



## Scientific Knowledge Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
PLANTS	<ul style="list-style-type: none"> <li>• Know how to grow fruits and vegetable to create food.</li> <li>• Exploring plants including tropical plants.</li> <li>• Understand the key features of the life cycle of a plant.</li> <li>• Autumn/Harvest where does food come from - how do we grow food?</li> <li>• Talk about some of the things I have observed such as plants, animals, natural and found objects.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name at least five common wild and garden plants including trees.</li> <li>• Identify and name at least 5 deciduous and or evergreen trees.</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants.</li> <li>• Investigate what plants need to grow and stay healthy.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the functions of different parts of flowering plants: roots, stem, trunk, leaves and flowers.</li> <li>• 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.</li> <li>• Investigate the way in which water is transported within plants.</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>		<ul style="list-style-type: none"> <li>• Describe the life processes and reproduction in some plants and animals</li> </ul>	



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ANIMALS INCLUDING HUMANS	<ul style="list-style-type: none"> <li>• Growth and change</li> <li>• Use correct terms e.g. chrysalis, pupa when observing life cycle of butterfly &amp; ladybirds.</li> <li>• Understand that are same changes to the body as we grow.</li> <li>• Talk about the senses as they explore.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name at least ten common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>• Identify and name at least five common animals that are carnivores, herbivores and omnivores.</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> <li>• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>	<ul style="list-style-type: none"> <li>• Understand that animals, including humans, have offspring which grow into adults</li> <li>• Investigate the basic needs of animals, including humans for survival (water, food and air)</li> <li>• Describe the importance for humans for exercise, eating the right amounts of food and hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify that animals including humans need the right types and amounts of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</li> <li>• Understand that human and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe the simple functions of basic parts of the digestive system in humans</li> <li>• Identify the different types of teeth and their functions in humans.</li> <li>• Construct and interpret the variations of food chains and what producers, predators and prey are</li> </ul>	<ul style="list-style-type: none"> <li>• Describe the changes that humans develop to old age.</li> <li>• Draw a timeline to indicate stages in the growth and development of humans</li> <li>• Learn about the changes experienced in puberty.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>• Recognise the impact of diet, exercise, drugs and lifestyle on the way our bodies function.</li> <li>• Describe the ways in which nutrients and water are transported within animals, including humans</li> </ul>



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LIVING THINGS AND THEIR HABITATS	<ul style="list-style-type: none"> <li>Life cycles and simple habitats.</li> <li>observe and talk about farm animal ls moving around.</li> <li>Hot climate animals-safari animals.</li> <li>British animals and birds.</li> <li>Begin to understand pollution</li> </ul>		<ul style="list-style-type: none"> <li>Explore and compare the difference between things that are living, dead and things that have never been alive</li> <li>Identify that most living things live in habitats to which they are suited</li> <li>Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>Identify and name a variety of plants and animals in their habitats including micro habitats</li> <li>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, name different sources of food.</li> </ul>		<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of way.</li> <li>Explore and use classification keys help group, identify and name a variety of living things in their local and wider environments.</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>Describe the life processes and reproduction in some plants and animals</li> <li>Find out about different reproduction, including sexual and asexual reproduction in plants and sexual reproduction in animals.</li> <li>Raise questions about their local environment throughout the year</li> <li>Research the works of naturalists and animal behaviourist for e.g.- David Attenborough and Jane Goodall</li> </ul>	<ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</li> <li>Give reasons for classifying and subdividing plants and animals based on specific characteristics.</li> <li>Can classify animals into commonly found invertebrates (such as insect, spiders, snails, worms and vertebrates (fish, amphibians, reptiles, birds and mammals).</li> <li>Find out about significant scientists such as Carl Linnaeus- a pioneer of classification</li> </ul>



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LIGHT	<ul style="list-style-type: none"> <li>Darkness is the absence of light - light sources – natural and man made</li> <li>Nocturnal and Diurnal Animals.</li> </ul>			<ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light</li> <li>Understand that light is reflected from surfaces.</li> <li>Recognise the dangers of the sun and how to protect your eyes.</li> <li>Recognise how shadows are formed and find patterns in the way that the size of shadows changes.</li> </ul>			<ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines.</li> <li>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</li> <li>Explain that we see things because light travels from light sources to our eyes from light sources to objects and then to our eyes.</li> <li>Use the idea that light travels in straight lines to explain how shadows have the same shapes as objects that cast them.</li> <li>Work scientifically by deciding where to place rear view mirrors on a car/creating a periscope.</li> </ul>



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FORCES & MAGNETS				<ul style="list-style-type: none"><li>• compare how things move on different surfaces</li><li>• notice that some forces need contact between two objects, but magnetic forces can act at a distance</li><li>• observe how magnets attract or repel each other and attract some materials and not others</li><li>• 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</li><li>• describe magnets as having two poles</li><li>• Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li></ul>		<ul style="list-style-type: none"><li>• Explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and falling objects</li><li>• Identify the effects of air resistance, water resistance and friction that act between moving surfaces</li><li>• Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to give a greater effect.</li></ul>	



