Cyril Jackson Primary School Curriculum Progression

SCIENCE

*Children are expected to know all the language from previous years.

Biology

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals Including Humans	• Explore the natural world around them, making observations and drawing pictures of animals and plants	• Explore the natural world around them, making observations and drawing pictures of animals and plants	• Point out some of the differences between different animals • Describe how an animal is suited to its environment • Point out differences between living things and non-living things • Name the parts of an animal's body • Name a range of domestic animals • Compare the bodies of different animals • Say why certain animals have certain characteristics • Name a range of wild animals	• Describe what animals need to survive • Explain the basic needs of animals, including humans • Explain that animals grow and reproduce • Explain why animals have offspring • Explain that animals reproduce in different ways • Describe the life cycle of some living things eg. egg (frogspawn), tadpole, frog	• Describe how nutrients, water and oxygen are transported within animals and humans • Classify living things and non-living things by a number of characteristics that they have thought of	• Classify living things and non-living things by a number of characteristics that they have thought of • Give reasons for how they have classified animals and plants, using their characteristics and how they are suited to their environment • Name and group a variety of living things based on feeding patterns - producer, consumer, predator, prey, herbivore, carnivore, omnivore • Compare the teeth of herbivores and carnivores • Explain what a simple food chain shows • Explain how certain living things depend on one another to survive		• Compare the organ systems of humans to other animals
Humans			• Name the parts of the human body that they can see • Identify the main parts of the human body and link them to their senses • Name some parts of the human body that cannot be seen	Describe why exercise and a balanced diet are important for humans	• Explain the importance of a nutritious balanced diet • Describe and explain the skeletal system of a human • Describe and explain the muscular system of a human • Explain how the muscular and skeletal systems work together to create movement	• Identify and name the basic parts of the human digestive system • Describe the function of the organs of the human digestive system • Identify the simple function of different types of human teeth		• Identify and explain the function of the organs of the human circulatory system - heart, blood vessels, blood, blood pressure, clotting • Identify and explain the function of the organs of the human gaseous exchange system - lungs, nose, throat, bronchi, bronchial tubes, diaphragm, ribs, breathing • Name the major organs in the human body • Locate the major human organs • Make a diagram that outlines the main parts of a body • Make a diagram of the human body and explain how different parts work and depend on one another • Explore the work of medical pioneers - eg. William Harvey and Galen - recognise how much we have learned about the human body
Variation and classification			• Sort some animals by body covering - scales, fur and skin • Sort some animals on a simple branching diagram • Classify animals by what they eat - carnivore, herbivore, omnivore • Sort photographs of living things and non-living things • Classify common animal - birds, fish, amphibians, reptiles, mammals, invertebrates • Begin to classify animals according to a number of given criteria					
Habitats					• Explain how people, weather and the environment can affect living things • Explain how certain living things depend on one another to survive			
Vocabulary*	similar, different, baby, chick, hatch, warm, adult, food	similar, different, baby, chick, hatch, warm, adult, food	carnivore, herbivores, omnivores, pets, young, old, mammals, amphibians, fish, reptiles, birds, common animals, humans neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth	survival, water, air, food, adult, baby, teenager, Offspring, kitten, calf, puppy, exercise, hygiene, reproduce, offspring, life-cycle, balanced diet, nutrition	nutrition, making own food, not making own food, eating/eat, skeletons, muscles, support, protection, support, movement, skull, jaw, ribs/ribcage, ulna, radius, tibia, fibia, contract, relax, bend, twist, pull, push, exercise, running, walking, food groups-fats, sugars, proteins carbohydrates, vitamins, minerals	function, digestive system, humans, mouth, tongue, teeth, oesophagus, swallow, stomach, small intestine, large intestine, anus, rectum, waste, faeces, liver, bile, water, saliva, salivary glands, vitamins, minerals, canine, incisors, pre-molars, molars, baby/milk teeth, wisdom teeth, grind, tear, rip, chew, food chain, producers, predators, prey, carnivores, herbivores, omnivores, damages to teeth, decay, gums, gum disease, sugar, dental hygiene/health		drugs, atriums, human, circulatory system, blood vessels, nutrients digestive system, cardiovascular ultrasound, cardiologists, capillaries pulse, ventricles, arteries, veins, heart, oxygen, carbon dioxide, lungs nutrients, water, lifestyle, addiction disease, medicine, alcohol, cigarettes stimulant, depressant, analgesic, hallucinogen

