Key Stage 3 2006

SCIENCE

Modified Large Print

Tier 3-6 Paper 2
First Part

Please read this page and page 2. Do not look at the rest of the test paper until your teacher tells you to start.

Write your name and the name of your school in the spaces below.

First name _____

Last name _____

School _____

Total Marks ☐

Note to markers:
This paper should be marked using the MODIFIED LARGE PRINT mark scheme amendments – MLP.

302900-663

REMEMBER

The whole test is one hour long, plus your additional time allowance.

Your teacher will provide you with the extra equipment you need.

This test starts with easier questions.

Try to answer all of the questions.

If you are asked to plan an investigation, there will be space for you to write down your thoughts and ideas.

Do not use any rough paper.

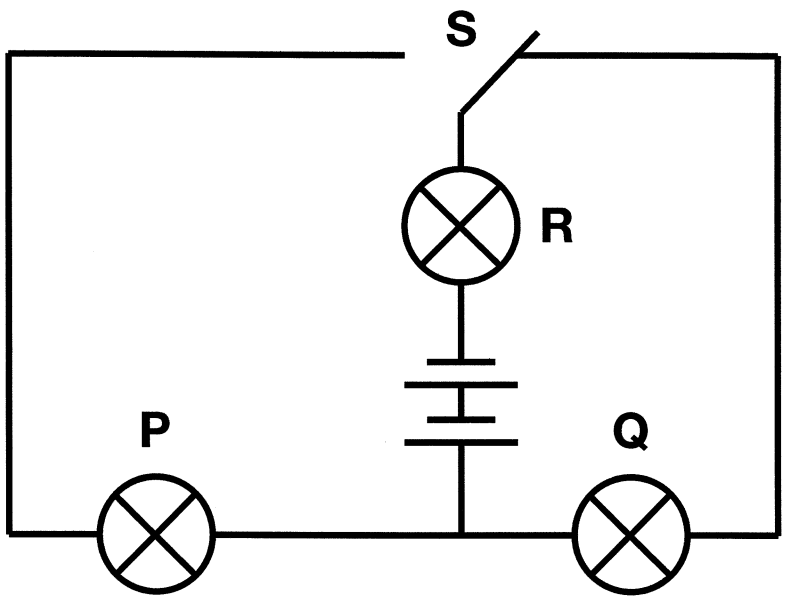
Check your work carefully.

Ask your teacher if you are not sure what to do.

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1. (a) The diagram below shows a circuit with a two-way switch, S.

Rosie puts the switch in the position shown below.



Complete the table below to show if the bulbs are on or off. Write on or off for each bulb. [1 mark]

bulb	on or off
P	
Q	
R	

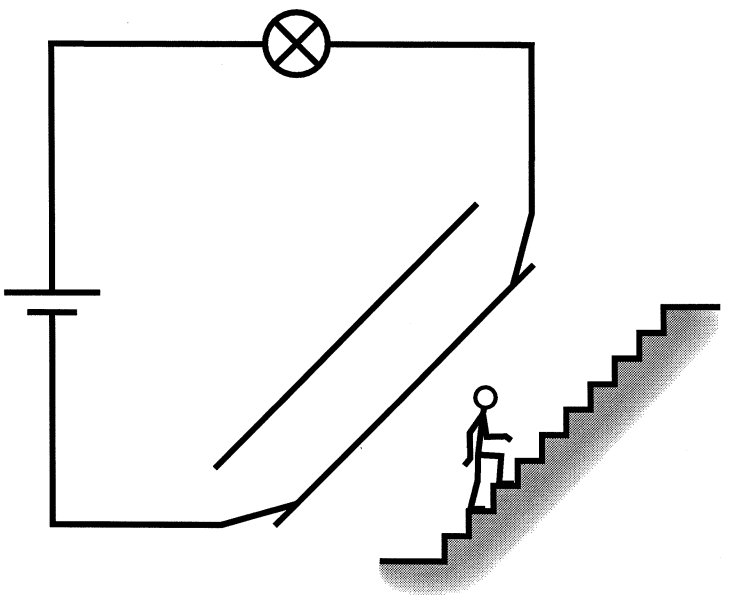
(b) Give the name of the part that provides energy for the circuit. [1 mark]

_____

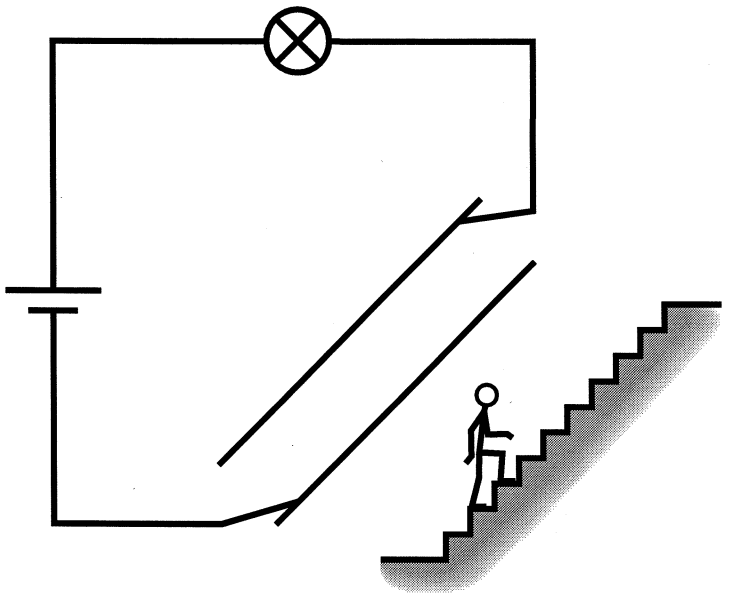
(c) **The diagrams below show a light-bulb over a staircase of a model house.**

There is a two-way switch at the bottom of the stairs and another two-way switch at the top.

