

## 1.4 Classifying invertebrate animals

1. The missing words are: differences, groups, classification, backbones, characteristics, species.

2. Top row: **molluscs** – muscular bodies/often have a shell; **cnidarians** – tentacles/stinging cells; **annelids** – segmented bodies; **flatworms** – flat bodies.

Bottom row: **echinoderms** – spiny skin; **arthropods** – jointed legs; **nematodes** – long thin bodies.

3. **Arachnids** – 8 legs/many spin webs; **insects** – 3 segments to the body/6 legs; **crustaceans** – at least 10 legs; **myriapods** – long segmented body/1 or 2 pairs of legs on each segment.

## 1.6 Classifying vertebrates

1. a. They all have a backbone.
- b. **Fish:** Three from: scales covering body; gills for breathing in water; fins and a tail; lay eggs in water to reproduce; body temperature varies with their surroundings.

**Amphibians:** Three from moist skin; four legs; breathe through skin and lungs when adult; lay eggs in water to reproduce; body temperature varies with their surroundings.

**Reptiles:** Three from dry scaly skin; lay eggs with leathery skins on land; have four legs (except snakes); use lungs to breathe air; body temperature varies with their surroundings.

**Birds:** have feathers and beaks; lay eggs with hard shells on land; two legs and two wings; breathe air using lungs; control their own body temperature.

**Mammals:** have fur; give birth to live young/ make milk to feed them; four limbs; breathe air using lungs; control their own body temperature.

### 3.5 The decomposers

1. The missing words are: water; mineral salts; herbivores; dead; decomposers; bacteria/fungi; fungi/bacteria; nutrients; plants.
2.
  - a. Decomposers are organisms that break down animal droppings, plant fruits and leaves that fall to the ground, and dead animals and plants. They use some of the nutrients to grow and reproduce and return some to the soil.
  - b. Compost is a brown, nutrient-rich material made when kitchen and garden waste is broken down by decomposers.
  - c. Plants take mineral salts from the ground and use them to build new plant tissue. Plants are eaten by herbivores. Eventually all the mineral resources of the soil would be used up. Compost returns many of the minerals to the soil and keeps it fertile.

### 3.7 Food chains, food webs and decomposers

1. A2; B3; C1; D5; E4; F7; G6
2.
  - a. maize
  - b. mice
  - c. snakes
  - d. This is the direction in which biomass is transferred through the food chain. The plant has the most biomass because it makes food by photosynthesis. Biomass is lost at each stage of the chain.

- e. Decomposers arrow goes from mongooses back to maize with label/explanation that decomposers break down biomass and return mineral salts to the soil to be taken up and used by the plants.
3. a. A food web is a model of the feeding relationships between organisms in an ecosystem. It links a number of food chains together.
- b. Most animals eat more than one kind of organism so a food web is a more realistic representation of the feeding relationships.
- c. **Herbivores:** two from ant, mouse, lizard;  
**carnivores:** two from spider, scorpion, large lizard, snake, fennec fox/fox.
- d. Producers/plants are missing – they make biomass by photosynthesis so they are the starting point for the whole food web;  
decomposers – they break down and digest the droppings and dead remains of animals and plants in the food web, returning mineral salts to the soil to be used and recycled by plants.