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SCIENCE

Biology

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evolution and Inheritance								• Give reasons for why living things produce offspring of the same kind • Give reasons for why offspring are not identical with each other or with their parents • Explain the process of evolution and describe the evidence for this • Begin to appreciate that variation in offspring over time can make animals more or less able to survive in particular environments • Explain how some living things adapt to survive in extreme conditions • Analyse the advantages and disadvantages of specific adaptations - eg. the benefit of two rather than four feet • Talk about the life of Charles Darwin • Begin to understand what is meant by DNA
Vocabulary*								adaptation, ancestor, biodiversity, biome, evolution, extinct, fossil, generation, inherit, maladaptation, mutation, natural selection, offspring, paleontology, species, survive, variation, characteristics, vary, Charles Darwin, habitat, DNA

Biology

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living Things and their Habitats	• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class	• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class		**Life processes and living things** • Match certain living things to the habitats they are found in • Explain the differences between living and non-living things • Decide if something is living, dead or non-living • Describe some of the life processes common to plants and animals, including humans **Variation and classification** • Classify living things into groups according to a range of criteria they have been given • Sort living things into groups and say why they sorted them in that way • Compare how plants grow in different conditions by making measurements • Identify and compare a variety of plants and animals found in different habitats and micro-habitats • Explain how animals get their food and draw a simple food chain **Habitats** • Describe how a habitat provides for the basic needs of things living there • Describe a range of different habitats • Describe how plants and animals are suited to their habitat • Name some characteristics of an animal that help it to live in a particular habitat • Describe what animals need to survive and link this to their habitats • Collect weather data about a local habitat - use it to explain the plants and animals they will find there		**All living things** • Use a classification key to group a variety of living things - plants, vertebrates, invertebrates • Compare the classification of common plants and animals to living things found in other places - under the sea, prehistoric • Explore the work of pioneers in classification eg. Carl Linnaeus **Habitats** • Recognise that environments can change and this can sometimes pose a danger to living things • Explain how people, weather and the environment can affect living things	**All living things** • Describe and compare the life cycles of a range of animals, including humans, amphibians, insects and birds • Describe the life cycles of common plants • Describe and explain the process of respiration in humans and plants • Talk with knowledge about birth, reproduction and death of familiar animals or plants • Explore the work of well know naturalists - e.g. David Attenborough **Habitats** • Observe their local environment and draw conclusions about life-cycles - e.g. a vegetable garden or plants in a shrubbery • Compare the life cycles of plants and animals in their local environment with the life cycles of those around the world, e.g. rainforests	**All living things** • Explain the classification of living things into broad groups based on common observable characteristics - five kingdoms of all living things, vertebrates, mammals, marsupials • Sub-divide their original groupings and explain their divisions • Group animals into vertebrates and invertebrates • Group animals into reptiles, fish, amphibians, birds and mammals • Explain why classification is important
Vocabulary*	Home, safe, animals, people, family, warm, cold,	Home, safe, animals, people, family, warm, cold,		living, dead, never4 been alive, life processes, healthy, habitats, environment/local environment, basic needs, depend, names of animals and plants, micro-habitats, grass, water, survive, air, security, food, shelter, urban, food chain, sources of food, characteristics, urban habitat, rural habitat, arctic habitat, pond habitat, forest/wood habitat, stones, soil, logs, wood, leaves, litter, pollution, adaptations		Plants, flowering/non – flowering plants, grasses, ferns, mosses, animals – fish, amphibians, reptiles, birds, mammals, vertebrates, invertebrates, snails, slugs, worms, spiders, insects, living things, non-living things, dead, never have been alive, grouping, classify/classification, local environment, changing environments, pollution, waste, dangers to environment, yearly and seasonal changes to environments, human, impact on environment, nature reserves, ecological plans, parks, gardens, ponds, housing developments, litter, forest/deforestation, adaptations	Life-cycles, mammals, amphibian, insect, bird, grow/growth, reproduction: sexual and asexual, local environment, seasonal changes, animal behavior, naturalists, David Attenborough, Jane Goodall, rainforests, oceans/seas, deserts, prehistoric, seeds, stem, roots/root cuttings, tubers/bulb/s, adaptations	Living things, classified/classification, sorting, broad groups, common observable characteristics, similarities and differences, microorganisms, plants, animals, sub-division, invertebrates, vertebrates, environment, habitats, interdependence, adaptations

