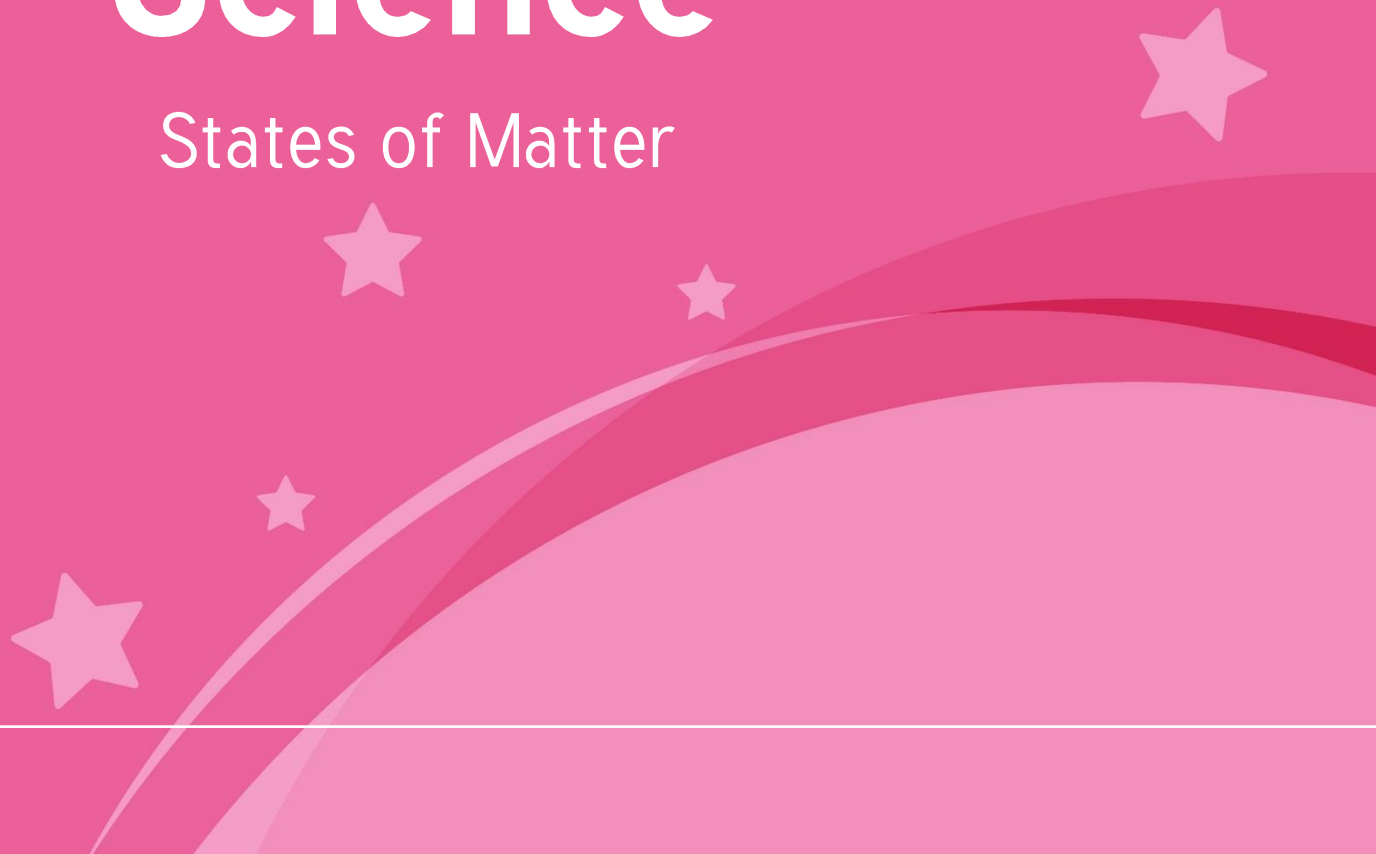


Science

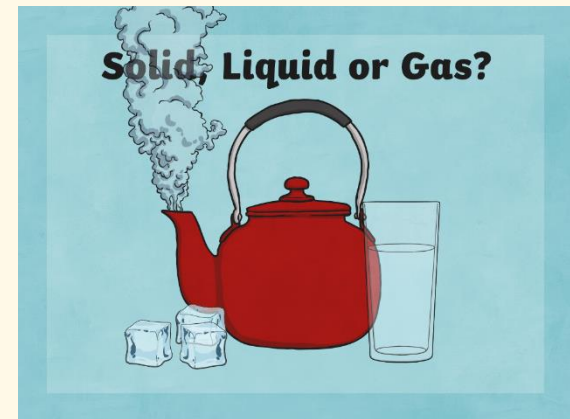
States of Matter



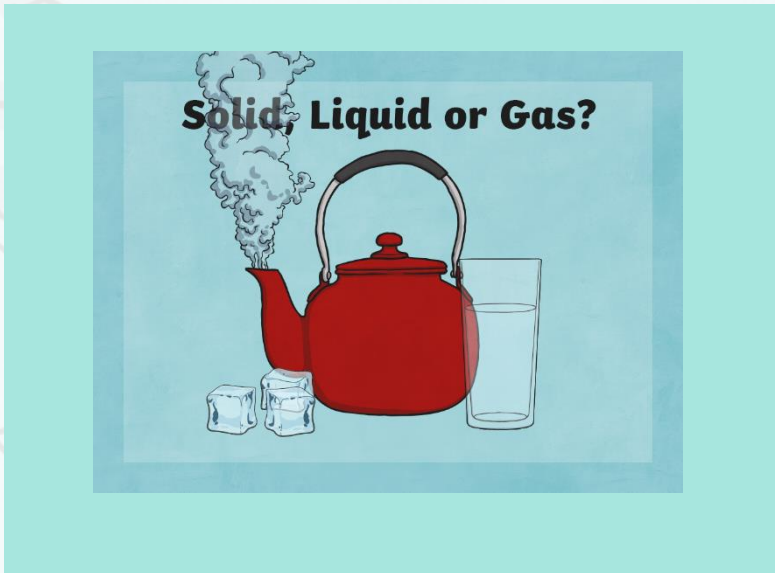
Today we are learning about states of matter.

The aim of today:

- To understand what states of matter means.
- To sort materials into solids, liquids or gases.
- To describe the properties of solids, liquids and gases.



Sorting Matter.



<https://www.bbc.co.uk/bitesize/topics/zkkg87h/articles/zsgwwxs>

Watch BBC bitesize the video about the 3 states of matter.

There's a game and a quiz to do too.

What is matter?

Matter is anything that takes up space.

It's another word for the stuff that things are made of.

Material is another way of describing what something is made of.

e.g. The material in the window is glass.

A material may be in one of three states:

solid, liquid or gas.

Properties of Solids

These items are all solids!

What do they have in common?
Share the adjectives you thought of.

Materials in a solid state keep their shape unless a force is applied to them.

Solids can be cut, squashed or twisted. They will not change shape on their own.

Solid materials always take up the same amount of space. **They do not spread out or flow.** Solids do not have to be hard. They can be squashy or soft.



Properties of Liquids

These items are all liquids!

