Science

Y5 Question **How can science help us after a natural disaster?**	**Power of Reading link texts** **Wonder by R J Palacio** **The boy at the back of the class by Onjali Rauf** **Escape from Pompeii by Christina Balit**

National Curriculum PoS - Science:

- 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.

Procedural knowledge:

Planning

Can they explore different ways to test an idea, choose the best way, and give reasons?
•Can they vary one factor whilst keeping the others the same in an experiment? Can they explain why they do this?
•Can they plan and carry out an investigation by controlling variables fairly and accurately?
•Can they make a prediction with reasons?
•Can they use information to help make a prediction?
•Can they use test results to make further predictions and set up further comparative tests?
•Can they explain, in simple terms, a scientific idea and what evidence supports it?

Doing

Can they explain why they have chosen specific equipment? (incl ICT based equipment)
•Can they decide which units of measurement they need to use?
•Can they explain why a measurement needs to be repeated?
•Can they record their measurements in different ways? (incl bar charts, tables and line graphs)
•Can they take measurements using a range of scientific equipment with increasing accuracy and precision

Evaluating

Can they find a pattern from their data and explain what it shows?

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- Can they use a graph to answer scientific questions?
- Can they link what they have found out to other science?
- Can they suggest how to improve their work and say why they think this?
- Can they record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models?
- Can they report findings from investigations through written explanations and conclusions?
- Can they report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations?

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Key Facts	Key Images	Key Vocabulary
States of Matter The three states of matter are: **solid, liquid, gas.** Solids have a fixed shape and volume and are rigid. Liquids have no fixed shape but have a fixed volume. Liquids are not rigid. Gases have no fixed shape or volume and are not rigid. Materials can change state at different temperatures. **Changes in State** A change is called **irreversible if** it cannot be changed back again. For example you cannot change a cake back into its ingredients again. Heating, mixing and burning can all cause **irreversible** changes. A reversible change is a change that **can** be undone or reversed. Melting is an example of a reversible change. For example melted chocolate can be changed back into solid chocolate by cooling. **Mixtures and Solutions** Some things dissolve when you mix them with **water.** When a substance dissolves it forms a solution A mixture made of solid particles of different sizes		Change of State Melt Freeze Dissolve Evaporate Condensation Sublimation Reversible Irreversible Solution Molecule Transformation

Science

Journey towards the final outcome: to be decided by staff

- To compare and group together everyday materials according to their properties
- To give reasons, based on evidence, for the particular uses of everyday materials

- To use knowledge of solids, liquids and gases to decide how mixtures might be separated (sieving and filtering)
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- To use knowledge of solids, liquids and gases to decide how mixtures might be separated (filtering and evaporation)
- To know that some materials will dissolve (solution)

- To explore whether dissolving, mixing and changes of state are reversible changes

- To explore how some changes result in the formation of new materials (irreversible)

- To demonstrate our learning of changes of state and how science can help us after a natural disaster

- To demonstrate our learning of changes of state and how science can help us after a natural disaster (Science show)