Biology

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	• Plant seeds and care for growing • Understand the key features of a life-cycle of a plant and an animal	• Plant seeds and care for growing • Understand the key features of a life-cycle of a plant and an animal	• Name the petals, stem, leaf and root of a plant • Identify and name a range of common plants and trees • Recognise deciduous and evergreen trees • Describe the parts of a plant - roots, stem, leaves, flowers • Name the main parts of a flowering plant **Variation and classification** • Sort some plants by size • Sort some plants by those that can be eaten and those that cannot	• Describe what plants need to survive • Describe how seeds and bulbs grow into plants • Describe what a plant needs to grow and stay healthy • Explain that plants grow and reproduce • Describe what plants need to survive and link it to where they are found • Explain that plants grow and reproduce in different ways	• Identify and describe the functions of different parts of plants - roots, stem, leaves and flowers • Classify a range of common plants according to many criteria - environment found, size, climate required, etc. • Identify what a plant needs for life and growth • Describe the ways in which nutrients, water and oxygen are transported within plants • Investigate the way in which water is transported within plants • Explain how the needs and functions of plant parts vary from plant to plant eg, insect and wind pollinated plants • Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and speed dispersal			
Vocabulary*	Water, soil, sun, leaf, roots, food, flowers, seeds, fruit, vegetable, grow	Water, soil, sun, leaf, roots, food, flowers, seeds, fruit, vegetable, grow	Common, wild plants, garden, plants tree, deciduous, evergreen, trunk branches, leaf, root, plant, leaf, bud, flowers, blossom, petals, root, stem, fruit, vegetables, bulb, seed	Observe, describe, record, seed/s bulb/s, plants, tree, bush, growth, germinate, healthy, survival, survive, water, air, sun, energy, temperature, soil, compost, nutrients, food, roots, stem, trunk, flower, petal, leaf/leaves, local, environment, seasons, year, weather, reproduction	common wild plants, garden plants, deciduous, evergreen tree, trunk, branches, leaf, root, plant, leaves, bud, flowers, blossom, petal, stem fruit, vegetables, bulb, seed, climate, life, growth, nutrients, transported, insect pollination, seed formation, seed dispersal, oxygen, carbon dioxide, flowers			

