



St Bartholomew's Knowledge Organiser	Class 4	Autumn 1 & 2 Science – Year B	Properties & Changes of Materials
What we will learn:		Science Knowledge	
In this unit you will learn: ➤ To investigate the properties of different materials in order to recommend materials for particular functions e.g. recommend a material for a cleaning cloth based upon its absorbency. ➤ To investigate how the temperature of water changes in different types of cups (e.g. cardboard vs plastic cup). ➤ To explore adding a range of solids to water and other liquids e.g. cooking oil, as appropriate. ➤ To investigate rates of dissolving by carrying out comparative and fair test. ➤ To separate mixtures by sieving, filtering and evaporation, choosing the most suitable method and equipment for each mixture. ➤ To explore the difference between reversible and irreversible changes ➤ Carry out comparative and fair tests involving irreversible changes e.g. What affects the rate of rusting? What affects the amount of gas produced? ➤ Record observations through photographs. ➤ Use secondary sources to research some famous materials inventions.		➤ 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.	
Important Vocabulary		Science skills we will develop:	
Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/irreversible change, burning, rusting, new material.		➤ 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. ➤ Use test results to make predictions to set up further comparative and fair tests. ➤ Record data and results of increasing complexity using tables and scatter graphs. ➤ Report and present findings from enquiries, including conclusions and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ➤ Record data and results of increasing complexity using scientific diagrams and labels, and line graphs.	