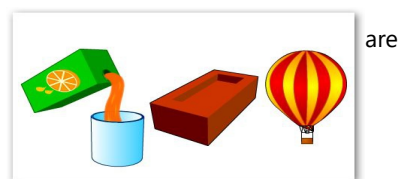


1.- STATES OF MATTER

Some things are solid, some things are liquid and some things are gas. They are the states of matter.



1.1.-PROPERTIES

Solids, liquids and gases have different properties:

Solid, liquid and gas

A **solid** has its own VOLUME and SHAPE.

A **liquid** has its own VOLUME but not its own SHAPE.

A **gas** does not have its own VOLUME nor its own SHAPE.

A **gas** spreads out to fill all the SPACE it can.

Liquids and gases can FLOW.

SOLID	LIQUID	GAS
It has a definite mass <i>It has a definite shape</i> It has a definite volume	It has a definite mass It does not have a definite shape It has a definite volume	It has a definite mass. It does not have a definite shape It does not have a definite volume

Exercise 1: Complete the text with a word from the box

shape	flow	space
	volume	volume
shape	shape	flow

³⁵₁₇ Gases and liquids can _____, solids do not _____.

³⁵₁₇ Liquids change _____, to fit the container they occupy.

³⁵₁₇ Solids keep the same _____.

³⁵₁₇ Solids and liquids have got their own _____.

³⁵₁₇ A gas will spread out to fill any _____.

³⁵₁₇ A gas does not have its own _____ nor its own _____.

Exercise 2: Complete the **Physical Properties of Each State**, using the following words:

Definite	Indefinite	Yes	No
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PROPERTY	SOLID	LIQUID	GAS
shape			
volume			
ability to flow			
can be compressed			

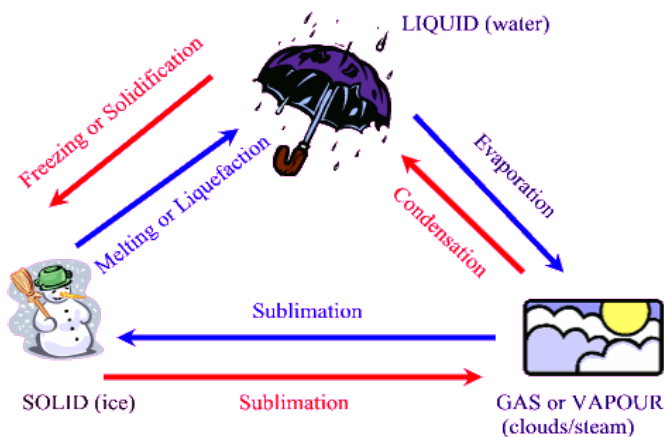
Exercise 3: Choose the correct answers:

- Gases can/cannot be compressed, and they can/cannot also flow.
- Solids can/cannot easily be compressed, and they can/cannot flow.
- Liquids can/cannot easily be compressed, but they can/cannot flow

Exercise 4: Which state of matter has:

- neither a fixed volume nor a definite shape?
- a fixed volume and a definite shape?
- no definite shape, but a fixed volume?

1.2.- Changes of states for water:



When a state of matter gains or loses heat it undergoes a change.

Exercise 5: Complete the sentences:

- The process of changing from _____ to _____ is _____.
- The process of changing from _____ to _____ is _____.
- The process of changing from _____ to _____ is _____.
- The process of changing from _____ to _____ is _____.
- The process of changing from _____ to _____ is _____.
- The process of changing from _____ to _____ is _____.
- The process of changing from _____ to _____ is _____.

to _____ is _____.

Exercise 6: Complete the sentences:

- The process of changing from solid to liquid is _____.
- The process of changing from solid to _____ is sublimation.
- The process of changing from _____ to liquid is melting.
- The process of changing from water vapour to liquid water is _____.

Melting and Boiling points:

- The **melting point** is the temperature at which a solid turn into a liquid. Freezing happens at the same temperature as melting. Therefore, the melting point can also be called the **freezing point**.
- The **boiling point** is the temperature at which a liquid turns into a gas. Condensation happens at the same temperature as boiling.

The melting point and boiling point are **properties of the substance**. They can help us to identify the substance. Then, a pure substance always melts and boils at the same temperature.

Exercise 7: Complete:

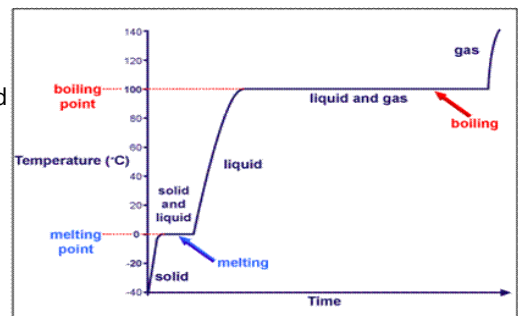
Melting and boiling

Many solids have a temperature at which they will _____. This is called the _____ of the solid.

The temperature at which a liquid _____ is called the _____.

As a solid _____, it changes into a liquid.

As a liquid _____, it changes into a gas.



Material	Melting point (°C)
Gold	1064
Silver	962
Iron	1525
Aluminium	660
Mercury	-39
Tin	232
Salt	800
Sugar	185
Chocolate	35
Olive oil	-20
Candle wax	60
Ice	0
Glass	1400

Exercise 8:

Look at the table of melting point of common materials. Using the information answer the questions.

- Which material has the highest melting point?
- Which material has the lowest melting point?
- Room temperature is 22°C. Name three materials that are solids at room temperature?
- Which material are liquids at room temperature?
- Which materials have a lower melting point than ice?

Exercise 9: Choose the right option.

a) When a liquid is cooled, it turns into a solid. This is called ...

↗ dissolving

↗ Freezing

↗ Melting

b) Evaporation is when

↗ a gas is cooled and changes to a liquid

↗ a liquid is heated and changes to a gas

↗ a solid is heated and changes to a liquid

c) Condensation happens when

↗ a gas is cooled

↗ a liquid is cooled

↗ a solid is cooled

d) When a solid is heated, it turns into a liquid. This is called ...

↗ dissolving

↗ freezing

↗ melting

e) Which of the following are examples of liquids?

↗ Wood and paper

↗ Shampoo and oil

↗ Shoes and socks

f) A gas condenses into a liquid when it is...

↗ Cooled

↗ Warmed

↗ Boiled

Exercise 10: Listen and complete

Many solids _____ when they are heated. They _____ into a liquid. This happens at a _____ called its _____ **point**.

If you _____ a liquid _____ enough, it will _____. The temperature at _____ this happens is called its _____ **point**. As a _____ boils it changes into a _____.

VOCABULARY

Translate these words into Spanish:

English	Spanish	English	Spanish

Sources:
http://www.clickandlearn.org/Gr9_Sci/Particle_Theory.htm
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