Cyril Jackson Primary School Curriculum Progression

SCIENCE

		Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Chemistry	Properties and changes of Material	• Use all their senses in hands – on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about the differences between materials and changes they notice	• Talk about the differences between materials and changes they notice	**Changing materials** • Explain what happens to certain materials when they are heated, e.g. bread, ice, chocolate • Explain what happens to certain materials when they are cooled, e.g. jelly, heated chocolate				**Properties and changes to materials** • Test and group materials based on scientific evidence - hardness, solubility, transparency, conductivity, insulation, magnetism • Work out which materials are most effective for keeping us warm or for keeping something cold • Explain the process of dissolving • Recover a substance from a solution • Decide how a mixture would best be separated - filtering, sieving, evaporating • Describe methods for separating mixtures - eg. filtration, distillation • Give reasons for the uses of everyday materials based on scientific evidence • Show what they know about the properties of different material • Use their knowledge of materials to suggest ways to classify - solids, liquids, gasses • Describe changes using scientific words - evaporation, condensation • Use the terms 'reversible' and 'irreversible'	
	Vocabulary*	Hard, soft,	Hard, soft, change, stretch, break,	Heat, change, transform, melt, freeze, solid, liquid, runny, stiff, ape				States of matter, solid, liquid, gas, air, oxygen, powder, granular/grain, crystals, change state, ice/water/steam, water vapour, heating, cooling, temperature, degrees Celsius, melt, freeze, solidify, melting point, boil, boiling point, evaporation, condensation, water cycle, precipitation, transpiration	
Chemistry	Rocks and Soil	• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about the differences between materials and changes they notice • Talk about what they see, using a wide vocabulary.	• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about the differences between materials and changes they notice			• Compare and group together different rocks based on their simple physical properties • Describe and explain how different rocks can be useful to us • Describe and explain the differences between sedimentary and igneous rocks, considering the way they are formed • Describe how fossils are formed within sedimentary rock • Classify igneous and sedimentary rocks • Begin to relate the properties of rocks with their uses			
	Vocabulary*	Hot, sink, float, wood, metal, paper, rock, soft, glass, shiny, melt, freeze, push, pull	Hot, heat, cool, cold, Float, sink, plastic, wood, plasticine, metal, paper, fabric Material, rock, hard, glass, soft, paper, fabric, material, smooth, shiny, rough, freeze, melt, change, push, pull, transform			Rock, stone, pebble, boulder, soil, fossils, grains, crystals, texture, absorb water, let water through, marble, chalk, granite, sandstone, slate, sandy soil, clay soil, chalky soil, peat, sedimentary, igneous rocks, form			
Chemistry	Seasonal Change		• Understand the effect of changing seasons on the natural world around them. • Describe what they see, hear and feel whilst outside.	**Light** • Identify and name sources of light • Identify and name sources of light that we can see • Explain what darkness is • Compare sources of light - brightest, dullest, darker, lighter • Observe and describe shadows during the day • Describe changes in light that result from actions • Describe how light and temperature are different during the night and day • Know that the sun lights up the earth • Stay safe when observing the sun • Describe how the sun moves across the sky • Know that the sun moves across the sky during the day • Explain why they can't see stars during the day					
	Vocabulary*		Season, autumn, spring, summer, winter. Months of the year, changes, weather, hot, cold, warm, frost, ice, sun, wind, rain, heat	summer, day, Spring, dark, Autumn, light, Winter, night, Season, Moon, Sun, lighter, darker, shadow,					

Chemistry

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
States of Matter	• Talk about the differences between materials and the changes they notice	• Talk about the differences between materials and the changes they notice				• Compare and group materials based on their states of matter, e.g. liquid, solid or gas • Explain what happens to materials when they are heated or cooled • Measure the temperature at which different materials change state • Group and classify a variety of materials according to the impact of temperature on them • Use measurements to explain changes to the state of water • Explain the importance that evaporation and condensation have in the water cycle • Explain what happens over time to materials such as puddles on the playground or washing hanging on a line • Relate temperature to change of state of materials		
Vocabulary*	Hard, soft, change, stretch, melt, freeze	Hard, soft, change, stretch, melt, freeze, solid, liquid				plus rigid, hard, soft, stretchy, flexible, waterproof, absorbent, electrical/thermal conductivity, melting, dissolve, solution, insoluble, solute, solvent, particle, mixture, filtering, sieving, residue, reversible/non reversible, plus rigid, hard, soft, stretchy, flexible, waterproof, absorbent, electrical/thermal conductivity, melting, dissolve, solution, insoluble, solute, solvent, particle, mixture, filtering, sieving, residue, reversible/non reversible changes, new material, burning, rusting reversible changes, new material, burning, rusting		

