stories that have a high level of human interest. Such stories often involve people going through intensely negative or intensely positive experiences. This means that press accounts may give a false sense of the level of human suffering caused by something such as changes in levels of trade, as they may tend to focus on stories of people who have suffered significant negative impacts while focusing less on the many people who may have benefited. The opposite can occur if press accounts focus on stories of human flourishing.

This is why it is important to balance secondary sources such as media accounts with primary sources that provide data. The former will tend to enrich our view of the changes in question with anecdotes, while the latter will help us ensure that we do not lose sight of how the changes have affected the society as a whole, rather than certain individuals or groups.

Describe an inquiry you would like to undertake into the effects of a change in trade.
Some suggestions are:

- the increase in good branded "Fair Trade"
- the existence of free trade agreements between different countries
- comparison between trade and barter systems in a local market
- the use of trade sanctions as a form of punishment.

In your description, set the boundaries for your inquiry so that it is manageable and realistic. Using the guidelines above, set limits in terms of time, place, space and specificity. You may want to use a table like the one below.

Time	Place and space	Specificity

🌐 **GLOBAL CONTEXTS**
Orientation in space and time

🗣 **ATL SKILLS**
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

TOPIC 3

Peace and trade

Peace can encourage trade by establishing and growing communication and transport networks and by freeing up resources for production rather than warfare. Some have suggested that this relationship runs in the other direction as well, with trade between communities increasing the chances that they will remain at peace. This is a controversial idea that has stirred considerable interest. The idea that we could not only gain wealth, but also peace, by increasing trade is very attractive.

Activity 7   All you need is trade

Does trade really foster peace? And if so, how? Read the speech referred to in the web links box and **analyse** the speaker's arguments.

Analysing the arguments put forward in a text involves breaking the text down into its key parts. Here are a set of "w-questions" that you can use for nearly any text to help you analyse what the author is trying to say. Note that you may want to print the speech in order to highlight the main points and summarize them in your own words in the margin.

W-questions for readings
The following questions can help you better understand any text you read:

- Who wrote the text? What qualifications does the author have to make him or her reliable? Are there any possible sources of bias you should be aware of that may affect what the author says?
- What is the main idea of the text (thesis or theme)? You should be able to state this in one or two sentences.
- What important conclusions does the text draw and what important points does it make? Often, but not always (so read closely), you may find these as the topic sentences of paragraphs. You may note these by highlighting important sections in the text and making brief explanatory notes in the margins. If you are reading a text in which nearly every paragraph contains an important conclusion or point (for example, a textbook), it may help to ask yourself "What is this paragraph about?" and make a brief note answering that question.
- For each of the conclusions you have found, write down how the author arrives at them. What evidence does he or she use to support the conclusions? Sometimes an author will not use evidence and will instead rely on his or her expertise to support what he or she says (this is often, but not always, the case with textbooks). If this is the case, write it down. If it is the case for the entire text, you do not have to repeat it for each important conclusion or point.
- What questions do you have after reading the text? This can be the most interesting part, especially as a basis for discussion.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Communication
Paraphrase accurately and concisely.

Summary

In this chapter you have focused on the concept of trade, inquiring into its relationship with equity, its positive and negative effects, and the various factors that impact it. As part of your inquiries, you have had the opportunity to develop important skills that will continue to help you in your learning in the Individuals and Societies disciplines and beyond. You have worked on applying existing knowledge to unfamiliar situations, using your informed imagination to help you understand the importance of trade by conceiving of how the world would be different without it, or at least with less of it. You took complex information about the effects of trade and condensed it into a brief, accessible text for public consumption. You confronted the complexity of human systems and the issues that arise from them and attempted to isolate variables in order to draw some conclusions out of that complexity. You also addressed the complexity and interconnectedness of human systems by setting reasonable boundaries for your inquiries into them. A number of times, you showed your understanding of processes such as the effects of conflict on trade by applying that understanding to specific instances. Finally, you read a challenging text in order to understand the author's main arguments as well as how he arrived at them, before going on to look at another key text with a specific purpose in mind, which required you to infer specific information from the text.

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CHAPTER 13 Power

INQUIRY QUESTIONS

TOPIC 1 War on terror
- What are some examples of power?
- How is terrorism defined?
- Is terrorism an unavoidable part of cultural conflict?

TOPIC 2 Indian caste system
- What distinguishes different castes?
- How can non-violent power bring about change?
- Is everyone born equal?

TOPIC 3 Colonialism and power in the Democratic Republic of Congo
- What resources were exploited under colonial rule?
- How do ruling nations exert power over their colonies?
- When a country is colonized, do the benefits compensate for loss of independence?

ATL SKILLS
- ✓ Present information in a variety of formats and platforms.
- ✓ Manage and resolve conflict, and work collaboratively in teams.
- ✓ Formulate factual, topical, conceptual and debatable questions.
- ✓ Use and interpret a range of discipline-specific terms and symbols.
- ✓ Build consensus.
- ✓ Identify obstacles and challenges.
- ✓ Consider ethical, cultural and environmental implications.
- ✓ Demonstrate persistence and perseverance.
- ✓ Read critically and for comprehension.

RELATED CONCEPTS

Beliefs   Justice   Ideologies   Relationships
Conflict   Perspective

GLOSSARY

Colonialism taking over control of another country and using its people and resources.

Consensus agreement.

Discrimination treating people differently based on factors such as race, age, sex or culture.

Legitimate authorised or legal.

Stratification the formation of groups or levels based on a particular characteristic, such as wealth or family background.

COMMAND TERMS

Construct develop information in a diagrammatic or logical form.

Develop improve incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state.

Evaluate make an appraisal by weighing up the strengths and limitations.

Formulate express precisely and systematically the relevant concept(s) or arguments(s).

Introducing power

Power is about how individuals and groups use their influence to change others. This influence can also be used to alter systems such as governments, economies or societies. Power can be directed downwards (for example, from a manager to the employees) or upwards (for example, from citizens to their leadership). When learning about power, it is important to question how it is being used and what the long-term effects will be. Some signs of power include the amount of money you have, the ability to influence decision-making or the political control of a country.

Power is often something that people attribute to the person who is the "boss" but in the topics for this chapter you will see how power can be used in different ways by different groups of people. Everyone in the world has power—whether it is the power over your own decisions, the influence you may have on someone else or the power to change a system. Before reading any further, consider the questions in the Quick Think box about what sort of power you have over your life.

In individuals and societies, to understand the relationships between different groups means understanding the power that they have with regard to each other. In this chapter, you will be asked to question what you perceive as power and to identify how power can be used to achieve objectives and goals set out by individuals, organizations and countries. One of your challenges will be to reflect on what you consider to be legitimate use of power. This will require you to reflect on your beliefs about how people should interact.

Beyond the classroom, power is something that every person uses every day. Understanding more about this concept, its uses and drawbacks, should allow you to understand more about relationships and interactions in the world that you live in.

The topics in this chapter come from three different locations in the world, but they are all influenced by powerful forces. When you hear the word "force", you may think of physical force, a way that one group or individual uses their power over another. However, power can come via non-violent means to achieve goals, too. Much like superheroes, individuals and organizations can choose to use their "force" for positive change rather than simply to achieve their own goals and objectives. Deciding whether power has been used ethically depends on the reasons for using power, and the culture and perspectives of those involved. A key inquiry question for this chapter is "Does the end justify the means?"

QUICK THINK

- What decisions do you have the power to make?
- Whose behaviour can you influence?
- Are you part of a group that has power over certain decisions?

War on terror

Terrorism as an example of power has risen to prominence in the last twenty years. Acts of terrorism occur all over the world and are the result of effective uses of power by small groups of people. When learning about terrorism and power, it is also necessary to examine how fear is used alongside power to achieve certain aims. In order to understand why terrorism is used as a method for gaining power, it is important to view the issue from different perspectives.

In the beginning

Since the end of the French Revolution in 1799, when the term "terrorism" was first used, terrorism has been used as a weapon of power by minority groups around the world. The Reign of Terror in France was a description of the methods of force used by the government on the French population. In the 1800s, acts of terrorism were focused on assassinations of key political figures in an attempt to overthrow an unpopular government. Small terrorist groups would focus on specific targets in the belief that eliminating several people in positions of power would mean a change in the way a country was ruled.

During the 20th century, terrorism became a way of controlling power amongst groups within societies. More often, civilians became the target of terrorist actions.

👤 Activity 1   Six acts of terrorism from six different countries

Construct an annotated timeline that documents six acts of terrorism from six different countries over a period of 150 years.

WEB LINKS
For a brief introduction to the history of terrorism, go to www.bbc.co.uk and search for "History: the changing faces of terrorism".

STEP 1   Use the web links box to start your research. As you research, you might like to create a graphic organizer like the one below to take notes.

Date	
Location	
Notes on what happened	
Resource	

STEP 2 Review the dates of the six events you have collected. You will have to construct a timeline to scale that represents these dates. Look at the timeline below to help you.

Guide to constructing an accurate timeline

Feature 1:
Timelines always have a title

Acts of terrorism

1881 1896 1911 1926 1941 1956 1971 1986 2001 2016

Assassination of Tsar Alexander II Russia 13 March 1881

Assassination of Archduke Franz Ferdinand Sarajevo 28 June 1914

Attacks on US by Al Qaida 11 September 2001

Feature 2:
Timelines have arrows at both ends to indicate that time continues.

Feature 3:
Each event is marked clearly with the specific date, event and location. On your timeline, you can also add a brief summary of the events.

Feature 4:
Timelines have a scale. Depending on your piece of paper and the spread of your events, work out the representation of centimetres to years. On this timeline, 1 cm represents 15 years.

STEP 3 Create your timeline carefully, following the guidelines for formatting. Have your draft reviewed before completing the final details.

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Research
Present information in a variety of formats and platforms.

September 11

The events of 11 September 2001, when passenger planes were deliberately flown into the World Trade Center in New York and The Pentagon in Virginia, were reported around the world. As people woke up, opened the newspaper, logged on to the internet or switched on the television, the terrorist attacks in the USA dominated the headlines. The shock of what had happened was connected with how the events had unfolded and the fact that citizens were the specific targets of terrorism.

The vocabulary of terrorism had well and truly entered the public domain. The power of the terrorists to shock governments, kill people

and damage resources took many by surprise. Terrorism was now something much bigger and more deadly than ever before.

Following on from the attacks, the President George Bush Jr, declared a "war on terror" on 20 September 2001. This declaration resulted in an international military campaign, designed to wipe out terrorists and any regimes that supported them around the world.

👥 Activity 2 — A documentary of the impacts of a terrorist attack

In your group, you will create a mini-documentary (7–10 minutes) that describes the story of one person during the September 11 attacks, or another terrorist attack of your choice.

STEP 1 As a group, brainstorm what sort of person you would like to create a documentary on—a civilian, military personnel, a terrorist, a politician.

STEP 2 Create inquiry questions that will help structure your research and ensure that you collect relevant information.

STEP 3 Divide up the research tasks among your group. Be sure to document your sources as you locate information.

STEP 4 As a group, brainstorm the different scenes for your documentary. A useful way to do this is to create a storyboard. A storyboard is a graphic representation of a plan for a play, film, documentary, music video or other production.

> 🔗 **WEB LINKS**
> You can draw your own storyboard or try using an online tool like www.storyboardthat.com.

STEP 5 Plan how and when to film your documentary, and be sure to edit it before showing it to your class. Alternatively, you could enhance your storyboard to include images with a complete script for each scene.

🌐 **GLOBAL CONTEXTS**
Personal and cultural expression

🗣 **ATL SKILLS**
Social
Manage and resolve conflict, and work collaboratively in teams.

Power and beliefs

The basis of many terrorist activities is a conflict of beliefs. These could be differences in beliefs about how to run a government or a conflict of religious beliefs. Many countries try to separate religious beliefs and the role of government in order to ensure that all religious groups in the country consider the government neutral. This is known as the separation between church and state.

Motivated by their beliefs, terrorist groups who use religion as a driving force are unique in that they consider their cause to be supported by a power more forceful than human beings. This can mean that the members of the terrorist group are driven to more extreme actions as they justify what they do using their religious beliefs.

Other terrorist groups may be motivated by causes that relate to their beliefs about culture, identity, animal rights or land ownership.

Activity 3   Provocative inquiry into power and religious beliefs

Develop and answer a provocative and relevant inquiry question related to power and religious beliefs. Conduct an analysis of the oaths sworn by leaders of different countries as they officially become a leader of the government. These promises are known as "oaths of office" and are said by leaders all over the world. Your analysis will answer your provocative question.

Consider:

- the location of the country
- the dominant religion of the country
- the political system
- the power of the ruling leader.

Use your analysis to answer your question in essay format.

TIP

A provocative question usually involves ideas or concepts that are debatable or controversial. For example, a question for this topic might be "Should religion be a part of the system of government?"

STEP 1 Read over your notes and resources from this chapter. What questions do you have related to power and beliefs? What do you know about the connection between governments and religions? What do you need to find out about governments and religions?

STEP 2 Choose three to five different countries and find out the wording of the oath sworn by the leader when they take office. You could use a comparison table like the one below to structure your analysis.

	Country 1	Country 2	Country 3
Type of government			
Name of leader (president, prime minister, etc)			
Key words in oath			
Religion mentioned?			
Similarities to other countries			
Differences to other countries			

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Thinking
Formulate factual, topical, conceptual and debatable questions.

TOPIC 2

Indian caste system

Nearly all societies exist with some sort of stratification. Sometimes these levels are clearly defined in relation to someone's heritage or the amount of money they have. In India, these levels are related to the jobs that a citizen can do. Discrimination based on the amount of power you have is illegal in India but making a law about something doesn't immediately remove hundreds of years of cultural practice. To bring about change requires courage and an innovative use of power.

Caste systems

The process of structuring people in societies is often known as the "caste system". The system of structure can be based on religious beliefs, wealth, family heritage or the jobs that people are allowed to do. Caste systems have existed in many countries and in different time periods. Sometimes a caste system can just focus on the exclusion of a minority group in a particular country. In other countries, every person in society is part of a caste system.

One of the most well known is the caste system of India. Castes are organized by professions, with the "untouchables" or "Dalits" at the bottom of the structure. Governments in India have developed laws to protect the rights of Dalits and ensure that they have representation in politics. Discrimination because of caste is not permitted by law but prejudices still exist.

WEB LINKS
Learn more about the Untouchables or Dalits of India by going to www.nationalgeographic.com and searching for "Untouchables feature".

Construct a "Snakes and Ladders" board game that helps children aged 8 to 10 to learn about the caste system in India.

You need six snakes and six ladders on your board. Each snake represents an attribute of a lower caste. Each ladder represents an attribute of a higher caste.

WEB LINKS
Not sure how "Snakes and Ladders" works? Go to www.en.wikipedia.org and search for "Snakes and Ladders".

STEP 1   If necessary, research in your group what a "Snakes and Ladders" board game looks like.

STEP 2   Divide the tasks so that some of the group members are working on the board design and others are researching information.

STEP 3   Revise your information so that it is written at a level appropriate for 8 to 10 year olds.

STEP 4   Create your game.

STEP 5   Test out your game with your classmates.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Communication
Use and interpret a range of discipline-specific terms and symbols.

Power through representation

You have probably experienced some sort of power through using your right to vote on a decision. Maybe you voted for class president, or voted with your family on what activity you were going to do on the weekend. Exercising your power through voting can be very effective but sometimes you may not have considered all the possible outcomes of your vote. Many organizations hold open meetings where these outcomes can be discussed. At this sort of meeting you would be able to express your views, hear the opinions of others and try to convince other people to change their minds and support your views.

Many rural villages in India utilize this sort of decision-making process. Sometimes there are certain quotas for women and Dalits to ensure that they have representation on the village council.

Activity 5   Village festival

Scenario

Your village has decided to host an arts and crafts festival as a way of celebrating a new women's group that creates jewellery and a Dalit group that weaves baskets and makes shoes. The festival will also include artwork submitted by different people in the village and food stalls selling local delicacies. It is hoped that the festival will be a way of raising money by attracting visitors and tourists to the village. The money raised will go towards the construction of a solar power system to provide light for village houses.

There are several concerns that groups of people have in the village, and it is your job as a member of the council to try to agree on appropriate solutions.

Issue 1: The Dalit group are pleased to be involved in the festival but are annoyed that they have had no say so far in any of the decisions, including how the profits of the festival will be spent.

Issue 2: The women's group is being asked to contribute 50% of their profits to the village fund. They feel that this is unfair.

Issue 3: Some groups are concerned that the installation of solar power will lead to more cafes and guesthouses being opened, bringing more tourists to the village. The concern is that more tourists will intrude on local traditions, disrupting the village lifestyle.

