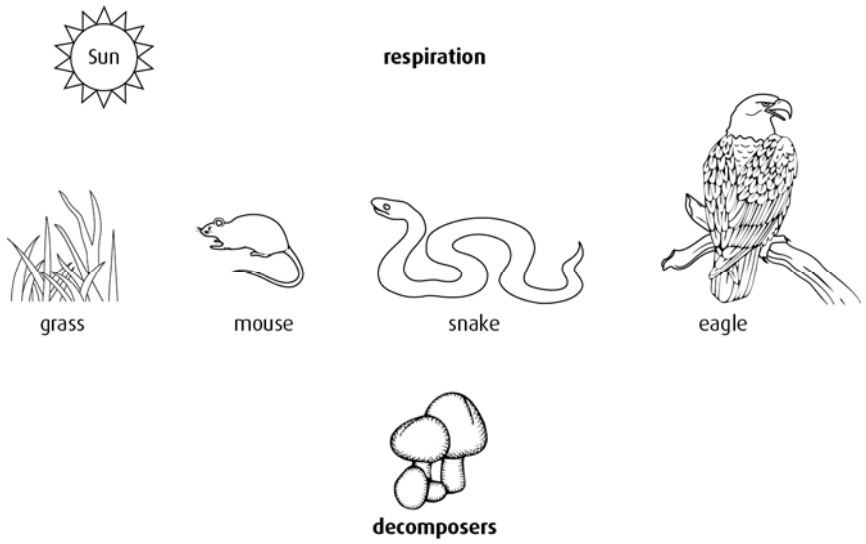
# Support worksheet – Chapter 5

**1** The organisms shown below can be linked together to form a food chain.



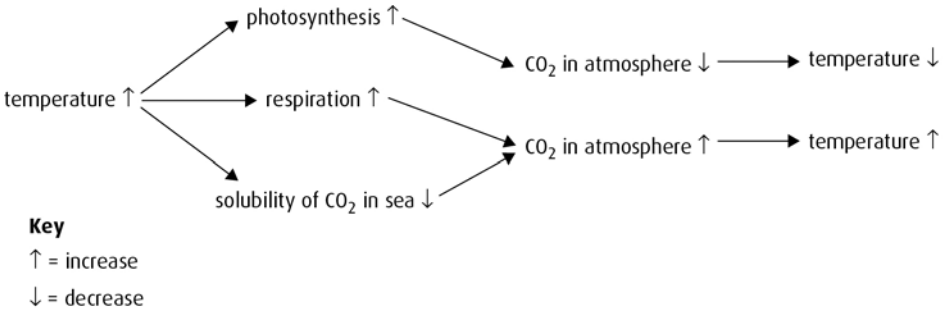

**a** Draw arrows on the diagram to show how energy from the Sun flows through an ecosystem. (4)

**b** Label each organism with the correct trophic level in this food chain. (2)

**c** If the eagle ate both snakes and mice, what could you say about its trophic level? (1)

**d** Why does the amount of energy at each trophic level decrease? (2)

**2** The diagram below shows some possible impacts of the greenhouse effect on biological processes.




**a** Use your own knowledge and the information in the diagram to explain the following.

**i** Why can an increase in temperature lead to an increase in the rate of photosynthesis? (1)

**ii** Why can an increase in carbon dioxide concentration increase global warming? (1)

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**iii** If all factors are considered, the effect of an increase in temperature may be an increase in carbon dioxide concentration in the atmosphere. Give reasons for this. (2)

**b** Name **two** other gases that contribute to the greenhouse effect. (2)

**3** A species of snail, *Cepea* sp., occurs in a number of different forms. The following statements can be made about this species.

**A** A large number of snails are born each year.
**B** Some snails have plain shells with no bands on them. Some snails have bands on their shells.
**C** Snails without bands tend to produce offspring without bands on their shells.
**D** In hot environments, snails with bands on their shells are more likely to die of heat stress.

Use this information to complete the table below, which contains statements about the theory of evolution by natural selection. (3)

| **Aspect of the theory of evolution** | **Letter of matching statement** |
|---|---|
| Some variations are inherited. | |
| There is variation in all populations. | |
| Natural populations overproduce offspring. | |

**4** **a** Arrange the following words so that they are in the correct hierarchy of taxa used in classification: (7)

genus, family, species, phylum, kingdom, order, class

**b** Complete the table below with the appropriate description of a phylum of plants from the following list. Add an example of a species from each phylum in the third column. (8)

**Description**

**A** Vascular plants with both xylem and phloem. These plants use wind pollination and most produce cones with seed scales.
**B** Non-vascular plants that do not produce flowers or seeds. Their reproductive spores are transported in water.
**C** Vascular plants that produce flowers and fruits. Many rely on animals to transport pollen from flower to flower.
**D** Vascular plants that live in damp places and need water to transport their reproductive spores.

| **Phylum** | **Letter of matching description** | **Example** |
|---|---|---|
| Bryophyta | | |
| Filicinophyta | | |
| Coniferophyta | | |
| Angiospermata | | |

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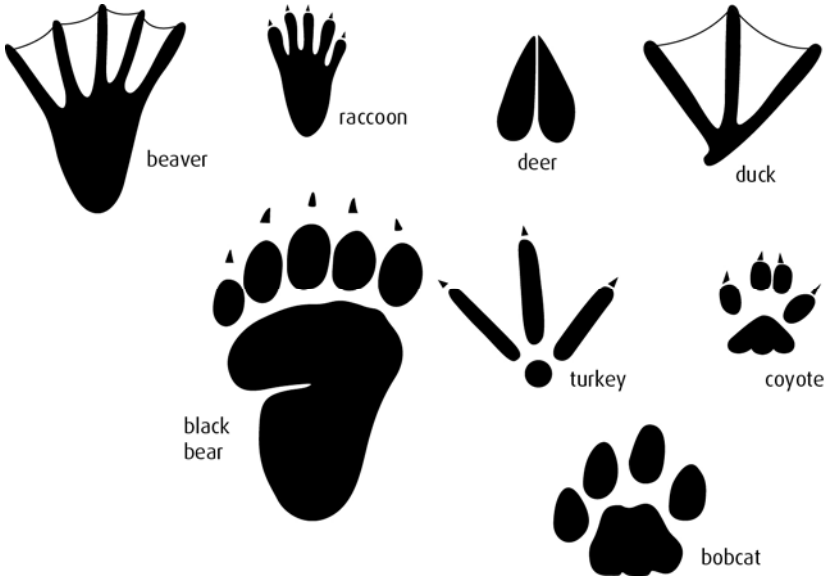
**5** Design a dichotomous key that could be used to identify the animals that made these eight footprints. (8)

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