What do they have in common?

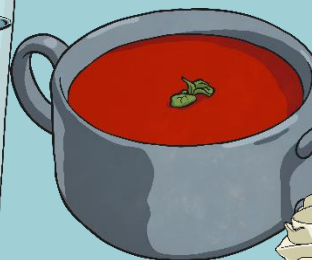
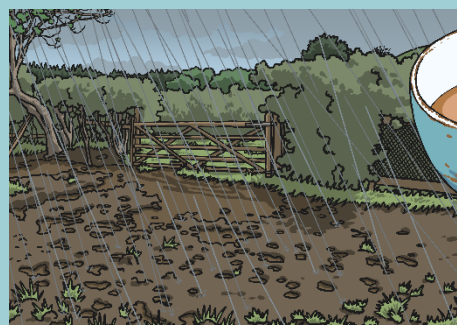
Share the adjectives you thought of.

Materials in a liquid state take the shape of the container they are in.

Although liquids can change shape, they do not change their volume. This means they still take up the same amount of space.

Liquids are pulled down to the bottom of a container by gravity.

Liquids can flow or be poured.



Properties of Gases

These items are all gases!

What do they have in common?
Share the adjectives you thought of.

Materials in a gaseous state can spread out to completely fill the container or room they are in.

Gases have weight.

Gases can be squashed.

Gases do not keep their shape.



Properties of Materials



Can you match the properties with the correct state?

Make a table in your book using the 3 states of matter as headings for each column. Write the correct properties under each heading. Make an extra row in your table. On the next slide there is link to a video of some materials. You can add the materials to the correct column in your table.



solid



liquid



gas

Spreads out to
fill a space.

Keeps its shape.

Can be cut,
squashed or torn.

Takes the shape of the
container it is in.

Can be poured.

Does not have
any fixed shape.

