Curriculum Skills and Progression Map
Science – Chemistry

Key Concepts:

Properties and changes of materials

Uses of everyday materials

States of Matter

Organisation of knowledge	Working scientifically	Plants	Animals including humans	Everyday materials	Seasonal changes
Relevant ELG	**ELG: Listening, Attention and Understanding** - Make comments about what they have heard and ask questions to clarify their understanding. **ELG: Fine motor skills** - Use a range of small tools, including scissors, paint brushes and cutlery. **ELG: Building Relationships** Work and play cooperatively and take turns with others.	**ELG: The Natural World** - Explore the natural world around them, making observations and drawing pictures of plants and animals. - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. **ELG: Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.		**ELG: The Natural World** - Understand some important processes and changes in the natural world, including the seasons and changing states of matter. **ELG: Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.	
Vocabulary: seasons, change, senses, touch, sight, hearing, taste, smell, life cycle, roots, leaves, soil, water, floating, sinking.					
KS1 readiness objectives	To feel confident to answer simple questions about observable properties of objects and people, animals and plants around them To compare objects in their environment and talk about similarities and differences To ask questions about the world around them, and seek to find their own answers	To know what a plant is To know what a flower is To know where you see plants To describe different plants and flowers	To know what an animal is To recognise and name a variety of different animals To know the names of different body parts of humans and animals they have experience of	To recognise that different everyday objects are made from different materials To describe how different objects look and feel	To know about different types of weather To observe changes in trees and plants as the seasons progress

Programmes of study **Year 1**	With Everyday Materials pupils should be taught to: • 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.
Progressive objectives	The child can correctly identify both object and material. The child can identify and name a range of materials. The child can describe a range of properties of a variety of materials. The child can classify a variety of materials into groups based on physical properties.
Assessment opportunities	Can the child answer the Biq Question: Everyday Materials – Can I explore materials and investigate which material would make the best umbrella?
Vocabulary	materials: wood, plastic, glass, metal, water, rock. properties: hard/soft, stretchy/stiff, rough/smooth, shiny/dull, waterproof, absorbent

Programmes of study **Year 2**	With Uses of Everyday Materials pupils should be taught to: □ 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.
Progressive objectives	The child can describe changes achieved by applying forces in different directions. The child can select and justify a material for a particular use.
Assessment opportunities	Can the child answer the Big Question: Uses of Everyday Materials - Can I identify and compare the suitability of different everyday materials for particular uses?
Vocabulary	**As previous year plus:** squash, twist, bendy, attract, flexible, suitable, useful, Charles Macintosh

Programmes of study **Year 3**	With Rocks pupils should be taught to: □ 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.
Progressive objectives	The child can explain how fossils are formed. The child can describe how soil is made. The child can examine and test rocks, grouping then according to the results.
Assessment opportunities	Can the child answer the Big Question: Rocks - How are fossils formed?
Vocabulary	Igneous, metamorphic, sedimentary, magma, palaeontology, lava, sediment, fossilisation, permeable, impermeable, erosion

Programmes of study **Year 4**	With States of Matter pupils should be taught to: □ 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 (°C) □ identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
Progressive objectives	The child can group materials according to their state of matter. The child can describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation. The child can identify changes of state and research values of degrees Celsius (°C) at which changes happen.
Assessment opportunities	Can the child answer the Big Question: States of Matter – What are the different states of matter and how we can change this in everyday materials? What change of state processes impact on the water cycle?
Vocabulary	solid, liquid, gas, change, state, heated, cooled, melt, freeze, temperature, degrees, Celsius, ice, water, steam, vapour, Water Cycle, evaporation, condensation, rate, precipitation, rain, rainfall, snow, sleet

Programmes of study **Year5**	With Properties and Changes in Materials pupils should be taught to: □ 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.
Progressive objectives	The child can test and sort a range of materials based on their physical properties. The child can describe how some materials, e.g. sugar, will dissolve and can be retrieved. The child can justify separation techniques proposed, with reference to materials being separated. The child can show how the original materials can be retrieved from each of these changes. The child can identify reactants and products of chemical changes and recognise these as being irreversible. The child can use evidence to justify the selection of a material for a purpose.
Assessment opportunities	Can the child answer the Big Question: Properties and Changes of materials – What methods can you use to separate mixtures and solutions and why?
Vocabulary	**As previous Year (4) plus:** hardness, solubility, transparency, electrical conductor, thermal conductor, response to magnets, magnetism, solution, chemical, separate, separating, solids, liquids, gases, evaporating, reversible/ irreversible changes, dissolving, mixing, melting, filtering sieving, burning, rusting, electrical conductivity, insulation

Programmes of study Year 6	NO CHEMISTRY
Progressive objectives	
Progressive objectives	
Assessment opportunities	BIG QUESTION WITH SUCCESS CRITERIA?
Vocabulary	