

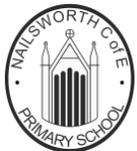
Areas of study	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Core substantive knowledge	<p>Everyday materials</p> <ul style="list-style-type: none"> Know about similarities and differences in relation to natural materials. 	<p>Everyday materials</p> <ul style="list-style-type: none"> distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties 	<p>Everyday materials</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<p>Rocks</p> <ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter <p>Forces</p> <ul style="list-style-type: none"> compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials 	<p>States of matter</p> <ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p>Everyday materials</p> <ul style="list-style-type: none"> 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 	<p>Evolution and Inheritance</p> <ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago



						<p>filtering, sieving and evaporating</p> <ul style="list-style-type: none">• 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.	
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Areas of study	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Cross-curricular links	English - talk about texture/weight /appearance. Text: Somebody Swallowed Stanley Maths - sort and classify	English - talk about materials identified. Maths - sort, group and classify	English - verbal explanations. Text: The Iron Man Text: Stuff Maths - sort, group and classify	English - instructions /explanations Text: A Rock Is Lively Text: A Planet Full Of Plastic Maths - sort, group and classify Geography - location of rocks	English – instructions /explanations Maths - sort, group and classify	English – instructions /explanations Maths - measurement	Science - Evolution and inheritance, History / English - On The Origin Of Species
Range and depth of scientific knowledge-substantive knowledge	Understand that Objects are made from materials which have their own names. Explore objects using all senses. Name materials	Identify and name materials (e.g. including wood, plastic, glass, metal, water, and rock) and their properties (e.g. hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent). Explain that some objects can be made from different materials Explore use of different materials	Identify and discuss the uses of different everyday materials Become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) Understand that different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass).	Understand that rock is a naturally occurring material. Become familiar with different types of rock e.g. sandstone, limestone, slate etc. and their different properties. Understand that soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). Understand that type of rock, size of rock piece and the amount of organic matter affect the property of the soil.	Understand that solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume. Understand that granular and powdery solids like sand can be confused with	Understand that materials have different uses depending on their properties and state (liquid, solid, gas) Understand that some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment. Explore separation by filtering, sieving and evaporation. Recognise that some changes to materials	



			Y2	Y3	Y4	Y5	
			<p>Consider the properties of materials that make them suitable or unsuitable for particular purposes.</p> <p>Consider unusual and creative uses for everyday materials.</p> <p>Find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.</p>	<p>Understand that some rocks contain fossils. Which were formed millions of years ago.</p> <p>Become familiar with the process by which fossils are formed</p>	<p>liquids because they can be poured, but when poured they form a heap and they do not keep a level surface when tipped.</p> <p>Understand that melting is a state change from solid to liquid.</p> <p>Understand that freezing is a state change from liquid to solid.</p> <p>Know that the freezing point of water is 0°C.</p> <p>Understand that boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature and bubbles of the gas</p>	<p>are reversible, but are not</p> <p>Discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.</p>	



					Y4		
					<p>can be seen in the liquid.</p> <p>Know that water boils when it is heated to 100°C.</p> <p>Understand that evaporation is the same state change as boiling (liquid to gas) but it happens slowly at lower temperatures and only at the surface of the liquid.</p> <p>Understand that condensation is the change back from a gas to a liquid caused by cooling.</p>		



Areas of study	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Range and depth of disciplinary knowledge.	Begin to group objects of similar materials e.g. rocks, wood	Begin to compare and classify how things move Carry out tests with guidance Problem-solve with regards to the most suitable material.	Compare the uses of everyday materials in and around the school with materials found in other places. Observe, identify and classify the uses of different materials Record observations .	Observe rocks, including those used in buildings and gravestones Explore how and why they might have changed over time Identify and classify rocks using a hand lens or microscope Research and discuss the different kinds of living things whose fossils are found in sedimentary Explore different soils and identify similarities and differences between them Raise and answer questions about the way soils are formed.	Group and classify a variety of different materials Explore the effect of temperature on substances such as chocolate, butter, cream (to make food such as chocolate crispy cakes) Research the temperature at which materials change state, Observe and record evaporation over a period of time e.g. a puddle in the playground Investigate the effect of temperature materials such as ice.	Pupils might work scientifically by: carrying out tests to answer questions , for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' They might compare materials in order to make a switch in a circuit. They could observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes. They might research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.	



Areas of study	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Scientific enquiry - disciplinary knowledge	Identifying and grouping	Identifying, grouping and classifying Predictions Problem-solving	Comparing Observing Identifying, grouping and classifying	Comparative tests Identifying, grouping and classifying Identification of patterns Problem-solving	Problem solving Comparative tests Research Observation Classification	Comparative tests Identification of patterns Predictions Pattern-seeking Problem-solving	
Organisation and communication	Verbal identification	Verbal explanations Photos	Verbal explanations Photos Diagrams	Diagrams Charts Explanations-verbal and written	Diagrams Charts Explanations-verbal and written	Diagrams Charts Explanations PowerPoint	