Christopher Pickering Primary School

Be the Best you can Be!

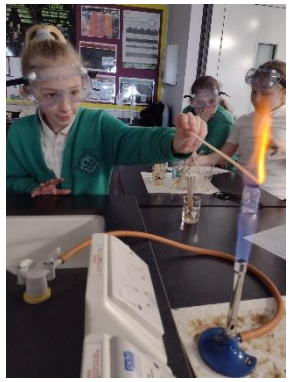
Christopher Pickering Science Progression 2026-2027

Science Progression

EYFS – Year 6







The intention for our young Scientists:
Through building up a body of key foundational knowledge and concepts, all pupils will be enthused about science and learning about the world we live in. By working together on a hands on, enquiry based approach, pupils will have the opportunity to become the scientists of the future. The science curriculum will: • encourage pupils to recognise the power of rational explanation • develop pupils' sense of excitement • develop pupils' curiosity about natural phenomena • Encourage pupils to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Working Scientifically Progression (Disciplinary Knowledge)

<table>
<tr><th colspan="7">Working Scientifically</th></tr>
<tr><td></td><td colspan="2">KS1 NC Working Scientifically</td><td colspan="2">Lower KS2 NC Working Scientifically</td><td colspan="2">Upper KS2 NC Working Scientifically</td></tr>
<tr><td></td><td colspan="2">During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content by:
asking simple questions and recognising that they can be answered in different ways
observing closely, using simple equipment
performing simple tests
identifying and classifying
using their observations and ideas to suggest answers to questions
gathering and recording data to help in answering questions</td><td colspan="2">During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:
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 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.</td><td colspan="2">During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:
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
using 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 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.</td></tr>
<tr><td></td><td>Year 1</td><td>Year 2</td><td>Year 3</td><td>Year 4</td><td>Year 5</td><td>Year 6</td></tr>
<tr><td>Asking and answering questions</td><td>Use everyday language/begin to use simple scientific words to ask or answer a scientific question</td><td>Suggest ideas, ask simple questions and know that they can be answered/ investigated in different ways including simple secondary sources, such as books and video clips.</td><td>Use ideas to pose questions, independently, about the world around them.</td><td>Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT.

Answer questions using straight forward scientific evidence.</td><td>Raise different types of scientific questions, and hypotheses.</td><td>Pose/select the most appropriate line of enquiry to investigate scientific questions.</td></tr>
</table>

Christopher Pickering Primary School Science Progression 2026 - 2027

Making predictions	Begin to say what might happen in an investigation.	Begin to make predictions.	Make predictions and begin to give a reason.	Make predictions and give a reason using simple scientific vocabulary.	Make predictions and give a reason using scientific vocabulary.	Make predictions and give a reason using scientific vocabulary. Base predictions on findings from previous investigations
Making observations	Observe objects, materials and living things and describe what they see.	Observe something closely and describe changes over time.	Make decisions about what to observe during an investigation.	Make systematic and careful observations.	Plan and carry out comparative and fair tests, making systematic and careful observations.	Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
Equipment and measurements	Use simple, nonstandard equipment and measurements in a practical task.	Use simple equipment, such as hand lenses or egg timers to take measurements, make observations and carry out simple tests.	Take accurate measurements using standard units.	Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.	Take measurements using a range of scientific equipment with increasing accuracy and precision.	Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking Science Working Scientifically Skills Progression results with additional readings.
Identifying and classifying	Sort and group objects, materials and living things, with help, according to simple observational features	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns.	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.	Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys.	Use and develop keys to identify, classify and describe living things and materials.	Identify and explain patterns seen in the natural environment.
Engaging in practical enquiry (investigating)	Follow instructions to complete a simple test individually or in a group.	Do things in the correct order when performing a simple test and begin to recognise when something is unfair.	Discuss enquiry methods and describe a fair test.	Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.	Plan a range of science enquiries, including comparative and fair tests.	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests
Recording and reporting findings	Begin to record simple data. Talk about their findings and explain what they have found out.	Gather data, record and talk about their findings, in a range of ways, using simple scientific vocabulary.	Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts.	Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models.	Choose the most effective approach to record and report results, linking to mathematical knowledge.
Drawing conclusions	Explain, with help, what they think they have found out.	Use simple scientific language to explain what they have found out.	Draw, with help, a simple conclusion based on	Use recorded data to make predictions, pose new questions and suggest	Use a simple mode of communication to justify	Identify validity of conclusion and required

