Newstead Primary School
Progression of Knowledge, Skills and Understanding in Science

Breadth of Study	F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals, including humans.	Talk about what they see, using a wide vocabulary. Understands that some animals have similar features. Describe what they see, hear and feel whilst outside.	Describe what they see, feel and hear whilst outside. Sequence the basic changes of a human life cycle.	**Unit - Name common animals, carnivores etc.** Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds. Know and classify animals by what they eat (carnivore, herbivore and omnivore). Know how to sort by living and non-living things . **Unit – Human body and senses.** Know the name of parts of the human body that can be seen. Know which part of the body associated with each of the five senses.	**Unit – Animal reproduction, Healthy living and basic needs.** Know the basic stages in a life cycle for animals, (including humans). Know why exercise, a balanced diet and good hygiene are important for humans.	**Unit – Skeletons and muscles, nutrition, exercise and health.** Know about the importance of a nutritious, balanced diet. Know how nutrients, water and oxygen are transported within animals and humans. Know about the skeletal and muscular system of a human.	**Unit – Digestive system, teeth and food chains.** Identify and name the parts of the human digestive system. Know the functions of the organs in the human digestive system. Identify and know the different types of human teeth. Know the functions of different human teeth. Use and construct food chains to identify producers, predators and prey	**Unit – Changes as humans develop from birth to old age.** Create a timeline to indicate stages of growth in humans.	**Unit – The circulatory system. Impact of exercise on body.** Identify and name the main parts of the human circulatory system. Know the function of the heart, blood vessels and blood. Know the impact of diet, exercise, drugs and lifestyle on health. Know the ways in which nutrients and water are transported in animals, including humans.
All living things and their habitats.	Begin to understand the need to respect and care for the natural environment and all living things. Understand the key features of the life cycle of an animal.	Observes and talks about changes in nature they notice. Use new knowledge to classify animals. Show understanding of time through the life cycles of animals and minibeasts.		**Unit - Alive or dead, Habitats, Adaptations and Food Chains.** Classify things by living, dead or never lived. Know how a specific habitat provides for the basic needs of things living there (plants and animals). Match living things to their habitat. Name some different sources of food for animals. Know about and explain a simple food chain.	**Unit – Grouping living things. Classification keys. Adaptation of living things.** Use classification keys to group, identify and name living things. Know how changes to an environment could endanger living things. Group materials based on their state of matter (solid, liquid or gas).		**Unit – Life cycles – plants and animals. Reproductive processes. Famous naturalists.** Know the life cycle of different living things e.g. mammal, amphibian, insect and bird. Know the differences between different life cycles. Know the process of reproduction in plants Know the process of reproduction in animals.	**Unit – Classification of living things and the reasons for it.** Classify living things into broad groups according to observable characteristics and based on similarities and differences. Know how living things have been classified. Give reasons for classifying plants and animals in a specific way.

Plants	Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant.	Show understanding of time through the life cycles of plants.	**Unit – Common plants and plant structure.** Know and name a variety of common wild and garden plants. Know and name the petals, stem, leaves and root of a plant. Know and name the roots, trunk, branches and leaves of a tree.	**Unit – Plant and seed growth, Plant reproduction and keeping plants healthy.** Know and explain how seeds and bulbs grow into plants. Know what plants need in order to grow and stay healthy (water, light & suitable temperature).	**Unit – Plant life. Basic structure and function.** Know the function of different parts of flowering plants and trees. **Unit – Life cycles and water transportation.** Know how water is transported within plants. Know the plant life cycle, especially the importance of flowers.			
Everyday Materials.	Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about the differences between materials.		**Unit – Properties of everyday materials and grouping.** Know the name of the materials an object is made from. Know about the properties of everyday materials.	**Unit – Identify and name different everyday materials, properties of materials. Compare the use different materials. Compare movement on different surfaces.** Know how materials can be changed by squashing, bending, twisting and stretching. Know why a material might or might not be used for a specific job.				
Properties and changes in materials.	Talk about the differences between materials and changes they notice.						**Unit – Compare properties of everyday materials. Soluble / dissolving. Reversible and irreversible substances.** Compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets. Know and explain how a material dissolves to form a solution.	

