



# Science

## States of Matter Lesson 2

# Solid, Liquid or Gas?



# Aim

- I can explain what solid, liquids and gases are at particle level.

# Success Criteria

- I can describe the properties of solids, liquids and gases.
- I can explain the difference between the particles in solids, liquids and gases and the forces between the particles.

# Properties of Materials



In science last week we sorted materials depending on what state they were. The 'state' is the form they exist in. Watch the video as a reminder.

<https://www.youtube.com/watch?app=desktop&v=wclY8F-UoTE>

As a quick recap, sort the properties of solids, liquids and gases.



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.



# Particles



We can explain the differences between solids, liquids and gases by knowing what they are made of.

Scientists have found out that all materials are made of very tiny particles. These particles are so small that we cannot see them with our eyes, or even with a microscope!

The position and behaviour of the particles is different in solids, liquids and gases.

<https://www.bbc.co.uk/bitesize/clips/zpbvr82>



Click  
here to  
find out  
more!

# Particles and Properties



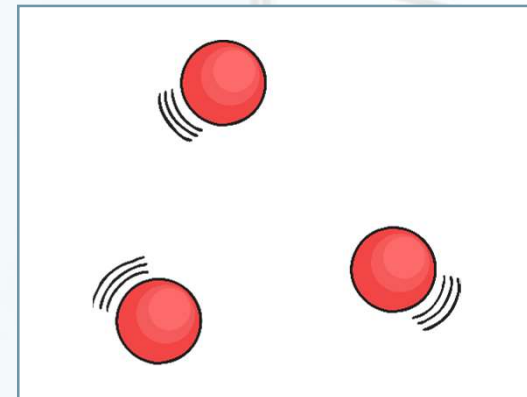
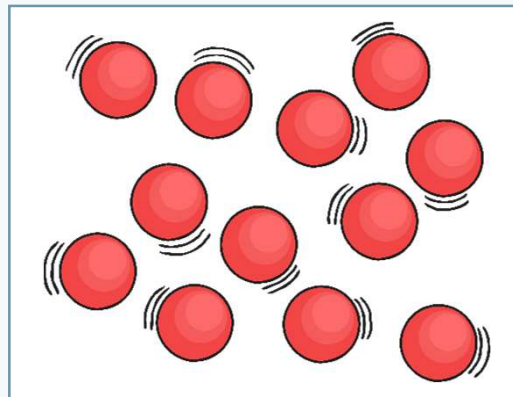
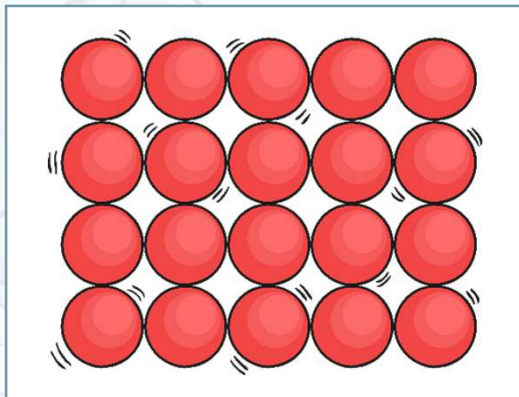
**Solids** have strong forces holding the particles close together so they keep their shape.

**Liquid** particles are farther apart and attractions are weaker so the liquid can change shape. They take up the shape of the container.

The particles in **gases** are far apart and forces of attraction that hold them together are weak. They will change their volume to fill the container that they are in.

There is another video that explains how particles are arranged in different states.

<https://www.youtube.com/watch?app=desktop&v=jmm1J2yI9tk>



# Particles and Properties

The children in the pictures are using their bodies to demonstrate states of matter. Can you work out which is solid, liquid and gas and why?





# Particles and Properties



Now you have read the information and watched the videos complete the “Particles in different states of matter” activity sheet. You can print and stick the boxes or draw it in your book.

Can you work out which diagram and explanation goes with each state?

Particle	
State	Particle

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Particle Properties		
solid	liquid	gas
Particles are close together but random. They can move over each other.	Particles are spread out and can move about quickly in all directions.	Particles are closely packed in a regular pattern. They vibrate on the spot.

