

## Pages 68–69 Food chains and food webs

1 B C A D

(1 mark for each if in correct order)

2 Food chains and food webs always have a green plant at the beginning.

This is because **only green plants can make their own food**. The first animal in a food chain is called **a primary consumer**. This animal is always a **herbivore**. The animals that eat the plants are then often eaten by other animals. The animal that is eaten is called **prey** and the animal that eats the other creature is called **a predator**. In the food chain the predator is known as the **secondary consumer**.

(1 mark for each correct choice)

3 The direction in which the energy travels

4 a Any food chain with an owl at the end:

hazelnuts → mouse → owl

hazelnuts → blue tit → owl

leaves → greenfly → blue tit → owl

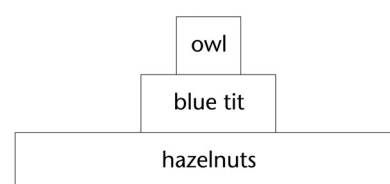
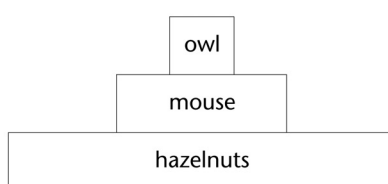
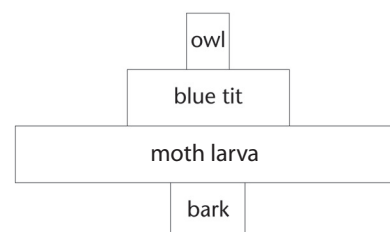
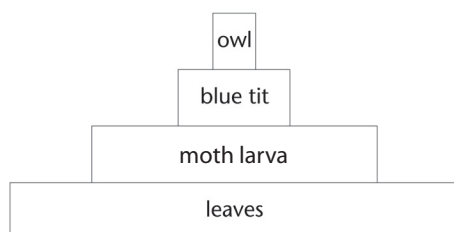
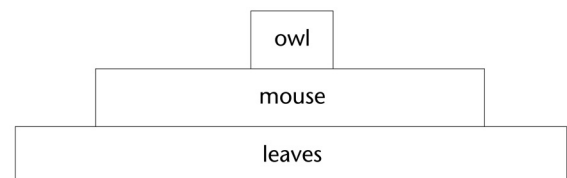
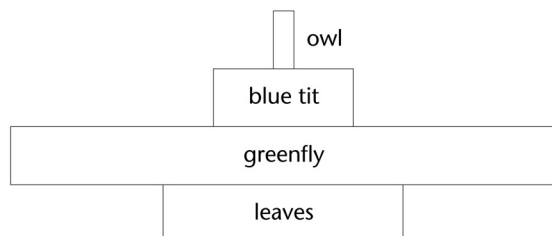
leaves → mouse → owl

bark → moth larva → blue tit → owl

leaves → moth larva → blue tit → owl

(1 mark each for any 2 correct ones provided the arrows are going in the right direction)

b The pyramid of numbers needs to be correct for the food chain chosen to gain the marks



(1 mark for correct order, 1 mark for producer at bottom, 1 mark for correct sizing of boxes)

(1) = 1 mark

## Page 70–71 Energy transfers in food chains and food webs

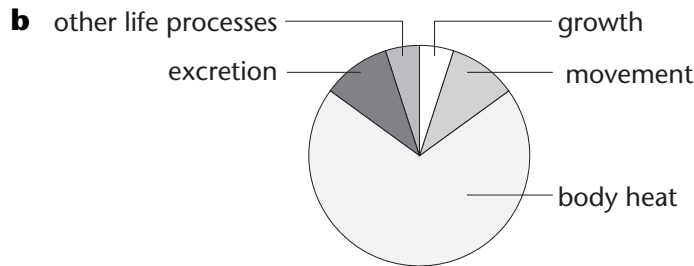
1 a Growth (1) Movement (1) Warmth (1)

b Only the energy used for growth can be passed up the food chain

2 a Total of energy used for other purposes 95% ( $5 + 10 + 10 + 70$ )

Energy left for growth 5% ( $100 - 95$ )

(1 mark for correct calculation and 1 for %)



(1 mark for correct construction,  
1 additional mark for  
accuracy of each segment)

3 a TRUE

b FALSE

c TRUE

d TRUE

e FALSE

## Pages 72–73 Variation and inheritance

1 a One of the twins must have dyed her hair

b If they are identical twins then all the characteristics that they inherit will be the same. Hair colour is an inherited characteristic (1), they have different coloured hair so one of them must have altered this (1)

2 a No

b Brothers do not have exactly the same inherited characteristics in the way that identical twins do (1) It is possible for many combinations of inherited characteristics to be present in any one family (1)