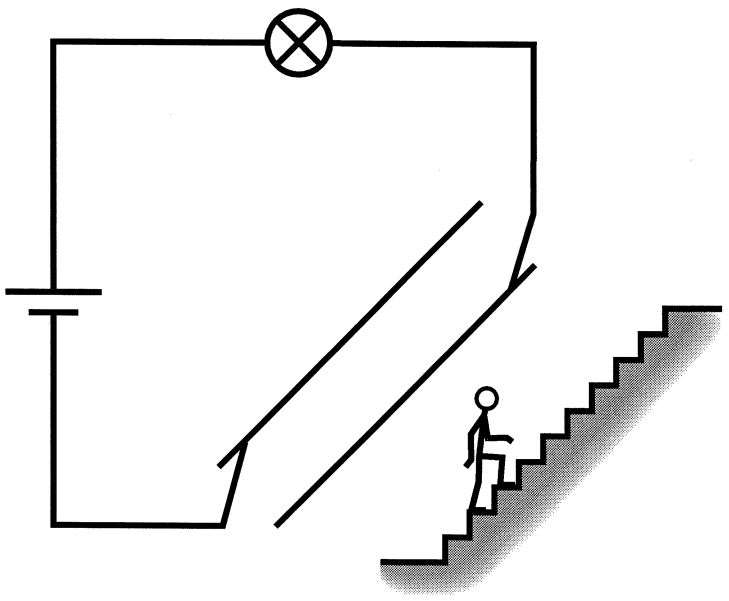
Under each diagram, tick one box to show if the bulb is on or off. The first one has been done for you. [2 marks]



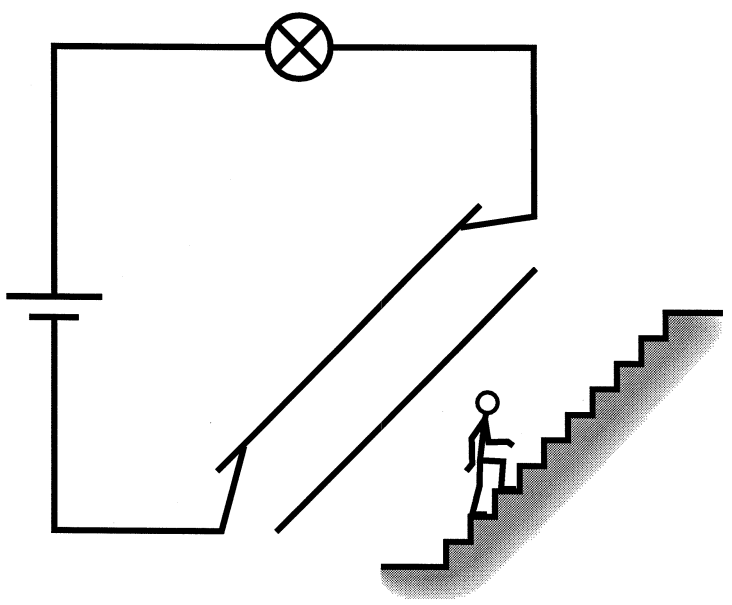
on	✓
off	



on	
off	



on	
off	



on	
off	

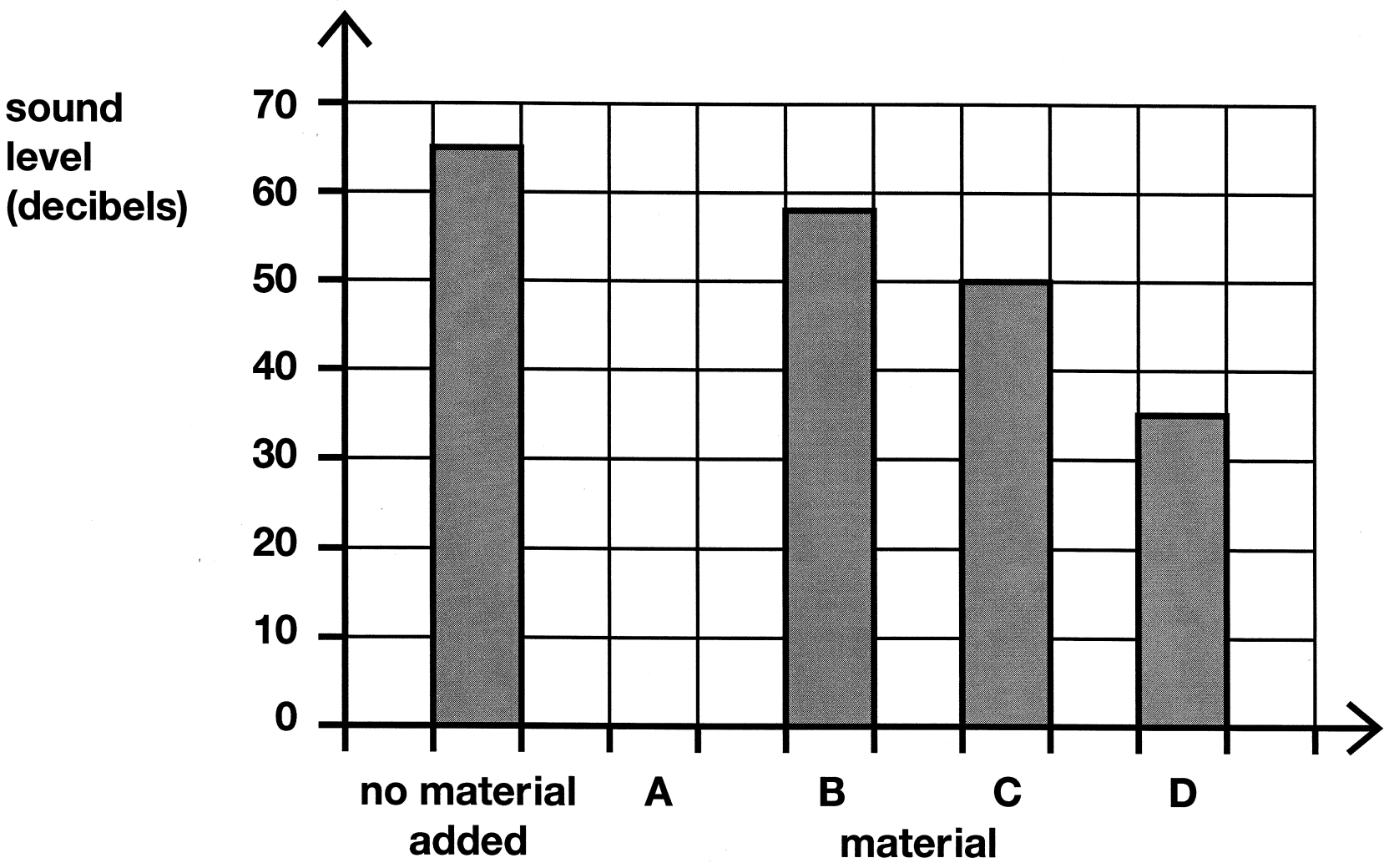
[maximum 4 marks]

2. John investigated which material would be best for sound-proofing.
He put a bell inside a box.
He covered the bell with each material in turn.
He put a sound sensor outside the box to record the sound level.