			evidence from an enquiry or observation.	improvements for further enquiries.	their conclusions on a hypothesis. Begin to recognise how scientific ideas change over time.	improvement to methodology. Discuss how scientific ideas develop over time.
Analysing data Evaluating and raising further questions and predictions	Use every day or simple scientific language to ask and/or answer a question on given data.	Identify simple patterns and/or relationships using simple comparative language.	Gather, record and use data in a variety of ways to answer a simple question.	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings.	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 1				
	Biology		**Chemistry**	**Physics**
	Animals including Humans	**Plants**	**Everyday Materials**	**Seasonal Changes**
National Curriculum Objectives	• 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) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	• 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.	• 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.	• observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies.
Curricular Goals	To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals including carnivore's, herbivores and omnivores To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	To 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	To identify, name and describe a number of everyday materials and their properties. To distinguish between an object and the material from which it is made and compare and group materials based on their simple physical properties.	To observe and describe changes across the four seasons including the changes in weather and how the day length varies
Substantive Knowledge	There are many different animals with different characteristics. Animals including humans have senses to help individuals survive.	Plants grow from seeds/bulbs Plants need light and water to grow and survive	There are many different materials that have different describable and measurable properties.	Weather can change There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc.

Christopher Pickering Primary School Science Progression 2026 - 2027

	When animals sense things they are able to respond. Animals including humans need food to survive. Animals including humans need a variety of food to help them grow, repair their bodies, be active and stay healthy.	Evergreen trees keep their leaves all year Deciduous trees lose their leaves in autumn Plants are important We can eat lots of plants	Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass) The properties of a material determine whether they are suitable for a purpose.	Days are longer and hotter in the summer Days are shorter and colder in the winter There are four seasons: Spring, Summer, Autumn, Winter
Vocabulary	Biology, Fish, reptiles, mammals, birds, amphibians *Mammals – human, squirrel, dolphins, fox, dog. deer* *Birds – robin, parrot, duck* *Fish – goldfish, shark, salmon* *Reptiles – snake, lizard* *Amphibians – toad, frog, newt* *Insects – bees, ladybirds, spiders, ants)* herbivore, omnivore, carnivore, cold blooded, warm blooded Animal, Fin, Claw, Tail, Antlers, Tusks, Wings, Beaks, Scales, Fur, Feathers, Horns, Hoof Human, body, Head, Neck, Ear, Mouth, Teeth, Eye, Nose, Shoulder, Arm, Elbow, Hand, Fingers, Thumb, Leg, Foot, Knee, Toes, Bottom Senses, touch, taste, smell, hearing, sight, see	Biology, Deciduous, evergreen trees, leaves, flowers, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem Plant, shoot, blossom, conditions, sunlight, water, soil, garden, wild plants, crop, field, harvest, rotation. Wild plants/flowers: Daisy Buttercup Nettle Clover Dandelion Grass Garden plants/flowers: Tulips Daffodils Rose Pansy Trees: Holly Silver birch Conifer Fir Horse Chestnut Crops: Potato Apple Tomato Bean Cress	Wood, plastic, glass, paper, water, metal, rock, hard, soft, bendy, rough, smooth (+examples of each)	Summer, spring, autumn, winter, sun, day, moon, night, light, dark, weather, rain, sun, cloud, snow, wind, temperature, hot, cold, warm, freezing

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 1 Enquiries				
	Do all animals eat the same food?	How does my bean change each week?		How does the oak tree change over the year? In which season does it rain the most? Does the wind always blow the same way? In which season is it the warmest?
	Do we get taller as we get older?	If plants need water could we grow cress in water but no soil?	Is there a pattern to the types of materials that are used to make objects in school?	Do trees with bigger leaves lose their leaves first in autumn?
	What are the names for all of the parts of our body?	How can we sort the flowers and leaves we find?	What is each object and what is it made from?	Which objects do you find in which season?
	Is our sense of smell better when we can't see?	In which conditions do plants grow best?	Which materials are the most flexible? Which materials are the most absorbent? Why are windows hard and transparent?	Which tree has the biggest leaves?
	To identify and describe the life, works and impact on the world of Sir David Attenborough			How do animals survive in winter?