STEP 1 In your group of six, decide who will play the following roles:

- female youth of a middle caste
- member of the women's group
- female village elder
- member of the Dalit group
- male village elder
- male youth of a middle caste.

STEP 2 Read through the scenario and identify the concerns of each group. You may wish to do additional research to help you learn more about the caste system.

STEP 3 Discuss the issues and opinions of each group and try to come to a consensus as a village. Remember, each person in the council has to be happy with and supportive of the final decision.

STEP 4 Step out of your role. Evaluate as a group the decision-making process.

- Who did you feel was the most powerful member of the council and why?
- Did the power shift during the discussions?
- What was successful about this decision-making process?
- What was frustrating about this process?

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Social
Build consensus.

Power in change

India has undergone significant shifts of power during the process of declaring independence from the British Empire. Where other countries used force and violence in a display of power to gain independence, India was led by the power of non-violent protest, as demonstrated by Mahatma Gandhi. He was a leader in recognizing and supporting oppressed people as well as bringing about change in politics through persistent non-violent methods.

Gandhi was an advocate for Dalits, giving them power and influence by providing them with support in politics. He was able to generate significant change with long-lasting effect through his innovative use of the power that he held. As a critical and creative thinker, Gandhi could recognize opportunities for change and act upon them for the advancement of those less fortunate than himself.

LITERARY LINKS

Power often means grabbing the opportunities as they present themselves and utilizing the resources you have in surprising ways. Learn about how two American athletes made a stand for the civil rights movement during the 1968 Mexico Olympics in the film documentary *Salute* (see www.salutethemovie.com).

Activity 6 — The integration of minority groups

Formulate an action plan that supports the integration of a minority group to give them representation in a local or national government.

TIP

An action plan is similar to a flow chart in that it shows the step-by-step process of achieving a goal.

STEP 1 Choose the location of your action plan. It could be in your local community or a country that you are familiar with.

STEP 2 Review the techniques that were used by Gandhi to support equality and fair representation in the Indian government.

STEP 3 Brainstorm possible steps for integration in your example. Remember, steps to a solution must be possible, relevant and humane. They may also require creativity and lateral thinking.

STEP 4 Create your plan.

TAKE ACTION

Don't just leave your action plan on a piece of paper—share it with representatives of the minority group that you wrote about.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Thinking
Identify obstacles and challenges.

Colonialism and power in the Democratic Republic of Congo

We can see how power on a global scale operates when we look at how many countries in Africa were used by more powerful countries as parts of their empires. The vast natural resources of the Democratic Republic of Congo (formerly known as Zaire) made it a very attractive country to control. When **colonialism** ended, the various power relationships shifted dramatically, providing opportunities for many individuals to seize control. The final task in this topic will challenge you to think about how external powers influence a country.

African land grab

During the age of exploration, Africa was considered a continent that could be carved up and used by whichever country could get there and claim land. The mineral resources, exotic spices and populations for the slave trade all provided a wealth of incentives for European countries to take over parts of Africa. The British, French, Portuguese, Belgians, Germans, Italians and Spanish all had control of different parts of Africa throughout the 19th and 20th centuries.

But how did more land equal more power for a country? For all of the colonizing countries, they had to invest significant time and resources in order to gain control of land in Africa and maintain their rule. There were inevitable conflicts over power and difficulties with communication and transportation of goods. Some of the most highly sought-after resources included slaves, diamonds and gold. When Belgium colonized the region of Central Africa, now known as the DRC, they were interested in the ivory trade as well as the increasingly lucrative rubber trade.
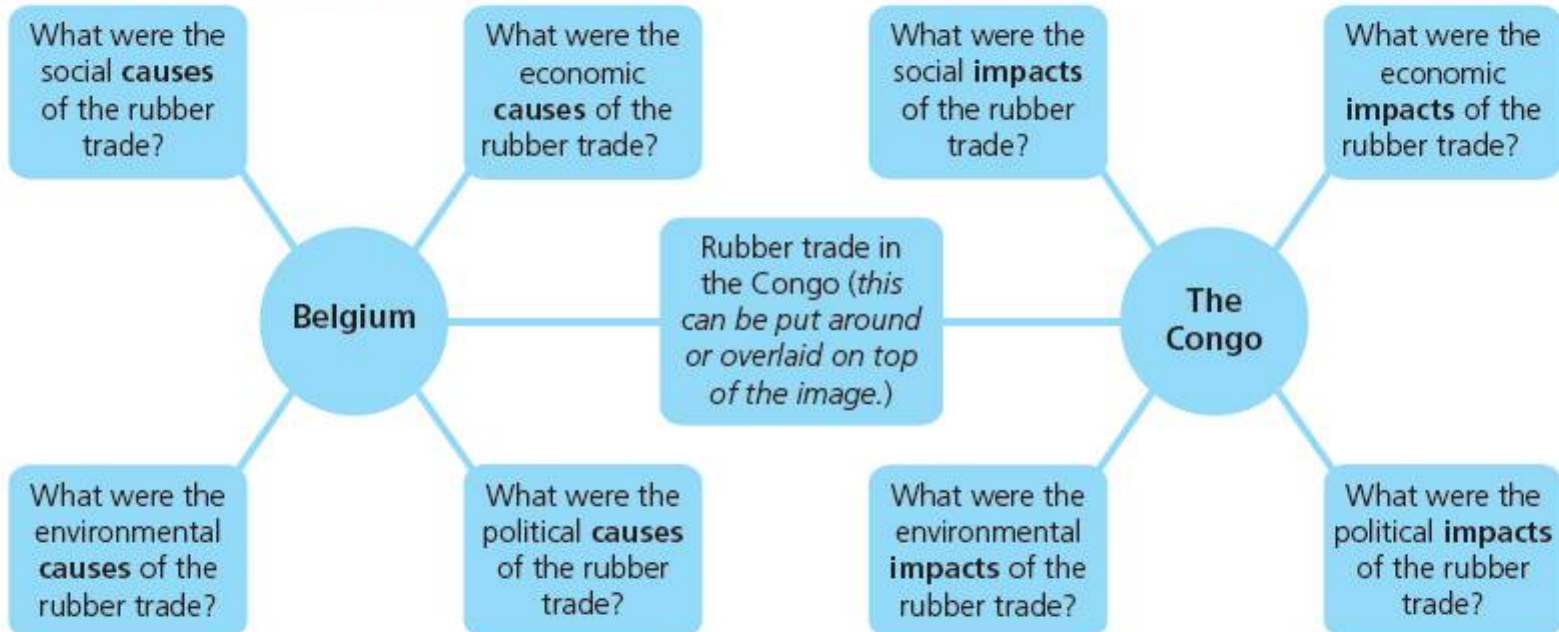
Create a spider diagram that outlines the impact of rubber in the Democratic Republic of Congo (DRC). This resource was in high demand, but why? And what were the advantages of controlling this resource? Start your research by using some key terms such as "Belgium", "Congo", "Rubber" and "Trade". As this is an event in history, look for websites that specialize in documenting the past.

The milk of a rubber tree flowing into a wooden bowl

What were the social **causes** of the rubber trade?

What were the economic **causes** of the rubber trade?

What were the social **impacts** of the rubber trade?

What were the economic **impacts** of the rubber trade?

Belgium

Rubber trade in the Congo (*this can be put around or overlaid on top of the image.*)

The Congo

What were the environmental **causes** of the rubber trade?

What were the political **causes** of the rubber trade?

What were the environmental **impacts** of the rubber trade?

What were the political **impacts** of the rubber trade?

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Self-management
Consider ethical, cultural and environmental implications.

A new nation is born

During the 1950s, the Belgian government was urged to release the Democratic Republic of Congo from its control and allow it to be a self-governing nation. The process of the withdrawing of power and governance from a nation is one that has many strands. In this case, a consultant for the Belgian government advocated for a slow transition over several decades, allowing for the shift in power to take place once the Congolese were considered "educated" enough to govern. Groups within the local Congolese population wanted the immediate withdrawal of the ruling Belgians.

A shift in the ruling power of a country inevitably results in upheaval. The transition from colonial rule to democratic rule also means the transition from one set of objectives to another. A new regime may seize the opportunity of more power and bring about sweeping changes without consideration for the country as a whole. Citizens may experience a shift in power as their former representatives give way to new ones.

Construct a graphic organizer that documents the transition of power in the Democratic Republic of Congo in 1960.

Your chart needs to show the power struggles between the different political groups as the Democratic Republic of Congo seceded from Belgian rule.

In addition to your chart, write two or three paragraphs that explain how these changes were viewed by other countries or organizations.

> **TIP**
>
> A graphic organizer can be a chart, table, spreadsheet or flow chart. It shows the steps in a process visually by using boxes, circles and arrows. Diagrams have to be annotated with a short text containing factual information.

> **INTERDISCIPLINARY LINKS**
>
> **Design**
>
> Use your skills of planning and design to create a visually effective graphic organizer. Different sizes of text and use of a variety of shapes can help highlight key pieces of information.

Peer review

Once you have completed a draft of your chart, meet with another group to peer review each other's work. Peer review is most effective when you provide constructive feedback that focuses on suggestions and reasons for change rather than criticizing what has been done. Ask questions like:

- "Why did you choose to …?"
- "What made you organize …?"
- "Have you thought about …?"

Consider the following:
- accurate and relevant details
- structure of events
- selection of information
- communication of information.

Once you have completed the peer review, make any changes to your graphic organizer and complete a published version.

> **GLOBAL CONTEXTS**
> **Fairness and development**

> **ATL SKILLS**
> **Self-management**
> Demonstrate persistence and perseverance.

Great power involves great responsibility.

> 32nd US President
> Franklin D Roosevelt

Power and corruption

As people and governments gain more power, it may seem that the chances of corruption occurring increase as well. The interaction between power, wealth and access to resources can result in exploitation of these things. You have read how some countries seized the opportunity to take control of other countries using their power of technology, wealth and determination.

Today, the relationship between richer countries and poorer countries is still about the balance of power. Rich countries have the opportunity to take advantage of poorer countries, purchasing their raw materials at low costs and setting up agreements with governments that give advantage to the rich countries rather than the poor. But rich countries also utilize their power and influence to ensure that aid and support are given to poor countries. This kind of relationship exists not just between governments but also between NGOs and individuals. In chapter 8, you read about the concepts of choice and responsibility between countries, but how do we know if aid from rich donors to poor recipients is effective?

Activity 9 — Persuasive essay

In this activity, you will write a persuasive essay on the following topic: "Can external powers intervene in the way that a country is governed in order to provide relief and support for its citizens?"

Writing a persuasive essay
You will first need to consider what your opinion is on the essay question. You may already know of some examples that could support your opinion, or you may need to do some additional research. Once you have decided on the direction of your essay, follow the steps below.

STEP 1 The key point of a persuasive essay is to have relevant and detailed examples to support your opinion. Brainstorm what examples you already know and create a list of questions that will guide your inquiry to complete your information.

STEP 2 Reading critically
As you come across each source, ask yourself the following questions:

Validity	■ Is my source relevant?
	■ Is the information supporting my argument?
Reliability	■ Who created my source?
	■ What is their connection to the events?
	■ Can I cross-reference the information to prove that it is accurate?

STEP 3 Once you have selected your information, begin to write your essay. Start with the strongest supporting argument first as this is often easiest to write.

STEP 4 After you have completed a draft of your essay, revise and edit your writing. Carefully check that your examples support your thesis statement. This step is very important. Sometimes during the writing process you may find that you have got to the end of your essay and argued for the opposite side of your thesis statement.

STEP 5 Make the necessary changes and publish your essay.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Communication
Read critically and for comprehension.

Summary

You have studied how power plays an integral role in the world. Conflict over how power is used can have its origins in cultural traditions and differences, historical legacies such as colonialism, or beliefs about responsibility. Interaction between countries is based on the amount of power each country has and, in turn, this is often connected to wealth and political influence. The way in which countries use power is based on what they believe is the right action to take.

As individuals, the amount of power we have ebbs and flows depending on the context we are in. Sometimes our limited power can be frustrating. At other times, we may feel happy that we don't have a lot of power as with it also comes responsibility.

References

Foer, JS. 2005. *Extremely Loud and Incredibly Close*. New York, NY, USA. Houghton Mifflin.

Kingsolver, B. 1998. *The Poisonwood Bible*. New York, NY, USA. HarperCollins.

KEY CONCEPT FOCUS
SYSTEMS

TOPIC 1 Threats to sustainability

- How is sustainability defined?
- How are consumption and sustainability connected?
- Are all natural systems sustainable when there is no human interference?

TOPIC 2 Debates about sustainability

- Who are some of the prominent researchers in the field of sustainability?
- How does climate change?
- What will the world look like in 30 years time?

TOPIC 3 Enhancing sustainability, preserving resources

- What three approaches help support sustainability?
- How can learning from the past support planning for the future?
- Is intergovernmental cooperation the key to sustainability?

ATL SKILLS

- ✓ Identify obstacles and challenges.
- ✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.
- ✓ Create novel solutions to authentic problems.
- ✓ Consider ideas from multiple perspectives.
- ✓ Access information to be informed and inform others.
- ✓ Draw reasonable conclusions and generalizations.
- ✓ Create novel solutions to authentic problems.

RELATED CONCEPTS

Cooperation   Management and Intervention   Choice   Resources   Innovation

GLOSSARY

Common access resource a natural resource which has no definitive private ownership.

Consensus a general agreement.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure; identify parts and relationships, and interpret information to reach conclusions.

Evaluate make an appraisal by weighing up strengths and limitations.

Explain give a detailed account including reasons or causes.

Investigate observe, study or make a detailed and systematic examination in order to establish facts and reach new conclusions.

Predict give an expected result of an upcoming action or event.

Suggest propose a solution, hypothesis or other possible answer.

Introducing sustainability

When we think about the future, we often hope that it will be better than the present. We can also imagine ways in which the future might be worse than the present, but we certainly do not hope for this outcome. This thinking sums up sustainability. If we can achieve it, things will not get worse in the future, and very possibly they will get better. Sustainability exists when we meet our current needs and wants without undermining the ability of people in the future (including our older selves) to meet theirs. In other words, sustainability helps us ensure that the future will be at least as good as the present and leaves open the possibility that it will be even better.

In this chapter you will explore the following:

- our rights and responsibilities in the effort to preserve sustainability
- the relationships between communities at the local, national and international levels as humanity strives to shape a sustainable future
- how we can address the need to share finite resources
- how peace and conflict resolution can enhance sustainability.

Of course, to raise the issue of sustainability is also to raise the possibility of its opposite. A future at least as good as the present is by no means guaranteed, as history shows us. While not all historical situations in which things got worse for people involved issues of sustainability, some certainly did.

⊂⊃ LITERARY LINKS

In his book *Collapse*, Jared Diamond makes lack of sustainability his theme, surveying communities throughout history, such as the Greenland Norse, the Maya and the Polynesians of Easter Island, whose living situations became unsustainable in ways that led to their demise. He ends the book by suggesting that humanity may face collapse on a global scale at some point in the future if we do not change our behaviour in ways that ensure our preservation.

⊂⊃ INTERDISCIPLINARY LINKS

Sciences

The physical sciences can provide insights into the extent to which sustainability is threatened and the changes that would need to occur in order to increase our chances of achieving it. Technology can help us to use our resources more efficiently and to discover new ones.

Arts and Language and Literature

The arts and literature help us to become aware of unsustainable behaviour at individual and group levels and to explore the consequences of this.

Mathematics

Mathematical tools are used not just in technology and the physical sciences, but also by practitioners of disciplines within the Individuals and Societies subject areas, as they seek to understand and influence human behaviour and beliefs, including those related to sustainability.

Threats to sustainability

If we are going to achieve sustainability, it is important for us to be aware of the things that threaten it. Threats to sustainability come in three main forms: depletion, pollution and destruction.

- **Depletion** involves using up natural resources so that they are no longer available.

- **Pollution** occurs when our production and consumption of goods release substances into the environment that damage it in some way and make it less able to support humans and other plant and animal species.

- The threat of **destruction** comes from things such as nuclear, chemical or biological weapons or even from natural causes such as an asteroid impact.

Understanding these three key ways in which our actions can undermine sustainability does not guarantee our success, but it does provide a basis for us to consider effective strategies.

Depletion

One way in which sustainability is threatened is through the using up of resources required to meet our needs and wants. Consider how important energy is to people's standards of living. The bulk of our energy today comes from fossil fuels, including oil, natural gas and coal. Given our huge energy needs, we consume massive amounts of these. Worldwide, for instance, we use 82.4 million barrels of oil per day. Given that fossil fuels take millions of years to form (ie, they are essentially non-renewable) we will use them up at some point if we continue to consume them.

