

Haydn Primary School

Science Curriculum Progression

	EYFS (Area/s of Learning)	KS1			KS2		
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key concepts Substantive Knowledge	<p><u>Knowledge and understanding the world</u></p> <p>Chn can explore creatures, people, plants and objects in their natural environments.</p> <p>Chn can observe and manipulate objects and materials to identify differences and similarities</p> <p>Chn can use senses, feeling materials or listening to sounds in the environment, such as sirens or farm animals.</p> <p>Chn can ask questions about why things happen and how things work</p> <p>Chn can answer questions about what they think will happen to help them communicate, plan, investigate, record and evaluate findings</p>	<p><u>Plants</u></p> <p>Chn can identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>Chn can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p><u>Animals, Including Humans</u></p> <p>Chn can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Chn can identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Chn can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Chn can 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><u>Everyday Materials</u></p> <p>Chn can distinguish between an object and the material from which it is made</p> <p>Chn can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Chn can describe the simple physical properties of a variety of everyday materials</p> <p>Chn can compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p><u>Seasonal Changes</u></p> <p>Chn can observe changes across the four seasons</p> <p>Chn can observe and describe weather associated with the seasons and how day length varies.</p>	<p><u>Living things and their habitats</u></p> <p>Chn can explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>Chn can identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>Chn can identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Chn describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p><u>Plants</u></p> <p>Chn can observe and describe how seeds and bulbs grow into mature plants</p> <p>Chn can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p><u>Animals including humans</u></p> <p>Chn can notice that animals, including humans, have offspring which grow into adults</p> <p>Chn can find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Chn can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p><u>Use of Everyday materials</u></p> <p>Chn can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Chn can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p><u>Light, Dark and Shadows</u></p> <p>Chn can recognise that they need light in order to see things and that dark is the absence of light</p> <p>Chn can notice that light is reflected from surfaces □ recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Chn can recognise that shadows are formed when the light from a light source is blocked by an opaque object □ find patterns in the way that the size of shadows change.</p> <p><u>Forces and Magnets</u></p> <p>Chn can compare how things move on different surfaces</p> <p>Chn can notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>Chn can observe how magnets attract or repel each other and attract some materials and not others</p> <p>Chn can 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</p> <p>Chn can describe magnets as having two poles</p> <p>Chn can predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p><u>Rocks and Volcanoes</u></p> <p>Chn can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Chn can describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Chn can recognise that soils are made from rocks and organic matter.</p> <p><u>Plants</u></p> <p>Chn can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>Chn can 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</p> <p>Chn can investigate the way in which water is transported within plants</p> <p>Chn can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p><u>Sound</u></p> <p>Chn can identify how sounds are made, associating some of them with something vibrating</p> <p>Chn can recognise that vibrations from sounds travel through a medium to the ear</p> <p>Chn can find patterns between the pitch of a sound and features of the object that produced it</p> <p>Chn can find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Chn can recognise that sounds get fainter as the distance from the sound source increases.</p> <p><u>Electricity</u></p> <p>Chn can identify common appliances that run on electricity</p> <p>Chn can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Chn can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</p> <p>Chn can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Chn can recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p><u>Living things and their habitats</u></p> <p>Chn can recognise that living things can be grouped in a variety of ways</p> <p>Chn can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Chn can recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p><u>State of Matter- Water cycle</u></p> <p>Chn can compare and group materials together, according to whether they are solids, liquids or gases</p> <p>Chn can 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 (°C)</p> <p>Chn can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p><u>Earth and Space</u></p> <p>Chn can describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Chn can describe the movement of the Moon relative to the Earth</p> <p>Chn can describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Chn can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p> <p><u>Forces</u></p> <p>Chn can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Chn can identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Chn can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p><u>Living things and their habitats -Life cycles</u></p> <p>Chn can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Chn can describe the life process of reproduction in some plants and animals.</p> <p><u>Properties and changes of materials</u></p> <p>Chn can 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>Chn can know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Chn can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Chn can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Chn can demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Chn can 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 acid on bicarbonate of soda.</p>	<p><u>Animals including humans</u></p> <p>Chn can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Chn can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Chn can describe the ways in which nutrients and water are transported within animals, including humans.</p> <p><u>Evolution and inheritance</u></p> <p>Chn can 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>Chn can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Chn can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p><u>Living things and habitats</u></p> <p>Chn can 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</p> <p>Chn can give reasons for classifying plants and animals based on specific characteristics.</p> <p><u>Light</u></p> <p>Chn can recognise that light appears to travel in straight lines</p> <p>Chn can 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</p> <p>Chn can 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>Chn can 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><u>Electricity</u></p> <p>Chn can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>Chn can 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</p>

