Science Knowledge progression

	Reception	Year 1/2	Year 3/4	Year 5/6
Biology	**Animals including humans** •How to stay healthy •People who help us •Dental Hygiene •Body Parts •Introduction to lifecycles (butterfly & frog) **Living things and their habitats** • Hot and Cold Places and animals within these habitats) • Woodland habitats including animals and hibernation **Plants** • Growing plants (beans) • Plant lifecyle **Understanding the Natural World** •Observations and drawing plants and animals, using maps, local visits **Using senses** •Describe what they can see, hear and feel outside	**Animals including humans** •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 •Know the name of parts of the human body that can be seen **•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** **Living things and their habitats** **•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** **Plants** •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 **•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)**	**Animals including humans** •Know about the importance of a nutritious, balanced diet •Know about the skeletal and muscular system of a human **•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** **Living things and their habitats** **•Use classification keys to group, identify and name living things** **•Know how changes to an environment could endanger living things** **Plants** •Know the function of different parts of flowing plants and trees •Know how water is transported within plants •Know the plant life cycle, especially the importance of flowers	**Animals including humans** •Create a timeline to indicate stages of growth in humans **•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** **Living things and their habitats** •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 **•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** **Evolution and inheritance** **•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**
Chemistry	**Materials** Exploration through everyday play and talk	**Everyday materials** •Know the name of the materials an object is made from •Know about the properties of everyday materials **•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**	**Rocks** •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 **States of matter** **•Group materials based on their state of matter (solid, liquid or gas)** **•Know the temperature at which materials change state (ice / water / water vapour)** **•Know about and explore how some materials can change state** **•Know the part played by evaporation and condensation in the water cycle**	**Properties and changes in materials** •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
Physics	**Seasons** •Seasonal walks throughout the year and talk about the effects of the changing seasons on the environment	**Seasonal changes** • Name the seasons and describe seasonal changes, including how daylight varies across the seasons	**Forces** •Know about and describe how objects move on different surfaces •Know what friction is and how to increase / reduce friction •Know about and explain how magnets attract and repel *Predict whether magnets will attract or repel and give a reason **Light** •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 **Sound** **•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** **Electricity** **•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**	**Forces** •Know what gravity is and its impact on our lives •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** **•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.** **Earth and space** •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) **Electricity** **•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**