If we have not found other resources to meet our energy needs, or altered our lifestyles to reduce our need for energy, we will experience a significant decline in living standards. Just imagine a world without electricity and you will have some idea of the consequences of depleting an important resource such as fossil fuels. The same is true of fresh water and fertile soil. While they may renew more quickly than fossil fuels, it is still possible for us to use these resources faster than they can be replenished.

TIP

Renewable resources can be used without diminishing the amount of resource that is available. Solar and wind energy are highly renewable, since their availability is not diminished by use at all. Other renewable resources, such as wood or fish, need to be managed to ensure that they are not depleted.

⬭ WEB LINKS

"Peak oil" refers to the point at which the Earth's oil supplies begin to decline. There is some debate about the point at which we will reach peak oil but, given that oil is non-renewable, that point will come. Go to www.science.howstuffworks.com and search for "peak oil" to find out more on the debate around this issue.

Pollution

Our standard of living is dependent not just on the resources we use to produce the goods we need to meet our needs and wants but also on a clean environment in which to live. In a way, this is an issue of resources.

When we speak of pollution, we really mean that some of our resources (covered in chapter 9), such as clean air and fresh water, become degraded by the waste we create when we produce and consume. If the resources are degraded enough by this process, we could reach a point where they are no longer usable.

Pollution can also destroy resources indirectly by degrading the environment around them—as, for instance, when animals and plants that are a source of food are no longer able to live in a polluted ecosystem. As with depletion, pollution threatens our standard of living by depriving us of resources we need.

Activity 1   The consequences of pollution

The Sustainability Compass is a way of measuring the status of a community based on four plot points. For a community to be sustainable, it needs to give equal consideration to the four compass points of nature, economy, decision-making and society.

The Sustainability Compass

North = Nature (the environment)

West = Who decides (politics, government, leadership)

East = Economy

South = Society (people and culture)
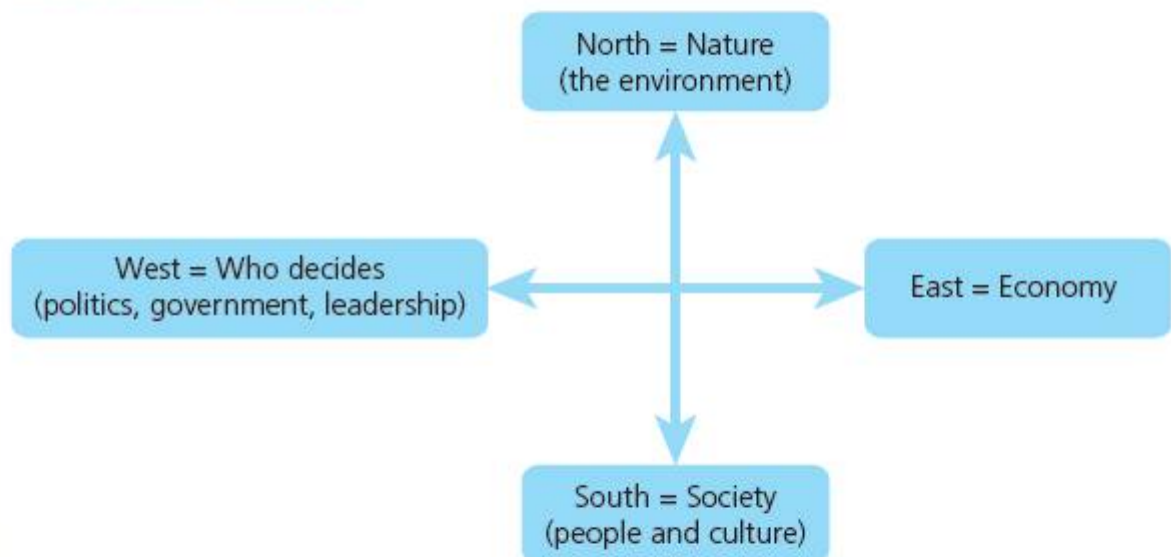
STEP 1 Choose a natural resource that is in your country. Here are some suggestions:

- a local water source
- a nearby beach
- a national park or forest
- air quality in your neighbourhood.

Destruction

Finally, there is the possibility of outright destruction of an environment through nuclear, chemical or biological weapons (or a natural cause, such as an asteroid impact). The use of these weapons opens up the possibility of sudden and catastrophic destruction of the environment and massive loss of human life. There are several examples in history where significant parts of the environment have been destroyed in a dramatic and sudden event. In 1986, the Chernobyl nuclear power plant in the Ukraine (then the USSR) exploded, causing widespread damage and radioactive contamination of the surrounding environment. Today, the zone of exclusion extends 30 km out from the reactor and is uninhabited. The plants and animals in this zone have been left to recover without human presence. Scientists estimate that this area will be unfit for human habitation for the next 20,000 years.

Sometimes natural and man-made disasters happen together, causing significant impact on the environment. In early March 2011, an earthquake with an epicentre located off the Pacific coast of Tōhoku caused a tsunami to strike the coastline near Fukushima, Japan. Because of the tsunami, the Fukushima 1 Nuclear Power Plant suffered a catastrophic failure and began leaking radioactive material into the surrounding environment.

While these disasters happened suddenly, environmental destruction can also take place over a longer period of time. Easter Island is an example where historians believe that the gradual removal of an environmental resource (trees) led to the eventual destruction of the landscape and decline of the native inhabitants.

Investigate a past society that may have collapsed due to a lack of sustainability built into the system (for example, Easter Island, Pitcairn and Henderson Islands, Anasazi, Maya, Greenland Norse).

Analyse the story of the society's collapse to determine the extent to which the three basic threats to sustainability (depletion, pollution and destruction) played a role in its demise. If you feel some of the causes do not fit into any of the categories, what new categories would you suggest?

While you read, you may want to take notes using a simple graphic organizer like the table below.

Depletion factors that led to this society's collapse	Pollution factors that led to this society's collapse	Destruction factors that led to this society's collapse	Other factors that led to this society's collapse but do not fit into the previous categories

Then consider the collapse using the points of the Sustainability Compass. Where did things go wrong (in nature, the economy, the society, well-being of individuals and families, or some combination of multiple factors)?

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

TOPIC 2

Debates about sustainability
How serious is our situation?

On one side of this debate are those who say that our situation is very serious indeed. They argue that unless we make immediate and significant changes to our activities on a global scale, we may be ensuring even now that humankind will face a crisis of sustainability in the not-too-distant future.

The scientist James Lovelock goes beyond this, arguing that it is already too late and that we will soon face catastrophic climate change that will kill off much of humankind and force survivors to live in the Arctic. On the other side, optimists like Bjørn Lomborg argue not

James Lovelock

Bjørn Lomborg

only that our current living standards will prove to be sustainable, but that quality of life will actually improve for most of the world's inhabitants. In between are many observers who are less sure either way, believing that we need to strive to better understand the problems we face while also taking some precautionary actions to help avoid worst-case scenarios.

You may also want to investigate the ideas of Ester Boserup and contrast them with those of Thomas Malthus and Neo-Malthusians like Paul Ehrlich. Neo-Malthusians argue that population growth will eventually outstrip our resources and lead to catastrophic collapses in living standards. Boserup and those who agree with her argue that the pressures of growing population will encourage innovation. This will lead to more efficient resource use, making it possible to support larger populations.

Tipping points

One of the main threats to the sustainability of our way of life is climate change. Scientists have sophisticated computer models that can map probable outcomes of climate change in relation to things such as human settlement, biome locations and migratory paths of animals. Climate change connects to the hugely complex networks and systems that make up the natural environment. Although scientists can develop models that attempt to mimic the inputs and outputs of these systems, there is still an element of uncertainty as to the exact timing and impact of climate change.

One example within the debate over the extent of climate change involves what are called feedback effects. If positive feedback effects exist within the Earth's climate system, then a small amount of warming caused by CO_2 from human activities could, through this system of positive feedbacks, lead to much larger amounts of warming. One main way in which this may happen is through water vapour (see Figure 14.1).

Warming temperatures could cause faster evaporation from the world's oceans, increasing the amount of water vapour, which itself is a greenhouse gas. Such an effect could double or triple the warming caused by CO_2 alone. However, uncertainty exists as to whether the amount of water vapour is indeed increasing as a result of warming temperatures and, even if it is, whether water vapour has a cooling or warming effect.

Figure 14.1 Global warming positive feedback loop

POSITIVE FEEDBACK LOOP

- Atmosphere warmed by increased carbon dioxide which causes global warming
- Surface water evaporates from the higher temperature of the atmosphere and becomes water vapour
- As the water vapour increases, the atmosphere gets even warmer

Increasing CO_2 → Global warming → Increased water vapor

Increases evaporation

Warms atmosphere

Some observers argue that we should be concerned with the possibility of "tipping points" in the Earth's natural systems. Tipping points occur when external factors change a system to the point where the system begins to change itself. Some scientists speculate that a tipping point in the Earth's climate system could come if the polar ice caps continue to melt or if a species such as the bee becomes extinct. If these events occur, an integral part of the Earth's systems would disappear, significantly altering the climate as we currently know it.

Innovation

Human systems are complex and their future outcomes difficult to predict. It is therefore hard to guess which innovations, if any, will arise to help us.

Innovation has been a key to sustainability in the past. Innovations in agriculture, for instance, have allowed us so far to avoid the threat to sustainability posed by the necessity of feeding growing populations. Innovations have also allowed us to continue to meet our energy needs despite growing populations. We have done this by harnessing cleaner sources of energy as well as by improving the machines, vehicles and devices that use energy so that they do so more cleanly and efficiently. Innovations are, however, by their very nature unpredictable. They involve coming up with new, more efficient ways to use resources and they emerge from the efforts of individuals and groups, of which there are billions worldwide. We therefore do not become aware of innovations until they have been developed and have demonstrated their effectiveness. What innovations will we see in the coming years in terms of cleaner energy, more efficient food production, and methods to combat climate change? While we can feel relatively certain that human innovation will continue, its pace and intensity is more difficult to predict.

Globally, the production of a given quantity of crop requires 65% less land than it did in 1961, thanks to fertilizers, tractors, pesticides, better varieties and other factors.

"Our Fading Footprint for Farming Food", Mind & Matter, *Wall Street Journal*, 21 December 2012

Innovation requires that we allow people to do things that seem stupid to most informed observers—even though we know that most of these would-be innovators will in fact fail.

American software entrepreneur Jim Manzi

Activity 3   Innovators for the future

Innovation and sustainability go hand in hand, but creating an innovation for the future requires you to imagine how you would like the future to look.

STEP 1 Choose one or two other students to collaborate with for this activity.

STEP 2 Read the article titled "A Giant Basket That Uses Condensation to Gather Drinking Water" from the website www.wired.com.

STEP 3 As you read, note down:

- the inventor of the giant basket
- how the inventor identified a need
- how the design was inspired.

What do you think prompted the development of this innovation? How do you think the inventor imagined Ethiopia's future without it?

STEP 4 Using the Sustainability Compass, identify one positive impact for each of the four compass points.

STEP 5 With your group, choose a local issue where sustainability is threatened. Using the Sustainability Compass, identify a cause and impact for each point.

STEP 6 Discuss what you want the future to look like in relation to the issue you have chosen, and brainstorm a potential solution.

STEP 7 Decide on an innovation that you could try to develop that helps solve the selected problem and promotes sustainability. Create a diagram, flow chart or written specifications to explain your innovation.

STEP 8 Share your innovation with other student groups.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Create novel solutions to authentic problems.

QUICK THINK

Before moving on to the next activity, do a self-reflection on your current position about sustainability. Where would you place yourself on the continuum in Figure 14.2?

Arturo Vittori, the inventor of the WarkaWater towers, used creative thinking to develop an innovation that would support sustainability in Ethiopia. He recognized that there was a problem and was able to act on it. Scientists have clearly documented the fact that climate change is happening and have made predictions about what the future of global civilization will look like. There have also been scientists, innovators and entrepreneurs who have proposed products and ideas that would mitigate some of the negative impacts of climate change. When these ideas are shared, it can make the impacts of climate change seem less serious.

Figure 14.2 Considering consequences of sustainability

"There are some threats to our global civilization but we don't need to make any changes to our way of life." ⟷ "Our sustainability as a global civilization is under extreme threat. We need to act now."

Activity 4   Socratic seminar: How bad is it?

This activity will encourage you to think carefully about sustainability and the future of global civilization. There is a huge amount of literature and research on this issue so you have to consider multiple opinions and think critically as you are preparing. Conduct a Socratic seminar discussion on the extent to which the sustainability of global civilization is threatened. You can use sources such as Jared Diamond's book *Collapse*, especially chapter 16, and Bjørn Lomborg's book *The Skeptical Environmentalist*, to acquaint yourself with two relatively distinct positions on this issue.

Purpose of the Socratic seminar

- A Socratic seminar differs from a debate in that the goal is not to defend a previously held position at all costs, but to seek, through discussion, to reach consensus and find answers to difficult questions. You should therefore be open to your position evolving during the discussion (although you may also determine that it does not need to evolve). The point is to reach the truth, not win the argument.
- Another use of the Socratic seminar is to help each other understand challenging texts. Therefore, the discussion may include analysis of what the authors are saying rather than just evaluation of their arguments.

During the seminar

- You do not need to raise your hand, and there is no formal discussion leader. (If a leader is appointed, he or she can listen and take notes and only intervene if the discussion is off-topic, going in circles, or if people need to be reminded not to interrupt each other.) Just make sure that you:
  - let others finish before you offer a comment
  - focus on trying to listen as much as talk (ie, when another person is talking, listen to them rather than spend the time formulating what you plan to say)
  - refer to the sources (texts and other media) that serve as the basis for the discussion, or to what another participant has said, whenever you make a comment or ask a question (you will want to have your notes and the texts with you during the discussion).

LITERARY LINKS
See Paul and Anne Ehrlich's book *The Population Explosion* for another source that argues that our situation is very serious.

WEB LINKS
The Copenhagen Consensus Center website has up-to-date writings that reflect Bjørn Lomborg's positions. Visit www.copenhagenconsensus.com.

For an indigenous perspective on sustainability, search for "Sustainable Futures With Maori Land: Speech By Minister Of Maori Affairs".

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Consider ideas from multiple perspectives.

Enhancing sustainability, preserving resources

When it comes to meeting the challenge of sustainability, we are presented with a number of general approaches. Since sustainability amounts to preserving the ability of future generations to satisfy their needs and wants at least at the same level as we do today, all of these strategies focus on resources. This is because resources are, by definition, the things that we use to produce the goods and services that meet our needs and wants. If future societies are to have the ability to meet their needs and wants at least as well as we do, then they will need access to sufficient resources. Three general approaches present themselves as ways to ensure that resources are available in the future—conservation, efficiency and discovery.

The three approaches to ensuring sustainability

Conservation

We can try to conserve resources by not using them to produce goods and services. This approach means that we actually do without the goods and services produced by those resources. For that reason, this approach can be difficult to implement unless people believe strongly that such sacrifices are needed. But conservation opens up the possibility of large and relatively predictable drops in resource use. In order to get people to consume fewer of the goods and services that use the resources we are trying to conserve, we can try to persuade them of the importance of these resources to overall sustainability and hope that they choose to limit their production or consumption of them. Governments can also use taxes and regulations to limit production and consumption of targeted goods and services.

Efficiency

Another approach to sustainability is to find more efficient ways to produce the goods and services that meet our needs and wants. Efficiency involves using the smallest amounts of resources possible in the production process. If we can increase efficiency we can produce the same amount of goods and services as before, while using fewer resources. This makes improvements to efficiency a potentially attractive approach, as it does not ask people to cut back on their consumption and experience a subsequent fall in their living standards. Enhancing sustainability while avoiding a drop in the standard of living, especially for the approximately 1.3 billion people worldwide who already live in absolute poverty, is a worthy goal. However, efficiency can be more difficult to achieve than conservation as it relies on the unpredictable contributions of human ingenuity to improve production processes and the products themselves, so that they use fewer resources.

TIP

The circular economy is an idea that stresses both conserving resources and using them more efficiently. In this model, only substances that are safe are released back into the natural environment and materials that are not safe for release back into the biosphere are continually circulated through the economy.

Discovery

We can try to discover new resources that replace ones being depleted or that are more sustainable than the resources we currently use. We can also discover innovative ways to use existing resources. For example, using biofuels as an energy source for cars can involve repurposing discarded cooking oil, or using ethanol as a car fuel source. This approach, like increasing efficiency, is also attractive in the sense that it may allow us to keep consuming at current levels without having to cut back on the goods and services that meet our wants and needs. Like efficiency gains, however, it is somewhat unpredictable. This is because it too relies on human ingenuity to discover new resources. In addition, the possibility exists that replacement resources may simply not be available in some cases, no matter how much human ingenuity is applied to the problem.

Activity 5 — Which approach?