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				<p>Animals including Humans</p> <p>Chn can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <p>Chn can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Animal including Humans</p> <p>Chn can describe the simple functions of the basic parts of the digestive system in humans</p> <p>Chn can identify the different types of teeth in humans and their simple functions</p> <p>Chn can construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Animals including Humans</p> <p>Chn can describe the changes as humans develop to old age.</p>	<p>Chn can use recognised symbols when representing a simple circuit in a diagram.</p>
<p><i>Working scientifically</i></p> <p>Disciplinary Knowledge</p>	<p>Chn know how to ask simple questions and recognising that they can be answered in different ways</p> <p>Chn know to observe closely, using simple equipment</p> <p>Chn know how to perform simple tests</p> <p>Chn know how to identifying and classifying animals, plants and properties of different materials.</p> <p>Chn know how to use observations and ideas to suggest answers to questions</p> <p>Chn know how to gather and recording data to help in answering questions.</p>	<p>Chn know how to ask simple questions and recognising that they can be answered in different ways</p> <p>Chn know how to observe closely, using simple equipment</p> <p>Chn know how to perform simple tests</p> <p>Chn know how to identifying and classifying animals, plants and properties of different materials.</p> <p>Chn know how to and use observations and ideas to suggest answers to questions.</p> <p>Chn know how to gather and record data to help in answer questions.</p>	<p>Chn know how to ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Chn know how to set up simple practical enquiries, comparative and fair tests</p> <p>Chn know how to make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>Chn know how to gather record, classify and present data in a variety of ways to help in answering questions</p> <p>Chn know how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Chn know how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Chn know how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Chn know how to identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Chn know how to use straightforward scientific evidence to answer questions or to support their findings.</p>	<p>Chn know how to ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Chn know how to set up simple practical enquiries, comparative and fair tests</p> <p>Chn know how to make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>Chn know how to gather record, classify and present data in a variety of ways to help in answering questions</p> <p>Chn know how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Chn know how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Chn know how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Chn know how to identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Chn know how to use straightforward scientific evidence to answer questions or to support their findings.</p>	<p>Chn know how to use plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Chn know how to take measurements, using a range of scientific equipment, with increasing accuracy and precision</p> <p>Chn know how to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p> <p>Chn know how to use test results to make predictions to set up further comparative and fair tests</p> <p>Chn know how to report and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations</p> <p>Chn know how to identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Chn know how to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Chn know how to take measurements, using a range of scientific equipment, with increasing accuracy and precision</p> <p>Chn know how to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p> <p>Chn know how to use test results to make predictions to set up further comparative and fair tests</p> <p>Chn know how to report and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations</p> <p>Chn know how to identify scientific evidence that has been used to support or refute ideas or arguments.</p>	

