Scientific enquiry – Year 5 Autumn 1 Science Properties and Changes of Materials

Lesson	Objectives	Scientific inquiry	Equipment list:
1. What do we use materials for?	• Test material properties • Compare material properties • Assess the suitability of a material for a particular use	Carry out tests on materials to answer questions about their properties, pattern-seeking, comparative tests, conclusions based on evidence	Copper coin, steel paper clip, iron nail, rock, slate, wooden peg, plastic peg, pencil, tracing paper, mirror, tights, magnets, wires, beaker, battery, bulb
2. What are thermal conductors and insulators?	• Name some conductors and insulators • Give some uses of conductors and insulators • Carry out tests to compare the properties of some materials	Comparative test, make conclusions based on evidence, evaluate and suggest improvements	3 paper cups, 3 materials, water, cling film, 3 rubber bands, thermometers
3. What happens when we mix materials?	• Recognise some soluble materials • Give some examples of solutions • explain how we can make things dissolve faster	Observe and compare changes when solutions are heated	Beaker, sugar, teaspoon, hot water, warm water, cold water, stopwatch
4. What are reversible changes?	• Recall some insoluble materials • Describe some reversible changes • carry out an investigation to show that changes of state are reversible changes	Observe evaporation and condensation over time, conclusion based on evidence, evaluation and suggestions for improvement, reliability	Warm water, ice cold water, cling film, beakers

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5. How do we separate some mixtures?	• State how sieves can be used to separate some mixtures • Describe the filtering technique • Explain how evaporation is used to separate some mixtures	Observe evaporation of water from salt solution	Demo – filter paper, filter funnel, solvent, insoluble soil and beaker evaporating dish, Bunsen burner or stove, salt water solution
6. What are irreversible changes?	• Recall some irreversible changes • Describe the characteristics of irreversible changes • Investigate an irreversible change	Observe an irreversible change when bicarbonate of soda is added to vinegar Discuss creative use of new materials	disposable glove or balloon, bicarbonate of soda, white vinegar, beaker or bottle