

States of Matter

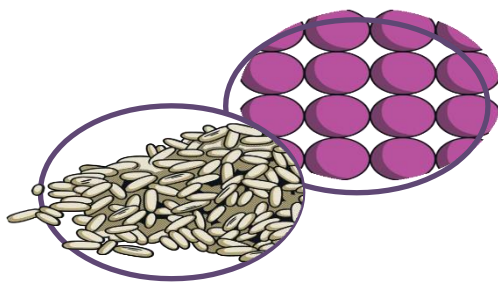
Solid

Definition:

A solid is one of the three states of matter. They have a definite shape that is not easy to change.

Examples:

Solids include things such as your chair, your desk, your hair, pieces of paper and most of the objects around you.



Nature:

All solids occupy space and can be weighed. Solids have definite shape and volume.

Physical Characteristics:

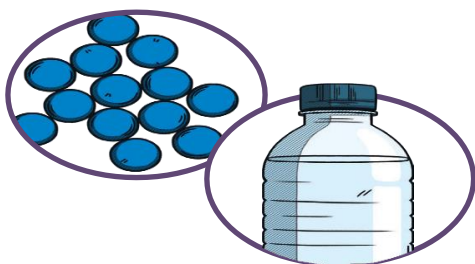
Solids can be hard like rocks, or soft like fur. They can be as large as an asteroid, or as small as a grain of rice. The only thing that these objects have in common is that they hold their shape because of their molecules being so tightly packed together.

Liquids

Definition: A liquid is one of the three states of matter. They are found between the solid and gas states.

Examples:

Liquids include things such as water, blood, petrol, honey, vinegar and soft drinks etc.



Nature:

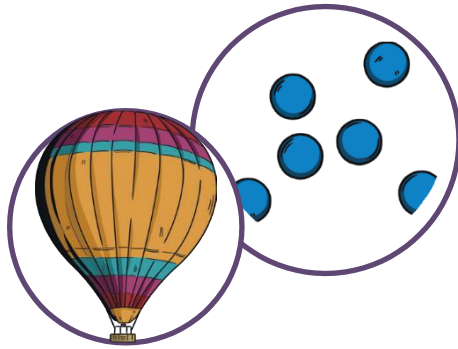
All liquids flow and can easily change shape. They also have a fixed volume.

Physical Characteristics:

Liquids are made up of very small molecules which are packed close together with no specific arrangement. The molecules are able to move around and slide past each other, which is why a liquid is able to change its shape.

A liquid will take the shape of the container in which it is poured into.

Gases



Definition:

A gas is one of the three states of matter. Gases are everywhere.

Examples:

Gases include things such as hydrogen, oxygen, helium and carbon dioxide etc.

Nature:

All gases occupy space and can be weighed. Gases do not have a fixed shape or volume.

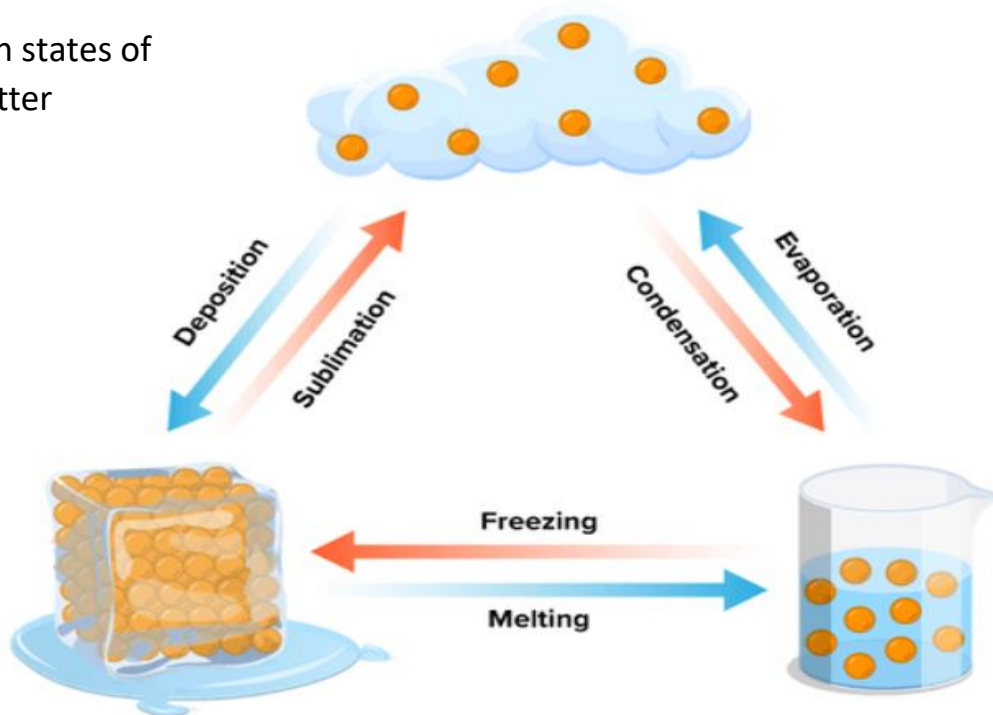
Physical Characteristics:

