



## Lesson Sequence



1. Explore properties of materials



2. Explore thermal conductors and thermal insulators



3. Explore hardness of materials



4. Discover materials that are soluble in water



5. Investigate the solubility of materials



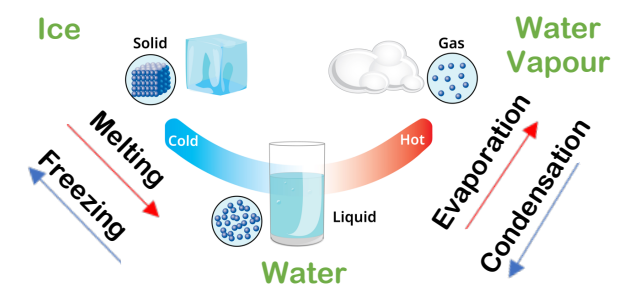
6. Explore how mixtures can be separated by filtering, sieving, evaporating or magnets

## Evaporation



If a solid has **dissolved** in water (for example in a salt solution), **heating** it causes the water to **EVAPORATE**, leaving the solid (salt) behind.

## Changes of State



Solids, liquids and gases can change state by being **heated** or **cooled**.

## Irreversible Changes



These are **CHEMICAL** changes – they **cannot** be reversed as a new material has been made.

## Reversible Changes



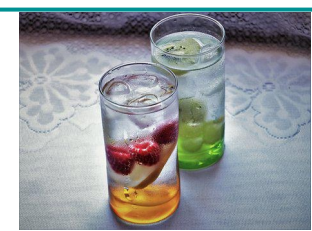
liquid chocolate  
– **cool** –  
solid chocolate



solid lolly  
– **heat** – liquid lolly



mixture of rice and flour  
– **sieve** –  
both separated



dissolved sugar  
– **evaporation (heat)** – solid sugar

These are **PHYSICAL** changes – they **can** be reversed as no permanent change has been made.



# Knowledge Organiser: Year 5 Changes of Materials

## Before & After Test



Tick all the **reversible** changes.

Frying an egg.		Water turning into water vapour.	
Burning paper.		A nail rusting.	
Melting chocolate.		A snowman melting.	
Mixing bicarbonate of soda and vinegar.		Mixing vinegar and milk.	

Draw a line from the picture to the correct process to **reverse** it.

Melted chocolate

Sieving

raspberry frozen in water

Cooling

Rice mixed with salt

Heating

Sand mixed with water

Filtering

Fill in the missing labels using the following words:

**evaporation** **condensation** **freezing** **melting**

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A lost explorer collects some water from the sea. It contains dissolved salt.

1. What is the name of the process he would use to separate the salt from the water?
2. Explain how he could do this.

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# Unit Rocket Words: Changing Materials



## Rocket Words

	<b>evaporation</b>	The process of changing from a liquid to a gas.
	<b>condensation</b>	The process of changing from a gas to a liquid.
	<b>chemical change</b>	When materials are mixed and a new material is made.
	 <b>irreversible</b>	<b>Cannot</b> be changed back.
	<b>physical change</b>	When materials are mixed but can be changed back to the original materials.
	 <b>reversible change</b>	<b>Can</b> be changed back.
	<b>states of matter</b>	There are 3 states of matter that make up everything in the world; solids, liquids, gases.
	<b>corrosion</b>	A chemical process that causes a material to wear away (for example rust)
	<b>combustion</b>	The process of burning materials.
	<b>solute</b>	A material that can dissolve in water.