



Darley Churchtown CofE Primary School – Curriculum for Science

Long term plan showing coverage of National Curriculum objectives (two-year curriculum cycle due to mixed age classes – where areas of learning are studied in consecutive year groups, the content for the lower year group is taught in Year A)

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1	Living things and their habitats	Materials and states of matter (suitability of materials)		Plants	Materials and states of matter (uses of materials)	Animals including humans
Class 2	Light and sound	Materials and states of matter	Electricity		Living things and their habitats	Animals including humans
Class 3	Forces and magnets	Light and sound	Earth and space	Animals including humans	Evolution and inheritance	Evolution and inheritance

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1	Seasonal changes	Animals including humans (human aspect)	Animals including humans (naming and grouping)	Plants	Materials and states of matter	
Class 2	Forces and magnets	Rocks	Animals including humans		Light and sound	Plants
Class 3	Electricity	Living things and their habitats		Animals including humans	Materials and states of matter	Living things and their habitats

Progression map showing key skills to be taught over the curriculum cycle

Area of study	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	I know how to ask questions, make observations and perform simple tests I know how to gather and record data		I can conduct simple practical enquiries using fair testing, taking accurate measurements and using a range of equipment. I can record and use findings to draw conclusions and answer scientific questions.		I can plan different types of scientific investigate and take measurements with increasing precision and accuracy.	



					I can record data, report findings and identify how scientific evidence has been used to support or refute evidence.	
Plants	I can name common plants, including deciduous and evergreen trees, and describe their structure.	I know how plants grow and the conditions required for them to remain healthy.	I can identify the parts, function and lifecycle of flowering plants; I can investigate water transportation in plants.			
Animals including humans	I can name common animals and identify their type; name carnivores, herbivores and omnivores and compare their structure. I can identify, name and label the basic parts of the human body and link them to senses.	I know animals have offspring and grow into adults; I understand the needs of animals and can describe the importance of living a healthy lifestyle.	I know animals get nutrition from what they eat; I understand that humans and other animals have a skeleton and muscles for movement, support and protection.	I can describe the functions of different parts of the digestive system; I name different types of human teeth and can construct and interpret food chains.	I know how humans change as they age.	I can name the main parts of the human circulatory system; I can describe how nutrients are supported in animals including humans and the impact of diet, exercise, drugs and lifestyle on the human body.
Living things and their habitats		I know the difference between things that are living, dead and have never been alive; I can identify habitats and living things that inhabit them; I can describe a simple food chain.		I can group living things and use classification keys; I recognise that environments change and can threaten living things.	I can describe differences in the lifecycle of a mammal, amphibian, insect and bird; I can describe the process of reproduction in some plants and animals.	I know living things are classified into broad groups; I can give reasons for classifying plants and animals based on characteristics.
Materials and states of matter	I can identify a variety of everyday materials (wood, plastic, glass, metal, water, rock); describe their	I can identify and compare the suitability of different everyday materials; I can change everyday materials by		I can compare materials based on states of matter (liquid, solid, gas); I can observe changes of state and	I can compare materials based on properties (hardness, solubility, transparency, conductivity, magnetism); I can	



	properties and make comparisons.	squashing, bending, twisting and stretching.		link this to the water cycle.	investigate separating materials including through dissolving and condensation and know there are reversible and irreversible changes.	
Light and sound			I know that light is needed to see and dark is the absence of light; I can observe and investigate shows and reflection; I know it is harmful to look at the sun.	I know that sound is vibrations and can investigate how it travels; I can link sound vibrations to pitch and volume.		I know that light appears to travel in straight lines; I can explain why this means shadows have the same shape as the objects that cast them.
Forces and magnets			I can investigate friction and magnetic forces; I know magnets have poles and can repel or attract.		I can explain the force of gravity; I can identify forces including air resistance, water resistance and friction; I know some mechanisms allow a smaller force to have a greater effect (levers, pulleys, gears).	
Electricity				I can construct a simple circuit and investigate how it works; I can recognise conductors and insulators.		I can investigate how voltage affects a circuit and use recognised symbols in a simple circuit diagram.
Other areas of study (no progression)	Seasonal changes: I can name the seasons and describe how day length and weather relates to seasons.		Rocks: I can compare and group different types of rock (igneous, sedimentary, metamorphic); I can explain how fossils are formed and the structure of soil.		Earth and space: I can name and order the planets in our solar system; I can describe the movements of the planets, sun and moon and explain how this causes day and night.	Evolution and inheritance: I know that living things have changed over time; I understand the theory of natural selection and how this may lead to evolution.



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Medium term plan showing objectives taught in each year group

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1	Living things • 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 kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and	Materials (suitability) • 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 shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		Plants • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Materials (uses) • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Animals • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.



	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.					
Class 2	Light - recognise that they need light in order to see things and that dark is the absence of light - 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	Materials - 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	Electricity - identify common appliances that run on electricity - construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers		Living things - recognise 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 and wider environment - recognise that environments can change and	Animals - 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 - identify that humans and some other



	- 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.	which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	- 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 - 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.		that this can sometimes pose dangers to living things.	animals have skeletons and muscles for support, protection and movement.
Class 3	Forces explain that unsupported	Light recognise that light appears to	Earth and space describe the movement of	Animals describe the changes as	Evolution and inheritance	



	objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	travel in straight lines • 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 • 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 • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	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 • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	humans develop to old age.	• 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 are adapted to suit their environment in different ways and that adaptation may lead to evolution.	
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Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1	Seasonal changes - observe changes across the four seasons - observe and describe weather associated with the seasons and how day length varies.	Animals (human aspect) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Animals (classification) - 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)	Plants - 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.	Materials - 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	
Class 2	Forces	Rocks	Animals		Sound	Plants



	• compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic 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	• 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	• describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey		• 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 a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound	• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and 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,
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	- describe magnets as having two poles - predict whether two magnets will attract or repel each other, depending on which poles are facing.				source increases	seed formation and seed dispersal.
Class 3	Electricity - associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit - compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of	Living things - 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 - give reasons for classifying plants and animals based		Animals - 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	Materials - 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 - know that some materials will dissolve in liquid to form a	Living things - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird - describe the life process of reproduction in some plants and animals.



	buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram.	on specific characteristics		• describe the ways in which nutrients and water are transported within animals, including humans.	solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes	
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					• 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.	
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