

St Columb Minor Academy – Substantive knowledge progression EYFS/KS1/KS2							
composites	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants Key vocabulary: ---- Deciduous, Evergreen, Tree, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem, Oak, Holly, Willow, Birch, Chestnut, Conker, Daisy, Buttercup, Rose, Daffodil, fruit ----- Seeds, Bulbs, Water, Light, Suitable temperature, Grow, Healthy, Germinate, Decompose, leaf, flower, blossom, petal, fruit, root, bulb, seed trunk, branch, stem, water, light, air, nutrients, soil,	Components coverage						
	They talk about the features of their own immediate environment and how environments might vary from one another Explore the natural world around them, making observations and drawing pictures of animals and plants. Understand the process required when planting and growing vegetables and flowers. Recognise, understand and name	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees	Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and suitable temperature to grow and stay healthy	Identify and describe the functions of different parts of flowering parts eg roots, stem, trunk, leaves, 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 part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			

<p>fertiliser, grow, healthy, transported, life cycle, pollination, seed formation, seed dispersal</p> <p>----</p> <p>Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower,</p>	<p>different life cycles. For example, plant and animal.</p>						
<p>Everyday Materials key vocabulary:</p> <p>---</p> <p>Wood, Plastic, Glass, Paper, clay Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth, shiny, stiff, bendy, waterproof, absorbent, see through, rough, smooth</p> <p>---</p> <p>Suitable/unsuitable, use, object, material, property, wood, plastic, glass, metal water, rock, fabrics, hard, soft, stretchy, flexible, waterproof, absorbent, transparent, translucent, opaque, shape, change, twist,</p>	Components coverage						
	<p>Demonstrate an understanding of changes of state. For example, solid to liquid.</p>	<p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Distinguish between an object and the material from which it is made</p> <p>describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday</p>	<p>Identify and compare suitability of everyday materials inc wood, metals, plastic, glass, brick, rock, paper, card for particular uses</p> <p>Find out shapes of solid objects made from some materials can be changed eg, squashing, bending, twisting, stretching</p>			<p>(Year 5 heading: properties and changes of materials)</p> <p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets</p> <p>Know that some materials will dissolve in</p>	

<p>squash, bend, stretch, roll, squeeze --- Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>		<p>materials on the basis of their simple physical properties.</p> <p>distinguish between an object and the material from which it is made</p> <p>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>				<p>liquid to from a solution and describe how to recover a substance from a solution. Uke knowledge of solids, liquids and gasses to decide how mixtures might be separated including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair testing, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the formation of new materials,</p>	
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						and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	
Animal Including Humans key vocabulary: --- Body, head, neck, arms, elbows, legs, knees, face, ears, eyes, eyebrows, eyelashes, nose, hair, mouth, teeth, tongue, feet, toes, fingers, nails, ankle, calf, thigh, hips, waist, trunk, chest, shoulders, back, hands, wrist, tail, wing, claw, fin, scales, feathers, fur, beak, senses, hearing, seeing, touching, --- Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak ---	Components coverage						
	Explore the natural world around them, making observations and drawing pictures of animals and plants; Recognise, understand and name different life cycles. For example, plant and animal. They make observations of animals and plants and explain why some things occur, and talk about changes.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores,	Notice that animals including humans have offspring which grow into adults Find out and describe the basic needs of animals, including humans, for survival (water, food,air) Describe the importance of exercise, eating the right foods and hygiene.		Identify different types of teeth in humans and their simple functions Describe simple function of the basic parts of the digestive system in humans. Construct and interpret a variety of food chains, identifying producers, predators and prey	Describe the changes as humans develop to old age	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Describe the ways in which nutrients and water are transported within animals, including humans. Recognise the impact of diet, exercise, drugs and lifestyle on their bodies function.