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 2				
	Biology			Chemistry
	Animals including Humans	Plants	Living Things and their Habitats	Everyday Materials
National Curriculum Objectives	• 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.	• 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.	• 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 animals in their habitats, including microhabitats • 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.	• 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.
Curricular Goals	To understand that animals have humans have offspring which grow into adults and to identify the basic needs or survival for animals. To identify and describe how and why humans can stay healthy and hygienic.	To observe and describe how seeds and bulbs grow into mature plants. To identify and describe what plants need to survive and stay healthy	To identify and name a range of habitats and understand that most things live in habitats and describe how different habitats provide different things for animals to survive To describe how animals obtain their food using the idea of a food chain	To identify and compare the suitability of a variety of materials To describe how the shapes of solid objects made by some materials can change form
Substantive Knowledge	Animals move in order to survive. Different animals move in different ways to help them survive. Exercise keeps animal's bodies in good condition and increases survival chances. All animals eventually die. Animals reproduce new animals when they reach maturity. Animals grow until	Plants grow from seeds/bulbs Plants need light, water and warmth to grow and survive Flowers make seeds to make more plants (reproduce) Plants are important We need plants to survive (to clean air, to eat)	Some things are living, some were once living but now dead and some things never lived. There is variation between living things. Different animals and plants live in different places. Living things are adapted to survive in different habitats. Environmental	Materials can be changed by physical force (twisting, bending, squashing and stretching) Different materials are suited to different purposes Glass is made from glass because it is transparent, hard and waterproof

	maturity and then do not grow any larger.	We can eat different parts of the plants (leaves, stems, roots, seeds, fruit)	change can affect plants and animals that live there	
Vocabulary	Survival, water, air, shelter, food, stage of life, adult, baby, toddler, child, teenager, offspring, exercise, hygiene, healthy,movement, heartbeat, pulse, energy, breath, warmer, heart rate, sugar content, sugar cubes, Florence Nightingale, overweight, obese, tooth decay. Caterpillar – butterfly Owlet – owl Kitten – cat Hatchling – snake Foal -horse Tadpole – frog Duckling – duck Puppy - dog	Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, petal, deciduous, evergreen, observe, grow, compare, record, temperature, predict, measure, diagram, germinate, warmth, seedlings, sunlight, comparative test, life cycle, grain, weather, hot, cold. Plants that we eat: Crops: Barley Wheat Corn Underground: Carrot Overground: Lettuce Tree: Orange Vines/bushes: Peas Flowers/plants: Honeysuckle Lavender Fuschia Hydrangea Trees: Oak Willow Sycamore Beech Cyprus	Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, seashore, woodland, ocean, rainforest, conditions, desert, damp, shade,	Waterproof, fabric, rubber, cars, rock, paper, cardboard, wood, metal, plastic, glass, brick, twisting, squashing, bending, matches, cans, spoons,

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 2 Enquiries				
	How much food and drink do I drink over a week? What happens to our bodies when we exercise?	How do my peas grow over time?		
	Do colourful drinks contain more sugar?	Do bigger seeds and bulbs grow into bigger plants?	Which microhabitat do worms prefer?	
	How can we sort and classify animals and their offspring? Can we categorise them in any other way?		How can we classify and group animals from different habitats?	Which materials are shiny and which materials are dull? Have they found a pattern between the uses of materials?
	Do we get stronger as we get older? Do bananas make us run faster?	Which conditions do plants grown best?		Which material is best suited?
	Do all animals have the same senses as humans? Why is Florence Nightingale so significant and what has she done for us?	Research Agnes Arber, her life and what she achieved and how her work has helped us today	What is it like in your chosen habitat?	What has John McAdam done for us?

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 3					
	Biology		**Chemistry**	**Physics**	
	Animals including Humans	Plants	Rocks	Light	Forces and Magnets
National Curriculum	• 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 animals have skeletons and muscles for support, protection and movement.	• 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, seed formation and seed dispersal.	• 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	• 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 • 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.	• 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 • describe magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Curricular Goals	To identify that animals and humans need the right type of nutrition, and that they cannot make their own and they get nutrition from what they eat To identify that humans and some other animals have skeletons and muscles for support, protection and movement.	To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers To 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 Explore the part that flowers play in the life cycle of flowering	To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties To describe in simple terms how fossils are formed when things that have lived are trapped within rock To recognise that soils are made from rocks and organic matter	To recognise that they need light in order to see things and that dark is the absence of light To 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 To recognise that shadows are formed when the light from a light source is blocked by an opaque object and to find	To compare how things move on different surfaces and identify that some forces need contact but magnetic forces can act at a distance. To observe how magnets attract or repel each other and attract some materials and not others To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and

