

# Knowledge Organiser -States of Matter (Year 4)

## Key vocabulary

### states of matter

Materials can be one of three states: solids, liquids or gases. Some materials can change from one state to another and back again.

### solids

These are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy. Solids take up the same amount of space no matter what has happened to them.

### liquids

Liquids take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured.

### gases

Gases can spread out to completely fill the container or room they are in. They do not have any fixed shape but they do have a mass.

### water vapour

This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour.

### melt

This is when a solid changes to a liquid.

### freeze

Liquid turns to a solid during the freezing process.

### evaporate

Turn a liquid into a gas.

### condense

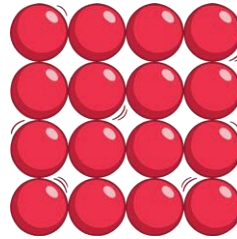
Turn a gas into a liquid.

### precipitation

Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

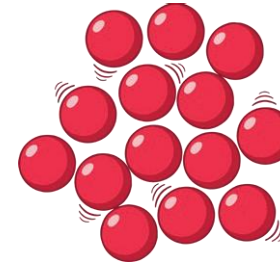
## The three states of matter

### Solid



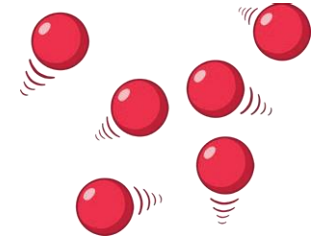
Particles in a solid are very close together and cannot move. They can only vibrate.

### Liquid



Particles in a liquid are close together but can move around each other easily.

### Gas



Particles in a gas are spread out and can move around very quickly in all directions.

## Changing states

When water and other liquids reach a certain temperature, they change state into a solid or a gas. The temperatures that these changes happen at are called the boiling, melting or freezing point.



cooling



heating

If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.

When freezing occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.

## The Water Cycle

### Evaporation and Condensation

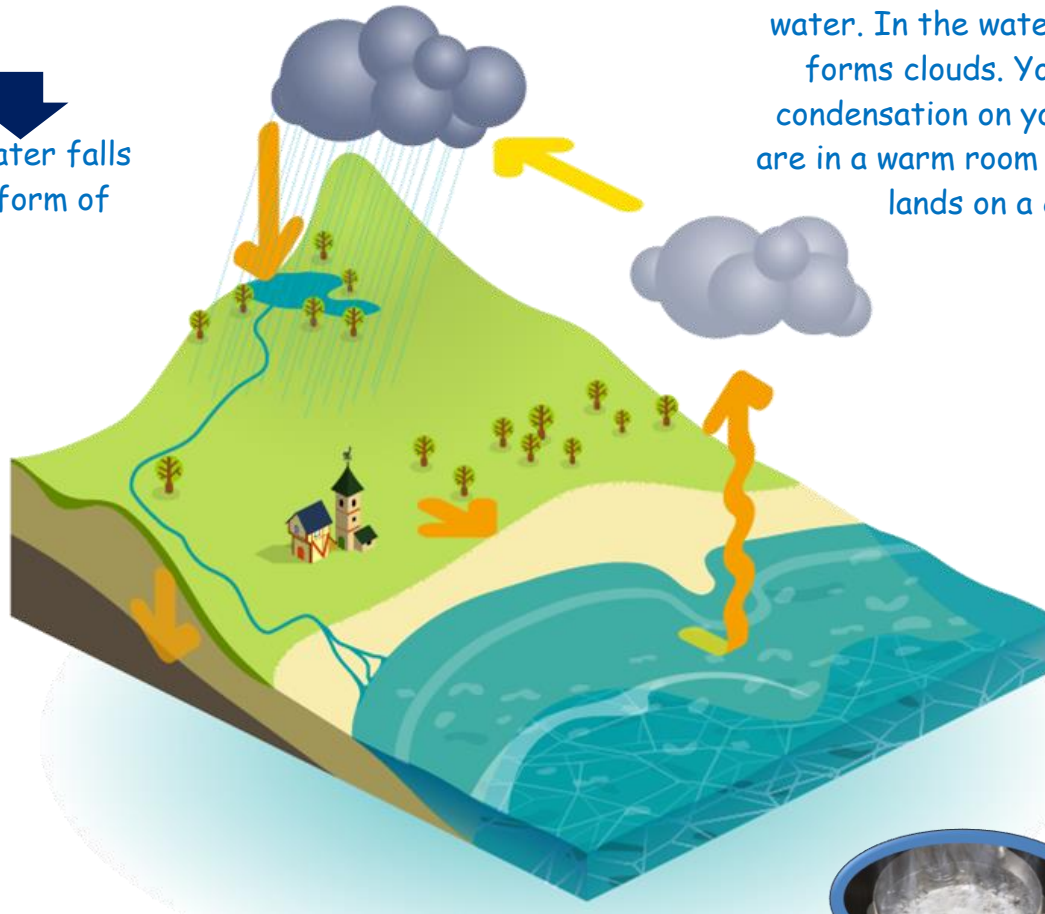


#### Precipitation

The clouds get heavy and water falls back to the ground in the form of rain or snow.



**Collection (run off)**  
Rain water runs over the land and collects in lakes or rivers, which take it back to the sea. The cycle starts all over again.



#### Condensation

Water vapour in the air **cools** down and changes back into tiny drops of liquid water. In the water cycle, this process forms clouds. You might have seen condensation on your window when you are in a warm room and the water vapour lands on a cool surface.



