

Pages 62–63 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

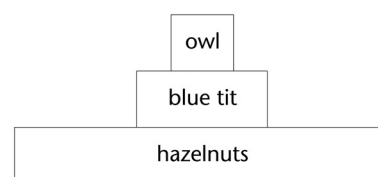
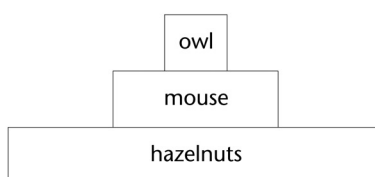
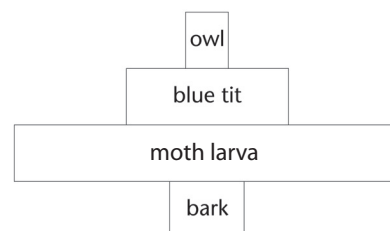
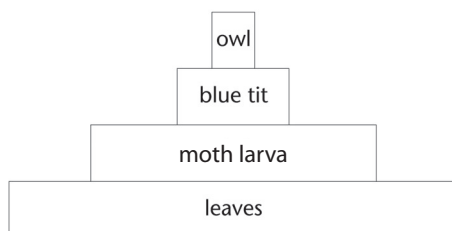
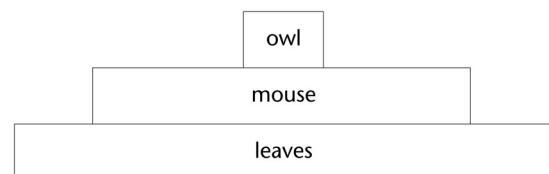
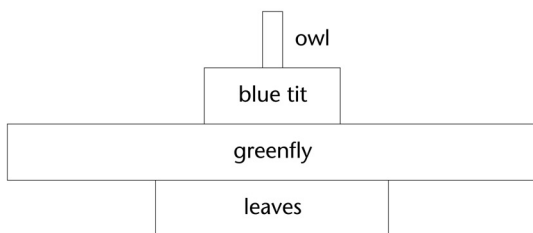
leaves → mouse → owl

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

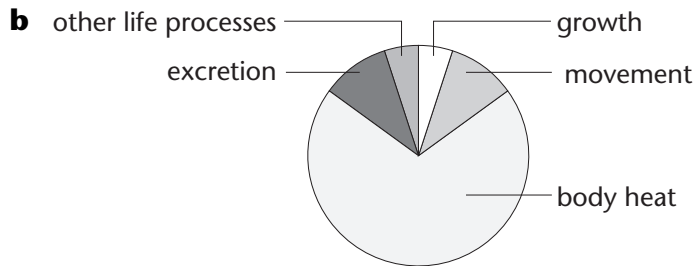


(1 mark for correct order, 1 mark for producer at bottom, 1 mark for correct sizing of boxes)

(1) = 1 mark

Page 64–65 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 66–67 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. If these two are the only ones resistant to disease, then using Plant A is the best way of getting blue disease-resistant flowers

Pages 68–69 Adaptation

1 B (1) C (1)

2 a Daily adaptations	Seasonal adaptations
Nocturnal hunting	Migration of birds
	Hibernation
	Deciduous trees

(1 mark for each correct entry)

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

c Creatures that sleep in the day and hunt for their prey at night (1)

d 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)

3 B (1) D (1) E (1)

4 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 70–71 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 Insects

4 Arachnids

5

Insect	Arachnid	Crustacean	Myriapod
Grasshopper	Spider	Crab	Millipede
Dragonfly	Scorpion	Lobster	
Wasp			

(1 mark for each correct entry)

Pages 72–73 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 74–75 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 The fox population will go down *(1)* because they will have less food *(1)*
(NOT all the foxes will die)

5 a FALSE

b TRUE

c FALSE

d TRUE

6 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

Pages 76–77 Human impact on the environment

- 1 The greenhouse effect (1) Global warming (1)
- 2 **a** It can be sprayed with an alkali
b Neutralisation
- 3 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)
- 4 Skin cancers
- 5 Chemicals that are used to kill pests are called **pesticides**. An example is slug pellets which are used to kill slugs. Slugs in turn are eaten by **predators** such as thrushes which are **prey** of bigger birds such as sparrowhawks. The thrushes will eat a lot of slugs and so the pesticide will **build up** in their bodies. This might not be enough to kill the thrushes but when a sparrowhawk eats a number of thrushes, the pesticide will **build up** in the body of the sparrowhawk and kill them. *(1 mark for each correct choice)*
- 6 More people need more space, so trees and forests are cut down to make space – 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)*