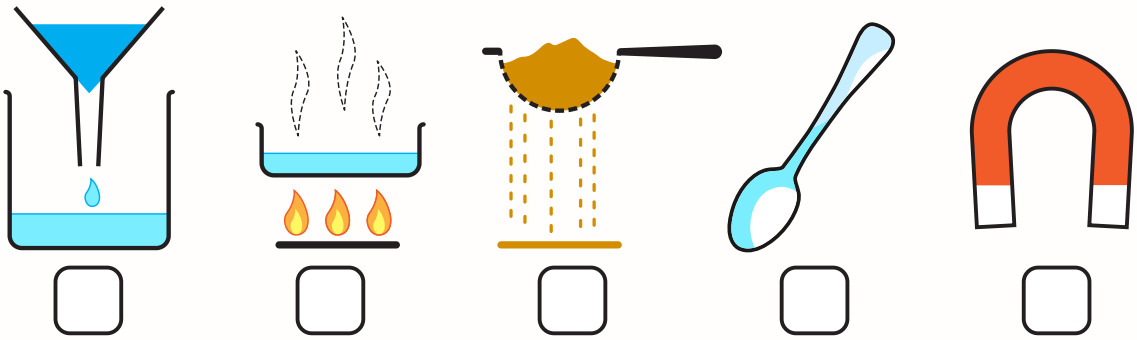
Science HeadStart primary

1 How can they be separated?

Complete the following:

a Some steel ball bearings are dropped into a bowl of sand. Tick **two** boxes to show the best ways the ball bearings can be separated from the sand.



2 marks

b Tick the box which shows how to separate each of the mixtures below. One has been done for you.

mixture	filtering	evaporating	sieving	cannot separate
sugar from sugar and water				
small pebbles from sand and small pebbles				
sand from salt, sand and water	✓			
sugar from sugar, salt and water				

2 marks

Page Total

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2 Dissolving

coffee granules

sand

sugar

cooking oil

salt

Year 5 conducted an investigation to find out which of the above substances would dissolve in water. They put their results into a table.

Complete their table below. Two have been done for you:

a

soluble	insoluble
coffee granules	sand

2 marks

Complete the following:

During the investigation, they dissolved the coffee granules in water of different temperatures.

b How does the temperature of the water affect the coffee granules dissolving?

.....

.....

1 mark

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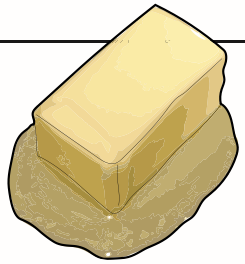
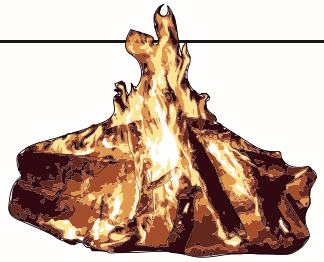
3 Can it be reversed?

..... change	..... change
• A substance can return to its original state. • The chemical properties do not change.	• A substance cannot return to its original state. • The chemical properties change.





Complete the following:

a Look at the table above. Write ***reversible*** or ***irreversible*** in the correct column at the top of the table.

1 mark

b Which of the following are examples of ***reversible*** change? Tick **two** boxes.

- ☐ wood burning on a fire
- ☐ metal rusting in the rain
- ☐ water freezing into ice
- ☐ eggs cooking in a pan
- ☐ butter melting in the heat

2 marks

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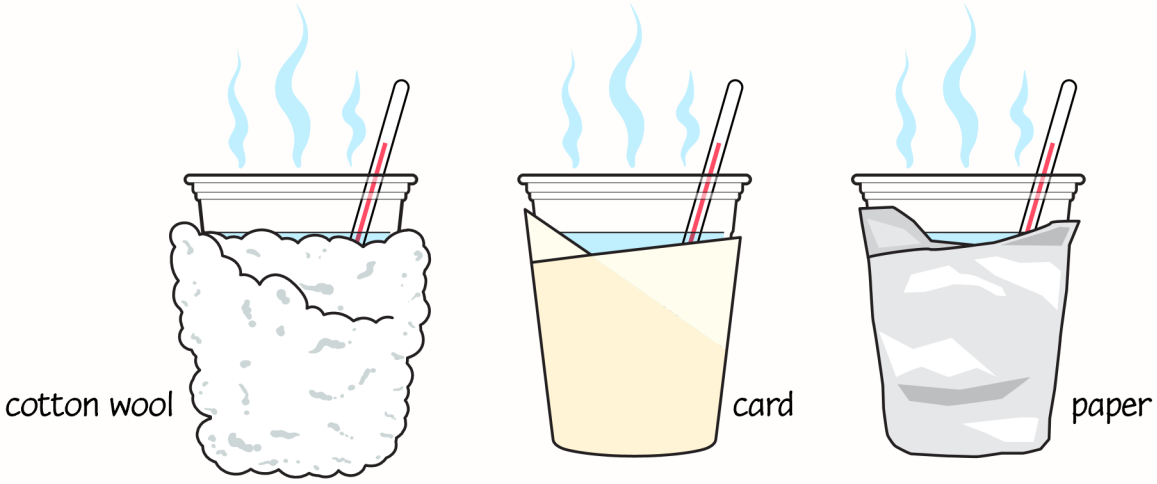
4 Thermal conductivity



Three identical plastic cups are wrapped in cotton wool, card and paper. The cups are filled to the same level with boiling water.
A thermometer is used to monitor the water temperature over time in each cup. These are the temperatures after 10 minutes:

material	temperature °C
cotton wool	85°
card	75°
paper	60°

Answer the following questions using the information above:

a Which material is the best insulator? ..... 1 mark

b Give **two** reasons why this was a fair test.

1 .....

2 ..... 2 marks

Page Total