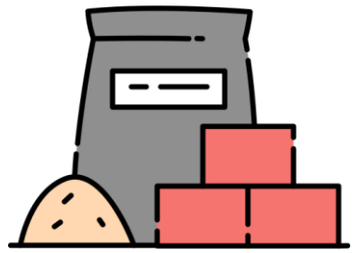
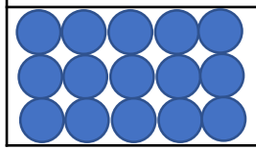
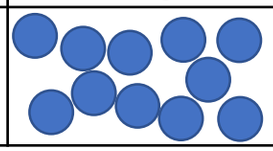
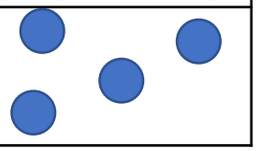
Materials KNOWLEDGE ORGANISER



ESSENTIAL MATERIALS VOCABULARY	
material	The matter something is made from.
brittle	Something that is hard but can break easily.
opaque	Objects that do not allow any light to travel through them,
reflective	A material which reflects light well.
translucent	Objects that allow some light to travel through, but it is scattered.
evaporate	The process of turning from liquid to vapour
dissolve	Causing something to become mixed into a liquid so it becomes a solution.
substance	The material or matter that something is made of.
condense	The conversion of a vapour to a gas or liquid.
thermometer	An instrument for measuring temperature.
mixture	A substance made by mixing other substances together.
conductor	A material that conducts or transmits heat, electricity or sound
insulator	A material that does not conduct or transmit heat, electricity or sound
absorb	Take in or soak up substances
transparent	Objects that allow light to easily travel through them

Solid	Liquid	Gas
Particles are very close together. They can vibrate, but not move.	Particles are close together, but can move around easily.	Particles are spread out. They can move around freely and quickly.
		

Dissolving

Some substances dissolve when they are mixed with water. It might look like they have disappeared, but it has actually mixed with the water to form a solution. These substances are called soluble substances. Substances like sugar and salt dissolve in water to make transparent solutions.

Substances that do not dissolve in water are called insoluble substances. Substances like sand or flour do not dissolve in water. When the particles don't dissolve, it is known as a suspension.

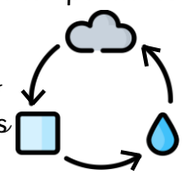
Conductors and Insulators

A conductor is a material that allows electricity to flow through it. Some examples of electrical conductors are silver, gold, copper, steel and sea water.

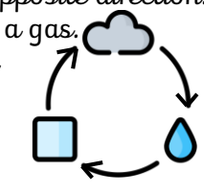
An insulator is a material that does now allow electricity to flow through it. Some examples of electrical insulators are rubber, glass, oil, diamond and dry wood.

Changes of State

Most solids can be changed to a liquid of gas by changing its temperature. The boiling point and freezing point is at different temperatures for different substances.
The solid melts to become a liquid. The liquid evaporates to become a gas. The gas deposits to become a solid.



The changes also occur in the opposite direction.
The solid sublimates to become a gas. The gas condenses to become a liquid. The liquid freezes to become a solid.



Properties of Materials

- Rough
- Flexible
- Brittle
- Hard
- Smooth
- Reflective
- Man-made
- Natural
- Rigid
- Translucent
- Shiny
- Opaque
- Transparent

Types of Materials

- Wood
- Metal
- Plastic
- **Liquid**
- Rubber
- **Solid**
- Magnet
- Brick
- Leather
- Sand
- **Gas**
- Rock
- Fabric

Changes

- Separate
- Conduct
- Evaporate
- Boil
- Recycle
- Burn
- Filter
- Dissolve
- Match
- React
- Cool
- Melt
- Reverse

MAKING LINKS TO PREVIOUS LEARNING
GOLDEN VOCABULARY

Electricity	Metal is a **conductor**.
Electricity	Plastic is an **insulator**.
Sound	**Absorbent** materials have the effect of muffling sound.
Light	Glass is an example of a **transparent** material