Science Curriculum at Scargill CE Primary School

Science – Autumn 1						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
<u>Specific area: Understanding the World</u> <u>The world:</u> children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. (Taught throughout the academic year)	<u>Animals, including humans</u> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) <u>Animals not including humans</u> 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 Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	<u>Everyday materials</u> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	<u>Light</u> Recognise that light in order to see things and that Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous Recognise that shadows are formed when the light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change	<u>Animals including humans (teeth and digestion)</u> Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth and their functions	<u>Earth and space</u> Describe the movement of the Earth, and other planets, relative to the sun in the solar system Describe the movement of the Moon relative to the Earth Describe the sun, Earth and Moon as approximately spherical bodies Understand and explain the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	<u>Light</u> Recognise that light appears to travel in straight lines Know that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light sources to our eyes or from light sources to objects and then to our eyes Know that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Science Curriculum at Scargill CE Primary School

Science – Autumn 2						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	<u>Seasonal changes</u> Observe changes across the four seasons. Focus – Autumn/Winter Observe and describe weather associated with the seasons and how the day length varies (To be ongoing throughout the year)		<u>Forces and magnets</u> Compare how things move on different surfaces Notice that some forces need contact between two objects but magnets forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others 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 Describe magnets as having two poles Can predict whether two magnets will attract or repel each other, depending on which poles are facing	<u>States of matter</u> Compare and group materials together, according to whether they are solids, liquids or gases 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 temperature <u>Water cycle</u> Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	<u>Animals including humans</u> Describe the changes as humans develop to old age Draw timelines to indicate stages in the growth and development of humans Describe changes (puberty) and reproduction in some animals. (SRE lessons)	<u>Electricity</u> To recognise and use symbols in a circuit diagram to 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 To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit

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Science – Spring 1						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	<u>Everyday materials</u> Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties	<u>Living things and their habitats</u> Explore and compare the differences between things that are living, dead and things that have never been alive 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 animals and plants, and how they depend on each other	<u>Animals, including humans (muscles and skeletons)</u> Identify that humans and some other animals have skeletons and muscles for support, protection and movement	<u>Sound</u> 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 the pitch of a sound and features of the object that produced it Find patterns between the volume of the sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases	<u>Properties and changes in materials</u> Compare and group together materials based on, hardness, solubility, transparency, thermal and electrical conductivity and magnetism Give reasons, based on evidence/fair tests for particular uses of everyday materials including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes Know that some changes result in new materials and are usually irreversible	<u>Animals including humans</u> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans

Science Curriculum at Scargill CE Primary School

Science – Spring 2						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		<u>Animals, including humans</u> Know that animals, including humans, have offspring which grow into adults. Know and describe the basic needs of animals, including humans, for survival (water, food and air) Understand the importance for humans of exercise, eating the right amounts of different types of food and hygiene	<u>Animals, including humans (nutrition)</u> 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	<u>Electricity</u> Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors	<u>Properties and change in materials</u> Know that some materials will dissolve in a liquid to form a solution and describe how to recover a substance from a solution Know how to separate liquids, solids and gases using methods such as filtering, sieving and evaporating	<u>Evolution and inheritance</u> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants adapt to suit their environment in different ways and that adaptation may lead to evolution

Science Curriculum at Scargill CE Primary School

Science – Summer 1						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	<u>Plants</u> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of common flowering plants, including trees (leaf, flower, petal, blossom, fruit, trunk, branch, stem, roots, bulb, seed)	<u>Plants</u> Observe and describe how seeds and bulbs grow into mature plants Know and describe how plants need water, light and a suitable temperature to grow and stay healthy	<u>Rocks</u> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter	<u>Living things and their habitats</u> Know that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local environment Recognise that environments can change and that this can sometimes pose dangers to living things Explore examples of human impact (both positive and negative) on environments. Eg: littering, deforestation	<u>Living things and their habitats</u> Describe the difference in life cycles of a mammal, an amphibian, an insect and a bird (Draw classification charts) Describe the life process of reproduction in some plants Sexual and asexual reproduction in plants – grow new plants from cuttings	<u>Living things and their habitats</u> Describe how living things are classified into broad groups according to common observable characteristic and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics

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Science – Summer 2						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	<u>Seasonal changes</u> Observe changes across the four seasons. Focus – Spring/Summer <u>Weather</u> Observe and describe weather associated with the seasons and how the day length varies Make links with 'Seasonal Changes'	<u>Living things and their habitats (micro-habitats)</u> Identify and name a variety of plants and animals in their habitats, including micro-habitats 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	<u>Plants</u> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk and flowers Explore the requirements of plants for life 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 and seed dispersal	<u>Animals including humans (food chains)</u> Construct and interpret a variety of food chains, identifying producers, predators and prey	<u>Forces</u> Understand and explain that unsupported objects fall to Earth because of the force of gravity Identify the effects of air resistance, water resistance and friction, that act between a moving surface Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	

Science Curriculum at Scargill CE Primary School

ONGOING THROUGHTOUT THE YEAR Working Scientifcally						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	Ask simple questions recognising that they can be answered in different ways Observe closely, using simple equipment Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions		Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Gathering, recording, classifying and presenting data in a gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identifying differences, similarities or changes related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions or to support their findings		Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs sUing test results to make predictions to set up further comparative and fair tests Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations Identifying scientific evidence that has been used to support or refute ideas or arguments	