Chemistry

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Uses of Everyday Materials	• Use all their senses in hands – on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about the differences between materials and changes they notice	• Talk about the differences between materials and changes they notice	**Classifying and grouping materials** • Describe materials using their senses • Describe materials using their senses, using specific scientific words • Explain what material objects are made from • Explain why a material might be useful for a specific job • Name some different materials • Sort materials into groups by a given criteria • Explain how solid shapes can be changed by squashing, bending, twisting and stretching • Describe things that are similar and different between materials	**Classifying and grouping materials** • Distinguish between an object and the material from which it is made • Identify and name a range of everyday materials - wood, plastic, metal, water, rock • Describe the simple physical properties of a variety of everyday materials • Compare and classify a variety of materials based on their simple physical properties • Describe the properties of different materials using words like transparent, opaque, rigid, flexible etc. • Sort materials into groups and say why they have sorted them in that way • Say which materials are natural and which are man-made **Changing materials** • Find out about people who developed useful new materials – Dunlop (rubber), Mackintosh (raincoats), McAdam (road surfaces) • Identify and compare the uses of a range of everyday materials - wood, metal, plastic, glass, brick, rock, paper, cardboard • Explain how things move on different surfaces • Explore how the shapes of solid objects can be changed - squashing, bending, twisting, stretching • Explain how materials are changed by bending, twisting and stretching • Explain how materials are changed by heating and cooling • Tell which materials cannot be changed back after being heated, cooled, bent, stretched or twisted				
Vocabulary*	Hard, soft,	Hard, soft, change, stretch, break,	Object, material, made from/used for, wood, plastic, glass, metal, water, rock, brick, stone, foil, cotton, paper, fabric, elastic, physical properties, group together, compare, describe, hard/soft, stretchy/stiff, shiny, dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent	Material, compare, identify/name, suitable/suitability, uses, wood, metal, plastic, glass brick, rock, paper, cardboard, shapes, solid, rough, smooth, bendy, stretch, clear, see through, transparent, translucent, hard, soft, opaque, change/changing, squash, bend, twist, stretching				

Cyril Jackson Primary School Curriculum Progression

SCIENCE

		Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Physics	Earth and Space							• Identify and explain the movement of the Earth relative to the sun • Compare the time of day at different places on the earth • Create shadow clocks • Begin to understand how older civilizations used the sun to create astronomical clock • Explain how seasons and the associated weather is created • Identify and explain the movement of the moon relative to the Earth • Explain the size, shape and position of the earth, sun and moon • Explain how night and day are created and use diagrams to show this • Explain how planets are linked to stars • Explore the work of some space pioneers - e.g. Galileo, Copernicus, Neil Armstrong	
	Vocabulary*							Earth, planets, sun, solar system, moon, celestial body, spherical, rotation, spin, night and day, names of planets, dwarf planet, orbit, geocentric model, heliocentric model, shadow clocks, sundials, astronomical clocks, equinox, (autumnal/vernal) Galileo, Copernicus, Neil Armstrong,	
Physics	Electricity	• Talk about what they see using a wide range of vocabulary	• Explore the world around them • Talk about what they see using a wide range of vocabulary				• How electricity is useful to us • Construct a simple circuit • Explain what a conductor is and test materials for conductivity • Recognise all metals are conductors of electricity • Explain closed and open circuits • Construct a circuit with a switch • Recognise some common conductors and insulators • Explain how a bulb might get dimmer		• Identify and name the basic parts of a simple electric series circuit - cells, wires, bulbs, switches, buzzers • Compare and give reasons for variation in how components function, including bulb brightness, buzzer volume and on/off position of switches • Explain how to make changes in a circuit • Explain the impact of changes in a circuit • Make a traffic light system or something similar • Explain the effect of changing the voltage of a battery • Explain the danger of short circuits • Explain what a fuse is
	Vocabulary*	See, eyes, light, dark, shadow, bright, far, close Bulb, switch, off, on, power	See, eyes, shadow, light, dark, bright, dim, far, close. Distant Bulb, switch, on, off, power				Electricity, appliance, device, mains, plug, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive/negative, connect, connection, short circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, motor, faster/slower, conductor, insulator, metal/non metal		Electricity, appliance, device, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive, negative, terminal, connection, short circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, volume, motor, conductor, insulator, voltage, current, resistance, function, series circuit,
Physics	Forces and Magnets	Explore and talk about different forces they can feel	Explore and talk about different forces they can feel			• Observe that magnetic forces can be transmitted without direct contact • Talk about how some magnets attract or repel each other • Classify which materials are attracted to magnets • Investigate the strengths of different magnets and find fair ways to compare them • Describe the speed and direction of moving objects • Explain why an object will move faster if it is rolling down a hill or a slope **Changing, classifying and grouping materials** • Sort the same group of materials in different ways • Explain different ways that they can sort the same group of materials • Sort materials by a number of different criteria • Sort materials by a number of different criteria and explain their reasons • Suggest materials which could be used for specific jobs • Explain why certain materials are used for specific jobs • Set up a simple test to explore the differences between materials	**Forces** • Explain what gravity is and its impact on our lives • Explain why a wheeled object that is initially pushed will slow down and stop • Describe and explain how motion is affected by forces, including gravitational attractions, magnetic attraction and friction • Explain the impact of friction on a moving object • Explain the effect of drag force on moving objects • Work out how water can cause resistance to floating objects • Design effective parachutes • Explain how force and motion can be transferred through gears, pulleys, levers and springs **Magnetism** • Explain how the force of magnetism works • Describe how magnetism is used in everyday objects • Work out how magnets are useful in an everyday context • Describe magnets as having two poles • Identify the link between magnets and the North and South poles		

