# Class 1 - Science

| | Cycle A | Cycle B |
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| A1 | | **Animals including humans – animal groupings, animal diets, the human body and senses**<br>Know that there are a variety of different common animals and there are differences between them.<br>Know that there are differences between carnivores, herbivores and omnivores.<br>Know the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)<br>Know which part of the body is associated with each sense.<br>Know that there are basic parts of the human body. |
| A2 | **Seasonal Changes – Autumn to Winter**<br>Know that the weather and environment changes across the four seasons.<br>Know that day length varies.<br>*Know weather patterns across the four seasons.*<br>*Know the difference between night and day.*<br>*Know that there are similarities and differences between the weather and environment across the four seasons.* | **Seasonal changes – Autumn to Winter**<br>Know that the weather and environment changes across the four seasons.<br>Know that day length varies.<br>*Know weather patterns across the four seasons.*<br>*Know the difference between night and day.*<br>*Know that there are similarities and differences between the weather and environment across the four seasons.* |
| Sp1 | **Materials**<br>Know that materials can be changed.<br>Know that there is a difference between an object and the material from which it is made like wool and jumpers.<br>Know that everyday materials have varied physical properties and can be grouped using these.<br>Know that there are a variety of different everyday materials, including wood, plastic, glass, metal, water and rock.<br>*Know that some materials including wood, metal, plastic, glass, brick, rock, paper and cardboard are more suitable for a specific task than others.*<br>*Know that the shape of solid objects from some materials can be changed by squashing, bending, twisting and stretching.* | |
| Sp2 | **Seasonal Changes – Winter to Spring**<br>**Plants**<br>Know that the weather and environment changes across the four seasons.<br>Know that day length varies.<br>*Know weather patterns across the four seasons.*<br>*Know the difference between night and day.*<br>*Know that there are similarities and differences between the weather and environment across the four seasons.*<br><br>Know that plants can grow in different places.<br>Know that there are deciduous and evergreen trees<br>Know that flowering plants and trees have a basic structure. | **Seasonal changes- Winter to Spring**<br>Know that the weather and environment changes across the four seasons.<br>Know that day length varies.<br>*Know weather patterns across the four seasons.*<br>*Know the difference between night and day.*<br>*Know that there are similarities and differences between the weather and environment across the four seasons.* |

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| Su1 | **Animal including Humans – animal offspring, animal needs, basic human needs, exercise and hygiene**<br>*Know that animals, including humans, have offspring which grow into adults.*<br>*Know that eating the right amounts of different types of foods is important.*<br>*Know that humans and animals have basic needs for survival.*<br>*Know that exercise is important for humans.*<br>*Know that hygiene is important for humans.* | **Plants- sorting plants according to simple properties, identifying and describing the structure of a variety of flowering plants, including trees.**<br><br>*Know that plants grow from seeds and bulbs.*<br>*Know that plants grow and mature.*<br>*Know that plants need water, light and suitable temperature to grow and stay healthy.* |
| Su2 | **Seasonal changes – Spring to Summer**<br><br>**Living things and their habitats**<br>Know that the weather and environment changes across the four seasons.<br>Know that day length varies.<br>*Know weather patterns across the four seasons.*<br>*Know the difference between night and day.*<br>*Know that there are similarities and differences between the weather and environment across the four seasons.*<br><br>Know a habitat is where living things would naturally live.<br>Know some common habitats e.g. forest, river, artic.<br>*Know that something that is living, dead or never been alive has different characteristics.*<br>*Know that most living things live in habitats to which they are suited.*<br>*Know how different habitats provide for the basic needs of different kinds of animals and plants and how they depend on each other.*<br>*Know a variety of plants and animals in their habitats, including microhabitats.* | **Seasonal changes – Spring to Summer**<br><br>Know that the weather and environment changes across the four seasons.<br>Know that day length varies.<br>*Know weather patterns across the four seasons.*<br>*Know the difference between night and day.*<br>*Know that there are similarities and differences between the weather and environment across the four seasons.* |