							Know and show how to recover a substance from a solution. Know and demonstrate how some materials can be separated (e.g. through filtering, sieving and evaporating). Know and demonstrate that some changes are reversible and some are not. Know how some changes result in the formation of a new material and that this is usually irreversible.	
Seasonal Changes		Understand the effect of the changing seasons on the natural world around them. Feel an immediate change, eg, the wind picking up, getting sunny.	**Unit – The four seasons and seasonal weather.** Name the seasons and know about the type of weather associated with each season. Know the main months associated with each season.					
Rocks					**Unit – Fossil formation. Compare and group rocks. Soil.** Compare and group rocks based on their appearance and physical properties, giving reasons. Know how soil is made and how fossils are formed. Know about and explain the difference between sedimentary, metamorphic and igneous rock.			
Forces	Explore and talk about the different forces they can feel.				**Unit – Different forces and magnets.** Know about and describe how objects move on different surfaces.		**Unit – Gravity. Friction. Forces and motion of mechanical devices.** Know what gravity is and its impact on our lives.	

					Know how a simple pulley works and use to on to lift an object. Know how some forces require contact and some do not, giving examples. Know about and explain how magnets attract and repel. Predict whether magnets will attract or repel and give a reason.		Identify and know the effect of air and water resistance. Identify and know the effect of friction. Explain how levers, pulleys and gears allow a smaller force to have a greater effect.	
Light					**<u>Unit – Reflection and Shadows.</u>** Know that dark is the absence of light. Know that light is needed in order to see and is reflected from a surface. Know and demonstrate how a shadow is formed and explain how a shadow changes shape. Know about the danger of direct sunlight and describe how to keep protected.			**<u>Unit – How light travels. Reflection. Ray models of light.</u>** Know how light travels. Know and demonstrate how we see objects. Know why shadows have the same shape as the object that casts them. Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.
States of Matter						**<u>Unit - Compare and group materials. Solids, liquids and gases. Changing state and water cycle.</u>** Know the temperature at which materials change state. Know about and explore how some materials can change state. Know the part played by evaporation and condensation in the water cycle.		
Electricity						**<u>Unit – Use of electricity. Simple circuits and switches. Conductors and insulators.</u>**		**<u>Unit – Electrical components. Simple circuits. Fuses and voltage.</u>**

						Identify and name appliances that require electricity to function. Construct a series circuit. Identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). Predict and test whether a lamp will light within a circuit. Know the function of a switch. Know the difference between a conductor and an insulator; giving examples of each.		Compare and give reasons for why components work and do not work in a circuit. Draw circuit diagrams using correct symbols. Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.
Sound					Unit – How sounds are made. Sound vibrations. Pitch and Volume. Know how sound is made, associating some of them with vibrating. Know how sound travels from a source to our ears. Know the correlation between pitch and the object producing a sound. Know the correlation between the volume of a sound and the strength of the vibrations that produced it. Know what happens to a sound as it travels away from its source.			
Earth and Space							**<u>Unit – Movement of the Earth and the planets. Movement of the Moon. Night and day.</u>** Know about and explain the movement of the Earth and other planets relative to the Sun.	

							Know about and explain the movement of the Moon relative to the Earth. Know and demonstrate how night and day are created. Describe the Sun, Earth and Moon (using the term spherical).	
Evolution and Inheritance								**<u>Unit – Identical and non-identical offspring. Fossil evidence an evolution. Adaptation and evolution.</u>** Know how the Earth and living things have changed over time. Know how fossils can be used to find out about the past. Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents). Know how animals and plants are adapted to suit their environment. Link adaptation over time to evolution. Know about evolution and can explain what it is.