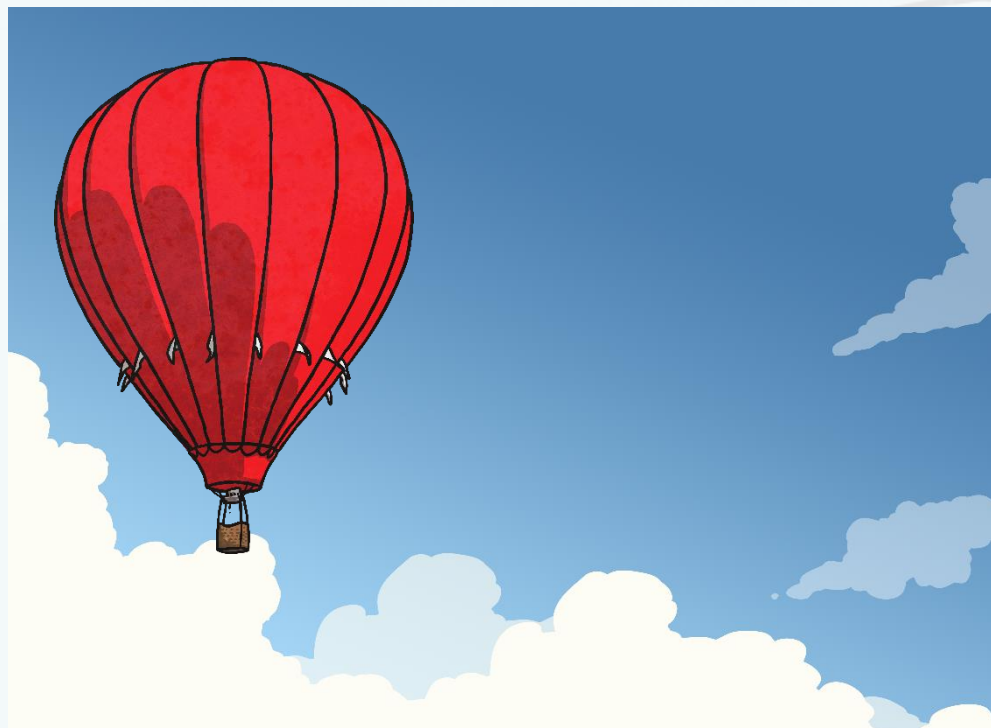
Spotting States of Matter



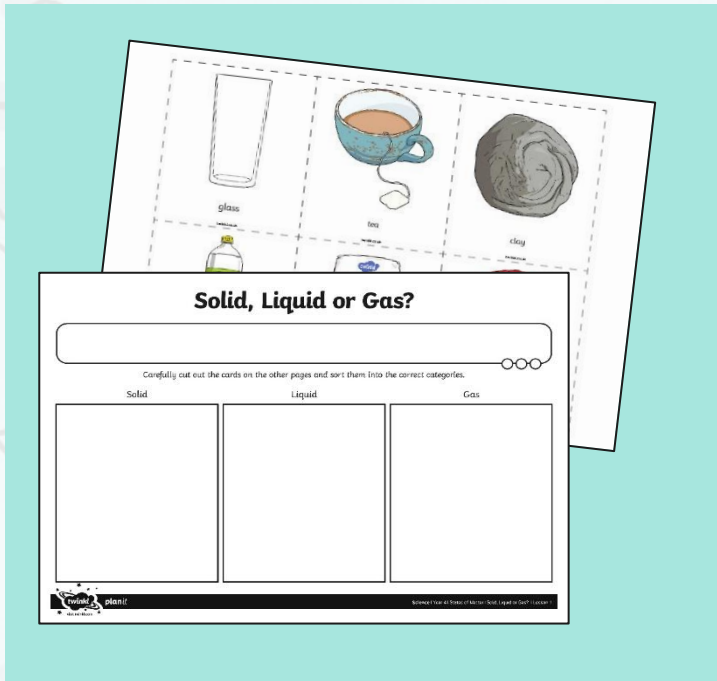
Watch this short film containing clips of different solids, liquids and gases.

See which materials you can spot, and which states of matter they are. Add them to your table.

Some of them are tricky because matter changes state when it is heated or cooled. We'll learn more about that another week.



Sorting Materials



On the Y4 webpage there is an example of a table and lots of items to sort.

You can print the activity or draw the table in your book and draw and label the objects.

You could even collect your own objects and group them practically into the 3 states of matter.

There are some tricky materials. What about a sponge? Or a bottle of lemonade? Maybe they will go into more than 1 category.

Where would you put honey? Is sand a solid? Think about the definitions that you have read. Discuss it with your family.



<https://www.youtube.com/watch?v=QQsybALJoew>

- The video link explains the states of matter in more detail.
- There are some experiments in the video too that you could try at home.
 - There also some fun facts! [link](#)