STEP 1 Investigate a specific policy, programme, organization or development that was intended to, or actually did, enhance sustainability. Possible examples include the European Union Emission Trading Scheme, the Forest Stewardship Council, the development of hybrid cars, or a circular economy firm from the Ellen MacArthur Foundation website (see below). Alternatively, choose a subject of your own.

STEP 2 Identify which of the three approaches to sustainability best describes your subject: conservation, efficiency or discovery. You may find that it embodies more than one of the approaches. You may also find that it is closely tied in with other specific policies, organizations or developments. Note these things as well.

STEP 3 Share the results of your investigation with your classmates and form groups so that each group has an example of conservation, efficiency and discovery.

WEB LINKS

Visit www.ellenmacarthurfoundation.org for resources to help you understand the circular economy. Click on "See it in action" for case studies of firms that operate according to the principles of the circular economy. You could also go to www.youtube com and search "re-thinking progress: the circular economy".

STEP 4 As a group, synthesize your information to see if there were any similarities between the motivations to achieve sustainability. Share your synthesis with the other groups.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Research
Access information to be informed and inform others.

Looking back to move forward

Like much of what we do in life, reflecting on past experiences can help shape our actions in the future. Scientists look at past events to try and understand how different outcomes might have been achieved. Historians look to causes of conflicts to learn how catalysts bring about dramatic changes. Economists dissect the causes of recessions to try to understand what changes may be needed in financial systems.

The systems that are part of providing resources for our needs and wants are susceptible to the effects of climate change. But how do we know what approach is the best to take to support sustainability in the future? As you read in Topic 1 of this chapter, there are several examples of societies that have experienced a dramatic collapse. Is there something that we can learn from these historical events and apply to future planning?

Activity 6   Save the society

Drawing on what you learned about the causes of societal collapse in Topic 1: Activity 2 "Doomed societies" suggest ways in which the society you studied might have been able to sustain itself. Place your solutions into the three categories above: conservation, efficiency, discovery. If you feel some of your solutions do not fit into any of the categories, what new categories would you suggest? You may want to use a simple graphic organizer like the table below to make notes on your proposed solutions.

How conservation might have saved the society	How increased efficiency might have saved the society	How discovery might have saved the society	Other actions that might have saved the society, which do not fit the previous categories

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Thinking
Create novel solutions to authentic problems.

International cooperation to enhance sustainability

One way in which sustainability can be maintained is for governments to set policies. This may especially be the case with resources we share (such as the atmosphere, the oceans, supplies of fresh water), given that these are not contained neatly within national borders.

The policies of one country can often affect other countries as well, for better or for worse. If one country makes significant sacrifices, say, in order to decrease its levels of carbon emissions, while other countries do nothing or even increase their emissions, then that country may end up sacrificing without seeing any effect on global carbon emissions. This has led some people to conclude that only cooperation between countries will allow us to address sustainability issues relating to common-access resources such as water and air.

Activity 7 — International cooperation and common-access resources

Research an example of an international attempt to protect a **common-access resource** (for example, the Kyoto Protocol, which attempted to address the problem of CO_2 emissions in the Earth's atmosphere; the Montreal Protocol, which addressed substances that deplete the ozone layer; the Antarctic Treaty System, which established scientific freedom and transparency for that continent).

- **Explain** the cooperation in terms of how it is intended to address the problems of depletion and pollution of the common-access resource.
- **Evaluate** the cooperation in terms of its effectiveness in preserving the common-access resource (or, if the cooperation has been implemented recently, its likely effectiveness in the future).

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Draw reasonable conclusions and generalizations.

Summary

In this chapter you have explored the concept of sustainability, focusing on the threats to it as well as on ways we can address those threats. We have seen how the complexity of human and natural systems can make it challenging to accurately assess the magnitude of various threats to sustainability and to develop effective strategies for dealing with those threats. At the same time, the complexity of the systems involved has hopefully helped you to see that the work of assessing threats to sustainability and crafting solutions to those threats is never likely to be completed, that mistakes will be made and

unforeseen consequences may arise. The important work of pursuing sustainability calls for everyone's involvement but also everyone's flexibility and continued willingness to question and explore.

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Ehrlich, PR and Ehrlich, AH. 1990. *The Population Explosion*. London, UK. Frederick Muller Ltd.

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Networks

INQUIRY QUESTIONS

TOPIC 1 Waste management
- What are the main components in a waste management system?
- What is the purpose of recycling?
- Should waste disposal be the responsibility of the producer of the waste?

TOPIC 2 Biomes
- What are some of the different types of biomes?
- How are biomes defined?
- Are human systems a part of the natural environment?

TOPIC 3 Social networks
- How do social networks operate?
- How is information shared in different domains?
- Have social networks changed the concept of friendship?

ATL SKILLS

✓ Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

✓ Collaborate with peers and experts using a variety of digital environments and media.

✓ Use appropriate forms of writing for different purposes and audiences.

✓ Plan short- and long-term assignments; meet deadlines.

✓ Organize and depict information logically.

✓ Use intercultural understanding to interpret communication.

✓ Consider ethical, cultural and environmental implications.

RELATED CONCEPTS

Equilibrium   Patterns   Organization   Interdependence   Scale   Causality

GLOSSARY

Domain a territory, region or area that can be real or virtual.

Equilibrium a state in which opposing forces or influences are balanced.

Opinion piece an article where you give your opinion on a particular issue.

Trophic involving the feeding habits of different species in a food web.

Vox pop the opinions of people recorded talking informally in public places.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure; identify parts and relationships and interpret information to reach conclusions.

Compare give an account of the similarities between two (or more) items or situations, referring to both (or all) of them throughout.

Create to evolve from one's own thought or imagination, as a work or an invention.

Document credit sources of information used by referencing (or citing) following a recognized referencing system.

Explore undertake a systematic process of discovery.

Introducing networks

Understanding networks is a vital part of understanding how systems work. Networks are the interlinking of systems to provide services on a huge variety of scales. For example, networks on a large scale of food production and transport connect with the systems in your body to ensure that you get the required nutrients to keep you alive.

Over time, we have developed networks that have allowed us to communicate more easily, ensure resources can be delivered all over the world and even allow us to travel into space. Our development of sophisticated networks has helped lead to an increasingly diverse and complex world. Understanding networks means being able to predict cause and effect immediately and over a longer period of time. If you are able to predict the effects of a change in a network, then you can put measures in place to manage these effects.

Think about how networks can become increasingly complex. Look at the different levels in Figure 15.1. How many people are involved in communication at each level? What do you see as the advantages and disadvantages of communicating at the different levels?

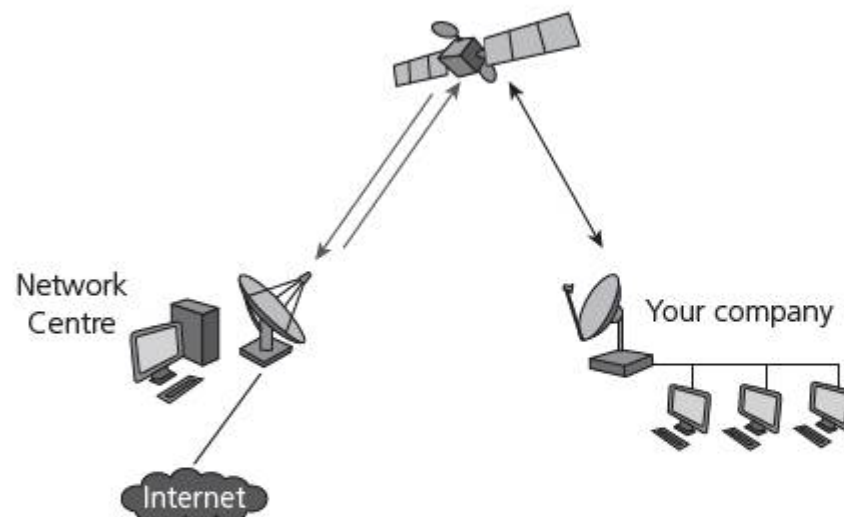*Figure 15.1* Examples of different networks with varying complexity

Level 1

Level 2

Level 3

Network Centre

Your company

Internet
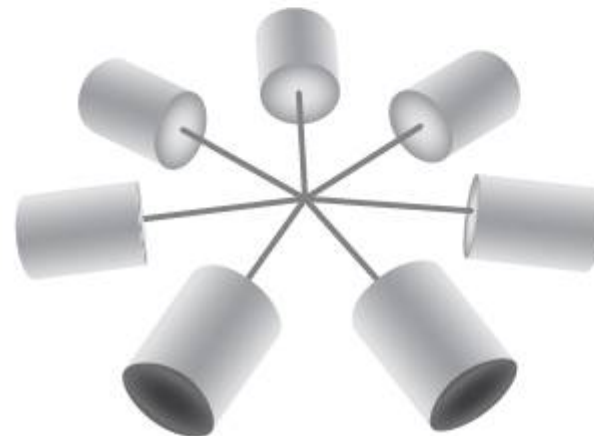
Studying networks in individuals and societies is essential for understanding how systems in our lives interact. Every day, you interact with a variety of systems that allow you to wake up, go to school, enjoy hobbies and spend time with your friends and family. Sometimes you may feel like you are a passive consumer in a system—you may turn on a light in your home but you don't have any role in the system producing electricity. At other times, you are an active part of a network—you are a member of a sports team that plays in a network of other schools. Knowing your role in an individual system or in a larger network will help you be aware of your influence, rights and responsibilities.

In this chapter you will look at three very different types of networks:

- networks of waste management
- biomes
- social networks.

Waste management

Look around you. How many waste bins can you see in your classroom? What about if you walk out into the hallway, into the cafeteria or on to the school playground? Are they full? Empty? Divided into different ways of disposing of your garbage? Every day, we use and dispose of items without thinking too carefully about it. Generally, where there is a build-up of human populations, villages, towns and cities have organized ways for waste to be disposed of. There are many different methods, depending on where the town is located and what regulations exist for the disposal of waste.

The network of waste management connects both human-made processes and natural ones. In order to understand resource production and consumption, it is essential that we know what happens at the end point of a product. Where does that empty drink bottle go? How do resources make it back into the manufacturing systems? Are there better ways of managing the networks of what we consume and throw away?

What is waste?

You generally throw something away when you no longer have a use or a need for it. The plastic wrap that was around food is no longer useful once the food has been consumed. A T-shirt is no longer needed once you have grown out of it. Waste is usually classified as anything that is not a product wanted or used by a consumer.

Waste is produced on many different levels and can be classified according to how it was produced as well as what sort of waste it is.

For example, waste produced in your home is known as household waste but it could probably also be classified into the type of waste it is, such as plastic, wood, compost or non-recyclable. The table below shows different categories of waste. The list on the left shows waste classifications based on how the waste was produced, and the list on the right contains various types of waste.

Examples of waste classified by how it is produced	Examples of types of waste
- Agricultural waste - Industrial waste (produced from mining, quarrying, manufacturing energy production, construction) - Municipal waste (waste from households) - Hazardous waste	- Food - Wood - Plastic - Metal - Chemical

Activity 1   World waste

STEP 1 Use the three resources in the list below, and any additional ones you want to select, to investigate production of domestic (household) waste in five different countries. Choose your countries from a variety of continents:
- **UN:** For data showing municipal waste collected, go to www.data.un.org and search for "municipal waste collected".
- **European Commission:** For waste statistics for EU member countries, go to www.epp.eurostat. ec.europa.eu and search for "waste statistics". The results will be in the data set section.
- **OECD:** For statistics on waste production, go to www.oecd-ilibrary.org and search for "waste production".

STEP 2 **Document** your sources of information.

STEP 3 **Analyse** the different statistics. Explain how these statistics are influenced by population, wealth, culture and resources.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Research
Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

Where does it go?

Everyone has a system for disposing of waste. These individual and household systems link to larger networks of waste disposal and recycling that are, in turn, linked to the even larger networks of production and consumption. The establishment of a waste disposal system is based on several factors:

- the willingness of a local council or government to have a system for waste disposal
- a culture of systematic waste disposal and recycling
- the infrastructure to support waste disposal.

Activity 2 — What's happening in my neighbourhood?

Role	Community volunteer
Audience	Members of your neighbourhood
Format	Own choice (poster, animation, flow chart, model)
Topic	Communicating how one method of waste disposal/recycling works

Using your investigative skills, explore what happens to waste in your community. Communicate your information in a format that can be used by your local council or government.

STEP 1 Choose which aspect of waste you will focus on. This could be household waste, biodegradable waste, hazardous waste, etc.

STEP 2 Look at some of the communications from your local government. How do they communicate information to the people living in your neighbourhood? Do they use flyers, posters, letters, emails or TV advertisements? This will influence the format that you will choose for this activity.

STEP 3 Write inquiry questions to help guide your research.

STEP 4 Create a draft of your final product and have it reviewed by your classmates. Check that the format is suitable for the message you are communicating.

STEP 5 Publish or create your final product.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Research
Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

Incineration, landfill and recycling

Three common ways of dealing with waste are burning (incineration), burying (landfill) and recycling. Each city and country will decide which of these methods, or a combination of methods, are suitable for dealing with waste. If we look at the network of waste disposal, we need to view it within the larger network of consumption. Governments spend a lot of time deciding what to do with waste, but do they also spend time working out ways in which people could consume less and produce less waste?

One of the more concerning developments in waste is the production and disposal of e-waste. E-waste, produced from discarded computers, mobile phones, electronic toys—anything that has a battery and a power circuit—is often highly toxic and tricky to dispose of. There are possibilities to recycle electronics for parts or scrap metal but this probably won't be carried out by a company or country unless there is financial gain.

The issue of e-waste directly connects with concepts of production, consumption, sustainability and ethical use of resources. Your next activity will challenge you to consider these ideas when you are analysing the networks connected to electronics production and disposal.

Activity 3 — What can we do about it? Assessing and changing a network

Role	Documentary film-maker
Audience	Young people aged 13 to 16
Format	Multimedia or short film, maximum 8 minutes long
Topic	Electronic consumption and disposal

Consumption of electronics is a major part of life in richer countries. Almost all adults own mobile phones, which they upgrade on a regular basis. Computers, laptops, tablets, GPS systems, hand-held games . . . the list goes on. How many of these do you own or have access to on a regular basis? What do you do when you don't want them any more?

In your role as a documentary film-maker, you will be telling two sides of this story:

- the production and consumption of electronics
- the impacts of disposal or recycling e-waste.

STEP 1 Form your group of two or three students for this activity.

Data collection: Production and consumption

Because this documentary is for young people, it is important to include their information and opinions in your research. Use the following techniques:

Collecting data through observation/survey	Collecting information through interviews
Learn more about how young people use electronics. • Create a data collection sheet that allows you to record information about electronic use. Include details such as: ▪ number of electronics owned ▪ date of most recent purchase ▪ amount of time spent on the internet ▪ number of phone calls/SMS made ▪ amount of time each day spent using electronics • You could also record observations of how your peers use electronics during free time at school.	Interviews of young people can be used in your documentary footage. • Use a **vox pop** technique to see if young people know how e-waste is disposed of. A question such as "When you want to get a new phone, what do you do with the old one?" can generate some interesting responses and give you information on how much young people know about e-waste disposal. • Use an image of e-waste and ask for your interviewee's first response to the image. Discarded e-waste

In addition to your surveys and interviews, you will need to collect statistical information about the production and consumption of electronics. Focus on one particular region or area that is relevant to your group.

Data collection: Disposal and recycling

You will also need to collect information on how e-waste is disposed or recycled. If possible, use information that is relevant to your region or country.

STEP 3 **Creating a solution**

Now that you have your information about production, consumption and disposal of electronics, can you recommend changes to this system to make it more sustainable? This ATL skill of creating novel solutions to authentic problems will require you to think critically and laterally.

• Consider what methods make people adjust their behaviour.
• What parts of the network could be easily changed?
• Who is responsible for significant parts of the network?

Your solution must be effective, creative and possible.

Publishing your documentary

Take the time to carefully edit your information into a documentary that is appropriate for your audience. Show it to your peers and assess the impact it has on them.

🌐 **GLOBAL CONTEXTS**
Globalization and sustainability

💭 **ATL SKILLS**
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

TOPIC 2

Biomes

Understanding the biomes in our surrounding environments provides unique insights into the ==equilibrium== of systems. We can learn the role of different ==trophic== levels in the food web and understand how systems cope during times of environmental stress. Studying the interaction between a biome and surrounding human-made systems helps us find out how we are impacting our environment.

Different specialist environments

Take a close look at the natural environment around you. What is the climate like? Are the trees deciduous? Do you have native animals that prefer hotter temperatures to colder temperatures? What sorts of fruits and vegetables can grow without the assistance of a greenhouse? All of these factors are characteristics of the biome that you live in. A biome is an environment characterized by specific temperatures, vegetation and fauna. It represents a network of interconnected systems that rely on the inputs and outputs of each system to sustain life.