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	EYFS	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
What Science looks like at Haydn	<p>Bonfire night/Diwali/Christmas – food prep, light and dark, nocturnal animals</p> <p>Cold lands – freezing and melting, magnets, animals</p> <p>Growing – life cycles, our bodies, keeping healthy, our senses,</p>	<p>Plants</p> <p>Animals, Including Humans</p> <p>Everyday Materials</p> <p>Seasonal Changes</p>	<p>Plants</p> <p>Living things and their habitats</p> <p>Animals including humans</p> <p>Use of Everyday materials</p>	<p>Light, Dark and Shadows</p> <p>Forces and Magnets</p> <p>Rocks and Volcanoes</p> <p>Plants</p> <p>Animals including Humans- Skeletons</p>	<p>Sound</p> <p>Electricity</p> <p>Living things and their habitats</p> <p>State of Matter</p> <p>Animal including Humans- digestive system/ teeth</p>	<p>Earth and Space</p> <p>Forces</p> <p>Living things and their habitats -Life cycles</p> <p>Properties and changes of materials</p> <p>Animals including Humans</p>	<p>Animals including humans</p> <p>Evolution and inheritance</p> <p>Living things and habitats</p> <p>Human body</p> <p>Light</p> <p>Electricity</p>
Key Vocabulary		<p>Animals including humans Fish, Reptiles, Mammals, Birds, Amphibians, Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak</p> <p>Plants Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem</p> <p>Everyday Materials Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth</p> <p>Seasonal Changes Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark</p>	<p>Animals including humans Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p> <p>Plants Seeds, Bulbs, Water, Light, Temperature, Growth</p> <p>Living things and their habitats Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert</p> <p>Everyday materials and their uses Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>	<p>Animals including humans Movement, Muscles, Bones, Skull, Nutrition, Skeletons,</p> <p>Plants Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower</p> <p>Rocks Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent</p> <p>Light Light, Shadows, Mirror, Reflective, Dark, Reflection</p> <p>Forces and magnets Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull</p>	<p>Animals including humans Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar</p> <p>Living things and their habitats Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats</p> <p>States of Matter Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating</p> <p>Sound Volume, Vibration, Wave, Pitch, Tone, Speaker</p> <p>Electricity Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators</p>	<p>Animals including humans Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty</p> <p>Living things and their habitats Mammal, Reproduction, Insect, Amphibian, Bird, Offspring</p> <p>Properties and changes of materials Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing</p> <p>Earth and Space Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation</p> <p>Forces Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys</p>	<p>Animals including humans Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration</p> <p>Living things and their habitats Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects</p> <p>Evolution and Inheritance Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics</p> <p>Light Refraction, Reflection, Light, Spectrum, Rainbow, Colour,</p> <p>Electricity Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell</p>
Experiences	<p>Trips</p> <p>Woodthorpe park – seasonal changes</p>	<p>Trips</p> <p>Space centre - Materials</p> <p>Twycross zoo – Animals</p>	<p>Trips</p> <p>Blackwoods – Animals and Habitats</p> <p>Whitepost farm – Animals</p>	<p>Trips</p> <p>Trips to school garden – Sustainability</p> <p>Magna Science Centre – Volcanoes</p>	<p>Trips</p> <p>Yorkshire wildlife park – living things and their habitats</p>		
Texts		<p>Plants</p> <p>The Gigantic Turnip Aleksei Tolstoy & Niamh Sharkey The Tiny Seed Eric Carle</p> <p>Animals including Humans</p> <p>Lots: The Diversity of Life on Earth Nicola Davies & Emily Sutton</p> <p>Me and My Amazing Body Joan Sweeney & Ed Miller</p> <p>Everyday materials</p> <p>Hansel & Gretel Beth Woollvin</p>	<p>Plants</p> <p>The Tin Forest Helen Ward & Wayne Anderson</p> <p>The Night Flower Lara Hawthorne</p> <p>Living things and their habitats</p> <p>Dear Greenpeace Simon James</p> <p>Animals including humans</p> <p>The Disgusting Sandwich Gareth Edwards & Hannah Shaw</p> <p>Use of Everyday materials</p> <p>The Great Paper Caper Oliver Jeffers</p>	<p>Light, Dark and Shadows</p> <p>The Dark Lemony Snicket & Jon Klassen</p> <p>Forces and Magnets</p> <p>Up and Down Oliver Jeffers</p> <p>Rocks and Volcanoes</p> <p>The Street Beneath My Feet Charlotte Guillian & Yuval Zommer</p> <p>Plants</p> <p>I Am the Seed that Grew the Tree Fiona Waters & Fran Preston-Gannon</p>	<p>Sound</p> <p>Sounds All Around: The Science of How Sound Works</p> <p>Electricity</p> <p>Oscar and the Bird: A Book About Electricity Geoff Waring</p> <p>Living things and their habitats</p> <p>The Lost Words Jackie Morris & Robert Macfarlane</p>	<p>Earth and Space</p> <p>Planetarium: Welcome to the Museum Roman Prinja</p> <p>Forces</p> <p>The Explorer Katherine Rundell</p> <p>Living things and their habitats</p> <p>Properties and changes of materials</p> <p>Ada Twist, Scientist Andrea Beaty & David Roberts</p>	<p>Animals including humans</p> <p>Marie Curie (Little People, Big Dreams) Isabel Sanchez Vegara</p> <p>Evolution and inheritance</p> <p>Moth: An Evolution Story Isabel Thomas</p> <p>Living things and habitats</p> <p>Animalium Jenny Broom</p> <p>Human body</p> <p>Light</p> <p>How Does a Lighthouse Work? Roman Belyaev</p>

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	<p>Song of the River Joy Cowley & Kimberley Andrews</p> <p><u>Seasonal changes</u></p> <p>Tree: Seasons Come, Seasons Go Patricia Hegarty & Britta Teckentrup</p> <p>Storm Sam Usher</p>	<p>Rosie Revere, Engineer Andrea Beaty & David Robert</p>	<p><u>Animals including Humans- Skeletons</u></p> <p>Book of Bones Gabrielle Balkan & Sam Brewster</p> <p>Information Graphics: Human Body Simon Rogers</p>	<p><u>State of Matter</u></p> <p>The Story of Snow: The Science of Winter's Wonderland Mark Cassino & Jon Nelson</p> <p><u>Animal including Humans</u></p> <p>How Does the Food Chain Work? Baby Professor</p> <p>Gut Garden: A Journey into the Wonderful World of Your Microbiome Katie Brosnan</p>	<p><u>Animals including Humans</u></p> <p>If All the World Were... Joseph Coelho & Allison Colpoys</p>	<p><u>Electricity</u></p> <p>Cool Circuits and Wicked Wires Susan Martineau</p>
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