Physics

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					• Set up a test to explore whether or not materials are attracted to magnets • Set up a test to explore whether or not a material will float or sink • Compare the properties of materials in different situations eg. floating in salty water, magnetism in water • Describe what it means to reverse a change • Describe which changes can be reversed • Describe which changes cannot be reversed	• Make predictions associated with whether two magnets will attract or repel depending on which poles are facing each other		
Vocabulary*	Push, pull, stretch, bend	Push, pull, stretch, bend			Force, contact force, non-contact force, magnetic force, magnet, strength, bar/ring/button/horseshoe magnets, attract, repel, magnetic material, metal, iron, steel, non-magnetic, poles, north/south pole	Fall, Earth, gravity, weight, mass, air resistance, water resistance, friction, moving surfaces, mechanisms, levers, pulleys, gears, force, transfers, gears, pivot, fulcrum, Newton		
Light	• Talk about what they see using a wide range of vocabulary	• Explore the world around them • Talk about what they see using a wide range of vocabulary			• Explain the difference between transparent, translucent and opaque • Compare the brightness and colour of lights • Explain why lights need to be bright or dimmer according to need • Explain how bulbs work in an electrical circuit • Make a bulb turn on and off • Say what happens to the electricity when more batteries are added • Explain how shadows are formed • Explain why a shadow changes when the light source is moved closer or further from the object			• Explain how light travels • Explain how the human eye sees objects • Explain how different colours of light can be created • Use and explain how simple optical instruments work - periscope, telescope, binoculars, mirror, magnifying glass, Newton's first reflecting telescope • Explain changes linked to light (and sound) • Use the ray model to explain the size of shadows
Vocabulary*	See, eyes, light, dark, shadow, bright, far, close	See, eyes, shadow, light, dark, bright, dim, far, close. distant			Light, light source, darkness, reflect, reflective, mirror, shadow, block, direction, transparent, opaque, translucent, cast, power			Light, light source, darkness, reflect, reflective, shadow, block, absorb, direction, transparent, opaque, translucent, periscope, binoculars, telescope, optical, cornea, iris, pupil, optic nerve, rotate, colours, prism, rainbow, white light, ray, absorb