| Key Area | Key Vocabulary (Class 1) |
|---|---|
| **Working Scientifically**<br>Questioning<br>Observation over time<br>Comparative and Fair Testing<br>Identifying and Classifying<br>Gathering and Recording<br>Research using secondary sources | question find out observe describe test compare<br>measure length height mass/weight time temperature<br>record results table chart pictograph block graph bar chart |
| **Biology**<br>Plants<br>Animals including humans/Evolution and Inheritance<br>Living things and their habitats<br>Seasonal Changes | wild plants garden plants weed deciduous evergreen<br>roots stem leaves flowers petals fruit seed bulb<br>germination shoot seed dispersal<br>sunlight water temperature nutrition |
| **Chemistry**<br>States of Matter<br>Use of everyday materials/Rocks | Materials; plastic wood metal water glass brick fabric paper stone<br>Object hard soft stretchy shiny dull rough smooth bendy<br>waterproof absorbent transparent opaque flexible stiff<br>suitability properties |
| **Physics**<br>Light<br>Sound<br>Forces and Magnets<br>Electricity<br>Earth and Space | |

Everton Primary School Progression Documents

**Ongoing knowledge being acquired:**

**All investigations**

Know that simple questions can be asked to find answers.
Know that answers to observations can be found by asking questions.
Know that observations can be made using simple equipment.
Know that changes can be recorded through observation.
Know that equipment can be selected to observe change over time.
Know that observations can be measured.
Know that predictions can be made.
Know that simple tests can be carried out with support.
Know that explanations can be made based on what has happened during an investigation.
Know that simple tests can be carried out independently.
Know that living and non-living things can be classified and compared.
Know that living and non-living things can be classified and compared through methods of sorting and grouping.
Know that patterns can be identified within scientific phenomena.
Know that relationships can be identified within scientific phenomena.
Know that simple secondary sources can be used to find answers.
Know that questions can be researched to find answers.

# Class 2 - Science

| | Cycle A | Cycle B |
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| A1 | **Grouping Animals**<br>Know that identified criteria will determine how living and non-living things are classified.<br>Know that keys can be used when grouping, sorting and classifying.<br>Know that scientific ideas and processes determine how living and non- living things are classified and sorted. | **States of Matter**<br>**Water Cycle**<br>Know that observations need to be careful and systematic.<br>Know that standard units of time in minutes and seconds can be used when accurately observing.<br>Know that a range of bar charts, tables and pictograms are used to show measurements.<br>Know that living things can be grouped into a variety of ways.<br>Know that classification keys can be used to identify living things.<br>Know the definitions of a solid, a liquid and a gas.<br>Know the difference between melting and dissolving.<br>Know that some materials change state when they are heated or cooled.<br>Know that evaporation and condensation are part of the water cycle.<br>Know that objects can be described by their states of matter - solids, liquids and gases.<br>Know that temperature can be measured in Degrees Celsius. |
| A2 | **Digestive System**<br>**Teeth**<br>Know that there are different types of teeth in humans and their different functions.<br>Know that the basic parts of the human digestive system have specific functions. | **Forces and Magnets**<br>Know that things move differently on different surfaces.<br>Know that some forces need contact between two objects.<br>Know that magnetic forces can act at a distance.<br>Know that magnets attract and repel each other.<br>Know that magnets attract some materials and not others.<br>Know that magnets have two poles.<br>Know which poles of magnets will attract or repel each other.<br>Know that the North and South Poles are polar opposites and this has an effect on Earth. |
| Sp1 | **Light**<br>Know that conclusions can be formed based on findings.<br>Know that shadows lengthen and shorten depending on the position of the sun and time of day within each season<br>Know when in a calendar year the lengths of days and nights vary.<br>Know that light is needed in order to see things.<br>Know that dark is the absence of light.<br>Identify light sources<br>Know that shadows are formed when light is blocked by an opaque object.<br>Know that shadows can change in size and spot patterns related to this.<br>Know that light from the sun can be dangerous and that eyes need protection.<br>Know how light is created using an electrical appliance. | **Electricity**<br>Know which every day materials allow electricity to flow through them.<br>Know that electricity is a form of energy which can be made in different ways.<br>Know that common appliances rely on electricity.<br>Know that there are basic parts of a series circuit including cells, wires, bulbs, switches and buzzers.<br>Know that there are reasons that a lamp will or will not light in a series circuit.<br>Know that a switch opens and closes a circuit.<br>Know that some materials are conductors or insulators. |

