

Y5 and 6: PROPERTIES AND CHANGES OF MATERIALS

Glossary

aeration - in sewage treatment the process of blowing air bubbles through the waste water in order to help bacteria digest waste matter

boiling point – the temperature above which a liquid becomes a gas

change of state – the process of change from one state of matter to another

condensation – the process of change from a gas into a liquid
to **condense** - verb

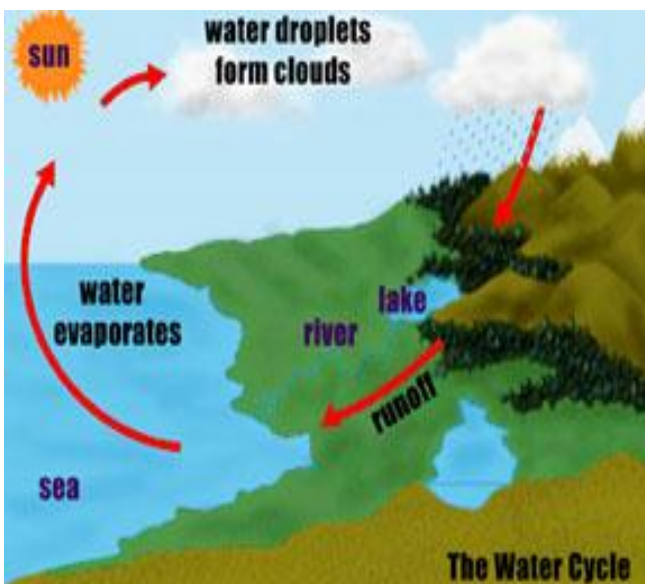
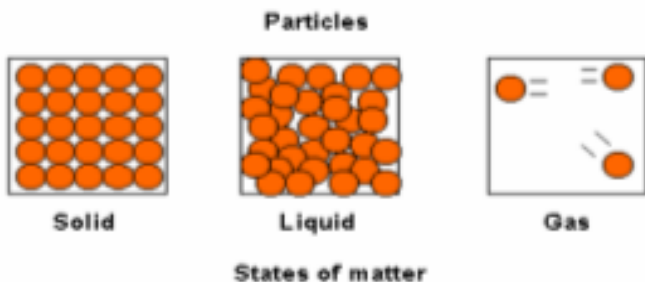
evaporation – the process of change from a liquid into a gas
to **evaporate** - verb

freezing – the process of change from a liquid into a solid
to **freeze** - verb

freezing point – the temperature below which a liquid becomes a solid – for water this is 0°C

gas – one of the three states of matter. Gases move to fill any available space. The particles in a gas are very far apart from each other and move freely

liquid – one of the three states of matter. In a liquid the particles are not as close together as in the solid form. Liquids can be poured and take on the shape of the container they are placed in



Sewage goes to a **sewage treatment** works. Sewage goes through a process of **aeration** to help bacteria digest waste mater



Drinking water has all dirt and germs removed before it gets to us, this is known as **water purification**

melting – the process of change from a solid into a liquid
to **melt** - verb

melting point - the temperature above which a solid becomes a liquid

pure substance – matter that is not a mixture of things

sewage treatment – the process of cleaning and purifying sewage water for return to a river, lake or sea

solid – one of the three states of matter. Solids keep their shape. The particles of a solid are very close together

solidification – the process of a liquid hardening to form a solid
to **solidify** - verb

states of matter – all material exists in three states – **solid, liquid and gas**

water cycle – the cycle of events that occur naturally in the weather systems of the Earth where water moves through its three states

water purification – the process of removing dirt and germs from water to make it drinkable for humans



A pure diamond is an example of a **pure substance**



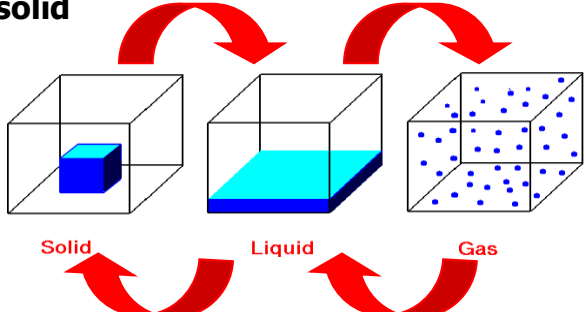
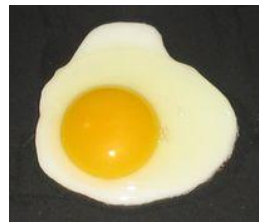
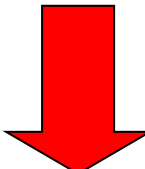
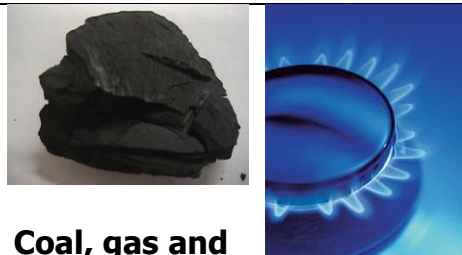
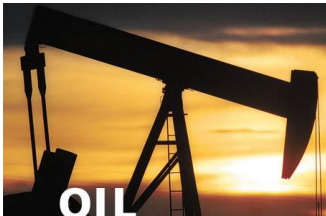
Melted chocolate will **solidify** if left in a cool place – this is called **solidification**

Changing State



The ice is solid, when heat is added, it reaches melting point and turns into a liquid. When more heat is added the water evaporates and turns into a gas. When the gas meets a cold surface, it condenses and turns back into a liquid.

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Glossary	Changing state from solid to liquid to gas and back again is a reversible change. 		Any reaction such as burning that causes new substances to be formed is called a CHEMICAL CHANGE the changes are irreversible. 	heating – the process of increasing the temperature irreversible change – a change that cannot easily be reversed e.g. burning physical changes - are reversible changes – no new substances are produced following the change
ash – a new substance formed when materials burn burning – a chemical change that is irreversible. Burning involves fuel, oxygen and a flame – heat, smoke and ash are produced when things burn change of state – the process of change from one state of matter to another – this is a reversible change chemical changes – are irreversible changes - new chemicals are produced following the change dissolving – the process of a substance becoming part of a liquid – this is a reversible change	 When chocolate is melted it can solidify again. The change is reversible.	 Cooking eggs by frying, boiling, scrambling, poaching etc. is always an irreversible change.	Fuel + Oxygen + Flame  Ash + Smoke + Heat	precipitate – the name of a solid produced in some chemical reactions reaction – To react - verb renewable energy – a source of energy that does not involve the burning of fossil fuels e.g. wind power
effervesce – to fizz – giving off a gas e.g. soluble antacid tablets – this is an irreversible change fossil fuel – fuel that comes from the remains of dead animals and plants e.g. coal, oil, gas hazard – a danger to health and / or life	Dissolving sugar in water is a reversible change.  When the water is evaporated it leaves the sugar behind.	 When oil, vinegar and egg yolks are mixed the resulting precipitate is mayonnaise. This change is irreversible.	 Coal, gas and oil are all fossil fuels. They are also examples of non-renewable energy sources. 	reversible change – a change that can be easily reversed e.g. freezing water to make ice substance – a material
Here are some hazard symbols – do you know what they mean? 	 Heating is the process of increasing the temperature. Cooling is the opposite process where temperature is decreased. We use a thermometer to measure temperature.	 When vitamin tablets effervesce (fizz) a gas is produced. This is an irreversible change.		This wind turbine is part of a wind farm helping to generate electricity from renewable sources. 

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