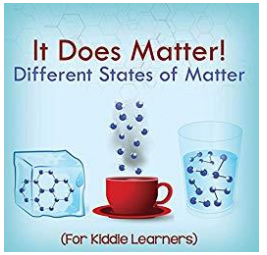
Science -Year 4 – spring 1 – States of matter

Vocabulary	Meaning
condensation	The conversion of a gas to a liquid, forming as droplets on a cold surface.
evaporation	The process of turning from a liquid into a vapour (gas) when heated.
gas	A substance or matter that is in a state of free movement and no fixed shape.
liquid	A substance that moves freely but has a consistency of water or oil.
melt	To become liquefied when something is heated.
particles	Very small (microscopic) pieces that make up a solid, liquid or a gas.
solid	A substance that is firm and stable in shape.
solidify	To become hard or solid.
state	A form that matter can exist in. (Solid, liquid or gas)
steam	The vapour (gas) that water turns into when heated.
temperature	A measurement of how hot or cold something is.
thermometer	An instrument for measuring temperature.

Skills

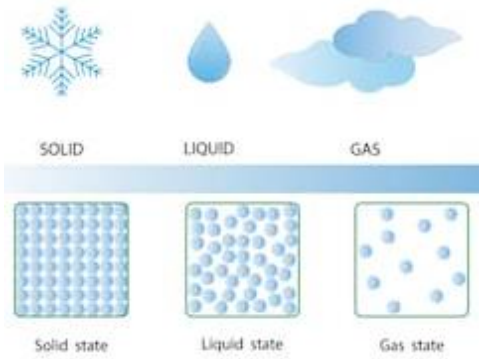
- To be able to draw diagrams to represent states of matter.
- To compare the properties of materials in different states of matter.
- To use a thermometer to measure temperature accurately.
- To explain how to keep it a fair test when researching.

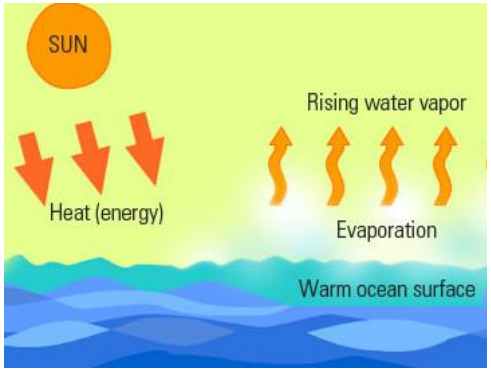
Books



Knowledge

- Materials and substances come in different states of matter; solids, liquids and gases.
- Each state of matter gives the material/ substance different properties.
- Materials can change states of matter when heated and cooled, however some materials cannot change state.





What I should be able to do and know now.

Knowledge:

- To know that we get solids, liquids and gases.
- To know that solids are hard.
- To know that liquids are runny.
- To know that we cannot see gases in the air.
- To know that when water heats up it disappears/ dries up.
- To know that when ice/ snow gets hot it turns to water.

Skills:

•Draw a solid object and a liquid in a container.

•Draw a table to collect results for an experiment.

•Explain in small steps how a process happens.

Growth Mindset Strategies

If I find something challenging I can:

Look back at the information I have been given.

Ask a friend if they can help me.

Use a diagram or text book.

Look at the example the teacher gave me.

Use an I-pad to research.

What I will be learning

- To compare and group materials together according to whether they are solids or liquids.
- To identify and explore the properties of gases.
- To observe that materials change state when they are heated or cooled.
- To research the temperature in degrees Celsius (°C) at which materials change state.
- To understand the process of evaporation.
- To understand the process of condensation.
- To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

What I will know and be able to do at the end of the topic.

Knowledge:

Can you name the 3 states of matter? Give 2 examples of each one.

Can you explain the process of evaporation?

When a liquid _____ it turns into a _____.

Can you explain the process of condensation?

When a gas _____ it turns into a _____ on a _____ surface.

Can you explain a test to find out the temperature that water turns into a gas? How would you make it fair?

Can you explain the water cycle? Draw a diagram to show it.

Can you link this to your knowledge of countries around the world?

Skills:

Draw a diagram showing the formation of the particles in a solid, liquid and a gas.

Create a table using a ruler for collecting data from my research.

Explain how to make it a fair test when carrying out an experiment and carry this out in practice.