Gases are made up of very small molecules which

are really spread out full of energy, and constantly moving around in different directions. A gas fills its

container no matter what size or shape it is.

Changes in states of matter



Practice Questions:

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

solid

liquid

gas



Next to each object, write whether it is a liquid, solid or gas.



plastic ruler _____



milk _____



air in a hot air balloon _____



bubbles in a fizzy drink _____



metal scissors _____



water _____

Write true or false next to each statement.

Some materials can change from one state to another and back again. _____

A solid takes the shape of the container it is in. _____

Solids are always hard. _____

Liquids can be poured. _____

Gases have a fixed shape. _____

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

solid to liquid

liquid to gas

liquid to solid

heat

cooling

Fill in the missing words in the sentences:

When liquids reach a certain _____, they change state into a _____ or a _____. The temperatures that these changes happen at are called the boiling, _____ or freezing _____.

Fill in the missing words to complete the sentences.

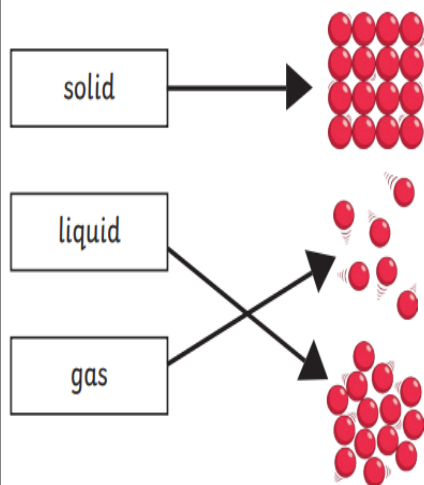
The process of a liquid changing state into a gas is called _____.

The process of a gas changing state into a liquid is called _____.

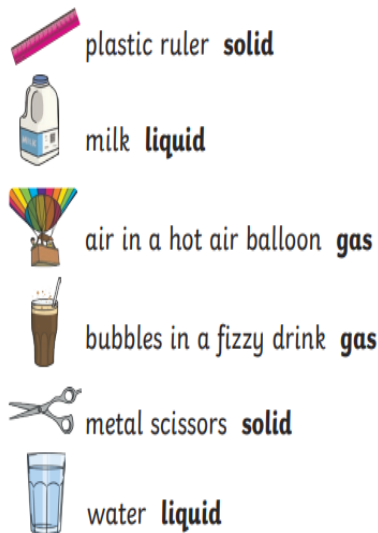
The fall of liquid or solid particles as rain, sleet, hail or snow from a cloud is called _____.

Answers

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



Next to each object, write whether it is a liquid, solid or gas.



Write true or false next to each statement.

Some materials can change from one state to another and back again. **true**

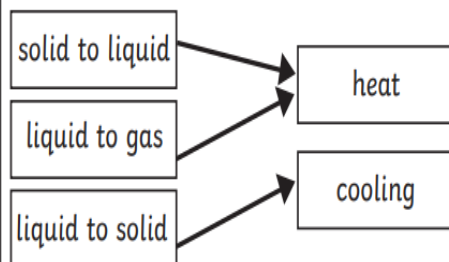
A solid takes the shape of the container it is in. **false**

Solids are always hard. **false**

Liquids can be poured. **true**

Gases have a fixed shape. **false**

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



Fill in the missing words in the sentences:

When liquids reach a certain **temperature**, they change state into a **solid** or a **gas**. The temperatures that these changes happen at are called the boiling, **melting** or freezing **point**.

Fill in the missing words to complete the sentences.

The process of a liquid changing state into a gas is called **evaporation**.

The process of a gas changing state into a liquid is called **condensation**.

The fall of liquid or solid particles as rain, sleet, hail or snow from a cloud is called **precipitation**.