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| | Know which materials offer the most effective reflection.<br>Know that objects can be described as opaque, translucent and transparent. | |
| Sp2 | **Rocks and Fossils**<br>Know that there are different kinds of rocks that can be grouped based on their appearance and physical properties.<br><br>Know that fossils are formed when things that have lived are trapped within rock.<br><br>Know that soils are made from rocks and organic matter.<br>Know which rocks are formed when a volcano erupts.<br>Know how soil composition is effected around the base of a volcano.<br>Know that the planet Earth has a core, mantle and crust.<br>Know how planet Earth is constructed/formed and how this affects volcanoes, mountains and earthquakes (including tectonic plates). | **Living Things and their Habitats**<br>Know that animals, including humans, need the right types and amount of nutrition and cannot make their own food<br>Know that there is a difference between producers, prey and predators which can be shown in a food chain.<br>Know what living things need to survive.<br>Know that environmental change can pose a danger to living things. |
| Su1 | **Musco-skeletal System**<br>Know that humans and some other animals have skeletons and muscles for support, protection and movement. | **Plants**<br>Know that choices can be made on what to observe and how to measure it.<br>Know that patterns can be naturally occurring.<br>Know that the requirements for life vary from plant to plant.<br>Know that water is transported within plants.<br><br>Know that plants have a life cycle.<br><br>Know that pollination, seed dispersal and seed formation play a role in the life cycle.<br><br>Know that different parts of plants have different functions.<br>Know the life cycle of a plant.<br>Know how plants transport water accurately.<br><br>Know how the functions of a plant works.<br><br>Know the life cycle of a plant.<br>Know how plants transport water accurately.<br>Know how the functions of a plant works. |
| Su2 | | **Sound**<br>Know that sound can be made in a variety of different ways.<br>Know that there are patterns between the pitch of a sound and features of the object that produced it.<br>Know that sounds are made by vibrations.<br>Know that vibrations from sounds travel through a medium to the ear.<br>Know that there are patterns between the volume of a sound and strength of the vibrations of the object that produced it. |

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| | | Know that sounds get fainter as the distance from the sound source increases. |

| Key Area | Key Vocabulary (Class 2) |
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| **Working Scientifically**<br>Questioning<br>Observation over time<br>Comparative and Fair Testing<br>Identifying and Classifying<br>Gathering and Recording<br>Research using secondary sources | **criteria, living, non-living, classified, systematic, conclusions, observation, comparative, fair testing, identifying, classifying, gathering, recording, primary, secondary, sources** |
| **Biology**<br>Plants<br>Animals including humans/Evolution and Inheritance<br>Living things and their habitats<br>Seasonal Changes | **Backbone, bones, contract, elbow, endoskeleton, exoskeleton, joints, muscles, organs, protect, relax, skeleton, support, tendons, balanced diet, disease, energy, hygiene, nutrients, nutrition, starchy, absorb, anther, bulb, carbon dioxide, climate, deciduous, dispersed, dissect, evergreen, fertilisation, fertiliser, flowering, function, germination, life cycle, mature, ovule, petal, plant, pollen, pollination, seed, stem, stigma, temperature, trunk** |
| **Chemistry**<br>States of Matter<br>Use of everyday materials/Rocks | **Gases, solids, liquids, evaporation, melting, dissolving, condensation, atoms, boiling, bedrock, decaying, grain, igneous, imprint, magma, man-made, sedimentary, metamorphic, molten, palaeontology, permeable, porous, prehistoric, preserve, pressure, soil, volcano.** |
| **Physics**<br>Light<br>Sound<br>Forces and Magnets<br>Electricity<br>Earth and Space | **Attract, friction, force, gravity, magnet, magnetic field, metal, non-magnetic, position, pull, push, repel, resistance, squash, twist, angle, bright, chemical reactions, dark, dim, electricity, emits, electrical components, appliances, cell, bulb, switch, motor, buzzer, mirror, opaque, product, reflect, shadow, source, surface, translucent, transparent, pitch.** |