He tested different materials and got the following results:

material	sound level (decibels)
no material added	65
A	40
B	58
C	50
D	35

(a) On the chart below, draw the bar for material A. [1 mark]



(b) How many types of material did John test? [1 mark]

_____

(c) Which material was best at stopping the sound going through? Give the correct letter. [1 mark]

_____

(d) Which two things should John have done to make his test fair? Tick the two correct boxes. [2 marks]

Use the same box each time. ☐

Make sure a different person recorded the results each time. ☐

Use the same material each time. ☐

Keep the distance between the sound sensor and the bell the same each time. ☐

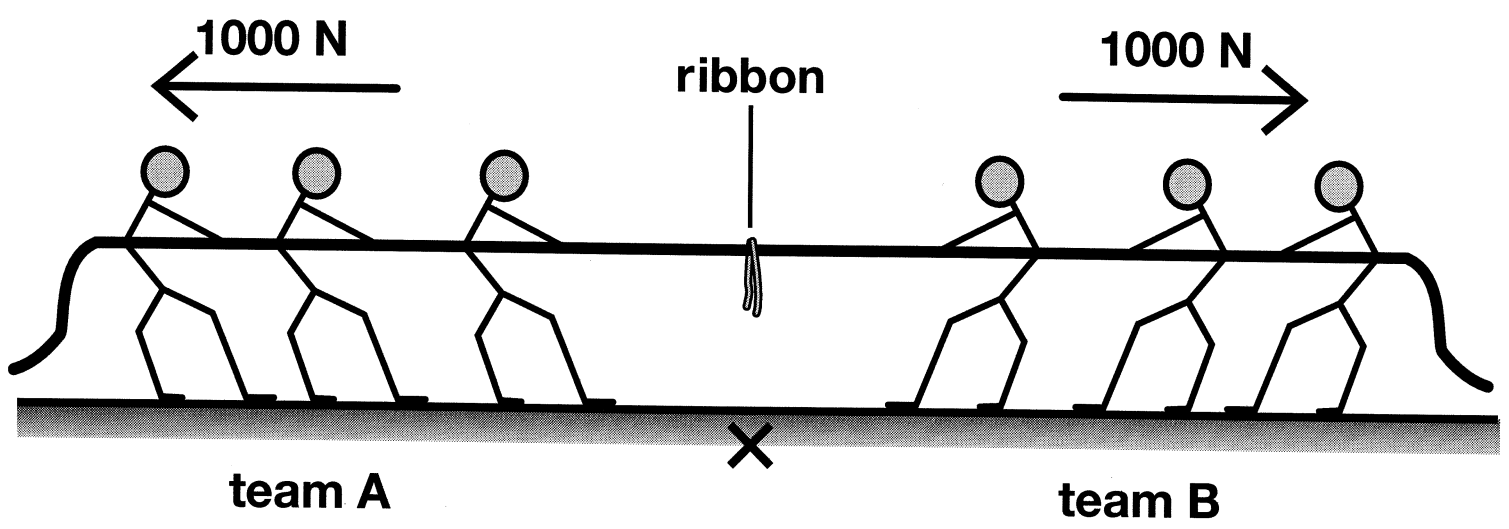
Test each material in a different room. ☐

[maximum 5 marks]

3. The drawings in parts (a), (b) and (c) show two teams of pupils in a tug-of-war.

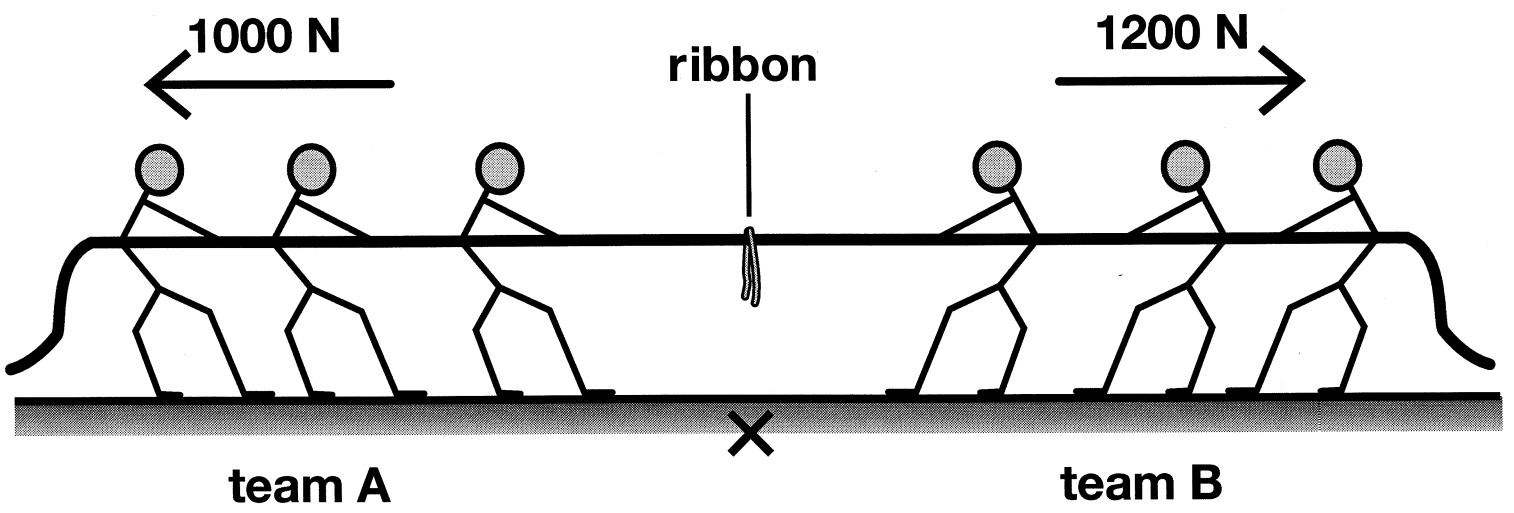
There is a ribbon tied to the middle of the rope.

