

## Scientist



[Daniel Fahrenheit](#)  
(Inventor of the thermometer)



[Dr Fangxian Fang](#)  
(Earth scientist)

## Skills

I'm taking accurate measurements using equipment like a nanoscientist.



I'm using scientific evidence to answer questions like a science teacher.



## Careers

Nanoscientist (studies incredibly small things such as atoms)  
Science teacher (teaches others about science)

## Enquiries



Comparative and fair testing

How does the surface area of a container of water affect how long it takes to evaporate?

How does the mass of an ice cube change over time?



Observation over time



Pattern making

Is there a pattern in how long it takes different sized ice lollies to melt?

Can you group these materials and objects into solids, liquids and



Identifying, classifying and grouping



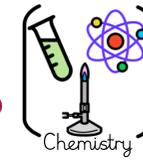
Research using secondary sources

What are hurricanes, and why do they happen?

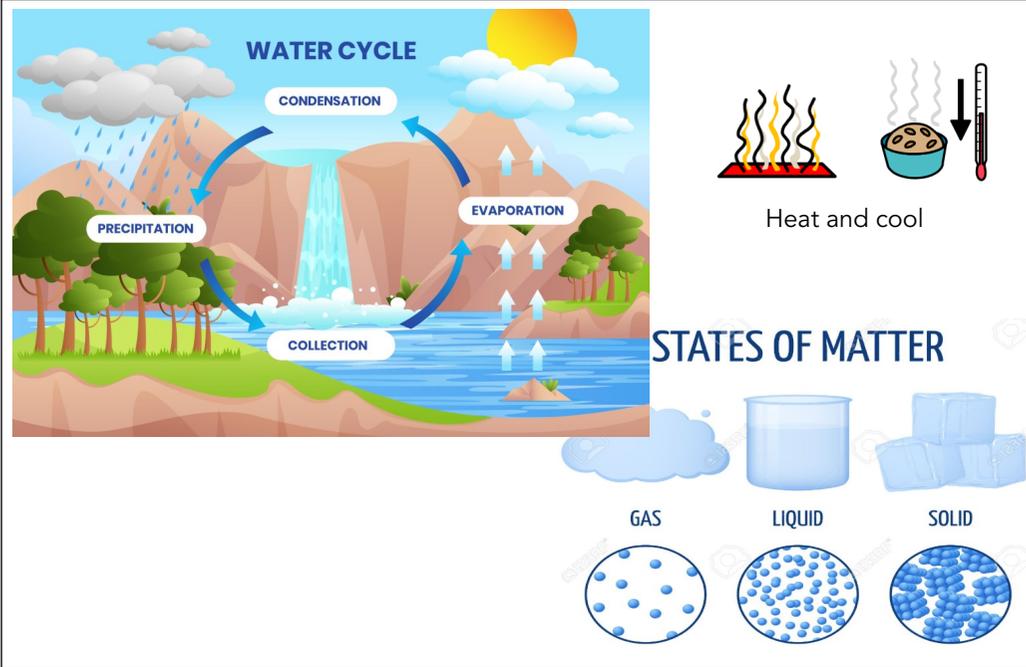
## Y4 STATES OF MATTER



### Main idea



Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled and link this to the water cycle. Begin to think about reversible and irreversible changes in materials.



### Key Learning

- Pupils can compare and group materials together, according to whether they are solids, liquids or gases.
- They can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).
- Pupils can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

### What you should already know

Pupils can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.

They know that the shapes of solids can be changed, and can begin to describe the changes that water can go through.

Pupils will know that the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

### What comes next?

Year 5 - Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.