**Ongoing knowledge being acquired:**

**All investigations**

Know that answers to observations can be found by asking relevant questions.
Know that straightforward scientific evidence can be used to answer questions and support own findings
Know that an investigation includes simple, practical enquiries.
Know that measurements can be taken using a range of equipment.
Know that comparative tests can be carried out.
Know that there is more than one variable.
Know that fair tests can be carried out.
Know that patterns can be identified in results.
Know that patterns can be identified through data collection.
Know that questions can be researched to find answers using secondary sources
Know that answers to questions using secondary sources can be reported in different ways.

# Class 3 – Science

| | Cycle A | Cycle B |
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| A1 | **Materials**<br>Know that observations can be made on a variety of scientific activities.<br><br>Know that times of observation will vary according to the requirements each experiment.<br><br>*Know that observations require: identifying the measurements required, selecting the equipment needed and taking precise readings.*<br>*Know that the interval and range can be taken from a set of observations.*<br><br>Know that there are reversible changes.<br><br>Know that there are irreversible changes.<br><br>Know that, using knowledge of solids, liquids and gases, those mixtures might be separated by filtering, sieving or evaporating.<br><br>*Know that knowledge of states of matter can be applied when working in other scientific areas.*<br><br>Know that everyday materials can be grouped together based on their properties (hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets.<br><br>Know that there are particular uses of everyday materials including metals, woods and plastics. | **Evolution and Inheritance**<br>Know that detailed classification models can be used to sort living and non-living things.<br><br>*Know that own classification methods can be chosen and developed in order to sort living and non- living things.*<br><br>*Know that living things produce offspring of the same kind but they are not identical to their parents.*<br><br>Know that animals and plants are adapted to suit their environment.<br><br>*Know that fossils provide information about living things that inhabited the earth millions of years ago.*<br><br>*Know that adaptation may lead to evolution.*<br><br>*Know that living things can be classified into broad groups including microorganisms, plants and animals using characteristics.* |
| A2 | **Circulatory System**<br>Know that the main parts of the human circulatory system each have a specific function.<br><br>Know that nutrients and water are transported within animals, including humans.<br><br>Know that diet, exercise, drugs and lifestyle all have an impact on the way bodies function | **Light and Shadows**<br>Know that observations can be made on a variety of scientific activities.<br><br>Know that times of observation will vary according to the requirements each experiment.<br><br>Know that observations require: identifying the measurements required, selecting the equipment needed and taking precise readings.<br><br>Know that the interval and range can be taken from a set of observations.<br><br>Know that data can be interpreted to find patterns.<br>Know that repeated and precise recordings must be taken.<br><br>*Know that knowledge of materials and their properties can be applied to other scientific areas e.g. when exploring how light travels and how the path of light can be altered.*<br><br>Know that objects are seen because they give out or reflect light. |

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| | | Know that we see because light travels from light sources, to objects to our eyes.<br><br>Know that light can damage eyes.<br><br>Know how to protect eyes from bright light<br><br>*Know that light appears to travel in straight lines.*<br><br>*Know that shadows have a similar shape to the objects that cast them.*<br><br>*Know that light is refracted by prisms*<br>*Know that white light can be split into component colours.* |
| Sp1 | **Earth in Space**<br>Know that seasons are caused by the orbit and tilt of the earth.<br><br>Know that biomes are linked to the tilt of the earth and the latitude.<br><br>Know that the movement of the moon is relative to the Earth.<br><br>Know that the sun, moon and Earth are approximately spherical bodies.<br><br>Know that the Earth's rotation creates day and night and the apparent movement of the sun across the sky.<br><br>Know that the movements of the Earth and other planets are relative to the sun in the solar system.<br><br>*Know how seasons and climate zones are caused by the orbit and tilt of the earth*<br><br>*Know how shadows are formed and how they change throughout the day.* | **Electricity**<br>Know that data can be interpreted to find patterns.<br><br>*Know that the brightness of a bulb or loudness of a buzzer is associated with the voltage in the circuit.*<br><br>*Know how motors can change speed and direction depending upon the voltage and polarity.*<br><br>*Know that symbols are used when representing a simple circuit in a diagram.*<br><br>*Know that there are variations in how components function.* |
| Sp2 | **Animal Adaptations**<br>*Know that patterns can be found in the natural environment.*<br><br>Know that living things produce offspring of the same kind but they are not identical to their parents.<br><br>*Know that animals and plants are adapted to suit their environment.*<br><br>*Know that there are changes in humans as they grow, go through puberty and live to old age.* | **Forces**<br>Know that repeated and precise recordings must be taken.<br><br>Know that unsupported objects fall to Earth because of gravity.<br><br>Know that air resistance, water resistance and friction will affect how objects move between surfaces.<br><br>Know that mechanisms including levels, pulleys and gears allow a smaller force to have a larger effect.<br><br>*Know that knowledge of forces can be applied to other scientific areas.* |