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MATERIALS: CHANGES & STATES OF MATTER	<ul style="list-style-type: none"> <li>Floating and sinking – predict and investigate</li> </ul>	<ul style="list-style-type: none"> <li>Distinguish between object and the material it is made from.</li> <li>Identify the names of a variety of everyday materials including wood, plastic, glass, metal, water and rock.</li> <li>Describe the simple properties of a variety of everyday materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>	<ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>Investigate how the shapes of solid objects made from some materials can be changes by squashing, bending twisting and stretching.</li> </ul>		<ul style="list-style-type: none"> <li>Compare and group together materials that are solids liquids or gases.</li> <li>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.</li> <li>Identify the part played by evaporation and condensation in the water cycles and the associate rate of evaporation with temperature.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</li> <li>Know that some materials will dissolve in liquid to for a solution, and describe how to recover a substance from a solution.</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>Give reasons based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>Demonstrate that dissolving mixing and changes of state are reversible reactions</li> <li>Explain that some changes result 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 bicarbonate of soda</li> </ul>	



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EARTH & SPACE						<ul style="list-style-type: none"><li>• Describe the movement of earth and other planets, relative to the sun in the solar system</li><li>• Describe the movement of the moon relative to the earth</li><li>• Describe the sun, earth and moon as approximately spherical bodies</li><li>• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li><li>• Learn that the sun is a star, in the centre of the solar system, and that it has eight planets: Mercury, Venus, Earth, Jupiter, Saturn, Uranus, Neptune (Pluto classified as dwarf planet in 2006)</li><li>• Understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has 4 moons and numerous smaller ones).</li></ul>	



SOUND

- Identify how sounds are made, associating some of them with something vibrating
- Recognise that vibrations from sounds travel through a medium to the ear.
- Find patterns between pitch of a sound and features of the object that produced it.
- Find patterns between the volume of sound as the strength of the vibrations that produced it
- Recognise that sounds get fainter as the distance from the sound source is increased.



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SEASONAL CHANGES		<ul style="list-style-type: none"> <li>Observe changes across the four seasons and the key changes that occur.</li> <li>Observe and describe weather associated with the seasons and how day length varies according to weather.</li> </ul>					
EVOLUTION & INHERITANCE	<ul style="list-style-type: none"> <li>Extinction and fossils.</li> </ul>						<ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaption may lead to evolution.</li> </ul>



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ELECTRICITY	<ul style="list-style-type: none"> <li>Understand that there are dangers around us and how to stay safe from electrical equipment, fire, sharp objects and medicines.</li> </ul>				<ul style="list-style-type: none"> <li>Identify common appliances that run on electricity</li> <li>Construct simple series circuits, identifying/naming basic parts, including cell, bulb, switch, and buzzer</li> <li>Use their circuits to create simple devices.</li> <li>Draw the circuit as a pictorial representation</li> <li>Understand and know the precautions for working safely with electricity</li> <li>Identify whether or not a lamp will light in a simple series circuit</li> <li>Recognise that a switch opens and closes a circuit and associated this with whether or not a lamp lights in a simple series circuit</li> <li>Recognise some common conductors and insulators and associate metals with being good conductors</li> </ul>		<ul style="list-style-type: none"> <li>Associate brightness of a lamp or the volume of a buzzer with the number and voltage cells used in the circuit.</li> <li>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</li> <li>Use recognised symbols when representing a simple circuit diagram.</li> <li>Construct simple series circuits to help answer questions about what happens when they test different components.</li> </ul>



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ROCKS				<ul style="list-style-type: none"><li>• Understand how fossils are formed when things that are trapped within a rock.</li><li>• Recognise that soils are made from rock and organic matter.</li><li>• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li></ul>			



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KEY VOCABULARY	senses, explore, staying safe, Autumn/Harvest, Grow, materials, footwear, waterproof, fruit, vegetables, clothing, appropriate, weather, darkness, absence, light, shadows, experiment, torch, light source, natural, man-made, nocturnal, diurnal animals, colors, seasons, dangers, electrical safety, equipment, fire, objects. Medicines, reduce, reuse, recycle, herbivore, carnivore, extinction and fossils, tropical plants. Seeds, bulbs life cycle growth and change, chrysalis, pupa, observe butterfly, habitats, melting, natural processes pollutions, transport, floating, sinking, predicting	Evergreen, Deciduous, root Stem, flower, seed, canopy, trunk, fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores, nose, ear, mouth, hands, feet, torso, head, skull, wood, plastic, glass, metal, water, rock, flexible, hard, soft, absorbs, season, autumn, winter, spring, summer	Habitat, dead, alive, food chain, predator, prey, source, light, air, water, warmth, offspring, hygiene, states, shapes, suitability	Roots, stem, trunk, leaves, flowers, air, light, water, nutrients, transported, life cycle, pollination, seed formation, seed dispersal, nutrition, skeletons, muscles, protection, fossils, trapped, organic, absence, reflected, surfaces, opaque, transparent, translucent, magnetic, forces, attraction, attract, repel, poles	Classification, keys, digestion, stomach, acid, incisor, molar, premolar, canine, food chain, producer, prey, predator, solids, liquids, gases, state, evaporation, condensation, vibration, pitch, volume, strength, appliance, circuit, cells, wires, bulbs, switches, buzzers, conductor, insulator	Lifecycle, Amphibian, reptile, reproduction, properties, transparency, conductivity, thermal, magnetic, dissolve, solution, mixture, separated, evaporation, reversible, irreversible, axis, spherical, clockwise, anticlockwise, rotation, gravity, resistance, air resistance, water resistance, frictions, mechanism, lever, pulley, gear, force	Characteristics, microorganisms, circulatory system, blood vessels, capillaries, aorta, veins, nutrients, fossils, adaptation, environment, evolutions, reflect, reflection, reflecting, sources, shadows, circuits