Physics

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sound						• Describe a range of sounds and explain how they are made • Compare sources of sound and explain how the sounds differ • Explain how to change a sound - louder/softer • Describe and explain how a sound travels from a source to our ears • Explain why sound gets fainter or louder according to the distance • Explain what happens to sound as it travels away from its source • Explain why sound gets fainter or louder according to the distance • Explain how you could change the pitch of a sound • Investigate how different materials can affect the pitch and volume of sounds • Explain how pitch and volume can be changed in a variety of ways		
Vocabulary*						Sound, sound source, noise, vibration, travel, solid, liquid, gas, pitch, tune, high, low, volume, loud, quiet, fainter, muffle, strength of vibrations, insulation, instrument, percussion, strings, bass, woodwind, tuned instrument, decibel, hertz, pitch		

Cyril Jackson Primary School Curriculum Progression

SCIENCE

Working Scientifically

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Observing closely	• Looks closely at similarities, differences, patterns and change • Make observations and explain observations • Carry out observations on changes such as melting ice, floating and sinking, magnets. • Children question why things happen having their own ideas.	• Looks closely at similarities, differences, patterns and change • Make observations and explain observations • Carry out observations on changes such as melting ice, floating and sinking, magnets. • Children question why things happen having their own ideas.	• Talk about what they see, touch, smell, hear or taste • Use simple equipment to help make observations	• Use sight, touch, smell, hear or taste to help them answer questions • Use some science words to describe what they have seen and measured • Compare several things • Suggest ways of finding out through listening, hearing, smelling, touching and tasting				
Performing simple tests			• Perform a simple test • Tell other people about what they have done	• Carry out a simple fair test • Explain why it might not be fair to compare two things • Suggest how to find things out • Use prompts to find things out • Say whether things happened as they expected • Say whether things happened as they expected and if not, why not				
Identifying and classifying			• Identify and classify things they observe • Think of some questions to ask • Answer some scientific questions • Give a simple reason for their answer • Explain what they have found out • Talk about similarities and differences • Explain what they have found out using scientific vocabulary	• Organise things into groups • Find simple patterns (or associations) • Identify animals and plants by specific criteria, e.g. lay eggs or not; have scales or not • Suggest more than one way of grouping animals and plants and explain their reasons				
Recording findings			• Show work using pictures, labels and captions • Record findings using standard units • Put some information in a chart or table • Use IT to show working • Make accurate measurements	• Use text, diagrams, pictures, charts, tables to record their observations • Measure using simple equipment • Use information from books and online information to find things out				
Plan an investigation					• Use different ideas and suggest how to find something out • Make and record a prediction before testing • Plan a fair test and explain why it was fair • Set up a simple fair test to make comparisons • Explain why they need to collect information to answer a question • Record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables	• Set up a simple fair test to make comparisons • Plan a fair test and isolate variables and explain why it was fair and explain which variables have been isolated • Plan and carry out an investigation by controlling variables fairly and accurately • Suggest improvements and predictions • Decide which information needs to be collected and decide which is the best way for collecting it • Use their findings to draw a simple conclusion • Use test results to make further predictions and set up further comparative tests	• Plan and carry out an investigation by controlling variables fairly and accurately • Vary one factor whilst keeping the others the same in an experiment • Make a prediction with reasons • Use test results to make further predictions and set up further comparative tests • Explore different ways to test an idea and choose the best way, and give reasons • Present a report of their findings through writing, display and presentation • Use information to help make a prediction • Explain (in simple terms) a scientific idea and what evidence supports it	• Explore different ways to test an idea and choose the best way, and give reasons • Vary one factor whilst keeping the others the same in an experiment. Can they explain why they do this? • Choose the best way to answer a question • Use information from different sources to answer a question and plan an investigation • Identify the key factors when planning a fair test • Plan and carry out an investigation by controlling variables fairly and accurately • Make a prediction with reasons • Make a prediction which links with other scientific knowledge • Use information to help make a prediction • Use test results to make further predictions and set up further comparative tests • Explain (in simple terms) a scientific idea and what evidence supports it • Present a report of their findings through writing, display and presentation • Explain how scientists use their scientific understanding plus good ideas to have a breakthrough • Record measurements in different ways, including bar charts, tables and line graphs • Explain qualitative and quantitative data • Take measurements using a range of scientific equipment with increasing accuracy and precision • Make precise measurements
Obtain and present evidence					**Obtain and present evidence** • Measure using different equipment and units of measure • Record their observations in different ways - labelled diagrams, charts etc. • Describe what they have found using scientific words • Make accurate measurements using standard units • Explain their findings in different ways - display, presentation and writing • Use their findings to draw a simple conclusion • Suggest improvements and predictions for further tests	**Obtain and present evidence** • Take measurements using different equipment and units of measure and record what they have found in a range of ways • Make accurate measurements using standard units • Explain their findings in different ways - display, presentation, writing • Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models	**Obtain and present evidence** • Take measurements using a range of scientific equipment with increasing accuracy and precision • Decide which units of measurement they need to use • Explain why a measurement needs to be repeated • Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models	**Obtain and present evidence** • Explain why they have chosen specific equipment including IT equipment • Plan in advance which equipment they will need and use it well • Decide which units of measurement they need to use • Explain why a measurement needs to be repeated • Collect information in different ways • Record measurements and observations systematically