Over short periods of time, changes in the output of one system may impact another. For example, a drought may mean lack of vegetation growth, which could lead to a decrease in the population of an animal. Over a longer period of time, changes such as this may result in the adaptation or extinction of a species.

Activity 4 — Create a poster about biomes

Create a poster that compares the networks of four different biomes.

STEP 1 Carry out initial research into the types of biomes you might like to use. Make sure that each group member chooses a different biome.

> **WEB LINKS**
> You can start your research on biomes at www.mbgnet.net.

STEP 2 Individually, select information that will provide you with the following details of your biome:
- location (altitude and latitude, examples of countries that have this biome)
- climate (precipitation, temperature)
- typical vegetation
- terrain
- animals
- threats to biome.

STEP 3 As a group, organize your information on a poster using the following format. For each individual biome, use a variety of ways to present information (maps, diagrams, images and descriptions).

In the centre, create a list of similarities shared by all four biomes. To complete this part of the task, you will need to collaborate with your peers, sharing the information you have researched.

> **Sample layout for poster**
>
> | Biome 1 | Biome 2 |
> | :---: | :---: |
> | | Similarities | |
> | Biome 3 | Biome 4 |
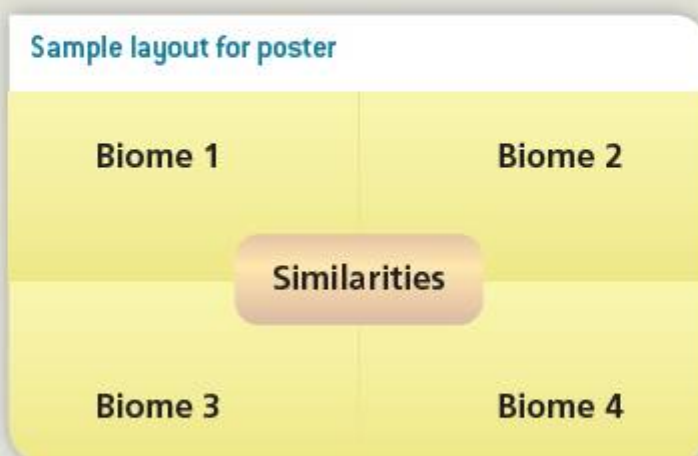
STEP 4 **Compare** your poster with those from the other groups. Are there any similarities that cover all biomes?

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Communication
Collaborate with peers and experts using a variety of digital environments and media.

Give and take

Our ability to extract, modify and use the resources of the environment is what has allowed people to survive and thrive. The networks of resource extraction that have been developed by people over thousands of years directly connect with the natural network of systems within biomes. The issue of using resources from biomes effectively and ensuring that they are available in the long term is called "sustainability". In order to integrate systems into an effective network that is sustainable you have to understand the impacts of the inputs and outputs of the various systems. Every system has particular vulnerabilities; if a part of the system is changed, overused or underused, it will affect the rest of the system.

Human systems have generally interacted with the systems contained within biomes in a way that focuses on extraction of one particular type of resource or part in the system. For example, the extraction of coal in a temperate forest biome also impacts the nutrient systems amongst vegetation, the water cycle and the habitats for fauna, which leads to a change in the way the systems in that biome operate.

Some biomes are more sensitive to change than others but all biomes have vulnerabilities where they interact with people.

👥 Activity 5 — Information pamphlet on mangroves

Prepare an information pamphlet on mangrove biomes that could be used in an educational programme for 11 to 14 year olds. Your pamphlet must include:

- diagrams explaining what mangroves are and where they can be found
- definitions of key vocabulary
- a comparison between two ways people have interacted with mangroves, including the short- and long-term effects.

To compare information, you could create a table, like the one shown in the example on the following page, or use a Venn diagram.

🔗 WEB LINKS
A good place to start researching how mangrove biomes have been impacted by human populations is www.mangrovewatch.org.au.

🔗 INTERDISCIPLINARY LINKS
Sciences

Mangroves are just one of the ecosystems that are sensitive to change. Connect with your knowledge of biology and mutations to investigate how waste and contamination of certain ecosystems has caused mutation of animals sensitive to change.

People interaction 1	People interaction 2
Use of mangroves: ■ ■ ■	Use of mangroves: ■ ■ ■
Impact on mangroves: Short-term ■ ■ Long-term ■ ■	Impact on mangroves: Short-term ■ ■ Long-term ■ ■

Summary comparing the two different uses of mangroves.

GLOBAL CONTEXTS
Fairness and development

ATL SKILLS
Communication
Use appropriate forms of writing for different purposes and audiences.

National park conservation

People who live in biomes that are very vulnerable to change have attempted to minimize the impact of human influence. Some of these strategies are probably quite familiar to you—one of the most common ways of protecting vulnerable environments is to create a park that restricts the sort of human activity that can happen in an area. These restrictions could include limiting the number of people who can visit an area or banning activities such as fishing or hunting.

Parks are created and controlled by local, state and government organizations. The UN also has a special category of protection that is reserved for areas of global significance by UNESCO. This sort of protection has advantages and disadvantages. It can mean that an area in a region has global significance and will attract tourists, but it also severely limits the range of activities that can take place, which might mean giving up the possibility to extract and use valuable resources from the area.

QUICK THINK

Protecting a region may seem like a good idea. But from what you have learned about how systems and networks operate, do you think it is really possible or helpful to isolate one area from another?

WEB LINKS
You can read more about what this designation of "global significance" means at www.whc.unesco.org.

LITERARY LINKS
Learn more about human interaction and management of different biomes by watching the PBS/*National Geographic* documentary *Strange Days on Planet Earth: Predators*.

You have been asked by the editor of *National Geographic* to write an ==opinion piece== on the effectiveness of protecting the rhino in Eastern and Southern Africa through de-horning. Your editor doesn't mind what your opinion is, as long as you:

- provide relevant explanations
- include different perspectives on the issue.

The question you have been given by your editor is: "How effective is this system for protecting the rhino?"

🔗 **WEB LINKS**
A good place to start research for background information is www.savetherhino.org.

Preparing your article

One of the ATL skills for this task is the skill of planning and managing your activities to complete a project. You will notice that the steps for the task have been outlined below, but it is up to you to decide how much time you need to allocate to each step. You may also decide that the steps can happen in a different order. For example, reading different magazine articles and deciding on a structure for your opinion piece could be the first thing that you do.

As a general guide, remember to divide your time roughly in half: 50% for research and 50% for writing, revising and editing.

STEP 1 The first step is to consider what your opinion is on this issue. Do you already know what examples you could use to support your opinion? What other information do you need to find out?

STEP 2 Write your inquiry questions to help you structure your research. Don't forget to record sources as you find information.

STEP 3 Spend some time reading magazine articles from *National Geographic* and other nature magazines to gain an idea of the style of writing.

STEP 4 Create a rough plan of your article structure and start writing.

STEP 5 Revise and edit your work, taking into consideration the requirements of your editor. Have you included any visuals with your article? Think about the impact of graphs, charts, maps and photographs.

STEP 6 Publish your article.

🌐 **GLOBAL CONTEXTS**
Globalization and sustainability

🗣 **ATL SKILLS**
Self-management
Plan short- and long-term assignments; meet deadlines.

Social networks

With modern communication systems, our networks can stretch across national boundaries, linking us with people, services and products that would not have been so easily accessible as recently as 15 years ago. Social networks are the varied ways we can connect with people in a virtual world. These could be to maintain connections with people we already know, as well as using networks for purposes such as finding a new job, making friends or even meeting a life partner. Social networks challenge many of our social norms, including the boundaries between "public" and "private" lives and our definitions of ideas such as friendship.

Circles of connections

You are connected with many people in the world. Your immediate connections are your family and friends, people you come into contact with every day and who have known you for a longer period of time. If we expand the circle of connections, it might include other relatives, people you meet only a few times a year or people who you used to live nearby. The words we use to describe our relationships with other people tend to indicate distance. For example, you might have two or three close friends. Perhaps your distant relatives all live in another part of the country.

How did you meet your friends? Are you in similar networks such as sports clubs or classes? How do you maintain close friendships? What would your friendship network look like if you drew it on paper?

Our different levels of connection with different people are similar to the hierarchies in a food web or the levels in a pyramid. At the top of the pyramid are a few people that we know very well and at the bottom of the pyramid are a lot of people we know but don't have a close relationship with.

Figure 15.2 **An example of a friendship network**

Acquaintances—people you know but not very well
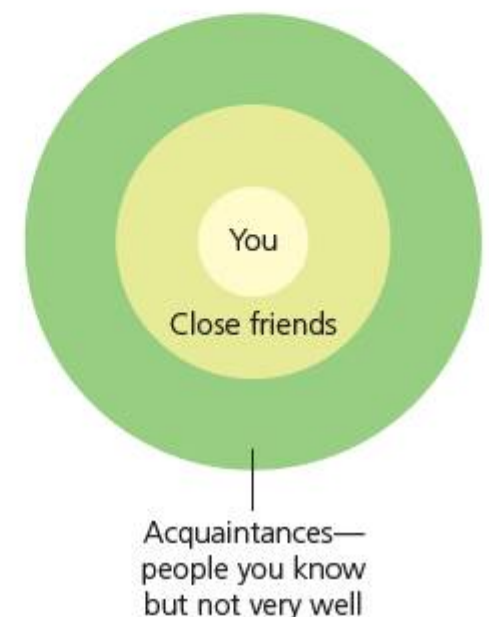
Create a Mind Map® that charts the connections you have with the people in your life.

STEP 1   Generate

Begin by spending five minutes listing all the people who you come into regular contact with. This means that you see or speak to them at least twice a month.

STEP 2   Sort

Sort your list of people into categories. You might like to use labels such as "relative", "friend", "acquaintance", "peer".

STEP 3   Connect

On a large piece of paper, write down the different people you have listed and the categories they are in. Connect them with lines and explanations of how you know them.

STEP 4   Elaborate

Add more detail to your diagram by elaborating on how you classified people, what connections you want to emphasize and any other interesting reflections you had while completing your Mind Map®.

🌐 **GLOBAL CONTEXTS**
Identities and relationships

💬 **ATL SKILLS**
Communication
Organize and depict information logically.

QUICK THINK

Photos of a celebrity's private birthday party appear in a newspaper. Is this information that should always be in the public domain? When does an event in the private domain become something in the public domain? Who has control or influence over this?

Public and private domains

What defines where people are on your social network? People who are close to us are usually the ones with whom we share personal information: our feelings, thoughts, hopes, fears, dreams and experiences. Those further away in our network are people that we may only share basic information with as defined by the relationship. For example, you may know that your neighbour likes goldfish as she has asked you to feed them while she is away on holiday, but you may not know what movies she likes to see or what music she enjoys listening to.

In thinking about the information that we share, we often talk about the public and private domains of information. Anything that is published in the media is considered to be in the public domain—a lot of people have access to this information. Generally, our personal information—things that we share just with our close friends—is considered to be in our private domain. But there is definitely an overlap in these two areas.

With the development of social networking tools such as Facebook, Instagram and Twitter, it has become much easier to share our information within a chosen network of people. We are able to decide if certain information is kept private, shared with a small group or shared with anyone in the public domain who wants to view it.

Activity 8 — Public versus private information

Use the matrix table below to think about and record the information you share and your reasons behind this. When you have completed your table, share the information in your group of three to complete the questions.

	Private domain	Public domain	Both	Examples/questions
Pictures (such as pictures of you, photographs you took)				
Personal factual information (such as date of birth, current location)				
Personal thoughts/feelings (such as reactions to news, journal entries)				
Messages to other people/ groups (such as congratulating a friend on an award, messages to your drama club)				

When you have completed your table, use the information you have recorded to discuss the following questions in your group of three:

1. How do you define "private domain" and "public domain" in your culture?
2. How do you share information?
3. What are the advantages and disadvantages of sharing information?

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Communication
Use intercultural understanding to interpret communication.

Using networks for solving problems

The dramatic rise in social networks has meant that we are in contact with more people, in a wider variety of locations, than ever before. There is a tremendous potential for this interconnected network to operate

in a variety of ways. Think about how many people you can connect to online. Already, we have seen social networks being used to organize demonstrations, locate missing people and solve crimes. Social networks have also been used for such diverse activities as crowd-sourcing funding, solving mathematical problems and coordinating aid efforts.

Social networks such as Instagram and Facebook connect people with friends that they might have lost contact with. Twitter allows people to send out short messages and use hashtags to create a searchable database of different topics. Tweets allow people to share the latest news and information, often before it is broadcast by other media. Networks such as Kickstarter allow people with ideas or products to gain funds to support their business from other Kickstarter users, bypassing traditional ways of raising money such as getting a loan from a bank. Other websites, blogs and social networking media can connect people who may be isolated by distance or a physical condition. They can connect people with similar interests or hobbies. They are having a profound influence on how we traditionally perceive friendships and relationships.

WEB LINKS
Jonathan Harris and Sep Kamvar have created an artwork based on the charting of human emotions in thousands of blog postings on the web. Is this an example of private information in the public domain? See for yourself at www.wefeelfine.org.

Activity 9   Persuasive speech—"The future of social networks"

What is the future of social networks? Are they a force for good? Answer using the format of a persuasive speech lasting 3 to 5 minutes to argue your opinion.

Persuasive speaking

This sort of speech involves giving your opinion on a topic and supporting it with relevant examples. You will need to grab the audience's attention and hold it throughout the entire speech, so the key is to spend equal time on the content as well as the delivery.

Content	Delivery
■ Start with something to grab your audience's attention. This could be a surprising fact, a rhetorical question or an anecdote. ■ Use relevant examples that your audience will understand and that connect with their experiences. ■ Have a conclusion that restates your main arguments. ■ Acknowledge the opposite side of the argument but explain why you disagree. ■ Facts and details will help you justify your opinion and convince your audience.	■ Speak more slowly, clearly and loudly than you normally would. ■ Don't be afraid of pauses. They allow your audience time to absorb the information. ■ Make sure you know how to pronounce difficult words. ■ Make frequent eye contact with the whole audience (and not just the teacher). ■ Smile. ■ Use relevant hand gestures to help emphasize your point but avoid pointing at your audience. ■ Practise, practise, practise before your speech.

Almost everyone in the world is nervous before they have to speak in front of an audience. Here are some tips to help you build confidence:

- Speak to your teacher about your concerns. They will be able to help you with practice and advice.
- Practise your speech with as many people as possible—your family members, friends, to yourself in the mirror.
- Take a deep breath before you start and smile at your audience. This will make you and them feel better straight away.
- Steady your hands by holding your notes or by putting your hands behind you.
- Sometimes, doing your speech is the only way to get rid of your nerves. So, if possible, volunteer to go first. Your classmates will appreciate you taking this brave step.

The fear of public speaking

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"If I can get abducted by aliens this morning, I won't have to give my presentation this afternoon!"

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Self-management
Consider ethical, cultural and environmental implications.

Summary

Although you have read about three different sorts of networks, they all have aspects in common. Waste management, biomes and social networks are all systems in our lives. They have inputs and outputs, they have interactions between human and environmental systems and they can all be changed. When attempting to change the processes of a network, you will need to try to predict the effects of the change in the different systems.

INQUIRY QUESTIONS

TOPIC 1 First World War alliances

- Which countries formed alliances in the First World War?
- What are the obligations of an allied relationship?
- Are alliances always beneficial for all the countries involved?

TOPIC 2 The media

- What methods does the media use to communicate news?
- How does the media influence policy?
- Do people have a right to know everything that their government does?

TOPIC 3 Climate change

- What are some impacts of climate change?
- How do environmental systems deliver essential services for human populations?
- Does interdependence mean the same as shared responsibility?

ATL SKILLS

✓ Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

✓ Demonstrate awareness of media interpretations of events and ideas.

✓ Read critically and for comprehension.

✓ Present information in a variety of formats and platforms.

✓ Consider ethical, cultural and environmental implications.

✓ Use appropriate forms of writing for different purposes and audiences.

✓ Access information to be informed and inform others.

✓ Collaborate with peers and experts using a variety of digital environments and media.

RELATED CONCEPTS

Cooperation   Conflict   Relationships   Culture
Causality   Integration   Social interaction

GLOSSARY

Damage control the need to limit the negative press surrounding a particular incident.

Disseminate spread or disperse information.

Sovereign ruler a supreme ruler or power, often a king or queen.

Succinct to be clear and to the point.

Whistle-blower a person who takes a risk in making information public about something allegedly illegal being done by an organization.