(a) The sizes and directions of the forces of each team are shown.



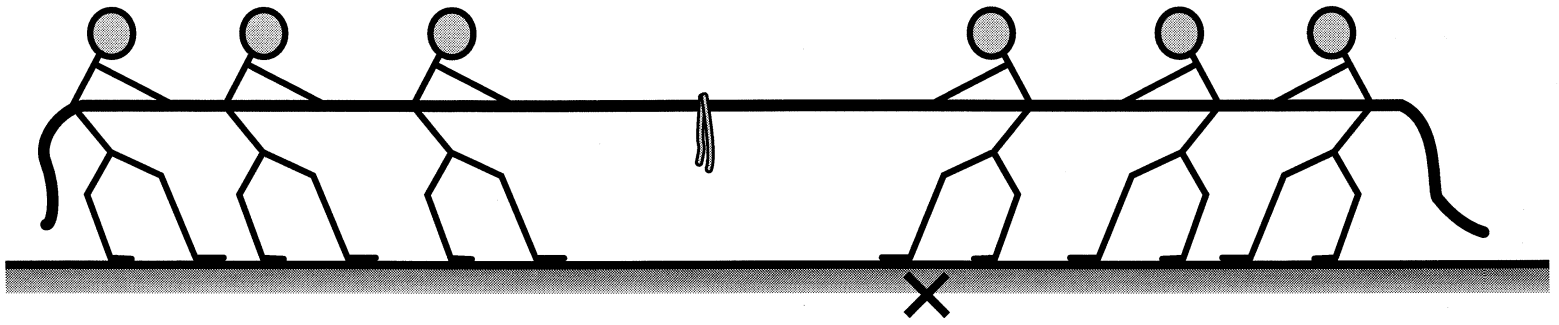
The ribbon stays above point X on the ground.
Give the reason for this. [1 mark]

(b) The teams then pull with the forces shown below.



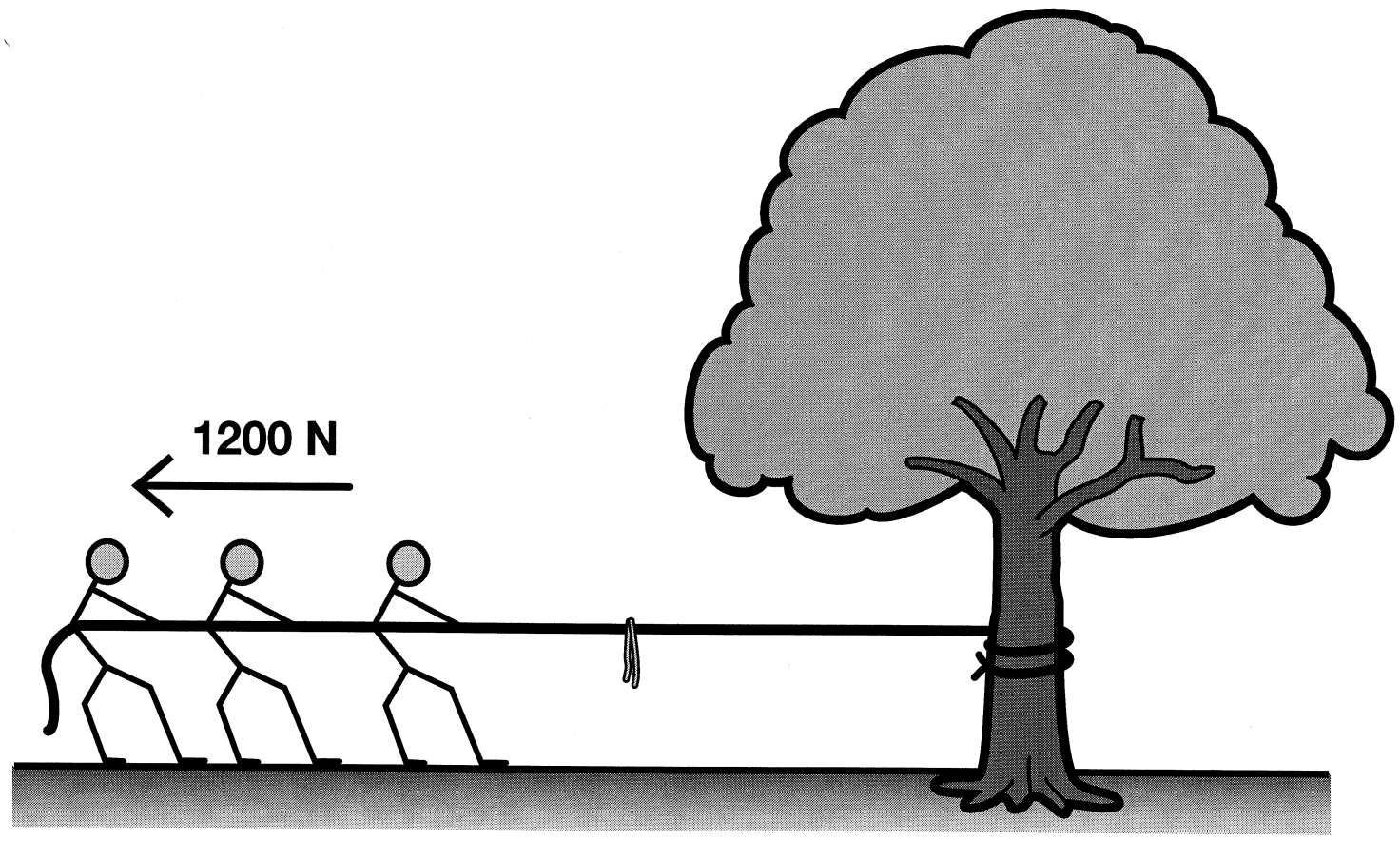
Draw an arrow on the rope to show the direction in which the ribbon will move. [1 mark]

(c) Later, the ribbon was to the left of point X as shown below.