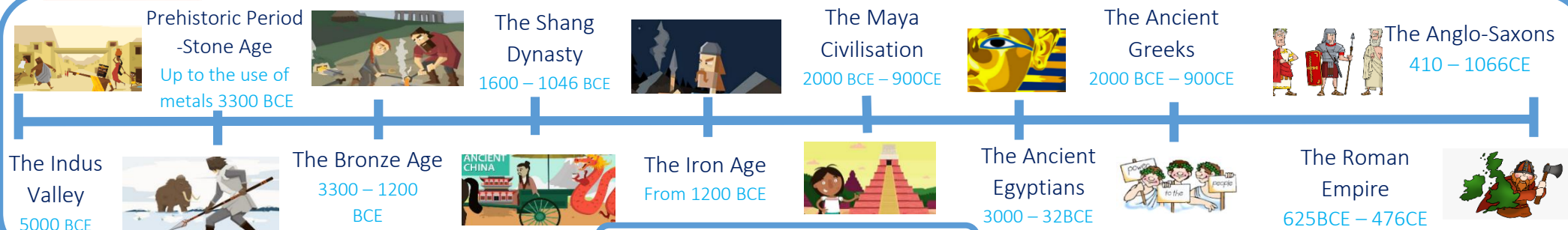
#### Evaporation

The sun **heats up** water on land, in rivers, lakes and seas. Heat causes the water particles to move quickly. They move further apart, until they move so far apart, they become a gas. This gas is known as water vapour. The water vapour rises into the air.





# Knowledge Organiser – Ancient Greece (Year 4)



## Key Vocabulary

- Ancient** Something which is very old and existed many years ago
- Athenian** People from the Greek city of Athens
- Civilization** A society that is advanced, lives in cities and has government and language
- Culture** The language, art and ideas of a group of people.
- Democracy** A fair political system where adults vote for an elected government, who then make decisions on how to run the country
- Olympics** A festival to honour Zeus where Greeks competed against each other
- Spartans** People from the Greek city of Sparta

## Early History Time Line

### Who were the Ancient Greeks?

About 2,500 years ago, Greece was one of the most important places in the ancient world. The Greeks were great thinkers, warriors, writers, actors, athletes, artists, architects and politicians. The Ancient Greeks called themselves Hellenes and their land was Hellas. The name 'Greeks' was given to the people of Greece later by the Romans. Ancient Greeks lived in mainland Greece and the Greek islands, but also in colonies scattered around the Mediterranean Sea. There were Greeks in Italy, Turkey, North Africa, and as far west as France.



### Periods of Ancient Greek History

The Minoans were the first great Greek civilisation. They lived on the island of Crete, between 2200 and 1450BCE.

Next came the Mycenaean civilisation, from mainland Greece. They were fine builders and traders, but they were also great soldiers.

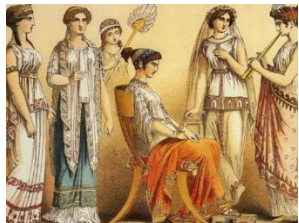
Between 480 and 280BCE, Greece entered a 'golden age' where they built fantastic temples, such as the Parthenon, made scientific discoveries, wrote plays and founded the first proper democracy. Historians call this Classical Greece.





## City States

There was never one country called Ancient Greece'. Instead, Greece was divided up into small city-states, like Athens, Sparta, Corinth and Olympia. Each city-state ruled itself. They had their own governments, laws and army. So, ancient Greeks living in Sparta considered themselves Spartan first, and Greek second. The city-states didn't get on very well and often fought each another. But when an outside enemy (such as Persia) attacked, the city states would sometimes join together to defeat the enemy.



Women in Athens and Sparta had very different lives.



## The Olympic Games



Greece is the home country of the Olympic Games. These were held there every four years, and were so important in Greek life that they were used as the basis for the Greek calendar.

The first recorded Olympic Games were in 776 BCE. The Olympics were part of a religious event. They were held in honour of Zeus, the father of the gods and were a big celebration.

Olympic events included:

- Javelin - ancient javelins were sharpened wooden sticks, sometimes with a metal point on the end.
- Discus - athletes would compete to throw a stone or metal discus as far as they could
- Wrestling and boxing - like today's games, the ancient Olympics included boxing and wrestling, but, they were a lot more violent! The only things competitors couldn't do were bite or poke people in the eye. Some wrestlers were even killed!
- Horse Racing – there were horse races and chariot races, which took place on a race track called a hippodrome. The horse owner was considered to be the winner, not the rider!



## Spartans v Athenians



Athenians and Spartans had very different ways of living their lives. Athenians could vote for their leaders (government). Spartans were ruled by a fierce King. Athenians wanted to control as much land as possible. They often fought other Greek states. Sparta had a powerful army, but did not want to expand its territory (taking land from other states).

Only boys and the daughters of very wealthy Athenians were educated. Athenian women were expected to stay at home and only go out in public with their husbands. Spartan girls could go to school and had military training. Spartan women controlled the family's property and had lots more freedom than Athenian women.

## The Battle of Marathon

The Athenians were being invaded by the Persians and needed more soldiers to help them fight. Pheidippides was sent to run to Sparta to ask them to join forces with the Athenians - a distance of 26 miles. It took him two days. The Spartans said they would help but only after they had finished celebrating a festival. Pheidippides ran all the way back to Athens to tell them they would have to wait. The Athenian army couldn't wait. Although the Athenians were heavily outnumbered by the Persians, their clever battle plan meant the Athenians were victorious. Pheidippides ran all the way back to Athens to tell them of the army's victory. He exclaimed, 'Nike!' (victory) but after delivering the message, he died.



Today, running races which are 26 miles long are called Marathons.

