

**Subject: Science****Year group: 5 Term: Spring 1****Title: Properties and changes of materials****What should I already know?**

- The name of a variety of materials used for everyday objects.
- Able to compare the suitability of a variety of everyday materials and find out how some solids can change shape through squashing, bending, twisting and stretching.
- Able to compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet.
- That some materials change state when they are heated or cooled; can compare and group materials based on if they are a solid, liquid or gas.

Facts I will learn

- Know that some materials are conductive (allow heat and electricity) to pass through and some are not conductive (do not allow electricity or heat to pass through).
- Know that some materials (e.g. sugar) dissolve in a liquid (they do not disappear) and through evaporation, these can be recovered.
- Solids, liquids and gases can be mixed and separated by either filtering, sieving or evaporation.
- Materials such as copper as used for wires (as they are conductive), however, plastic is used to cover the wires (as it is an insulator) and does not allow electricity to harm the person touching it.
- Reversible changes can occur after dissolving, mixing and changing states.
- When mixing acid with bicarbonate of soda it creates a new material, therefore you cannot reverse the change back to each individual state.

Key questions

- How can we compare and group everyday materials?
- Which materials can we use to keep things warm?
- What can I change to make a bulb shine brighter?
- What happens to some materials if I put them in a liquid?
- How can I get materials back from liquid?
- Can some changes result in new materials?

Key Skills.....

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

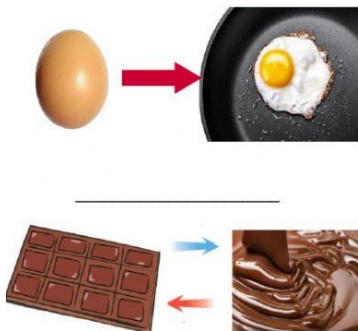
Web links

<https://www.stem.org.uk/resources/community/collection/12742/year-5-properties-materials>

<https://www.bbc.co.uk/bitesize/topics/zryydcdm>

Experiences that school will provide:

- Experiments and observations.
- Cooking/baking – to see if you can get the ingredients back to how they started.



Experiences that could be provided at home...

- Cooking or baking to see if you can get the ingredients back to how they started.

Key vocab	Definition
Mixture	A combination of two or more substances.
Dissolve	When a solid is mixed into a liquid, creating a solution.
Solution	A mixture of two or more substances that stays evenly mixed.
Insoluble	Difficult or impossible to dissolve insoluble in water.
Filter	A device used to remove solids from liquids.
Reversible	The material that was altered returns to its original state.
Irreversible	Impossible to change back.
Burning	A chemical reaction that produces heat.
Rusting	A type of corrosion.
Conductor	A material which electricity, heat or sound can flow through.