Why did the ribbon move towards the left? [1 mark]

(d) **Team A practises by pulling a rope tied to a tree.**



The team pulls with a force of 1200 N but the tree does not move.

What is the force of the tree on the rope?

Tick the correct box. [1 mark]

zero	☐
less than 1200 N	☐
1200 N	☐
more than 1200 N	☐

(e) **The pupils do not slip because there is a force between their shoes and the ground. What is the name of this force? [1 mark]**

_____

[maximum 5 marks]

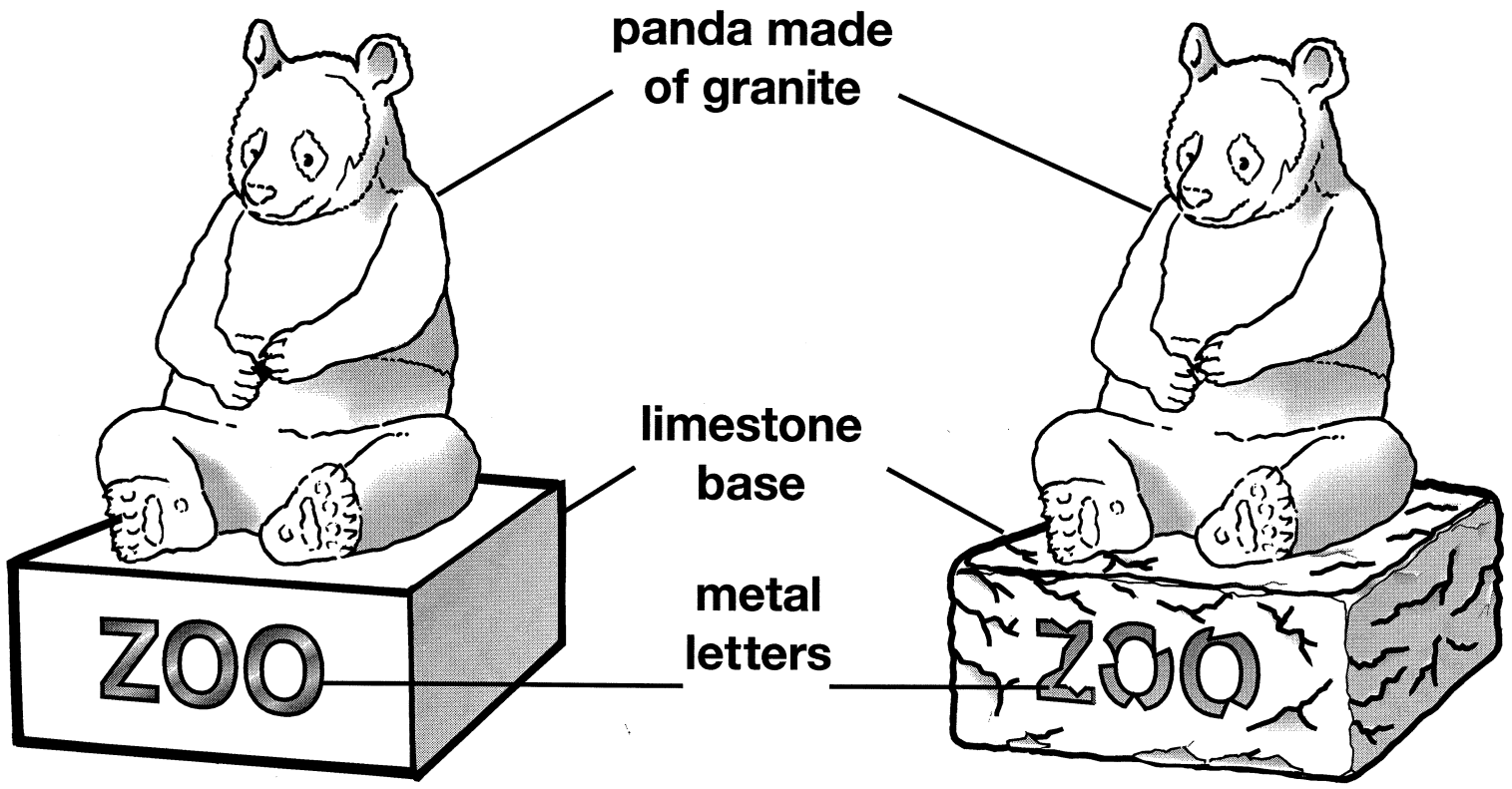
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4. **A statue outside a zoo was made from two types of rock.**

The panda was made of granite.
The base was made of limestone.

The drawings show the statue as it was in 1936 and in 2006.



statue in 1936 **statue in 2006**

(a) **The surface of the limestone base has changed over the years.**

(i) **Which process caused this change?**
Tick the correct box. [1 mark]

evaporating ☐

melting ☐

reflecting ☐

weathering ☐

(ii) The surface of the panda made of granite has not changed.

Suggest why granite does not change in the same way as limestone. [1 mark]

_____

_____

_____

(b) Acid rain can be formed when fossil fuels burn.