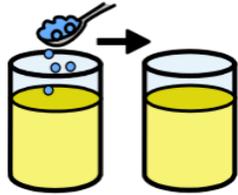
### Key vocabulary

Properties	Dissolve
Solubility	Solution
Transparency	Substance
Electrical conductivity	Solids
Thermal conductivity	Liquids
Magnetic	Gases
	Evaporation
	Condensation

# Year 4: States of Matter



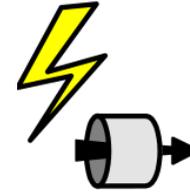
Properties: a quality that something is known by (characteristic and features)



Solubility: the quality or extent of being soluble; ability to be dissolved



Transparency: how easily it is to look through a material to what is on the other side



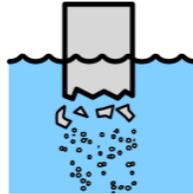
Electrical conductivity: the capacity for or property of conducting or transmitting electrical currents



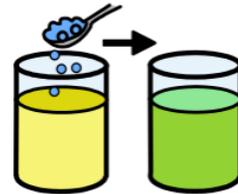
Thermal conductivity: the capacity for or property of conducting or transmitting heat



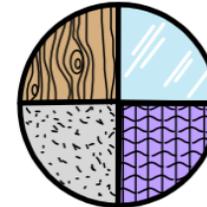
Magnetic: when a material attracts magnets



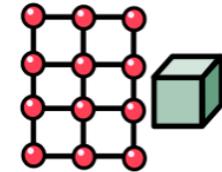
Dissolve: to mix completely with liquid



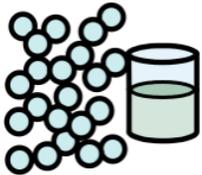
Solution: a mixture that contains two or more unlike substances combined evenly



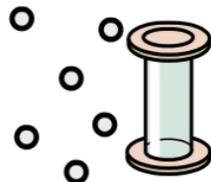
Substance: that of which something is made



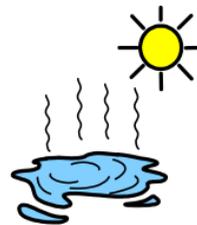
Solids: having a firm shape or form that can be measured in length, width, and height; not



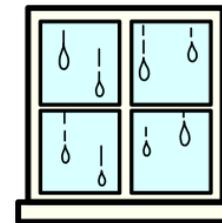
Liquids: a form of matter that flows easily and is neither a solid nor a gas. Liquid can take on the shape of any container it is poured into



Gases: a form of matter that is neither liquid nor solid.



Evaporation: to turn from liquid into gas

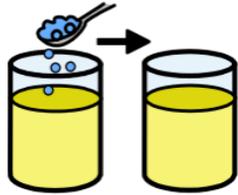


Condensation: the act or process of changing from a gas to a liquid

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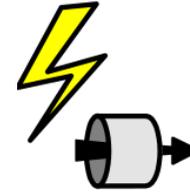
Properties



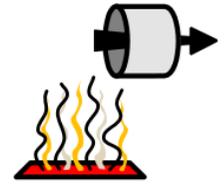
Solubility



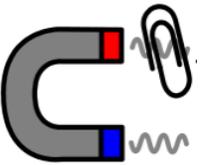
Transparency



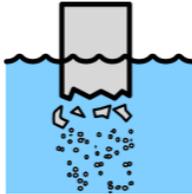
Electrical  
conductivity



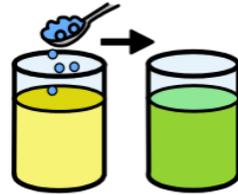
Thermal  
conductivity



Magnetic



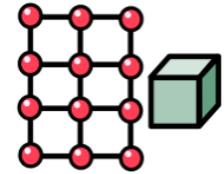
Dissolve



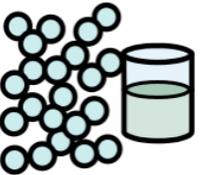
Solution



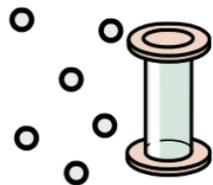
Substance



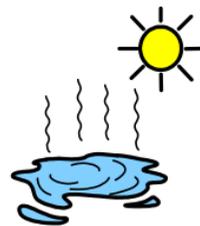
Solids



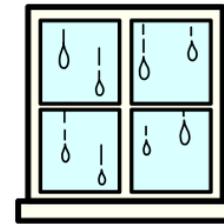
Liquids



Gases



Evaporation



Condensation