Cyril Jackson Primary School Curriculum Progression

SCIENCE

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Consider evidence and evaluate					• Explain what they have found out and use their measurements to say whether it helps to answer their question • Use a range of equipment (including a data-logger) in a simple test • Suggest how to improve their work if they did it again	• Find patterns in their evidence or measurements • Make a prediction based on something they have found out • Record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables • Use a graph or diagram to answer scientific questions • Findings from investigations through written explanations and conclusions	• Report findings from investigations through written explanations and conclusions • Use a graph to answer scientific questions • Find a pattern from their data and explain what it shows • Link what they have found out to other science concepts • Suggest how to improve their work and say why they think this	• Find a pattern from their data and explain what it shows • Use a graph to answer scientific questions • Link what they have found out to other science • Draw conclusions from their work • Link their conclusions to other scientific knowledge • Suggest how to improve their work and say why they think this • Explain how they could improve their way of working • Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models • Report findings from investigations through written explanations and conclusions
Vocabulary*	Questioning What How Where When Why Observing Look See Same Different Experimenting Try Test Ideas Explore Find out Classifying/Data Collection Group Sort Objects Compare Applying Think Happen Know Recording Show Say/tell Draw Put Stick/glue/paste Sort/order	Questioning What How Where When Why Observing Look See Same Different Experimenting Try Test Ideas Explore Find out Classifying/Data Collection Group Sort Objects Compare Applying Think Happen Know Recording Show Say/tell Draw Put Stick/glue/paste Sort/order	Questioning Question Ask Answer Observing Look See Compare Observe Identify Describe Experimenting Test Ideas Evidence Equipment Measure Measurement Classifying/Data Collection Identify Compare Group Collect Gather Sort Data Patterns Applying Observe Suggest Answer Questions Recording Find Communicate Record Drawing Label Diagram Information Chart	Questioning Question Ask Answer Different answers Observing Relevant observations Close observations Discover/find out Reasons Explanations Experimenting Comparative test Predict Predictions Equipment Measure Measurement Classifying/Data Collection Identify Compare Group Gather Classify Sort Data Information Patterns Tally Survey Applying Observe/observing Ask Question Predict Recording Find Communicate Record Audience List Bullets Label Chart Sketch Line graph Cause Effect	Questioning Relevant questions Scientific enquiry Evidence Observing Observations Systematic Careful Precise Examine Compare Explanations Experimenting Comparative test Fair test Ideas Suggestions Predict Predictions Equipment Data logger Thermometer Measure Measurement Standard unit Classifying/Data Collection Gather Classify Present Data, Data collection Information Secondary sources Graphs Interpret Patterns Applying Recording	Questioning Observing Experimenting Classifying/Data Collection Applying Recording	Questioning Observing Experimenting Classifying/Data Collection Applying Recording	Questioning Observing Experimenting Classifying/Data Collection Applying Recording