(i) Give the name of one fossil fuel. [1 mark]

_____

(ii) What is true about all fossil fuels?
Tick the correct box. [1 mark]

All fossil fuels are a source of energy. ☐

All fossil fuels are black. ☐

All fossil fuels are liquid. ☐

All fossil fuels take less than 50 years to form. ☐

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(iii) **Acid rain has changed the surface of the metal letters on the statue.**

Which word describes the effect of acid rain on a metal? Tick the correct box. [1 mark]

corrosion	☐
friction	☐
magnetism	☐
vibration	☐

(iv) **What could the zoo owner put on the metal letters to protect them from acid rain? [1 mark]**

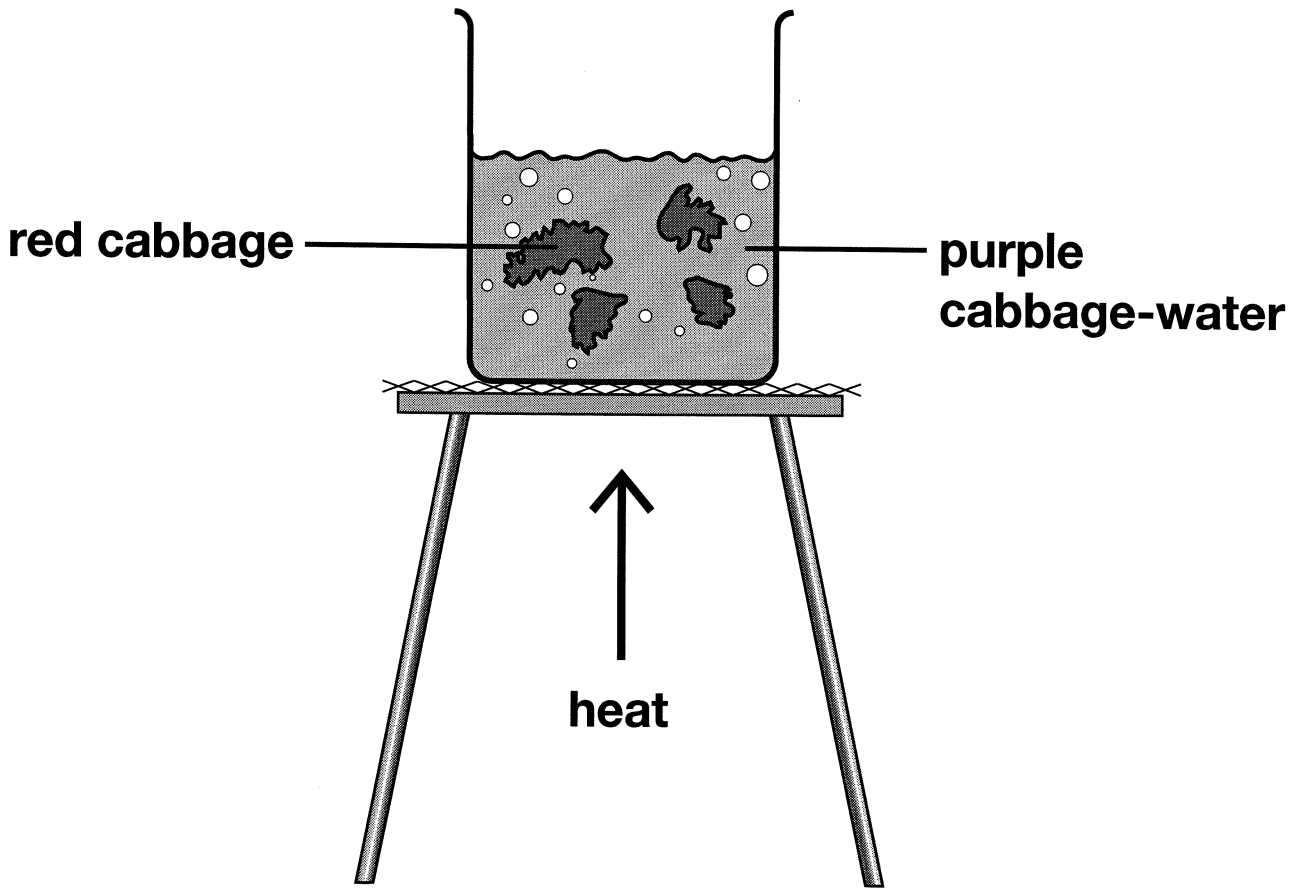
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[maximum 6 marks]

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5. Sharna boiled some red cabbage in water. The cabbage-water turned purple.



(a) (i) Sharna separated pieces of cabbage from the cabbage-water.

Which method could she use?
Tick the correct box. [1 mark]

chromatography ☐

filtration ☐

condensation ☐

freezing ☐

(ii) **Sharna wanted to find out if the purple cabbage-water contained more than one coloured substance.**

Which method did she use?
Tick the correct box. [1 mark]

chromatography	☐
filtration	☐
condensation	☐
freezing	☐

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(b) **Sharna mixed the purple cabbage-water with some other liquids.**

She wrote the colours of the mixtures in a table as shown below.

	colour of cabbage-water mixed with liquid	Is the liquid acidic, alkaline or neutral?
liquid 1	red	acidic
liquid 2	blue	alkaline
liquid 3	purple	neutral

Use the information in the table to answer parts (i) and (ii) below.

(i) **Sharna mixed cabbage-water with colourless washing-up liquid.**

The mixture turned blue.

What does this tell you about the washing-up liquid? [1 mark]

_____

_____

(ii) **Sharna then mixed cabbage-water with lemon juice. Lemon juice is acidic.**

What colour was the mixture? [1 mark]

