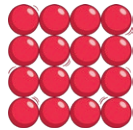


# Year 5 Properties and Changes of Materials

Match the state of matter to the picture that shows how the particles behave.

solid



liquid



gas



Fill in the gaps by writing the name of the state of matter next to the correct description.

\_\_\_\_\_ are materials that take the shape of their container. They can flow or be poured.

\_\_\_\_\_ are materials that keep their shape unless force is applied to them. They can be hard, soft or squishy.

\_\_\_\_\_ are materials that do not have a fixed shape but do have a fixed mass.

Explain why the properties of these materials make them suitable for their uses.



A glass window: \_\_\_\_\_



A copper saucepan: \_\_\_\_\_

Write the meaning of these properties of materials.

permeable \_\_\_\_\_

absorbent \_\_\_\_\_

Complete the sentences with the name of the change of state being described.

When a solid is heated and it changes into a liquid, it is said to be \_\_\_\_\_.

When a liquid cools and changes into a solid, it is said to be \_\_\_\_\_.

When a liquid changes into a gas or vapour, it is said to be \_\_\_\_\_.

When a gas cools and changes into a liquid, it is said to be \_\_\_\_\_.

Give an example of when a material wouldn't be suitable for certain uses due to its properties.

# Year 5 Properties and Changes of Materials

Put a circle around all the materials that will dissolve in water.

coffee granules    sugar    pepper    salt



sand

jelly cubes

olive oil



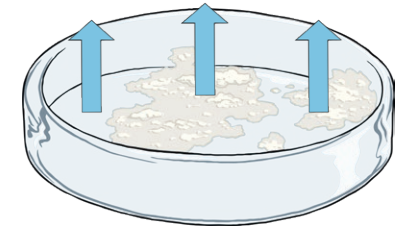
What is the scientific term given to a material that dissolves in water?

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Fill in the missing word in this sentence.

A \_\_\_\_\_ change is when a material changes state but can change back to its original state.

Reversible changes can be reversed in several ways. Underneath each picture, write the method that is being used.



Give an example of an irreversible change.

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# Year 5 Properties and Changes of Materials

Draw a line from each word to its meaning.

conductor

a mixture containing the particles of another substance that won't dissolve

insulator

a material that allows heat or electricity to easily travel through it

solution

a material that does not allow heat or electricity to travel through it

suspension

a liquid containing the particles of another substance dissolved in it

Which methods of separation would be best to use when separating the following things:

a) large particles from small particles

\_\_\_\_\_

b) solid particles from liquid

\_\_\_\_\_

When finding out which materials dissolve in a liquid, what **two** things could you do to make a material dissolve faster?

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

Some materials can change state when they are heated or cooled. Draw a line from the change of state to either the word 'heat' or the word 'cooling'.

solid to liquid

heat

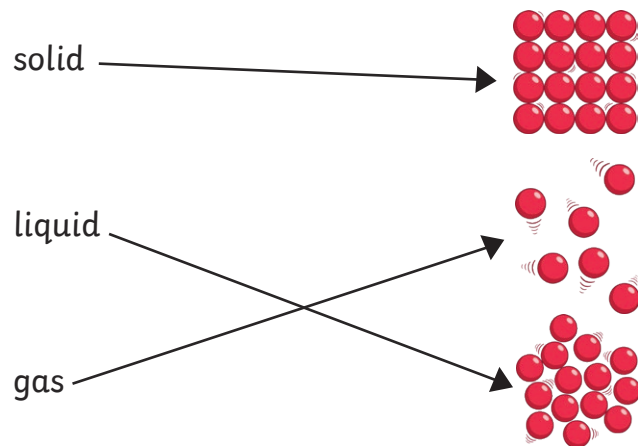
liquid to solid

cooling

liquid to gas

# Year 5 Properties and Changes of Materials Answers

Match the state of matter to the picture that shows how the particles behave.



Fill in the gaps by writing the name of the state of matter next to the correct description.

**Liquids** are materials that take the shape of their container. They can flow or be poured.

**Solids** are materials that keep their shape unless force is applied to them. They can be hard, soft or squishy.

**Gases** are materials that do not have a fixed shape but do have a fixed mass.

Explain why the properties of these materials make them suitable for their uses.