COMMAND TERMS

Analyse break down in order to bring out the essential elements or structure; identify parts and relationships, and interpret information to reach conclusions.
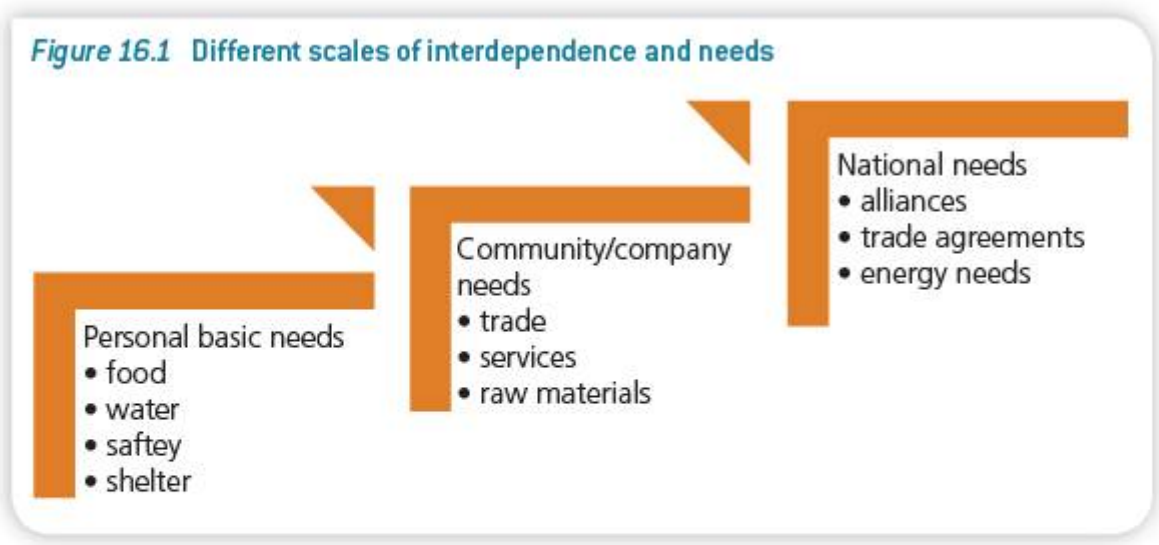
Design produce a plan, simulation or model.

Develop improve incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state.

Introducing interdependence

Interdependence can be defined as the reliance of two or more people, organizations or countries on each other. The relationship of interdependence can be formed around a common goal such as safety, preservation of an environment or solving a global issue. Like many related concepts, it helps to think about interdependence on different scales.

Look at Figure 16.1 below and think about early human settlements. Why did people group together to live and hunt? A tribal group could share protection at night from attackers—only some of the group would need to guard while the rest would be able to sleep. A group of hunters could work together to kill a large animal that would feed many. Interdependence and bonds in our social network are formed and strengthened by mutual interest.

Figure 16.1 Different scales of interdependence and needs

National needs
• alliances
• trade agreements
• energy needs

Community/company needs
• trade
• services
• raw materials

Personal basic needs
• food
• water
• saftey
• shelter

At a community or company level, exchange between two parties may be based around raw materials, trade of manufactured goods or exchange of expertise in particular services.

Nationally and internationally, interdependence has traditionally happened via political alliances and trade agreements. These bonds may have been formed through an imperial or colonial relationship, or through a mutual interest in a cause or goal. They may also form when there is a shared problem to solve or enemy to defend against. Increasingly, solutions to global concerns such as rising sea levels caused by climate change will rely on interdependence and cooperation between different countries.

For many of the issues discussed in this chapter, interdependence is directly connected to security—personal, community or national security.

CHAPTER LINKS
Security doesn't just have to mean safety. As you will discover in chapter 17, security can mean the reliability of a consistent food and water supply or the provision of safe health services.

The reliance of countries on the Earth's systems means that we are interdependent on how they are used. Ecologist Garrett Hardin wrote about this phenomenon, calling it the "tragedy of the commons", where a resource that is available to many but owned by no one relies on cooperation between the people who want to use it. If certain individuals decide to use the resource as much as possible for personal gain without consideration for others, the resource will no longer be useful.

TOPIC 1

First World War alliances

The assassination of Archduke Franz Ferdinand in Sarajevo in 1914 set off a chain of events that led to a world at war. Leaders and politicians scrambled to establish and reinforce alliances between countries as a means of protection. The USA stayed out of the conflict until 1917 but was courted by both the Allied Powers and the Central Powers, despite declaring neutrality in 1914. While alliances between countries offered protection, they also meant obligation. For many of the smaller members of the allied forces, this obligation was fulfilled by the sacrifice of thousands of young men and women.

Taking sides

Before the outbreak of the First World War, countries in Europe were establishing connections in the form of alliances (see Figure 16.2). One of the motivations for making an alliance was concern about growing military and naval power among major nations.

By developing their military power, it could be guessed that some countries were readying themselves to increase their empires throughout the European continent and beyond.

TIP

The Central Powers are also referred to as the Triple Alliance in literature. The Allied Powers are also called the Triple Entente. "Entente" is a French word, which is a good way to remember that the Triple Entente had France as a member.

Other countries grew concerned about possible invasions and so quickly formed bonds with each other as a security measure. The details of these interdependent relationships covered benefits as well as obligations for members of the alliance.

Figure 16.2 European alliances before the First World War broke out

Allied powers	
Central powers	
Neutral countries	

Activity 1 — "The enemy of my enemy is my friend"

Design an annotated map that shows details of the alliances in Europe before the outbreak of the First World War. You can see an example of an annotated map by going to www.businessinsider.com and searching for "2013 climate map". You might like to create your annotated map using mapping software such as Google Maps. Be sure to address the following questions:

- What did each set of alliances have in common? (Think about aims, ideologies, location.)
- What were the benefits and obligations of each alliance?

In a paragraph, give your opinion on whether you think the Central Powers and the Allied Powers were only united through a common enemy.

TIP
- Maps require a title.
- Annotations need to be succinct and placed on the map without obscuring other information.
- Consider using a key.

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Research
Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media.

Remaining neutral

As you can see from the map (Figure 16.2), certain countries quickly declared themselves neutral when war broke out in 1914. Not all of these countries managed or decided to stay neutral throughout the war. The USA declared its neutrality but later joined the Allied Powers in 1917, partly as a result of the bombing of the cruise ship *Lusitania* by German U-boats. Belgium declared its neutrality but was invaded by German troops marching towards France.

Switzerland is well known as a neutral country, throughout both world wars and right to the present day. Given what you know about the benefits of an interdependent relationship between countries, why would a country such as Switzerland choose to turn down the option to form an alliance?

Activity 2 — Switzerland—remaining independent not interdependent

Multimedia presentation

For this activity, you will be working in groups to analyse Switzerland and its history of remaining neutral. The key to successful group work is clear communication and allocation of tasks.

STEP 1 Plan and Organize
Like previous topics, it might be helpful to look at this topic through the perspectives of social, economic, environmental and political factors.

STEP 2 Assess your group talents
Who knows how to use multimedia software? Who enjoys researching or writing? Think about the strengths of each group member and allocate tasks accordingly.

STEP 3 Inquiry questions
Work as a group to construct inquiry questions to guide the research.

STEP 4 Collecting information
During the research part of the project, ensure that you are documenting your sources. It may also be helpful to collaborate with members from another group.

STEP 5 Write and present
Ensure that the presentation accurately communicates what you have learned about why Switzerland chooses to remain a neutral country. Highlight the factors that you think are the most important.

Perspectives on interdependence

As the war progressed through 1915 and 1916, it became clear that the structure of the alliances meant both benefits and obligations for its members. Countries such as Australia and New Zealand declared war in August 1914 as they were part of the British Empire. In hindsight, it seems strange for countries thousands of kilometres away to declare war in a conflict that began with the assassination of an Austro-Hungarian Archduke. For these colonies, their perspective on interdependence was that if their **sovereign ruler** was at war, then they were obliged to participate.

While Italy was initially allied with the Central Powers, the Allied Powers offered significant deals that persuaded Italy to switch sides. This relationship based on interdependence appeared to be less strong; Italy's rulers considered the options of alliance available to them and chose what they believed was in the country's best interests.

LITERARY LINKS
Watch the film *Gallipoli*, starring a young Mel Gibson, to learn more about Australians in the First World War and the obligations they had as part of the British Empire.

Activity 3   Source analysis and creation—obligation and advantage

This task will challenge your skills at analysing images and evaluating their meaning based on the historical context. You will then create your own visual resource that demonstrates your knowledge of the concept of interdependence through the event of the secret Treaty of London in 1915.

Source analysis

STEP 1 Look closely at the source, entitled "Obligation". Identify what historical event is being depicted in the source.

TIP
You will have learned about tone in your language and literature class. Consider the tone of the text in this source.

STEP 2 Think about the text. Who is speaking? Who is the audience? What is the message? How is the message being conveyed?

STEP 3 Think about the images. What images are being used? How are they drawn? Are they metaphors or representations?

STEP 4 Sources are assessed for reliability. How reliable is this source in showing the interdependence between members of the British Empire? Think about who created the source and what its purpose is.

STEP 5 Sources are also assessed for validity. How valid is this source in showing the interdependence between members of the British Empire? Think about when it was created. Is this source biased towards one particular point of view?

Obligation

THE EMPIRE NEEDS MEN!
AUSTRALIA CANADA INDIA NEW ZEALAND
All answer the call.
Helped by the YOUNG LIONS
The OLD LION defies his Foes.
ENLIST NOW.

Source creation

In 1915, the secret Treaty of London was signed between France, Great Britain, Italy and Russia. This was the indication of Italy changing alliances and breaking away from Germany and Austria-Hungary.

STEP 1 Research the Treaty of London. You might like to begin with the source in the Web Links box.

STEP 2 Write a summary paragraph that explains your perspectives on interdependence in the context of Italy changing alliances in 1915.

STEP 3 Create an artefact that represents the Treaty of London. This could be a pamphlet, a newspaper article or a poster. The artefact has to be historically accurate.

WEB LINKS
To learn more about the Treaty of London go to www.history.com and search for "Treaty of London".

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Research
Demonstrate awareness of media interpretations of events and ideas.

The media

The role of the media is to **disseminate** information of public interest. But who decides what the public are interested in? Some media publishers believe that the public is only interested in what a celebrity bought at a supermarket, but other media outlets believe that the public has the right to know anything that is currently happening in the world. In some instances, the individuals, organizations and governments that are involved in stories featured in the media may have an opinion about the "right to know" that conflicts with the values of the public or media organizations. However, they are dependent on the media for informing the people of issues they want to be made public. What happens in an interdependent relationship when one party disagrees with the values of the other?

> *A flourishing, morally credible media is a vital component in the maintenance of genuinely public talk, argument about common good.*
>
> Poet and theologian Rowan D. Williams

History of the media

The invention of the movable-type printing press by Johannes Gutenberg led to the rise of newspapers in Europe during the 17th century. Production of news that could be read by anyone who was literate began the start of an interdependent relationship between the media, politicians and the public.

In the 17th century, there were just newspapers but today there are a huge variety of ways to gain information about what is going on in our world.

Figure 16.3 The history of the media

1. 1605: First newspaper published in Straßburg, Germany.

2. 1844: First telegram sent from Washington DC, USA

3. 1920: First radio news broadcast aired in Detroit, USA

4. 1936: First public television service broadcast from London, UK

5. 1994: First news website www.rant.com launches

What events are considered to be important enough to be reported in the news? Choose one day and ten different media sources to evaluate what's happening.

STEP 1 Choose a day for your media review.

STEP 2 Access a selection of media resources. Be sure to include media from at least three different countries, newspapers, news websites, radio and television.

STEP 3 Collect the main article or lead news story from each media source. This might involve taking a screenshot of the headline or writing down what you heard on the radio. Be sure to accurately record the reference details for each of your media sources.

> 🔗 **WEB LINKS**
> A useful tool for creating screenshots is Jing. Go to www.techsmith.com and search for Jing.

STEP 4 Organise your headlines into a collage. You could use an online tool such as Glogster to do this.

STEP 5 **Analyse** the content of each of the headlines from different media sources on the same day. Is the same news event being reported? Do the headlines have something in common? Can you use your own knowledge to explain similarities or differences in the events that are reported?

🌐 **GLOBAL CONTEXTS**
Orientation in space and time

🧠 **ATL SKILLS**
Communication
Read critically and for comprehension.

Interdependence on media

We are dependent on the media to inform us of events that are happening locally, regionally and internationally. But how do these news outlets know about these events in the first place? Many companies, politicians and celebrities have media advisers that provide guidance on message and image. There is a relationship of interdependence between the media and these groups; they depend on the media to communicate their message to their supporters. The media depends on companies, politicians and celebrities to supply them with details that will sell newspapers, entertain viewers and inform listeners.

Activity 5 — Good press gone bad

In groups of 3 or 4 create a multimedia presentation that describes the changing relationship between the media and a person or organization.

STEP 1 Choose the focus of your presentation. Some suggestions are listed below.
- Former US president Bill Clinton
- Enron
- ExxonMobil or BP
- Former South African president Nelson Mandela
- Oprah Winfrey
- Madonna
- Lance Armstrong
- Martina Hingis

Your example can be a person or organization, but they must have experienced a variety of positive and negative press.

STEP 2 In your group, brainstorm the goals of your final presentation. You need to present an analysis of how the press can present different perspectives of a person or organization. This means that you will have to sample a variety of media sources and ensure that you keep careful documentation of your sources.

STEP 3 Develop inquiry questions to guide your research.
- How is this person or organization currently portrayed by the press?
- What incidents in the past have been publicized in the media?
- How have these portrayals influenced public opinion of this person or organization?
- Have there been any occasions when the media advisers for the person or organization have gone into damage control?

STEP 4 Using your timeline skills, create a graph that documents the rise and fall of the individual, company or organization.

STEP 5 Your final product should be a multimedia presentation, using a format such as Prezi (www.prezi.com) or VoiceThread (www.voicethread.com), or narrating a slide show to document the media interaction with your chosen person or organization.

STEP 6 As part of your product, be sure to include an analysis of the interdependence between the media and your chosen person or organization.

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Research
Present information in a variety of formats and platforms.

Changing ways to share information

Increased access to technology has in turn increased the speed at which we share information. Events such as sporting competitions can be broadcast live on television and radio. There are now millions of people sharing comments and pictures through social media sites that give millions of other perspectives on events. With an increased ability to share information, what happens when something is made public that was only intended for a very select audience?

An organization known as WikiLeaks was founded in 2007 with the aim of providing information to the public that relied on anonymous sources to leak details of issues such as government security, trade and policies. The organization created alarm in 2010 when it released significant amounts of confidential information involving war crimes, corruption, torture and other human rights violations. The information was mostly generated from government sources and provided to WikiLeaks by whistle-blower Bradley Manning. The information was controversial as it included details of government operations in security and defence, which governments believed they had the right to keep secret. But as an independent media organization WikiLeaks believed that the public had a right to know this information.

What happens when two interdependent organizations disagree on such a crucial aspect of the relationship? How is it decided what is "fair" or "right"? Who is responsible for making the decision? Governments argue that the public didn't have to know these security details, but WikiLeaks thinks that they do have a right to know. What do you think?

Activity 6   Round-table discussion

Participate in a round-table discussion about the relationship between the media and government organizations.
- Should the press have complete freedom?
- Does the public have the right to know everything?

STEP 1 Begin by thinking about your position on this issue. How do you feel about the freedom of the press?

STEP 2 Spend some time researching the issues surrounding WikiLeaks and its spokesperson, Julian Assange. What are the different perspectives on this issue? What has happened to the whistle-blowers involved in the release of confidential information?

TAKE ACTION
Write an editorial piece based on the class discussion and submit it to your local newspaper for publication.

STEP 3 Create a Mind Map® or other graphic organizer that helps you structure your ideas about the interdependent relationship between the media and government organizations. Make sure you are addressing the two discussion questions.

STEP 4 Work with the following ATL skills:

Preparing for the discussion	During the discussion
Consider ethical, cultural and environmental implications of issues	Demonstrate persistence and perseverance
■ What are the ethical implications of revealing the identity of whistle-blowers? ■ Does the role of the media differ in different cultures? ■ Should there be someone responsible for monitoring the virtual environment?	■ How can you ensure that your point of view is heard? ■ Can you calmly respond to perspectives that differ from your own opinion? ■ Are you able to be patient but still persist in sharing your opinion?

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Self-management
Consider ethical, cultural and environmental implications.

TOPIC 3

Climate change
Essential global services

The previous examples of interdependence have focused closely on specific organizations and groups. In reality, all countries are interdependent on each other when considering the essential services of the Earth that everyone relies on to survive.

This sort of interdependence is on a scale that can be difficult to grasp. The essential services of the Earth involve weather, the water cycle, nutrient cycles and tidal patterns. As you have learned in chapter 15 on networks, the interconnectedness of these different systems means that even a slight change in one area can have consequences in many different parts of the system.