		plants, including pollination, seed formation and seed dispersal. To investigate the way in which water is transported within plants		patterns in the way the size of shadows change	identify some magnetic materials and predict whether two magnets will attract or repel.
Substantive Knowledge	Different animals are adapted to eat different foods. Many animals have skeletons to support their bodies and protect vital organs. Muscles are connected to bones and move them when they contract. Movable joints connect bones	Plants are producers, they make their own food. Their leaves absorb sunlight and carbon dioxide Plants have roots, which provide support and draw water from the soil Flowering plants have specific adaptations which help it to carry out pollination, fertilisation and seed production Seed dispersal improves a plants chances of successful reproduction Seeds/bulbs require the right conditions to germinate and grow Seeds contain enough food for the plant's initial growth	There are different types of rock. There are different types of soil. Soils change over time. Different plants grow in different soils. Fossils tell us what has happened before. Fossils provide evidence. Palaeontologists use Fossils to find out about the past. Fossils provide evidence that living things have changed over time.	There must be light for us to see. Without light it is dark. We need light to see things even shiny things. Transparent materials let light travel through them, and opaque materials don't let light through. Beams of light bounce off some materials (reflection). Shiny materials reflect light beams better than non-shiny materials. Light comes from a source	Magnets exert attractive and repulsive forces on each other. Magnets exert non-contact forces, which work through some materials. Magnets exert attractive forces on some materials. Magnet forces are affected by magnet strength, object mass, distance from object and object material
Vocabulary	Nutrients, nutrition, carbohydrates, protein, fats, vitamins, minerals, water, fibre, skeleton, bones, joints (ball and socket, hinge, gliding), endoskeleton, exoskeleton, hydrostatic skeleton, Diet, vertebrates, invertebrates, muscles, contract, relax, Survival Scientific names for bones Movement, organs. Marie Curie	Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, flower, energy, growth, seedling, carbon dioxide, oxygen, sugar, material, photosynthesis, chlorophyll, seed formation, stamen, styll, stigma, fertiliser, pollen, nectar, roots, stem, trunk, flowers, support, germinate White carnation Celery Tulip Sunflower seeds	Rocks, igneous, metamorphic, sedimentary, permeable, impermeable, chemical fossil, property, body fossil, trace fossil, Mary Anning, cast fossil, mould fossil, replacement fossil, extinct, organic matter, topsoil, sub soil, base rock, formation, cliffs, hills, mountains, quarry, particles, landscape, volcano Granite Chalk Limestone Sand Slate Marble	Light source, dark, reflect, ray, mirror, bounce, visible, beam, sun, glare, travel, straight, opaque, shadow, block, transparent, translucent, retroreflective, natural, artificial, surface, torch, battery, glasses, dangerous. Justus Von Liebig	Force, push, pull, friction, surface, magnet, magnetic, magnetic field, pole, north, south, attract, repel, compass, iron fillings, bar magnet, ring magnet

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 3 Enquiries					
		How is water transported through a plant? Does the size if the seed affect the size of the plant?	Which soil type supports healthy plant growth?	How do shadows change over time?	
	Are all skeletons the same?	Do all plants require the same conditions to grow?	Is all soil the same?	How do different mirror types reflect?	Are bigger magnets stronger? How can we position magnets to create different patterns using their poles?
	Which foods contain which nutrients? What are the different skeleton types and why are they significant?	Provide children with a variety of flowering plants to identify using the classification key	How are rocks classified?	What is a light source? What materials are opaque, transparent, and translucent?	Which materials are magnetic?
	Do people with a longer femur jump further?	What conditions are best for a plant to grow?	Do all rocks have the same properties?	What types of materials are most reflective?	How does friction affect speed?
	Who was Marie Curie and what did she discover?	How do plants pollinate? Who was Joseph Banks?	What is a fossil? Who is Mary Anning?	Who is Justus Von Liebig?	How are magnets used in everyday life?