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| Su1 | **Plants**<br>Know that observations can be made on a variety of scientific activities.<br><br>Know that times of observation will vary according to the requirements each experiment.<br><br>Know that observations require: identifying the measurements required, selecting the equipment needed and taking precise readings.<br><br>Know that the interval and range can be taken from a set of observations.<br>Know that knowledge of plants can be applied to work on life cycles.<br><br>Know the life cycle of a plant.<br><br>Know how plants transport water accurately.<br><br>Know how the functions of a plant works. | **Life Cycles of animals and plants**<br>Know that knowledge of plants can be applied to work on life cycles.<br><br>Know that life cycles are different between mammals, amphibians, insects and birds.<br><br>Know that reproduction is a life process in plants and animals.<br><br>Know that reproduction is a life process in plants and animals. |
| Su2 | | |

| Key Area | Key Vocabulary (Class 3) |
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| **Working Scientifically**<br>Questioning<br>Observation over time<br>Comparative and Fair Testing<br>Identifying and Classifying<br>Gathering and Recording<br>Research using secondary sources | Observations, measurement, equipment, precise readings, interval, range, vary, patterns, variables, fair test, classification, living, non-living, micro organisms, vertebrates, invertebrates, amphibians, Carl Linnaeus |
| **Biology**<br>Plants<br>Animals including humans/Evolution and Inheritance<br>Living things and their habitats<br>Seasonal Changes | Functions, transport, life cycle, reproduction, life processes, offspring, characteristic, vary, adapt, extreme, conditions, inherit, inheritance. |
| **Chemistry**<br>States of Matter<br>Use of everyday materials/Rocks | Materials, solubility, transparent, translucent, opaque, dissolves, solution, separate, gases, mixing, reversible changes, irreversible changes, evaporating, sieving, chemical, chemists, rusting, burning, filtering. |
| **Physics**<br>Light<br>Sound<br>Forces and Magnets<br>Electricity<br>Earth and Space | Travels, straight, reflection, light sources, mirrors, periscope, raninbow, filters, spectrum, vibrate, vibration, medium, pitch, faint, insulate, air-resistance, water-resistance, friction, gravity, mechanisms, voltage, cell, battery, bulb, buzzer, current, insulator, conductor, polarity, symbols, circuit, components, function |

**Ongoing knowledge being acquired:**
**All investigations**
Know that other sources of information (secondary sources) will help answer questions that cannot be answered through practical investigations.
Know that the use of questioning can be used to support own evidence and help when talking about how scientific ideas have developed over time.
Know that some variables need to be controlled.

Know that results can lead to further prediction and the design of further comparative tests.
Know that methods can be improved.
Know that there are explanations behind needing to control variables.
Know that there are reasons for improving methods.
Know that the correct units must be used when measuring accurately and precisely.
Know that causal relationships can be identified.
Know that data can be gathered, recorded, classified and presented in a variety of ways which include scientific diagrams, labels, keys, graphs and tables.
Know that evidence can support / refute causal relationships
Know that research can be presented in different formats.
Know that research can be presented using different formats, selecting the best format for the information being shared.