Sometimes this scenario is referred to as the "butterfly effect"—a scientific theory that small change in one area, such as a butterfly flapping its wings, could have a significant effect in another area, such as the formation of a hurricane.

Activity 7 — From a vending machine to the Pacific—one bottle's journey

Role	Author/scientific researcher
Audience	Student choice
Format	Student choice
Topic	The Great Pacific Garbage Patch

WEB LINKS
A great introduction to this phenomenon is on www.youtube.com. Search for "Great Pacific Garbage Patch" on the SciShow channel.

You are an author explaining the formation of the Great Pacific Garbage Patch. For this task you can choose who the audience is and what format you want to use. You could write a scientific report, a short story, a flow chart, a screenplay . . . the possibilities are only limited by your imagination.

STEP 1 Choose a format and an appropriate audience. This will help guide you in terms of the level of vocabulary you will use and the amount of detail you want to include.

STEP 2 Create inquiry questions that will guide your research.

STEP 3 Use a graphic organizer or Cornell notes to record your information and your sources.

STEP 4 Create a draft version of your product and have it reviewed by several of your peers, and also self-assess your writing against the assignment criteria.

WEB LINKS
You can generate your own notepaper for Cornell notes at www.cornell-notes.com.

STEP 5 Revise, edit and publish your final copy.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Communication
Use appropriate forms of writing for different purposes and audiences.

Rising sea levels

No matter where a country is located, it is dependent on the Earth's systems to maintain life. Climate patterns, tides and the water cycle all deliver essential benefits. This interdependent relationship has become clearer as scientific research has established the impact of CO_2 emissions, sea pollution and a warming atmosphere.

Uncontrolled emissions of carbon dioxide have contributed to the rise in the average temperature of the Earth's surface. Oceans have absorbed approximately 80% of this extra heat, with several serious impacts.

QUICK THINK

Are parts of the country you live in susceptible to rising sea levels? What about other places you have been to or lived in?

When water heats up, it expands. This causes a rise in sea levels. In addition, more water is flowing into the ocean from melting ice caps and glaciers and less water is evaporating, resulting in a gain in the amount of water in the oceans.

So far, few countries have been affected by these impacts but for Tuvalu, a South Pacific island nation with a maximum elevation of 4.6 metres, rising sea levels are having serious consequences. Now, countries such as Tuvalu are facing the real possibility that they will disappear altogether, possibly within the next 50 years. Because Tuvalu is a small nation, it is unable to cope with the effects of climate change and rising sea levels caused by warmer seas and is dependent on other nations curbing their CO_2 emissions to prevent further warming.

Activity 8   Informative speech—Tuvalu's future

As a citizen of Tuvalu, you have been invited to speak at a conference hosted by the UN Framework Convention on Climate Change. You will be speaking on behalf of young citizens of this island nation, explaining the possible future of Tuvalu if sea levels continue to rise.

Your speech must be:

- in formal language
- informative
- accurate
- 4–5 minutes long.

STEP 1 This task requires you to present detailed information in a specific role. Use these guidelines to structure your inquiry questions.

STEP 2 Consider the formality of the occasion—you've been asked to speak in front of delegates from countries around the world. This will influence the structure and tone of your speech.

STEP 3 As you write your speech, check that you have detailed, relevant facts and make sure you include the sources.

STEP 4 Use the advice in Activity 9, chapter 15 on networks (see pages 204–5) to help you practise giving your speech.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Research
Access information to be informed and inform others.

Interdependence and responsibility

Using the example of Tuvalu, it is possible to see how we are all dependent on using the Earth's limited resources in a responsible manner. But who decides what is responsible? As you have no doubt discovered during your research, there is frequent disagreement among scientists and politicians as to how resources should be managed.

Many of the arguments around management involve a complex interaction between the allocation of responsibility, the development and wealth of nations, and scientific research.

Activity 9   A workshop on interdependence and climate change

Role	Workshop leaders
Audience	Students aged 8 to 10 years
Format	Interactive workshop lasting 30 to 45 minutes
Topic	Interdependence and climate change

Design a workshop that explains the concept of interdependence in relation to climate change for students aged 8 to 10 years.

STEP 1 Brainstorm some initial ideas in your groups of 3 or 4. What are some of the key details that have had an impact on your understanding of interdependence?

STEP 2 Choose the big ideas that you would like your workshop participants to have by the end of the workshop. Write these down as statements beginning, "Students understand that . . ."

STEP 3 Divide your workshop up into five-minute sections and develop a framework for activities.

STEP 4 As a group, allocate tasks based on the skills and strengths of each group member.

STEP 5 Combine different activities and knowledge to create your workshop. Think about how you like to learn things and ensure that there are a variety of activities for the workshop participants.

STEP 6 Practise the different activities and presentations in your workshop. If possible, work with another group of students who can pretend to be your participants. Check that the material and activities are suitable for students aged 8 to 10.

STEP 7 Deliver your workshop.

TAKE ACTION
Offer to give your workshop to students in other primary schools or local community groups.

STEP 8 After the workshop, spend some time as a group and individually reflecting on the workshop. Did you achieve your goals?

GLOBAL CONTEXTS	ATL SKILLS
Fairness and development	**Communication**
	Collaborate with peers and experts using a variety of digital environments and media.

Summary

You have examined how interdependence is closely linked to the related concepts of networks, choice and sustainability. Individuals, groups and countries rely on each other during times of peace and war. We make choices about who we are connected to, based on information we receive through different media. The media informs and influences our ideas of the world around us but can often provide conflicting messages. The single biggest factor connecting every person is our dependence on the Earth to provide essential life services; oxygen, food, water, shelter and safety. Continued access to these services relies on different countries having a sustainable and responsible interdependent relationship.

CHAPTER 17 Globalization

INQUIRY QUESTIONS

TOPIC 1 Food security

- What are a young person's basic nutrition requirements?
- How is food security different from food scarcity?
- Is there enough food in the world for everyone?

TOPIC 2 Infectious diseases

- What infectious diseases are most prevalent in the world today?
- How do infectious diseases impact the economy?
- Should governments be responsible for eradicating infectious diseases?

TOPIC 3 Urbanization

- What factors are causing people to leave rural areas?
- What is the connection between culture and changing patterns in urbanization?
- Are urban areas less harmful to the environment?

ATL SKILLS

- ✓ Access information to be informed and inform others.
- ✓ Plan strategies and take action to achieve personal and academic goals.
- ✓ Draw reasonable conclusions and generalizations.
- ✓ Use and interpret a range of discipline-specific terms and symbols.
- ✓ Locate, organize, evaluate, synthesize and ethically use information from a variety of sources and media.
- ✓ Create original works and ideas; use existing works and ideas in new ways.
- ✓ Use appropriate forms of writing for different purposes and audiences.
- ✓ Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.
- ✓ Manage and resolve conflict, and work collaboratively in teams.

RELATED CONCEPTS

Interdependence   Innovation   Networks
Relationships   Sustainability

GLOSSARY

Arable land land that has fertile soil and is accessible for farming.

Empathy the ability to understand and share the feelings of others.

Pathogens a bacteria or virus that causes a disease.

Push and pull factors a pull factor is something that attracts people to a community. A push factor is something that drives people away from a community.

Rebuttal to argue against.

COMMAND TERMS

Create evolve from one's own thought or imagination, as a work or an invention.

Design produce a plan, simulation or model.

Explain give a detailed account including reasons or causes.

Present offer for display, observation, examination or consideration.

Sketch represent by means of a diagram or graph (labelled as appropriate). The sketch should give a general idea of the required shape or relationship, and should include relevant features.

Introducing globalization

Globalization is a concept that you are no doubt very familiar with. It became common as a term in the late 1970s as modern communications and transport enabled an increasing number of companies and countries to connect across political and geographical boundaries.

Studying globalization is often used alongside the study of networks, particularly focusing on the interaction of markets and economies. For this chapter, you will be studying globalization in connection with the key concept of change. Globalization naturally brings about an interaction between cultures, societies, ideologies and economies, which tends to lead to change. Part of understanding the interaction of the concepts of globalization and change is evaluating the impact of change. You will have your own ideas about whether impacts are positive or negative; it will require your skills of ==empathy== to evaluate these impacts from the perspectives of different groups of people affected.

Like many concepts and topics you study in individuals and societies, it helps to evaluate globalization in terms of social, economic, environmental and political (SEEP) effects. Within each of these four categories, you should also consider positive and negative effects as well as short- and long-term effects.

Figure 17.1 The SEEP framework for analysing issues and events
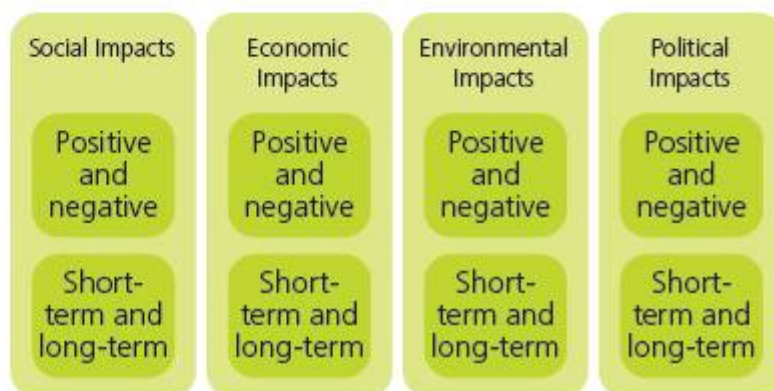
Of course, the impacts of globalization vary. For example, there may be positive social impacts in one country in the short-term. But in the long-term, the impact of globalization may be negative. While you are not expected to be able to predict all possible impacts, you do need to think carefully and consider how effects are interdependent on each other.

Social

Social factors affected by globalization are aspects of our lives to do with health, education, community and culture. When considering whether globalization effects changes in people's lifestyles, you could examine factors such as life expectancy, access to education, access to

health care, changes in culture and traditions, or changes in the way that communities are organized.

Economic

The economic factors that are affected by globalization include the structure and performance of markets within a country. Globalization also connects with the currency of a country and its strength in relation to other currencies. Economic impacts can be measured by indicators such as a rise or fall in Gross National Income (GNI) or average income per household.

Environmental

Traditionally, students were encouraged to analyse an issue through its social, political and economic impacts. However, as greater impacts from resource use began to occur—such as environmental degradation and climate change—it is now necessary to consider how environments can be changed through globalization. Impacts on environments need extra consideration as such changes are not necessarily restricted by country borders.

Political

Political factors refer to how a country or community is governed. This includes the structure of government, the processes surrounding election of representatives, and the types of political parties. Governments are responsible for making laws that directly influence the society, economy and environment of a country. They are also responsible for interactions with other governments.

TOPIC 1

Food security

Food security—where all people have access to enough safe and nutritious food to maintain a healthy life—is something that rarely crosses the minds of most people. Supermarkets are now expected to carry a full range of food from around the world—mangoes available in winter, speciality Asian foods available in Europe, and American chocolate bars available in Australia. But what about the estimated 800 million or so people in the world who do not have food security? Why are they unable to access what many people rarely think about? Living with constant food insecurity can have significant short- and long-term effects both on individuals and communities.

The world on my plate

Think about what you have eaten today. Do you know where it was bought? Do you know where the ingredients in the food were grown? Could you identify the plant that produces the grain or fruit or vegetable that you have eaten? For many people, there is an increasing disconnect between what they eat and how it was produced. Supermarkets that stock a huge variety of fruit, vegetables and processed foods can readily supply us with our daily nutritional needs.

Activity 1 — What can I eat?

You will conduct an investigation into what is available in your local supermarket or farmer's market, and then present your findings in the form of an annotated map.

TIP

Be as specific as possible in your questions. Note the use of the word "unprocessed", which means raw fruit or vegetables. Any food item that has been cooked, frozen, tinned or mixed with another food item can be classified as "processed".

STEP 1 Inquiring

Develop eight inquiry questions that will help you learn more about what is sold in your local market. Some suggestions include:

- What is the most expensive processed food item?
- What is the cheapest unprocessed food item?
- Which regions or countries supply vegetables to the supermarket?
- Which processed food item has travelled the greatest distance?

STEP 2 Organizing

Using a blank outline map, annotate it with labels showing country of origin, distances and prices of food. Be sure to label your map clearly, and provide a key and scale if necessary.

STEP 3 Analysing

Compare your results with students who surveyed other supermarkets. What were the similarities or differences? Can you explain these?

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Research
Access information to be informed and inform others.

TAKE ACTION

Have a debate with your family about where they think it is best to source food from. Is it better to buy food locally or to buy organic food sourced from further away?

Impacts on food security

Producing food for a country's population requires certain conditions: arable land; a suitable amount of rainfall; and the machinery or people to plant and harvest crops.

In the 1960s and 1970s, the Punjabi state in India experienced the Green Revolution, a combination of scientific developments in agriculture that led to an increase in food production. Much of the research originated in the USA, funded by corporations. It was hailed as a dramatic change that would lead to the end of world hunger. Irrigation, high-yield crops and more effective fertilizers provided an increase in food production. But as the global population has increased, food production has not kept up. Or has it?

Food availability is linked to available arable land, as well as factors such as political stability, government support for farmers, and farming technology. The distribution of arable land is not equally spaced around the world, meaning that farmers in marginal areas rely on irrigation, fertilizers and specially adapted crops to be able to grow food.

Activity 2 — Research report—evaluating food insecurity

This Activity will encourage you to evaluate the causes and effects of food insecurity through the creation of a research report.

Role	Educational consultants working for the UN World Food Programme
Audience	High school teachers
Format	Research report
Topic	Causes and effects of food insecurity

You will be working in groups of 2–3 to prepare your report. Follow the steps below to guide you through the process.

STEP 1 Choose a country that you will focus on for your research. Spend some time reviewing the information from the web links box to help you make your decision. Of course, you can also use additional sources of information.

STEP 2 Divide up the research areas among the group members. Make sure that everyone knows what area of research they are responsible for.

STEP 3 Research information to help you compile your report. You might like to create graphic organizers like the ones below to help you. Record your sources as you are researching. Remember, there may be more causes and effects in some areas than in others.

You could also label each cause and effect as short-term or long-term.

The causes of food insecurity

The effects of food insecurity
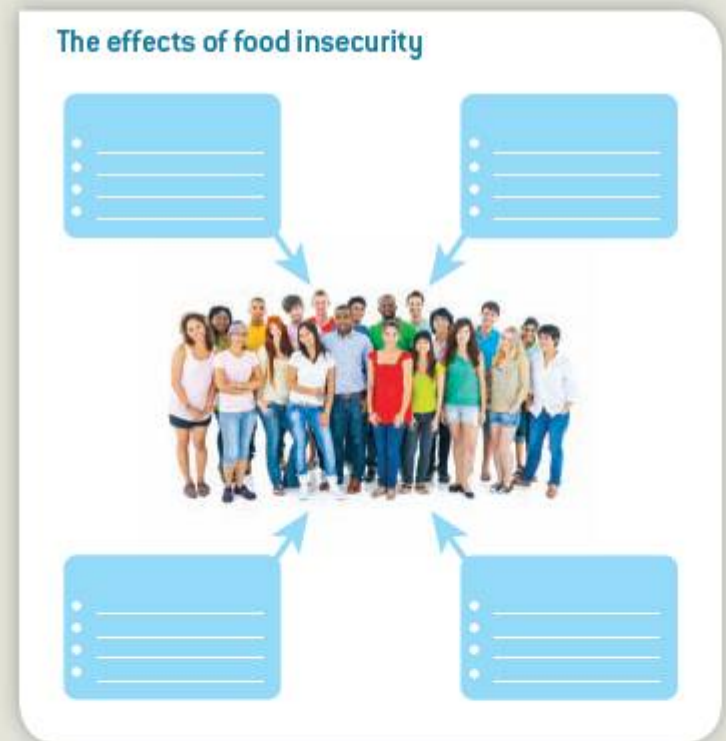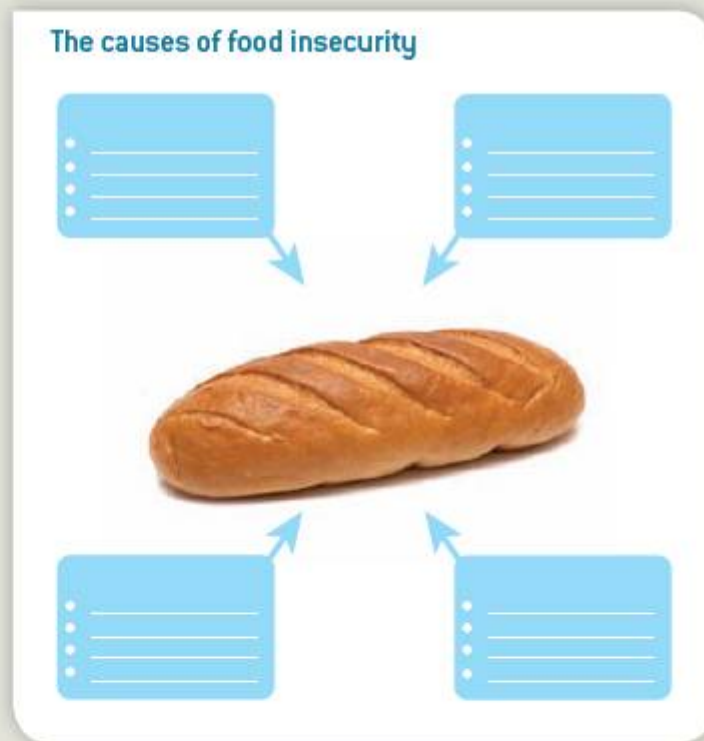
STEP 4 Use headings from your notes to generate different sections in your report. Divide up the writing of different sections among your group members.