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 4					
	Biology		**Chemistry**	**Physics**	
	Animals including Humans	Living things and their Habitats	States of Matter	Electricity	Sound
National Curriculum	• 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 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, seed formation and seed dispersal.	• 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 (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	• 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 • 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.	• 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 source increases.
Curricular Goals	To 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 To construct and interpret a variety of food chains, identifying producers, predators and prey	To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers To 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	To compare and group materials together, according to whether they are solids, liquids or gases To 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)	To 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 To identify whether or not a lamp will light in a simple series circuit, based on whether or not	To identify how sounds are made, associating some of them with something vibrating To recognise that vibrations from sounds travel through a medium to the ear

		To 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.	To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	the lamp is part of a complete loop with a battery To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit To recognise some common conductors and insulators, and associate metals with being good conductors.	To find patterns between the pitch of a sound and features of the object that produced it To find patterns between the volume of a sound and the strength of the vibrations that produced it To recognise that sounds get fainter as the distance from the sound source increases.
Substantive Knowledge	Animals have teeth to help them eat. Different types of teeth do different jobs. Food is broken down by the teeth and further in the stomach and intestines where nutrients go into the blood. The blood takes nutrients around the body. Nutrients produced by plants move to primary consumers then to secondary consumers through food chains.	Living things can be divided into groups based upon their characteristics Environmental change affects different habitats differently Different organisms are affected differently by environmental change Different food chains occur in different habitats • Human activity significantly affects the environment	Solids, liquids and gases are described by observable properties. Materials can be divided into solids, liquids and gases. Heating causes solids to melt into liquids and liquids evaporate into gases. Cooling causes gases to condense into liquids and liquids to freeze into solids. The temperature at which given substances change state are always the same.	A source of electricity (mains of battery) is needed for electrical devices to work. Electricity sources push electricity round a circuit. More batteries will push the electricity round the circuit faster. Devices work harder when more electricity goes through them. A complete circuit is needed for electricity to flow and devices to work. Some materials allow electricity to flow easily and these are called conductors. Materials that don't allow electricity to flow easily are called insulators.	Sound travels from its source in all directions and we hear it when it travels to our ears. Sound travel can be blocked. Sound spreads out as it travels. Changing the shape, size and material of an object will change the sound it produces. Sound is produced when an object vibrates. Sound moves through all materials by making them vibrate. Changing the way an object vibrates changes its sound. Bigger vibrations produce louder sounds and smaller vibrations produce quieter sounds. Faster vibrations (higher frequencies) produce higher pitched sounds
Vocabulary	Herbivore, Carnivore, Digestive system, tongue, mouth, teeth, oesophagus, acid, transports, enzymes, stomach, gall bladder,	Environment, flowering, nonflowering, plants, animals, vertebrates, fish, amphibians, reptiles, mammals, invertebrate,	Solid, liquid, gas, particles, state, materials, properties, matter, melt, freeze, water, ice, temperature, process,	Electricity, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer,	Amplitude, volume, quiet, loud, ear, pitch, high, low, particles, instruments, wave.

Christopher Pickering Primary School Science Progression 2026 - 2027

	small intestine, pancreas, large intestine, saliva, liver, tooth, canine, incisor, molar, premolar, wisdom teeth, milk teeth, pulp, enamel, root ,gum, producer, consumer, organs, glands	human impact, nature reserves, deforestation.	condensation, evaporation, water vapour, energy, precipitation, collection,	switch, conductor, electrical insulator, component.	
Year 4 Enquiries					
	What happens to our teeth when we drink different liquids?	How does the impact of a changing environment affect the insect population over time?	How does the size of an ice cube effect how quickly it melts?	How does a bulb dim over time?	Does sound within the school change at different parts of the day?
	Do all animals including humans have the same digestive systems?	What environmental factors influence bee populations?	Do materials all melt at the same temperature?	Why do we have different types and sizes of battery?	What is best way to make sound travel?
	What is the function of each part of the digestive system?	How are living things grouped?	Which materials are liquids, solids, and gases?	Which objects are powered by electricity?	How does pitch change with different instruments?
	What is the affect of acid on tooth enamel?	How does light affect the activity of woodlice?	To investigate the effect of a mass of a solid in terms of time taken for it to change state.	Can any material complete a circuit?	What is the best material to sound proof a room?
	Who was Gerald Durrell? What does a food chain look like in a variety of ecosystems?	What is the impact of humans and changes in the rainforest having on living things?	Do materials all freeze at the same temperature?	How is electricity generated? Who was Thomas Edison?	Who was Alexander Graham Bell

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 5					
	Biology		**Chemistry**	**Physics**	
	Animals including Humans	Living things and their Habitats	Properties and Changes in Materials	Earth and Space	Forces
National Curriculum	• Describe the changes as humans develop to old age.	• 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.	• 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 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 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.	• 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 • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	• explain that unsupported 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.