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Science | Year 4 | States of Matter (Solid, Liquid or Gas?) (Lesson 1)

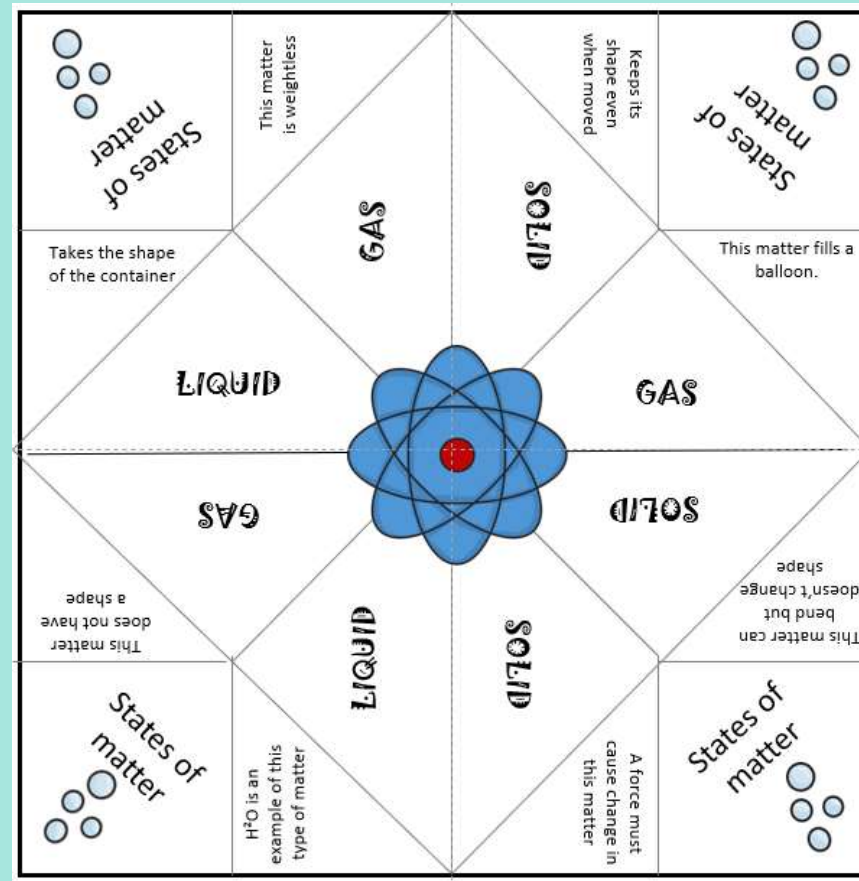


# Science Particles activities



There are some other activities for you to do on the Year 4 web page.

Make your own fortune teller by printing it or using facts that you have learnt. There is a fact sheet to complete too.



## Extra Challenge: Are you interested to learn more about states of matter?

We have learnt about the 3 main states of matter:

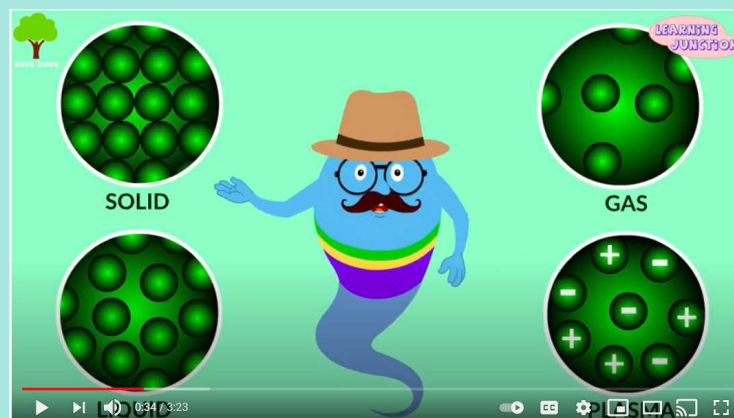
Solid

Liquid

Gas

There are other states of matter. In the video these are discussed. You could do your own investigations about the other states of matter. Present your work however you choose.

You could do a poster, PowerPoint, video or written description for example.



<https://www.youtube.com/watch?app=desktop&v=8zrbvWgJk>