STEP 5 Compile your report and work together on a conclusion in the form of a ranked list. Your group will need to consider the three most important causes and effects of food insecurity in the country you have researched.

GLOBAL CONTEXTS
Identities and relationships

ATL SKILLS
Self-management
Plan strategies and take action to achieve personal and academic goals.

Global pressures and demands

Improvements in storage and transportation have led to a greater variety of food products being shipped around the world. Demand from consumers means that there is a market all year round for tropical fruits, vegetables, herbs, spices and grains. For farmers living in areas where these crops grow, there is a financial incentive to grow crops they can sell for money rather than crops that they would grow to supply their own food needs.

Globalization has provided people with access to products that previously had limited availability. But, as inquiring students, it is important to evaluate the benefits and costs of this. Some organizations are already aware that cash incentives for crops sold for export have left communities without the ability to feed themselves. In order to provide advice and avoid this impact, organizations such as Fair Trade work with local farmers to prevent food shortages while providing business advice in order to enable them to earn money.

Activity 3 — Persuasive essay

Explain how globalization can be used to improve food security around the world. In your response, refer to the impacts of interdependence, innovation and sustainability.

STEP 1 When you are assigned an essay task, the first step is always to "decode" the question.

- Look for the command term. This is the action word that tells you what sort of thinking you have to do.
- Are there any case studies or examples that you have to include? These are generally written in the second part of the question. In this case, the question asks you to refer to the related concepts of interdependence, innovation and sustainability. You can use any specific case studies or examples to support your explanation.

STEP 2 Write your inquiry questions to guide your research. You could use the three related concepts as research categories for your questions.

STEP 3 Carry out your research, accurately recording your sources as you go.

STEP 4 Formulate your thesis question. Remember, this is a phrase consisting of one or two sentences that summarizes your entire essay. Use part of the essay question in your thesis statement. For example, you can start: "Globalization can be used to improve food security by . . ."

STEP 5 Draft your essay.

STEP 6 Revise and edit your essay after having it peer reviewed. Don't forget to check your essay against the assessment criteria and be sure that it addresses the question.

GLOBAL CONTEXTS
Globalization and sustainability

ATL SKILLS
Thinking
Draw reasonable conclusions and
generalizations.

TAKE ACTION
Have you ever tried to grow your own food? Even without a
garden, you can use small boxes and pots to grow herbs and
some vegetables.

TOPIC 2

Infectious diseases

Solving health problems on a global scale

The eradication of smallpox in 1975 was hailed as a triumph by health
officials around the world. It had required significant coordination and
cooperation between governments, as well as a committed task force
of public health workers. After eradicating smallpox, it seemed that
globalization and advancements in medicine could mean that other
diseases such as polio, malaria and HIV/AIDS could also be wiped out.
But these diseases continue to persist in specific regions of the world.
Exploring this issue in more detail will further your understanding of
cooperation as a result of globalization and will also encourage you to
make interdisciplinary links with sciences and with physical and health
education (PHE).

The spark

In October 1975, the World Health Organization and health workers
around the world celebrated the success of the eradication of *Variola
major*, the infectious disease commonly known as smallpox. It had
been a coordinated effort that required sharing ideas between different
countries that were each interdependent on the other for accurate
administering of the smallpox vaccine and tracking of its effects. This
was the first time that an infectious disease had been wiped out and it
is an example of the positive effects of globalization.

This kind of coordinated effort is something that stands as a marker
in human history. What were the key factors that encouraged global
cooperation to eradicate smallpox?

WEB LINKS
Learn more about the
process of eradicating
smallpox and watch DA
Henderson talk about his
role in isolating the last case
of smallpox at
www.historyofvaccines.org.
Search for "history of
smallpox".

It is October 1975 and you are a news reporter, announcing the official declaration that smallpox has been eradicated. Prepare a news report lasting two to three minutes that summarizes the main details of this momentous event.

STEP 1   Use the five Ws and one H to research your information.

- Who?
- Where?
- What?
- Why?
- When?
- How?

STEP 2   The length of your report indicates how much detailed information you will be able to give. Consider what TV viewers of your news report will really want to hear.

STEP 3   Research and then write your report.

STEP 4   Consider how you want to present your report. If you are filming it, you might like to include relevant visuals. If you are presenting to the class, consider how you could include supporting visual information in your presentation without exceeding the time limit.

STEP 5   Watch news broadcasts on TV or online to check the format of the reports.

STEP 6   Rehearse and **present** your report.

🌐 **GLOBAL CONTEXTS**
Scientific and technical innovation

💬 **ATL SKILLS**
Communication
Use and interpret a range of discipline-specific terms and symbols.

Use of networks

In the eradication of smallpox, the bringing about of change on a global scale required the use of different levels of networks. Cooperation between governments led to the sharing of resources and funds to support smallpox vaccination programmes. Vital information was shared amongst networks of scientists in the process of developing the vaccine. The vast network of health workers who administered the vaccines around the globe relied on each other for support. Amongst many millions of communities, people spoke with each other about where and why they should be vaccinated.

Think about the different types of communication that would have occurred between these different groups. What technology would they have used? Remember that, in 1975, there was no internet and no mobile telephones, and yet collaboration still happened on a global scale.

There are still many infectious diseases that have harmful effects on human populations and there are efforts to eradicate these diseases, but so far none have experienced the success of eradicating smallpox.

Activity 5   Summary table

Complete a summary table of four infectious diseases. The first seven rows are about factual information, but for the eighth row you will have to evaluate what you know before proposing a hypothesis.

Use the format below and **create** your summary table of information.

	Smallpox	Malaria	HIV/AIDS	Polio
Symptoms of infection				
How the disease is transmitted				
Type of treatment (include cost if possible)				
Fatality rate				
Approximate number of infections worldwide				
Countries most affected				
Current efforts to combat the disease				
Hypothesis: This disease has not yet been eradicated because . . .	Not applicable			

TIP

The word "summary" indicates that you are collecting specific relevant details in bullet points rather than long descriptive paragraphs.

⊕ GLOBAL CONTEXTS
Scientific and technical innovation

◔ ATL SKILLS
Research
Locate, organize, evaluate, synthesize and ethically use information from a variety of sources and media.

Ongoing change

Despite more sophisticated ways to communicate and collaborate, and increasing medical knowledge, infectious diseases still have significant social and economic impacts on a country. For many infectious

diseases, it is a case of the Red Queen Effect—as medicines develop, pathogens that cause disease mutate and develop as well. Populations build up resistance to anti-malaria medication or bacteria develop resistance to antibiotics.

Other barriers to eradication of disease have been factors that we generally associate with the benefits of globalization. Increased travel around the globe has aided communication and collaboration between medical experts. But it has also aided the transmission of diseases to places that were previously isolated.

There are also cultural barriers to disease eradication. In 2003 in Northern Nigeria, polio vaccination was stopped by political and religious leaders because of fears that the vaccination contained HIV or anti-fertility medication.

Activity 6   Vodcast

Your group has the chance to choose one infectious disease and propose a way to eradicate it. You will need to use the resources and materials from the previous two activities to ensure that your solution is possible, humane, innovative and long lasting.

Your solution must be applicable to a specific country. For example, you can choose how to eradicate malaria in Thailand or how to eradicate polio in Nigeria.

LITERARY LINKS
View a fictional account of what happens when an infectious disease is spread rapidly around the world in the film *Contagion*.

STEP 1 Choose your disease and country. Use the table from Activity 2 to evaluate which disease you think has the greatest possibility to be eradicated from your country.

STEP 2 Review your notes from Activity 1. What were the influencing factors that led to the eradication of smallpox? Could you repeat any of these with the solution to your chosen disease?

TIP
A vodcast is a video broadcast sent out over the Internet. Go to www.unicef.org and search for "vodcast" to see examples of world issues.

STEP 3 Develop inquiry questions to help guide your research.

STEP 4 Check that your solution fits the criteria of being possible, humane, innovative and long lasting.

STEP 5 Present your solution in the form of a vodcast.

GLOBAL CONTEXTS
Scientific and technical innovation

ATL SKILLS
Thinking
Create original works and ideas; use existing works and ideas in new ways.

Urbanization

Urban populations are expanding at an ever-increasing rate. Urban communities hold significant **pull factors** that draw people to them from rural areas. While urban communities can provide services that may support people more than rural communities, the increase in urbanization of a population brings significant challenges. In 2008, the world crossed a tipping point and there are now more people living in urban communities than in rural communities. As these communities become increasingly connected due to globalization, can solutions to problems in one city be applied in another?

The bright lights of the big city

The attraction of urban areas has been steadily increasing since the late 19th century. It is important to understand the factors that are drawing people to urban areas (the pull factors) and the reasons why people are leaving rural areas (the push factors).

Traditionally, urban areas offered increased protection for people. They were generally built around a castle or church and often had walls that could help ward off invaders. You were much safer in a town with defensive walls than living on an isolated farm. Now, cities have a different set of factors that are attracting people to move there (see below).
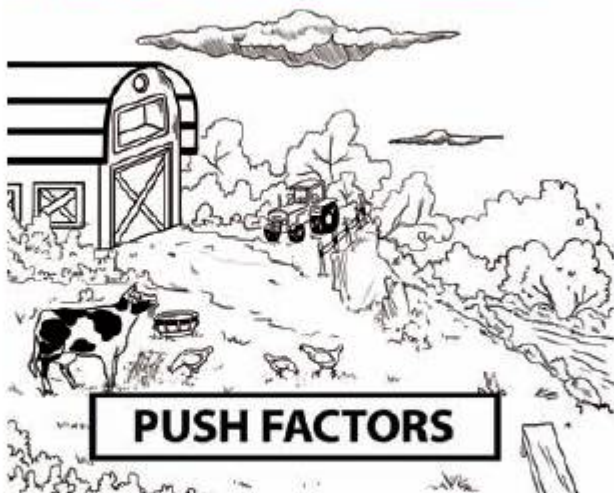
QUICK THINK
Would you prefer to live in the city or the country? Why?

Push factors: Reasons why people are leaving rural areas	Pull factors: Reasons why people are moving to the city
• climate change • isolation • difficulty of accessing health care and other community services • less profit in food production	• more opportunities for different types of employment • greater connection with more varied communities • better access to education • wider variety of entertainment • ease of transportation

Figure 17.2A Push factors in urbanization

PUSH FACTORS

Figure 17.2B Pull factors in urbanization

PULL FACTORS

This task will require you to think about an alternative perspective on encouraging people to stay in rural communities. Many countries in the world are experiencing shortages of people willing to work on farms. Create an advertisement to encourage people to stay in, or move to, rural communities.

Role	Designer
Audience	People aged 18 to 35
Format	Poster (200 words maximum)
Topic	Advertise the benefits of living in a rural community

STEP 1 Brainstorm some of the reasons why people might enjoy living and working in rural communities.

STEP 2 Develop inquiry questions to structure your research why people are leaving rural communities. When you understand this perspective, you will be able to focus on the alternative perspective—why people should stay in rural communities.

STEP 3 Sketch out an idea for your poster. Think about what visuals are effective. Consider word choice and text type in order to clearly communicate your message.

STEP 4 Use a tool such as Glogster (www.glogster.edu) to create your poster.

STEP 5 Work with two or three other students to peer review your poster to ensure that the structure, word and image choice clearly communicate your intended message.

GLOBAL CONTEXTS
Orientation in space and time

ATL SKILLS
Communication
Use appropriate forms of writing for different purposes and audiences.

WEB LINKS
For more information on issues surrounding urbanization, visit the web pages of the United Nations Population Fund at www.unfpa.org/pds/urbanization.htm.

Benefits and drawbacks

Urban areas provide services for its population that are not available to rural communities. Living in a city means living "on the grid". Many residents generally have access to electricity, water, sewerage, garbage disposal, cable TV and high-speed internet. Most cities have public transportation and a wide variety of shops, entertainment and public services such as libraries and community centres. Larger cities are connected globally as they become transport hubs with railway stations and airports.

Activity 8 — A simile for the city

In order to think about the integration of services and facilities in a city, it is useful to think in similes.

Design a visual representation of a city using a simile. For example, consider how a city is like a:

- human body
- car
- tree.

STEP 1 Choose the image that best represents how you see a city.

STEP 2 Create a list of the parts of your image and a corresponding list of the features of the city. For example, if a city is like a human body, the veins represent the major roadways and the nerves represent the telecommunications network.

STEP 3 Draw your simile, using clear descriptive labels to explain your images.

GLOBAL CONTEXTS
Personal and cultural expression

ATL SKILLS
Thinking
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding.

However, the population of some cities increases so rapidly that urban planning and development cannot keep up. This means that new residents often resort to living in illegal buildings, slums or shanty towns that are not connected to city services such as electricity, water, sewerage, or garbage disposal. As many of these residents are living in illegal housing, they are often unable to register for government services, to obtain an official residential address or to vote. By escaping the social isolation of a farm, they may have become politically and economically isolated in a city.

Cultural integration

The combination of increasing urbanization and globalization has resulted in increasingly changing cityscapes. When cities become known as hubs for certain industries, they attract migrants and immigrants who, in turn, influence the culture and construction of a city. Some of the most well-known groups of immigrants are the Chinese who followed the discoveries of gold in countries such as the USA and Australia. Within large urban areas, such as San Francisco and Sydney, Chinese communities established themselves in one particular location, which then became known as "Chinatown".

LITERARY LINKS
Learn more about the experiences of immigrants in new countries by reading Anh Do's *The Happiest Refugee*. Anh is a comedian who moved from Vietnam to Australia when he was a young boy.

Another recommended read is *The Other Side of Truth* by Beverly Naidoo, which follows the lives of Femi and Sade as they are smuggled from persecution in Nigeria to a new life in the UK.

How such communities mix with the culture of a country is a frequent subject of discussion. New immigrants are often caught between the culture they were brought up with and the culture of their new country. Some people advocate integration into a new culture, but an alternative view is that the arrival of immigrants has encouraged people to embrace differences and celebrate multiculturalism. How can these ideas coexist?

Activity 9   Immigration debate

Debate statement: "For successful integration, immigrants must adopt the culture and language of their new community."

STEP 1   In your group, you will be either for or against this statement. Your teacher may assign the side to you.

STEP 2   Review your notes from the previous activities. What makes people leave a place? Does this affect how they may integrate into a new community?

STEP 3   Each of your group members has a different role in the debate team, so you will need to think about who will be the first, second and third speaker.

Speaker 1: Introduction, definition and interpretation of the topic and introduction of the other speakers, arguments and supporting details.

Speaker 2: Rebuttal of the opposition team's arguments, more evidence supporting the team case.

Speaker 3: Rebuttal of the opposition team's arguments, more evidence supporting the team case and conclusion of all evidence.

STEP 4   As a group, be sure that you all have the same definition and interpretation of the topic.

STEP 5   Carry out research to ensure that you have specific, relevant and detailed examples to support your arguments.

STEP 6   Before the actual debate, practise your speech, providing feedback to each other on use of tone, hand gestures, posture and emphasis.

TIP

- A debate and a discussion are different things. A debate means that there will be adjudication and one side will be declared the winner. A discussion is an open-ended talk about a particular topic.

- A formal debate isn't about you giving your own personal opinion; it's about representing the perspective of the role you have been assigned.

WEB LINKS
You can read a useful guide introducing the format of debating at www.debatingsa.com.au. Resources are available under the "Schools Competition" tab.

Summary

We have looked at how globalization is the exchange of ideas, people, products and services around the world. The influence of technology means that this exchange is happening on a wider scale and at an ever increasing rate. Globalization has brought solutions to issues such as food production in some parts of the world but has also led to food insecurity and shortages in other parts. Globalization has helped eradicate infectious diseases such as smallpox but has also led to an increase in malaria and HIV. While globalization has allowed you access to tremendous amounts of knowledge about the world, it is up to you to make choices as to whether you act on this knowledge.

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