

## 1.1 What is life?

1. A3; B5; C6; D7; E1; F4; G2
2. The statements that apply to all living things are: a, b, d, e, f, g.
3. Any three from: they move by extending their stems and roots; they use respiration to release the energy they need to stay alive; they sense things in their surroundings, such as light; they increase in size during their lifetime; they produce offspring; they remove waste products from their bodies; they make nutrients.

## 7.1 Ecosystems of the Earth

1. The missing words are: ecosystem; environment; ecosystem; biosphere; ecosystem; abiotic; biotic; soil/temperature; temperature/soil; light.
2. The food supply; the numbers of predators and prey; diseases and parasites.
3. A3; B5; C4; D1; E2

## 7.2 Habitats within an ecosystem

1. **a.** Rainforest. **b.** rainforest **c.** desert **d.** desert  
**e.** rainforest **f.** desert.
2. **a.** Antarctic **b.** desert **c.** rainforest, **d.** Antarctic and desert, **e.** desert, **f.** rainforest, **g.** desert and Antarctic
3. Any three from: thick fur, small ears or large rounded body – to reduce heat loss; wide feet to avoid sinking in snow or to help the bear to swim; sharp claws to help catch its prey.

## 12.1 The carbon cycle

- 1. Photosynthesis:** takes place in the green parts of plants and in algae. It uses energy from light, trapped by chlorophyll in the chloroplasts. Carbon dioxide is taken in from the air and combined with water to produce glucose and oxygen. This in turn is used to build the biomass of plants. Photosynthesis is the first stage of most food chains. **Feeding:** animals feed. They eat plants or other animals. They take in the biomass of plants, break it down, and build it back up into animal biomass. Carbon is passed from one organism to another in this way. Some is released into the environment through respiration at the same time. **Respiration:** takes place in all living organisms. Glucose molecules are broken down using oxygen, producing carbon dioxide ( $\text{CO}_2$ ) and water. This releases energy to be used by cells. **Decomposition:** the process carried out by the decomposers. Microorganisms such as bacteria and fungi feed on the waste materials produced by animals, the dead leaves produced by plants, and the dead bodies of animals and plants. They break them down, releasing carbon dioxide back into the atmosphere. **Combustion:** the scientific word for burning. When a substance burns, it reacts with oxygen in the air and the energy transferred heats the surroundings and produces light. Many fuels, from wood to fossil fuels like coal, oil, and gas, are carbon compounds. When these fuels burn, they produce carbon dioxide and water which are released into the atmosphere.