

Threshold Concept	Milestone 2	
Biology	<p>Work scientifically This concept involves learning the methodologies of the discipline of science.</p> <p>Understand plants This concept involves becoming familiar with different types of plants, their structure and reproduction.</p>	<ul style="list-style-type: none"> • Ask relevant questions. • Set up simple, practical enquiries and comparative and fair tests. • Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests. • Identify differences, similarities or changes related to simple, scientific ideas and processes. • Use straightforward, scientific evidence to answer questions or to support their findings. <ul style="list-style-type: none"> • Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers. • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
	<p>Understand animals and humans This concept involves becoming familiar with different types of animals, humans and the life processes they share.</p> <p>Investigate living things This concept involves becoming familiar with a wider range of living things, including insects and understanding life processes.</p>	<ul style="list-style-type: none"> • Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat. • Construct and interpret a variety of food chains, identifying producers, predators and prey. • Identify that humans and some animals have skeletons and muscles for support, protection and movement. • Describe the simple functions of the basic parts of the digestive system in humans. • Identify the different types of teeth in humans and their simple functions. <ul style="list-style-type: none"> • Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys. • Recognise that environments can change and that this can sometimes pose dangers to specific habitats.
	<p>Understand evolution and inheritance This concept involves understanding that organisms come into existence, adapt, change and evolve and become extinct.</p>	<ul style="list-style-type: none"> • Identify how plants and animals, including humans, resemble their parents in many features. • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Identify how animals and plants are suited to and adapt to their environment in different ways.
Chemistry	<p>Investigate materials This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed.</p>	<p>Rocks and Soils</p> <ul style="list-style-type: none"> • Compare and group together different kinds of rocks on the basis of their simple, physical properties. • Relate the simple physical properties of some rocks to their formation (igneous or sedimentary). • Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock. • Recognise that soils are made from rocks and organic matter.

<p>Physics</p>	<p>Understand movement, forces and magnets <i>This concept involves understanding what causes motion.</i></p> <p>Understand light and seeing <i>This concept involves understanding how light and reflection affect sight.</i></p> <p>Investigate sound and hearing <i>This concept involves understanding how sound is produced, how it travels and how it is heard.</i></p> <p>Understand electrical circuits <i>This concept involves understanding circuits and their role in electrical applications.</i></p>	<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 the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <ul style="list-style-type: none"> • Compare how things move on different surfaces. • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • 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. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. <ul style="list-style-type: none"> • Recognise that they need light in order to see things and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by a solid object. • Find patterns in the way that the size of shadows change. <ul style="list-style-type: none"> • Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel through a medium to the ear. <ul style="list-style-type: none"> • Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors.
	<p>Understand the Earth's movement in space <i>This concept involves understanding what causes seasonal changes, day and night.</i></p> <p><i>Note: Items in italics are not statutory in the English National Curriculum.</i></p>	<ul style="list-style-type: none"> • Describe the movement of the Earth relative to the Sun in the solar system. • Describe the movement of the Moon relative to the Earth.