

Our School Values- Science	
Love	We show love by fostering a joy of discovery.
Courage	We show courage by being brave, challenging thinking, asking questions and investigating new ideas. We show courage knowing that we won't always find the answer.
Unity	We show unity by working collaboratively to discover more.
Inspiration	We show inspiration by not giving up and thinking creatively to seek answers.



## Year 5

### Science

### Properties of Materials



NC Objective

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.

Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.

### Knowledge I already know

Know about similarities and difference in relation to materials.  
 Know the properties of some materials and can suggest some of the purposes they are used for.  
 Know a range of properties and compare and group together a variety of everyday materials.  
 Know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.  
 Know how to compare and group materials together, according to whether they are solids, liquids or gases.  
 Know and observe that some materials change state when they are heated or cooled .

### Knowledge I will learn

Materials have different uses depending on their properties and state (liquid, solid, gas).  
 Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment.  
 Mixtures can be separated by filtering, sieving and evaporation.  
 Some changes to materials such as dissolving, mixing and changes of state are reversible, but in the formation of new materials these are irreversible.  
 Investigate the properties of different materials in order to recommend materials for particular functions depending on these properties.  
 Explore and investigate adding a range of solids to water and other liquids and the rates of dissolving.  
 Carry out comparative and fair tests involving non-reversible changes e.g. What affects the rate of rusting?  
 What affects the amount of gas produced?

### Key Vocabulary

Word	Definition
Insulator	A substance or object which does not readily allow the passage of heat or sound.
Conductor	A substance or object that an electric charge can pass through without difficulty.
Change of State	Substances can change state, usually when they are heated or cooled.
Mixture	A material made up of two or more different substances which are physically combined
Dissolve	Referring to the ability for a given substance, the solute, to dissolve in a solvent
Soluble	The ability to dissolve into (become a part of) another substance.
Insoluble	The inability to become a part of another substance. Does not break down.
Reversible	Able to reverse so that the previous state or situation is restored

LI: To understand vocabulary - understanding and context- class discussion	LI: To compare everyday materials on the basis of their properties.	LI: To explain choices for everyday material uses.	LI: To understand how a material dissolves	LI: To understand reversible and irreversible changes	LI: To look at changes to materials in water over an extended period.
Vocabulary definitions Matching activities	Organising materials- identifying appearances, characteristics and uses	Investigation- Design a lifeboat. Different materials in salty water	Investigation into whether material are soluble or insoluble	Identifying changes- Reversible or irreversible. Practical learning	To conclude final findings

ToE	WS	ToE	WS	ToE	WS	ToE	WS	ToE	WS