

St. Bega's Catholic Primary School

'Love one another as I have loved you.'



Science Chemistry Strand

Engage, Model, Connect, Secure



Science Progression and Sequence 2023.24

Chemistry Strand

Nursery	Reception	Year 1 (Core Knowledge)	Year 2 (Core Knowledge)
Links to Everyday Materials <ul style="list-style-type: none"> Use all of their senses to explore collections of natural materials, e.g., shells, leaves talking about what they can see. Explore collections of different materials with similar and different properties. Use language to describe common features of materials, e.g. colour, texture, size Talk about the differences and changes to materials that they notice when working in the environment (cooking, water play, natural light) 	Links to Everyday Materials <ul style="list-style-type: none"> Explore collections of different materials with similar and different properties. Name some common natural and man-made materials, e.g. sand, wood, glass, brick, plastic, clay, fabric etc with adult support. Describe and make comparisons between materials. Experiment with making changes to materials. Ask and answer 'how' and 'why' questions such as how things happened and how things work. Classify objects according to their properties. 	Year 1 Everyday Materials <ul style="list-style-type: none"> Correctly identify and name 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 a variety of everyday materials on the basis of their simple physical properties. Group together a variety of everyday materials on the basis of their simple physical properties. 	Year 2 Uses of Everyday Materials <ul style="list-style-type: none"> Identify what properties a material needs for a particular purpose. Name the materials from which different objects are made. Recognise suitable and unsuitable choices of materials for particular purposes based on physical properties (see vocabulary appendix for examples). Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Know that materials can be either man-made or naturally occurring. Group objects into man-made or natural categories. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Year 3 (Core Knowledge)	Year 4 (Core Knowledge)	Year 5 (Core Knowledge)
<p>Year 3; Rocks and Soils</p> <ul style="list-style-type: none"> • Group different kinds of rocks on the basis of appearance and simple physical properties, (see vocabulary appendix for examples). • Compare different kinds of rocks on the basis of appearance and simple physical properties, (see vocabulary appendix for examples). Name the 3 types of rock. • Describe the features of each rock type • Describe how each rock type is formed within the rock cycle. Name some different rocks and categorise them based on physical features. • Understand different uses for different rocks and how they change over time. Explain simply how a fossil is formed. • Recognise that soils are made from rocks and organic matter, (living and dead) and be introduced to different soil types. 	<p>Year 4 States of Matter</p> <ul style="list-style-type: none"> • Know that all things are made up of particles. • Know that particles are arranged differently in solids, liquids and gases. • Name properties of solids, liquids and gases. • Compare and group materials together according to if they are solids, liquids and gases, giving reasons to justify their choices. • Observe that some materials change state when heated or cooled, and are able to give everyday examples of melting and freezing. • Understand that melting and freezing are a state change between solids and liquids. • Measure or research the temperature at which melting and freezing occurs for some materials. • Know that water freezes at 0°C and boils at 100°C. <p>Understand that</p> <ul style="list-style-type: none"> ○ condensation is a state change from a gas to a liquid. ○ evaporation is a state change from liquid to gas. ○ boiling and evaporation are the same state change from liquid to gas but at different temperatures. <ul style="list-style-type: none"> • Know that the speed of evaporation depends on a number of variables including the temperature. • Describe the water cycle. • Identify the parts played by evaporation and condensation in the water cycle. 	<p>Year 5 Properties and Changes of 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. • Discuss the suitability of everyday materials for different purposes based on their properties, giving reasons, based on evidence from comparative and fair tests. • Know the difference between reversible and irreversible changes. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes results 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. • Understand some materials will dissolve in liquid to form a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving, and evaporating. • Describe how to recover a substance from a solution.