3

Environmental	Inherited
Playing the piano	Hair colour
Swimming	Eye colour

(1 mark for each correct entry)

4 a E (1) F (1) A (1)

b A

c Because Plant A gives more blue flowers than Plant B (1) If these two are the only ones resistant to disease (1) then Plant A is the best way of getting blue disease-resistant flowers (1)

## Pages 74–75 Adaptation

1 B (1) C (1)

2 Good night vision/Almost 360 degree vision for hunting small mammals/Very quiet almost silent flight for hunting small mammals/Colours not easily seen in woodland for camouflage/Very sharp hearing to detect prey/Sharp claws to catch small mammals/etc. (1 mark each for any 3 sensible responses)

3 So that they are asleep and using less energy (1) in the winter months when food is scarce (1)

4 To find new sources of food (1) they spend half the year in each hemisphere so that they are always in summer when food is plentiful but do not stay in one place for the winter when there would be very little to feed on (1)

5 a Creatures that sleep in the day and hunt for their prey at night

b Good night vision/hearing/etc. (1 mark for anything sensible)

6	Daily adaptations	Seasonal adaptations
	Nocturnal hunting	Migration of birds
		Hibernation
		Deciduous trees

(1 mark for each correct entry)

7 B (1) D (1) E (1)

8 a & b There are almost an infinite number of answers to this question so award 1 mark each for any sensible suggestion that relates to any of the features of the habitat for an animal and for a plant.

## Pages 76–77 Classification

**1 a** Vertebrates

**b** Amphibians (1)      Birds (1)      Mammals (1)      Fish (1)      Reptiles (1)

**2 a** Amphibians

**b** Birds

**c** Fish

**d** Mammals

**e** Reptiles

**3 a** Warm blooded (1)      Breathe through lungs (1)

**b** Breathe through lungs

**4** Insects

**5**

<b>Insect</b>	<b>Arachnid</b>	<b>Crustacean</b>	<b>Myriapod</b>
<b>Grasshopper</b>	<b>Spider</b>	<b>Crab</b>	<b>Millipede</b>
<b>Dragonfly</b>	<b>Scorpion</b>	<b>Lobster</b>	
<b>Wasp</b>			

(1 mark for each correct entry)

**6** Arachnids

## Pages 78–79 Using keys to identify living things

**1 a** Aisle C

**b** Aisle G

**c** Aisle H

**d** Aisle E

**e** Aisle A

**2** Any 3 questions that enable identification to be made, for example:

Q2 Does it live in water?

If YES, it is a dolphin

If NO, go to question 3.

Q3 Are its young usually born in large numbers?

If YES, it is a dog

If NO, go to question 4.

Q4 Does it walk on two legs or four?

If two legs, it is a human

If four legs, it is a horse.

*(1 mark for each question that allows a mammal to be identified)*

### Pages 80–81 Competition among living things

**1** No individuals of that species are still alive

**2** Because the large tree will block the light from the ground below and no other plants can grow without light *or* Competition for light/water

**3** In spring although there is less light, there is more under the trees than there will be in the height of summer *(1)* when all the trees are in leaf *(1)*

**4** Loss of nesting sites *(1)* Loss of habitat for insects that birds feed on as well as trees themselves which may have berries, etc. that birds feed on *(1)*

**5 a** The population of rabbits is stable/it does not change

**b** Spring or early summer

**c** The population drops suddenly

**d** Sensible suggestions such as increase in a predator *or* reduction in food supply *or* disease

**6 a** FALSE

**b** TRUE

**c** FALSE

**d** TRUE

### Pages 82–83 Human impact on the environment

- 1** The greenhouse effect (1) Global warming (1)
- 2** Burn less fossil fuels (1) Plant more trees to take in the carbon dioxide (1)
- 3**
  - a** It can be sprayed with an alkali
  - b** Neutralisation
- 4**
  - a** Cause damage to the ozone layer (1) in the upper atmosphere. This layer protects the Earth by filtering out some of the harmful UV rays from the Sun (1)
  - b** Increase the incidence of skin cancers
- 5**
  - a** Kill pests
  - b** Creatures higher up the food chain eat more individuals (1) of those lower down, so the amount of pesticide builds up in the bodies of the larger creatures and kills them (1)
- 6** Reduces the numbers of trees on Earth and so cuts down the available oxygen (1) and the means of reducing CO<sub>2</sub> (1) Rainforests are habitats of huge numbers of species (1) *(Any 2 answers)*
- 7** More people need more space, so trees and forests are cut down to make space or Animals bred for food need grazing which again can mean forests are cut down/Either of these can mean that not only the trees but also other animals and plants that live in the forests no longer have a habitat *(2 marks for a sensible answer)*