Science Progression of Knowledge and Skills Everyday materials

Key to understanding this document: Black = National Curriculum objectives Red = Knowledge/Skills to be taught Green = Resources to be used

At The Discovery School we understand the importance of our children knowing more, remembering more and doing more. With this in mind, we teach the children the knowledge they require, ensuring they have opportunities for the retrieval of knowledge and the chance to apply new skills during their learning.							
Area of Learning	**EYFS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Everyday materials		Working scientifically: Identifying and classifying as part of group. EM1 distinguish between an object and the material from which it is made. Children to use sorting hoops to sort materials into groups (working as small groups). Children then post-it note the name of the material for each hoop.	Working scientifically: Performing a simple test. Using observations to answer simple questions. EM1 identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses. Children to make something e.g. houses. Which			Working scientifically: Recording data and results of increasing complexity. Taking measurements using a range of scientific equipment. Reporting and presenting findings in a conclusion. EM1 compare and group together everyday materials on the basis of their properties,	

		Working scientifically: Identifying and classifying. EM2- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Material detectives- hunt around the school to find materials and record in simple scaffolded table. Pictures could be used to support LA children. Working scientifically: Using observations and ideas to suggest	material is best suitable? Children to make a prediction of which material will be most effective. Working scientifically: Performing a simple test. Gathering and recording data. Using observations to answer questions. EM2 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Children to make a prediction. Children then investigate a range of materials to see which			including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets . Children have a selection of objects on their tables to test. Children must test based on their properties. Teacher can give children an idea of how to test and then children can generate their own investigations afterwards. Children to record results in their own table. Working scientifically: Recording data and results of increasing	

		answers to questions. Gathering and recording data to help answer questions. EM3 describe the simple physical properties of a variety of everyday materials Children are able to identify the basic properties of materials. E.g. Wood is strong. Feely boxes could be used where children put their hand into a box and describe the simple properties of the material. Children record in scaffolded table. Working scientifically: Observing closely using simple equipment.	bend, stretch, squash and twist.			complexity using a table. Using a range of scientific equipment. Reporting results in a conclusion. EM2 know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Testing different materials to see which dissolve – salt, sugar, vitamin tablet. Working scientifically: Recording data and results. Using range of scientific equipment. Reporting and presenting findings from investigations.	

		Performing a simple test. Identifying and classifying. EM4 compare and group together a variety of everyday materials on the basis of their simple physical properties. Pose the question 'What is the best material for an umbrella? '– focus on materials that are waterproof/ not waterproof. 'Property chain' – one child selects an object and describes the property e.g. 'my rock is rough'. The next child says 'your rock is rough my ruler is bendy'.				EM3 use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Acting out solids, liquids and gases. Filtering activity to see which filters/ does not. Use salt for evaporation investigation. Working scientifically: Planning different types of scientific enquiry. Identifying scientific evidence that has been used to support ideas. EM4 give reasons, based on evidence from comparative and	

						fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (DT link – making toys). Working scientifically: Recording data and results using a table. Using range of scientific equipment. Reporting and presenting findings from investigations. EM5 demonstrate that dissolving, mixing and changes of state are reversible changes. Investigation to see which dissolves. Sugar, chocolate, ice, jelly.	

						Working scientifically: Recording data and results of increasing complexity using a table. Using range of scientific equipment. Use predictions. Reporting and presenting findings from investigations. EM6 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. Carousel of different investigations (more detail in	

						Andrew Berry scheme): Making toast, Bicarbonate of soda experiment – mixing vinegar and bicarbonate of soda together to produce carbon dioxide. Indigestion tablet in water. Then put balloon over the top to see the balloon expand.	
Key Vocabulary		Wood, plastic, glass, metal, water, rock, hard, soft, stretchy, stiff, dull, rough, smooth, bendy, not bendy, absorbent, transparent.	Squash, bend, stretch, twist, solid.			Hardness, solubility, transparency, conductivity, electrical, thermal, magnetic, filtering, sieving, evaporation, fair test, dissolving, mixing, reversible change, bicarbonate of soda.	

Resources			House materials- Wood, stick, straw, stones, etc. Materials to bend, stretch, twist.			Bicarbonate of soda, white vinegar, candles, triangular burning frames, salt, sugar, ice, chocolate, jelly, balloons, indigestion tablets.	