<p>Digestive system, nutrition, mouth, teeth, canine, incisor, molar, pre-molar, saliva, tongue, rip, tear, chew, grind, cut, oesophagus (gullet), stomach, small intestine, large intestine, rectum, anus, carnivore, herbivore, omnivore, producer, consumer, predator, prey, food chain</p> <p>---</p> <p>Circulatory system, heart, blood, blood vessels, pumps, oxygen, carbon dioxide, lungs, nutrients, water, diet, exercise, drugs, lifestyle, evolution, suited/suitable, adapted, adaptation, offspring, reproduction, variation, inherit, inheritance, fossils</p>		<p>herbivores and omnivores</p> <p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>					
Components coverage							

<p>Seasonal Changes key vocabulary</p> <p>---</p> <p>Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark. weather, hot, warm, cool cold, sunny, cloudy, windy, rainy, snowing, hailing, sleet, frost, fog, mist, icy, rainbow, thunder, lightning, storm, light, dark, day, night</p>	<p>Recognise and identify how the environment around them changes. For example, naming the four seasons and being able to identify the differences between them.</p>	<p>observe changes across the four seasons</p> <p>observe and describe weather associated with the seasons and how day length varies.</p>					
Components coverage							
<p>Living things and their habitats key vocabulary:</p> <p>---</p> <p>Living, dead, never been alive, names of local habitats, pond, woodland, meadow, name micro habitat</p> <p>---</p> <p>Reproduce, produce young, produce new plants, animals, plants, shoot, within, under, next to, fruit, earth, soil, seeds</p> <p>---</p> <p>Habitat, nutrition, environment, keys, condition, consumer, producer, organism, predator,</p>	<p>Children know about similarities and differences in relation to places, objects, materials and living things</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another</p>		<p>Explore and compare differences between things that are living and things that have never been alive.</p> <p>Identify most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different types of animals and plants and how they depend on each other.</p> <p>Identify and name a variety of plants and</p>		<p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that living things can be grouped in a variety of ways</p> <p>Recognise that environments can change and this can sometimes pose dangers to living things</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p>

<p>prey, food chain, similar, different --- Life cycle, reproduction, sexual, asexual, germination, pollination, seed formation, seed dispersal, pollen, stamen, stigma, plantlets, runners, mammal, amphibian, insect, bird, fish, reptile, eggs, live young --- Plant Growth, fertiliser, nutrients, consumer, producer, predator, prey, food chain, Key, suited, plant food, produces, identify, habitats, life processes Micro-organism, microbe, germ, virus, decay, organism, micro-organism, fungus, mushrooms, classification keys, environment, fish, amphibians, reptiles, birds, ,mammals, vertebrates, invertebrates, name some of these, arachnid, mollusc, insect, crustacean</p>			<p>animals including micro-habitats</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of simple food chains, and identify and name difference sources of food.</p>				
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Rocks key vocabulary:	Components coverage						
<p>Year 3</p> <p>Rock, stone, pebble, boulder, soil, fossils, grains, crystals, texture, absorb water, let water through, marble, chalk, granite, sandstone, slate, sandy soil, clay soil, chalky soil, peat,</p>				<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>			
Light key vocabulary	Components coverage						
<p>Year 3</p> <p>Light, Shadows, Mirror, Reflective, Dark, Reflection, light source, cast, Bright, ;light, dark, black, night, day, reflective strip, reflect, torch, Sun, candle, lamp, darker, darkest, brighter, brightest, brightness, shine</p> <p>Year 6</p> <p>Light, dark, shadow, transparent, opaque, direction,</p>	<p>Understand some important processes and changes in the natural world around them</p> <p>Children to understand day and night</p>			<p>Recognise they need light in order to see things and that dark is the absence of light</p> <p>Notice that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object</p>			<p>Recognise that light appears to travel in straight lines</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p> <p>Use the idea that light travels in straight lines to explain that objects are seen</p>