Christopher Pickering Primary School Science Progression 2026 - 2027

Curricular Goals	To describe the changes as humans develop to old age.	To 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.	To 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 To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic To demonstrate that dissolving, mixing and changes of state are reversible changes 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.	To describe the movement of the Earth, and other planets, relative to the Sun in the solar system To describe the movement of the Moon relative to the Earth To describe the Sun, Earth and Moon as approximately spherical bodies To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object To identify the effects of air resistance, water resistance and friction, that act between moving surfaces To rtecognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
Substantive Knowledge	Different animals mature at different rates and live to different ages. Puberty is something we all go through, a process which prepares our bodies for being adults, and reproduction Hormones control these changes, which can be physical and/or emotional.	Different animals mature at different rates and live to different ages. Some organisms reproduce sexually where offspring inherit information from both parents. Some organisms reproduce asexually by making a copy of a single parent. Environmental change can affect how well an organism is suited to its environment. Different types of organisms have different lifecycles.	When two or more substances are mixed and remain present the mixture can be separated. Some changes can be reversed, and some cannot. Materials change state by heating and cooling. All matter (including gas) has mass. Sometimes mixed substances react to make a new substance. These changes are usually irreversible. Heating can sometimes cause materials to change permanently. When this happens, a new substance is made. These changes are not	Stars, planets, and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over distance. Objects with larger masses exert bigger gravitational forces. Objects like planets, moons and stars spin. Smaller mass objects like planets orbit large mass objects like stars. Stars produce vast amounts of heat and light. All other objects are lumps of rock, metal or ice and can be seen	Air resistance and water resistance are forces against motion caused by objects having to move air and water out of their way. • Friction is a force against motion caused by two surfaces rubbing against each other. • Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move

			reversible. Indicators that something new has been made are: The properties of the material are different (colour, state, texture, hardness, smell, temperature) If it is not possible to get the material back easily it is likely that it is not there anymore and something new has been made (irreversible change)	because they reflect the light of stars.	
Vocabulary	Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty, Hormone, Physical, Emotional, life cycle, birth, death, senses, deteriorate, sun damage, wrinkles, skin	Reproduction, Sexual, Asexual, Pollination, Dispersal, reproduction, cell, fertilisation, pollination, male, female, pregnancy, young, mammal, metamorphosis, amphibian, insect, egg, embryo, bird, plant	Solid, liquid, gas, particles, state, materials, properties, matter, melt, freeze, water, ice, temperature, process, condensation, evaporation, water vapour, energy, precipitation, collection, Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing Material, conductor, dissolve, insoluble, suspension, chemical, physical, irreversible, solution, reversible, separate, mixture, insulator, transparent, flexible, permeable, soluble, property, magnetic, hard.	Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, celestial, constellation, waxing, waning, crescent, gibbous. Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, planets, solar system, day, night, rotate, orbit, spherical, geocentric, heliocentric, astronomy, Ptolemy, Galileo, Plato, Aristotle, Pythagoras, Eratosthenes	Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys, force, push, pull, opposing, streamline, brake, mechanism, lever, cog, machine, pulley
Year 5 Enquiries					
	Do all animals have the same gestation period?	How do plants reproduce?		How does the moon change throughout the lunar period?	
	Is there a correlation between birth weight and current height?	Are there any patterns between the lifecycles of different mammals (including monotremes, placentals and marsupials)?	Is there a relationship between conductivity and insulation?	Does the suns position change throughout the day?	
	What are the stages of growth and development in humans?	How do lifecycles of mammals compare to other animals?		How can we group the planets?	
		How are living things affected by changes in conditions?		Does the sun rise and set at the same time every day?	

	Do all mammals have the same life expectancy?	Who is Jane Goodall?		Who was Galileo?	

