



Year 4: States of Matter Knowledge Organiser

Key People/Scientists	
1	Joseph Preistly (1733-1804) Discovered Oxygen, through his research he identified photosynthesis (the process of feeding plants).
	Lord Kelvin (1824-1907) Developed a temperature scale called the Kelvin scale. His research into heat and energy allowed him to determine the temperature of absolute zero.

Key Questions	
What is a	A solid is made up of tightly packed vibrating
solid?	particles to form a regular pattern.
What is a	In a liquid the vibrating particles still touch, but
liquid?	they move around, sliding over each other. This is
	why you can pour, but not compress, a liquid
What happens	A material can change its state by heating it up or
to a material	cooling it down. For example, water is a liquid at
when it is	room temperature. If we cool it down, it changes
heated or	into a solid – ice. If we heat it up, it changes into a
cooled?	gas - steam.
Why is the	The water cycle is essential to life on our planet:
importance of	without it there would be no plants or animals
the water	The water cycle is powered by the Sun: heat makes
cycle?	water evaporate, before it cools and condenses and
	falls back to the ground.

Misconceptions/Key facts

<u>Misconception:</u> Sand and rice take the shape of containers; therefore, they are not solids.

<u>Fact:</u> Each individual grain of sand and rice have definite shape; therefore, they are solids.

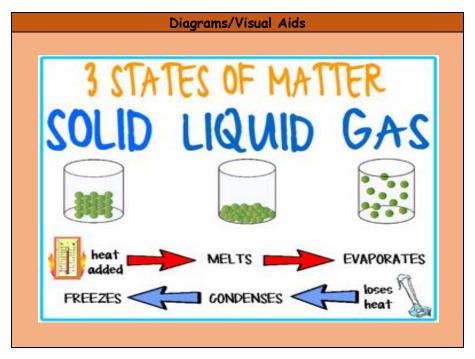
<u>Misconception:</u> Solids are hard, strong, and non-malleable.

<u>Fact:</u> Different solids have different degree of hardness, strength, and malleability.

<u>Misconception:</u> Mass is associated with the term 'massive' and thus related to the size or volume of an object.

 $\underline{\underline{Fact:}}$ Mass is the amount of matter in

an object.



Key Vocabulary	
Celsius	Celsius is a measurement of temperature
condenses	Condensation is the process by which water vapor (water in its gas form) turns into liquid.
evaporates	The change in state when a liquid e.g. water changes to a gas e.g. water vapour.
freeze	Cooling freezes a liquid into a solid.
matter	Matter is anything, such as a solid, liquid or gas, that has weight (mass) and occupies space
melts	Heat melts a solid and turns it into a liquid.
particles	Particles are tiny bits of matter that make up everything in the universe.
water vapour	Water vapour is water that is in the form of a vapour, or gas.

Bricknell Avenue, Hull East Yorkshire, HU5 4TN Telephone: 01482 846171