A glass window: **Glass is transparent so it lets light pass through. It is hard so it keeps wind and cold air out. It can be cut into different shapes.**

A copper saucepan: **Copper conducts heat so it allows food to cook. It can be shaped into a saucepan shape but it is also hard so it will keep this shape.**

Write the meaning of these properties of materials.

permeable – **A material that allows liquids or gases to pass through it.**

absorbent – **A material that soaks up liquid easily.**

Complete the sentences with the name of the change of state being described.

When a solid is heated and it changes into a liquid, it is said to be **melting**.

When a liquid cools and changes into a solid, it is said to be **freezing**.

When a liquid changes into a gas or vapour, it is said to be **evaporating**.

When a gas cools and changes into a liquid, it is said to be **condensing**.

Give an example of when a material wouldn't be suitable for certain uses due to its properties.

**Any answers that show an unsuitable material for a use. Examples include a paper umbrella, a metal oven glove, a plastic saucepan, etc.**

# Year 5 Properties and Changes of Materials **Answers**

Put a circle around all the materials that will dissolve in water.



What is the scientific term given to a material that dissolves in water?

**soluble**

Fill in the missing word in this sentence.

A **reversible** change is when a material changes state but can change back to its original state.

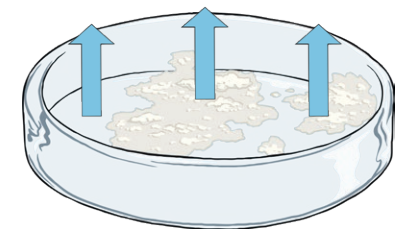
Reversible changes can be reversed in several ways. Underneath each picture, write the method that is being used.



**sieving**



**filtering**



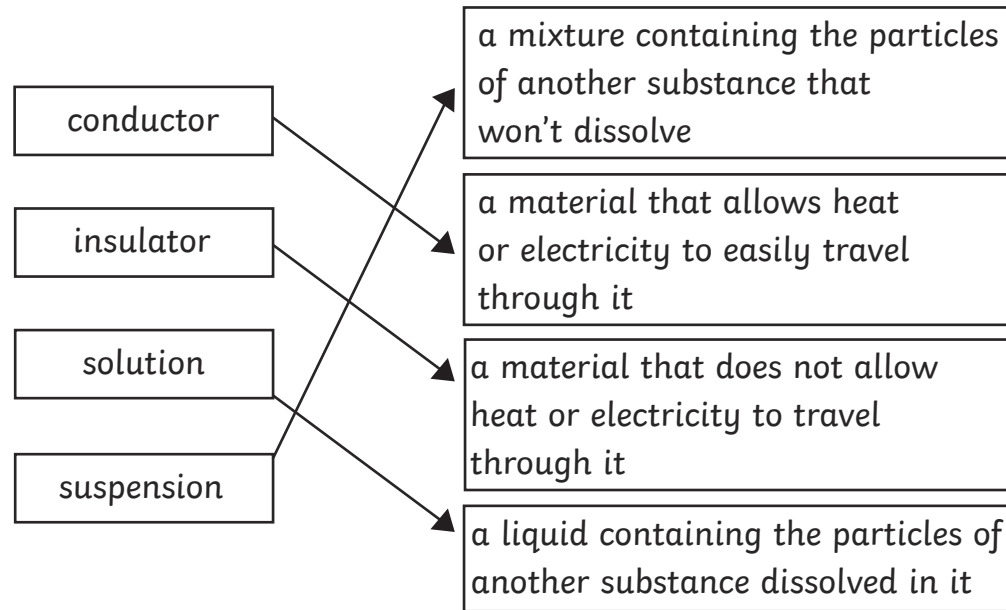
**evaporating**

Give an example of an irreversible change.

**Any answers that show an irreversible change. Examples include burning wood or mixing vinegar and milk.**

# Year 5 Properties and Changes of Materials **Answers**

Draw a line from each word to its meaning.



Which methods of separation would be best to use when separating the following things:

a) large particles from small particles

**sieving**

b) solid particles from liquid

**filtering or evaporating**

When finding out which materials dissolve in a liquid, what **two** things could you do to make a material dissolve faster?

- 1) **stirring**
- 2) **raising the temperature of the liquid**
- 3) **making the particles of the dissolving substance smaller**

Some materials can change state when they are heated or cooled. Draw a line from the change of state to either the word 'heat' or the word 'cooling'.