<p>light travels, translucent, shortest, longest, highest, object, material, light source, Sun, night, day</p>				<p>Find pattern in the way the size of shadows change</p>		<p>because they give out or reflect light into the eye.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>
<p>Forces and Magnets key vocabulary:</p> <p>---</p> <p>Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull, magnetic north, poles, south pole, north pole, push, pull, bar magnet, ring magnet, button magnet, surface, field</p> <p>---</p> <p>Air resistance, Water resistance, Friction, Gravity, brake, water resistance, change direction, accelerate move, Newton, Gears, Pulleys, lever, force, pivot (fulcrum)</p>	Components coverage					
				<p>Compare how things move on different surfaces</p> <p>Compare and group everyday materials on the basis of if they are attracted to a magnet and identify some magnetic materials</p> <p>Notice some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract and repel each other and attract some materials not others</p>		<p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p>

				Describe magnets as having two poles			
				Predict if two magnets will attack or repel each other depending on which poles are facing.			
States of Matter key vocabulary:	Components coverage						
<p>---</p> <p>States of matter, solid, liquid, gas, air, oxygen, powder, granular/grain, crystals, change state, ice/water/steam, water vapour, heating, cooling, temperature, degrees Celsius, melt, freeze, solidify, melting point, boil, boiling point, evaporation, condensation, water cycle, precipitation, transpiration</p> <p>---</p> <p>rigid, hard, soft, stretchy, flexible, waterproof, absorbent, electrical/thermal conductivity, melting, dissolve, solution, insoluble, solute, solvent, particle, mixture,</p>	<p>Understand some important processes and changes in the natural world around them</p> <p>Demonstrate an understanding of changes of state. For example, solid to liquid.</p>				<p>Compare and group materials together according to whether they are solids, liquids or gasses</p> <p>Observe that some materials change states when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>		

filtering, sieving, residue, reversible/non reversible changes, new material, burning, rusting,							
Electricity key vocabulary: --- Electricity, battery, cell, circuit, complete circuit, electrical, fuse, conductor, electrical insulator, wire bulb, switch, current, component, voltage, filament, static electricity, resistance	Components coverage						
					Identify common appliances that run on electricity Identify whether or not a lamp will light in simple series circuit, based on whether the lamp is part of a complete loop with a battery Construct simple series electrical circuit, identifying and naming its basic parts including cell, wires, bulbs, switches and buzzers Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit		
	Components coverage						

<p>Sound key vocabulary:</p> <p>Sound, sounds, high, low, loud, quiet, shake, rattle, blow, pluck, tap, scrape, ring, silence, direction, louder, loudest, quieter, quietest, noise, soft, further away, nearer, ear, faint, fainter, volume</p> <p>vibration, wave, volume, pitch, tone, insulation, sound source, noise, vibration, travel, solid, liquid, gas, pitch, tune, high, low, volume, loud, quiet, fainter, muffle, strength of vibrations, insulation, instrument, percussion, Changing sounds, sounds, loudness, vibrate muffle, tuning, quiet, soft, noise, sound, source, loud, high, low, vibrating, soundproof</p>					<p>Identify how sounds are made, associate some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Recognise that sounds get fainter as the distance from the sound source</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patters between the volume of a sound and the strength of the vibrations that produced it</p>							
<p>Earth and Space key vocabulary:</p> <p>---</p> <p>Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, orbit,</p>	Components coverage										<p>Describe the move of the Earth, and other planets, relative to the</p>	

<p>constellation, waxing, waning, full, new, year, month, gravity, Earth, planets, sun, solar system, moon, celestial body, spherical, rotation, spin, night and day, names of planets, dwarf planet, orbit, satellite, axis, shadow clocks, sundials, astronomical clocks</p>						<p>sun in the solar system</p> <p>Describe the movement of the moon relative to the earth</p> <p>Use the idea of the earths rotation to explain day and night and the apparent movement of the sun across the sky.</p>							
<p>Evolution and Inheritance key vocabulary:</p> <p>Characteristics, adaption, evolution, natural selection, fossil, adaptive traits, inherited traits, extinction, variation, parent, identical, offspring, non-identical, environment</p>	Components coverage												<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and</p>

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							plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
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