Christopher Pickering Primary School Science Progression 2026 - 2027

Year 6					
	Biology			**Physics**	
	Animals including Humans	Living things and their Habitats	Evolution and Inheritance	Electricity	Light
National Curriculum	• 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.	• 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 • Give reasons for classifying plants and animals based on specific characteristics.	• 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.	• 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 buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram.	• recognise that light appears to 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.
Curricular Goals	To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	To 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 Give reasons for classifying plants and animals based on specific characteristics.			

Christopher Pickering Primary School Science Progression 2026 - 2027

	To describe the ways in which nutrients and water are transported within animals, including humans.				
Substantive Knowledge	The heart pumps blood around the body. Oxygen is breathed into the lungs where it is absorbed by the blood. Muscles need oxygen to release energy from food to do work. (Oxygen is taken into the blood in the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.)	Variation exists within a population (and between offspring of some plants) – NB: this Key Idea is duplicated in Year 6 Evolution and Inheritance. Organisms best suited to their environment are more likely to survive long enough to reproduce. Organisms are best adapted to reproduce are more likely to do so. Organisms reproduce and offspring have similar characteristic patterns. Competition exists for resources and mates.	Life cycles have evolved to help organisms survive to adulthood. Over time the characteristics that are most suited to the environment become increasingly common. NB: The following could be duplicated in Year 6 Living things and their habitats. Organisms best suited to their environment are more likely to survive long enough to reproduce. Organisms are best adapted to reproduce are more likely to do so. • Organisms reproduce and offspring have similar characteristic patterns. • Variation exists within a population (and between offspring of some plants) • Competition exists for resources and mates	Batteries are a store of energy. This energy pushes electricity round the circuit. When the battery's energy is gone it stops pushing. Voltage measures the 'push.' • The greater the current flowing through a device the harder it works. • Current is how much electricity is flowing round a circuit. • When current flows through wires heat is released. The greater the current, the more heat is released.	Animals see light sources when light travels from the source into their eyes. • Animals see objects when light is reflected off that object and enters their eyes. • Light reflects off all objects (unless they are black). Non shiny surfaces scatter the light, so we do not see the beam. • Light travels in straight lines.
Vocabulary	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle kidneys, bladder, urethra, ureters Oxygenated, Deoxygenated, Valve, Exercise, Respiration Circulatory system, heart, lungs, blood vessels, blood, artery, vein, pulmonary, aorttic, atrium, ventricle.alveoli, capillary, vena cava, digestive, transport, gas exchange, villi, nutrients,	Variation Organisms Populations. Classification Characteristics Environment, flowering, nonflowering, plants, animals, vertebrates, fish, amphibians, reptiles, mammals, invertebrate, human impact, nature reserves, deforestation. Classify, compare, bacteria, microorganism, organism, invertebrates, vertebrates, Linnaean.	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics, Variation, Inherited, Environmental, Mutation, Competition, Survival of the Fittest, Evidence,	Electricity, neutrons, protons, electrons, nucleus, atom, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator, conductors	Light source, dark, reflect, ray, mirror, bounce, visible, beam, sun, glare, travel, straight, opaque, shadow, block, transparent, translucent, opaque, Reflect Absorb, incident ray, law of reflection, angle of reflection, reflected ray, emitted, scattered Refraction, spectrum, prism. Eye, retina, pupil, cornea, iris, lens, sclera, optic nerve Ibn al-haychan

	water, oxygen, alcohol, drugs, tobacco. Alexander Fleming				
Year 6 Enquiries					
	What factors may affect our pulse rate?	What happens to a piece of bread if you leave it on the windowsill for two weeks?			How does light at different times of the day affect the colours we see?
	How can we test the relationship between food intake and energy levels?	Do flowering and non-flowering plants share any characteristics?		What changes or differences occur when adding one component at a time to a circuit? What would happen if the cells or batteries were removed from the series circuit?	Does light travel?
	Which organs of the body make up the circulatory system? What are the risks and effects of taking drugs?	How can plants and trees be identified?			How do prisms effect the way light travels?
	What type of exercise has the greatest affect on my heart rate? Does the length of time exercising affect my heart rate?			How does the voltage in a circuit affects the brightness of bulbs and the loudness of buzzers?	How does the distance from a light source affect the size of a shadow?
	Who was Alexander Flemming?	Who was Carl Linnaeus?		Who was Michael Faraday?	Who was Al-Haytham?