_____

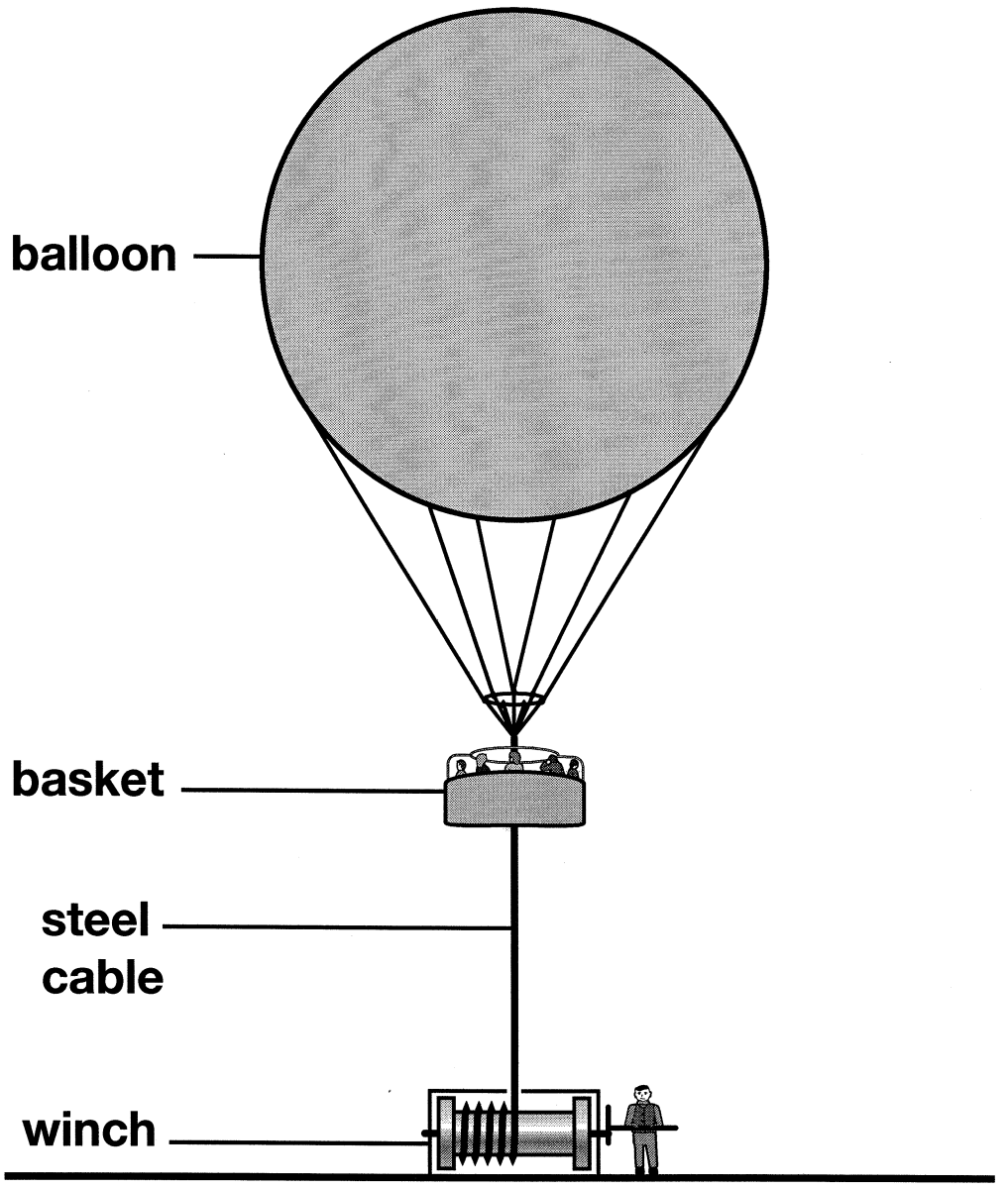
(c) **What is the name of a chemical which changes colour when it is mixed with acids or alkalis?**

Tick the correct box. [1 mark]

filtrate	☐
indicator	☐
non-metal	☐
solution	☐

[maximum 5 marks]

6. **The drawing shows some people in a balloon ride.**
The basket of the balloon is fixed to the end of a steel cable.



(a) A man brings the balloon down by winding the steel cable around a winch.

Six properties of steel are given below.

(i) Which two properties of steel make it suitable for the cable?

Tick the two correct boxes. [2 marks]

It conducts electricity. ☐

It conducts heat. ☐

It is flexible. ☐

It is magnetic. ☐

It becomes rusty. ☐

It is strong. ☐

(ii) From these six properties of steel, give one property that is never useful. [1 mark]

_____

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(b) The table below shows the mass of 1 m^3 of five different gases at 20°C.

gas	mass of 1 m^3 of gas (kg)
hydrogen	0.1
helium	0.2
air	1.2
oxygen	1.3
carbon dioxide	1.8

(i) Many years ago hydrogen was used in balloons that carried people.

Hydrogen is no longer used because it is dangerous.

Why is it dangerous to use hydrogen? [1 mark]

_____

(ii) Which other gas in the table can be used in a balloon so that it can go up in the air? [1 mark]

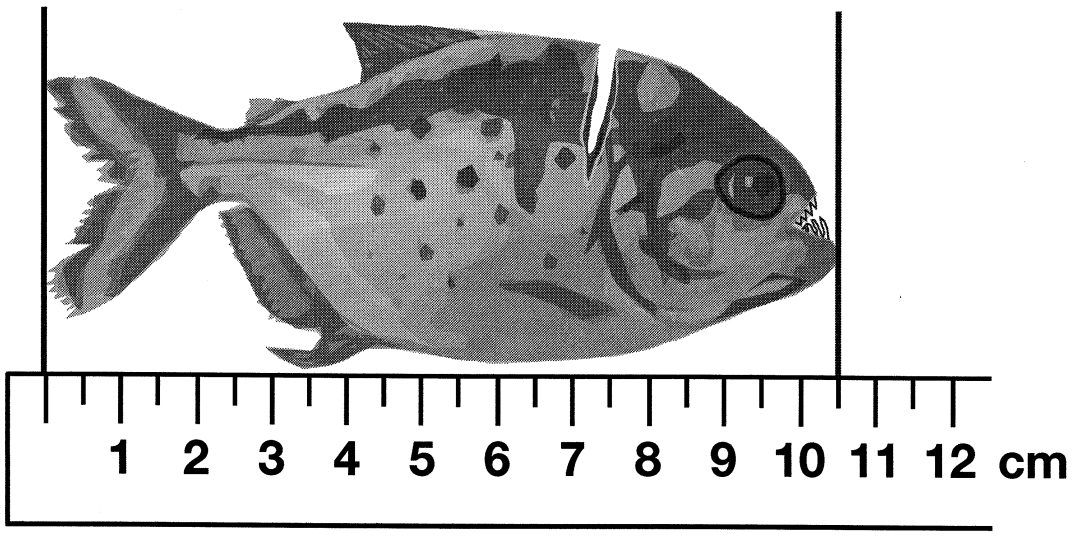
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[maximum 5 marks]

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7. **In 2004, a man fishing on the River Thames in London told scientists that a strange fish had dropped from the sky onto his boat.**



(a) **What is the length of this fish? [1 mark]**

_____ **cm**

(b) **A scientist looked at the fish and wrote the notes shown below.**

Scientist's notes

- **Its shape and teeth suggest it is a piranha.**
- **It is fresh, so it died recently.**
- **It might have been a pet that was put in the river by its owner.**
- **Maybe a bird picked it out of the river. The cut on its body could have been made by a bird's beak.**

Read the scientist's notes.

