

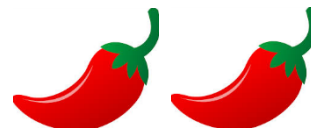


Research and States of Matter

- What are the 3 states of matter?
- What are properties of each state of matter?
- Can the 3 states of matter change? How? (Ice melting and freezing, water cycle (evaporation and condensation...))

Investigation 1

- Name objects and identify the materials they are made of.
- What type of material is it?
- How is it being used?
- Describe the materials using properties
- Why is this the best material for that object? (example: Why wouldn't glass be an ideal material for making stairs?)

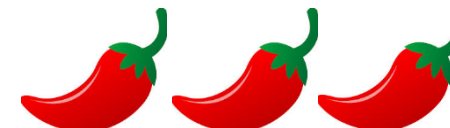


Investigation 2

- What is the difference between reversible and non-reversible change?
- Describe some simple reversible and non-reversible changes to materials, giving examples
- Write a report of your investigation and include labelled diagrams

Investigation 3.

- Oh no! My kitchen ingredients have been mixed up: salt, round pepper corns, sugar cubes and coffee grains.
- What would the most suitable method be for separating the ingredients? Sieving, filtering and/or evaporation?
- Challenge: Choose your own materials; How could they be separated?



Research

- Task 1: Research new materials produced by chemists e.g. Spencer Silver Ruth Benerito
- Task 2: Research a variety of materials. Who discovered the material? How are they made? How do they benefit us? What are they used for?

Scientific Method and Experiments

Conduct a science experiment at home. (**Ask permission from your adults**). Before this, write up a report using the scientific method: Materials, Question, Hypothesis (Prediction), Method, Observation, Diagram, Conclusion.

Examples could include:

- Mentos and Coca-Cola (very messy)
- Bicarbonate Soda and Vinegar (very messy)
- Lava lamp: oil, water, food colouring

Properties and Changes of Materials

Year 5 Science Takeaway Homework Menu



National Curriculum Expectations

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are reversible changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda

Scientific Vocabulary:

- thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material

Takeaway homework guidelines

- It is up to you to choose what task to complete.
- Choose a task that is appropriate - but remember, the more you push yourself the more of a scientist you will become!