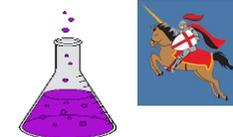


PROGRESSION OF SKILLS POLICY 2019



SCIENCE ESSENTIAL SKILLS Y1-Y6: SUBSTANCE, MATTER AND MATERIALS

KEY STAGE 1		LOWER KEY STAGE 2		UPPER KEY STAGE 2	
End of Y1 expectations	End of Y2 expectations	End of Y3 expectations	End of Y4 expectations	End of Y5 expectations	End of Y6 expectations
Identifying and naming:					
Name a range of everyday materials, including wood, plastic, metal, rock and glass.	Identify the uses of everyday materials in a familiar location (e.g. school or home), recording their findings.	Identify and name a range of rocks and soils, describing how fossils are formed (link to evolution).	Identify how water changes state, using the correct terminology and relate these key processes to the water cycle.	Identify a wide range of reversible and irreversible changes that are in use in everyday life.	
Classification:					
Group and sort materials according to their simple physical properties.	Sort and grade a range of materials for a specific property (e.g. smoothness).	Classify and group rocks according to their appearance or physical properties, using a hand lens or digital microscope and identifying whether they are granular, crystalline or fossilised.	Classify everyday materials as a solid, liquid or gas at room temperature.	Classify and group mixtures for how they can be separated, including sieving, filtering and evaporating.	
Uses:					
Identify the material an object is made from, suggesting why it is made from that material.	Identify and describe the range of materials that can be used to make a single given object (e.g. cup, chair, table or shelter).	Suggest reasons why certain rocks or stones are used for a specific purpose.	Describe a material whose use changes as its state changes.	Provide evidence and reasons why a material has been chosen for a specific use. Scientifically and systematically compare the functionality of a range of materials to perform a specific function.	
Physical processes:					
Identify some materials that help physical processes (e.g.	Describe how the shape of some materials can be changed by twisting,	Explain the terms 'weathering' and 'erosion' and describe the effect they	Explain the effect of heating and cooling on a range of	Describe what happens when a solute dissolves in a solvent to form a solution and how this process can be reversed.	

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woollen fabric keeps us warm).	bending, squashing or stretching.	have on different types of rocks and soils.	substances, including water.		
Physical properties:					
Describe properties of a material using everyday language or simple scientific vocabulary (e.g. hard/soft or bendy/not bendy).	Relate a material's physical properties to its uses (e.g. describe or demonstrate how a material can be unsuitable for a given task due to its ability to be changed by squashing and bending).	Investigate the physical properties of one or a number of rock types and relate their properties to their appearance.	Describe the properties of solids, liquids and gases, giving examples of each (e.g. solids retain their shape).	Describe comprehensively some familiar and unfamiliar material's physical properties, including transparency, conductivity, solubility and magnetism.	
Comparisons:					
Compare two or more different materials for their performance at a particular task (e.g. mopping up a spill).	Compare significant individuals who have developed useful materials (e.g. Charles Macintosh or John Dunlop) and decide which individual's material is of most use to them.	Compare in detail a range of rock or soil samples from the locality, using simple tables and diagrams to present their findings.	Measure or research the temperature, in degrees Celsius ($^{\circ}\text{C}$), at which materials change state and compare to the temperatures at which water changes state.	Compare reversible with irreversible change, using flow diagrams/equations to show which materials are added, what is made and indicating if the reaction can be reversed.	

KEY VOCABULARY: SUBSTANCE, MATTER AND MATERIALS

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KEY STAGE 1		LOWER KEY STAGE 2		UPPER KEY STAGE 2	
End of Y1 expectations	End of Y2 expectations	End of Y3 expectations	End of Y4 expectations	End of Y5 expectations	End of Y6 expectations
<p>materials wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil</p> <p>properties hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent</p>	<p>wood, metal, plastic, glass, brick, rock, paper, cardboard</p> <p>squashing, bending, twisting, stretching</p> <p>wood matches, floors, telegraph poles</p> <p>metal solid metallic material such as an alloy, coins, cans, cars, table legs</p> <p>spoons plastic, metal and wooden</p> <p>John Dunlop Rubber</p> <p>Charles Macintosh waterproof fabric</p> <p>John McAdam Macadamisation</p>	<p>appearance physical properties hard/soft shiny/dull rough/smooth absorbent/not absorbent fossils sedimentary rock soils organic matter buildings gravestones grains crystals</p>	<p>sedimentary rock soils organic matter buildings gravestones grains crystals sedimentary rock soils organic matter buildings gravestones grains crystals</p>	<p>properties hardness solubility transparency electrical conductor, thermal conductor response to magnets dissolve solution separate, separating solids, liquids, gases reversible changes, irreversible dissolving, mixing evaporating, evaporation filtering, sieving, melting new material burning rusting magnetism electricity chemists Spencer Silver, Ruth Benerito quantitative measurements conductivity insulation chemical</p>	