What two features of the fish made the scientist think it was a piranha? [2 marks]

1. _____

_____

2. _____

_____

(c) What made the scientist think a bird had picked it out of the river? [1 mark]

_____

_____

_____

(d) How could you find the name of a fish you had not seen before? [1 mark]

_____

_____

_____

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Here are the scientist's notes again.

Scientist's notes

- Its shape and teeth suggest it is a piranha.
- It is fresh, so it died recently.
- It might have been a pet that was put in the river by its owner.
- Maybe a bird picked it out of the river.
  The cut on its body could have been made by a bird's beak.

(e) Four of the scientist's ideas are listed in the table below.

By each idea put one tick to show whether the idea is supported by evidence or not supported by evidence.
[2 marks]

idea	supported by evidence	not supported by evidence
It is a piranha.		
It died recently.		
It was put in the river by its owner.		
It was picked up by a bird.		

[maximum 7 marks]

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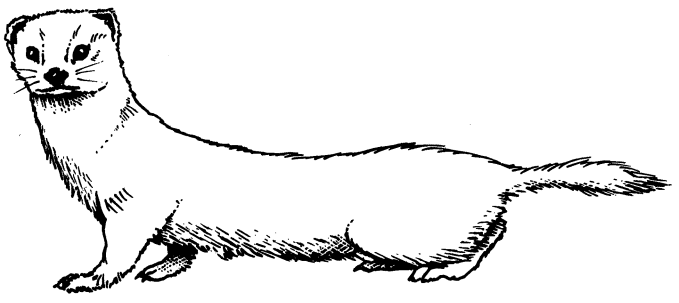
8. **The drawings below show a stoat, a weasel and an American mink.**

The stoat and the weasel are British wild animals.

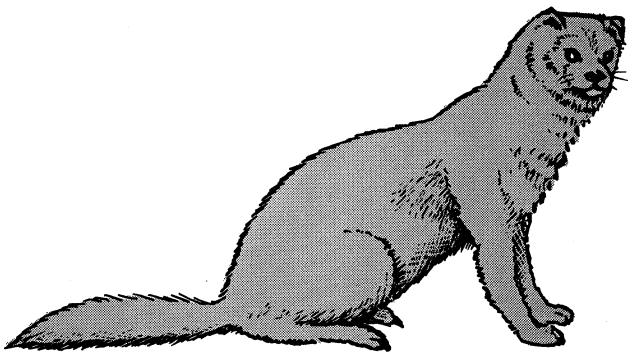
Mink are from America.



stoat



weasel



American mink

(a) They all hunt and eat rabbits.

1000 American mink were set free into the British countryside in 1998.

(i) What happened to the numbers of rabbits in the countryside? [1 mark]

_____

Give a reason for your answer. [1 mark]

_____

_____

_____

(ii) How did this affect the stoats and weasels that lived in the countryside? [1 mark]

_____

_____

_____

(b) Stoats, weasels and American mink all hunt and eat rabbits. Complete the sentence below. [1 mark]

The stoats, weasels and American mink are all predators and

the rabbits are their _____.

(c) (i) Give the name of one other wild animal in Britain that hunts for small animals such as rabbits. [1 mark]

_____

(ii) The American mink were not hunted by other animals in the British countryside, but many of the mink died.

Suggest two different reasons why the mink died. [2 marks]

1. _____

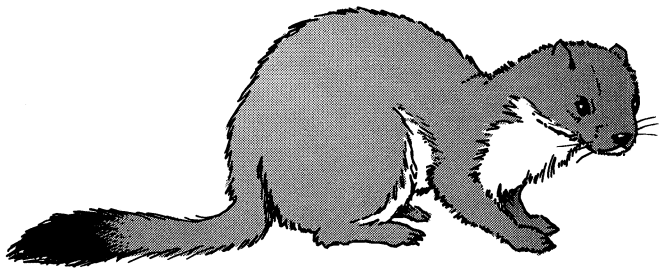
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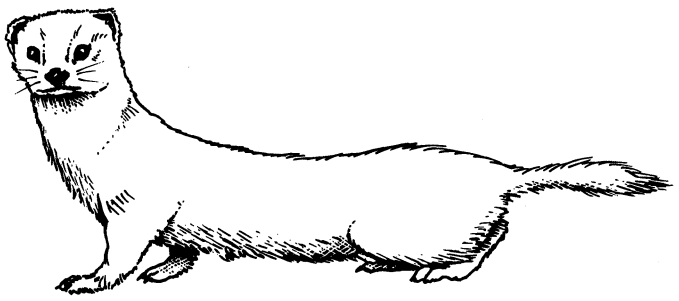
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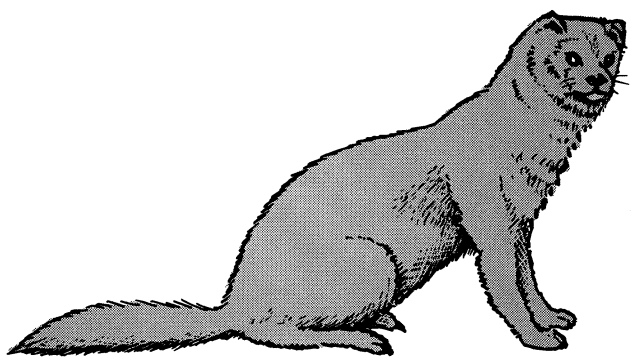
Here are the pictures again.



stoat



weasel



American mink

(d) Stoats, weasels and mink are all mammals.

Give one way that you can tell from the drawings that they are mammals. [1 mark]

_____

_____

_____

[maximum 8 marks]

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