



## St. Katharine's Primary School Science Curriculum Overview Early Years

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Spring 1</b> <b>Yo Ho Ho a</b> <b>pirating we will</b> <b>go!</b>	<ul style="list-style-type: none"><li>• Children know about similarities and differences in relation to materials.</li></ul>	<ul style="list-style-type: none"><li>• Talk about similarities and differences in children following visit to Life Education Van.</li></ul>	
<b>Spring 2</b> <b>Run, run as fast</b> <b>as you can</b>	<ul style="list-style-type: none"><li>• Children know about similarities and differences in relation to materials.</li></ul>	<ul style="list-style-type: none"><li>• Talk about similarities and differences when choosing the materials for the different roofs.</li></ul>	Material, fabric, wood, plastic, metal, foil, paper, card
<b>Summer 1</b> <b>Read around</b> <b>the world</b>	<ul style="list-style-type: none"><li>• Talk about the features of their own immediate environment and how environments might vary from one another.</li></ul>	<ul style="list-style-type: none"><li>• Talk about similarities and differences between the natural world around them and contrasting environments for example – Polar, Africa and ours;</li><li>• Talk about similarities and differences with healthy and unhealthy foods.</li></ul>	Hotter, colder, healthy food, unhealthy food
<b>Summer 2</b> <b>What's beneath</b> <b>my feet?</b>	<ul style="list-style-type: none"><li>• Make observations of animals and plants.</li></ul>	<ul style="list-style-type: none"><li>• Observe animals and plants carefully using magnifiers;</li><li>• Record observations in drawings.</li></ul>	



## St. Katharine's Primary School Science Curriculum Overview Year 1

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Autumn 1</b> <b>To the Rescue</b>  Everyday materials   Humans   Seasonal Changes	<ul style="list-style-type: none"> <li>distinguish between an object and the material from which it is made;</li> <li>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock;</li> <li>describe the simple physical properties of a variety of everyday materials;</li> <li>compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <ul style="list-style-type: none"> <li>identify, name, draw and label the basic parts of the human body;</li> <li>say which part of the body is associated with each sense.</li> </ul> <ul style="list-style-type: none"> <li>observe and describe weather associated with autumn.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple scientific questions about the physical properties of materials and answer them in different ways using their observations and ideas;</li> <li>observe materials closely using magnifiers and microscopes;</li> <li>identify and classify materials, recording observations in writing and pictures.</li> <li>read and spell scientific vocabulary at a level consistent with word reading and spelling knowledge.</li> </ul> <ul style="list-style-type: none"> <li>record observations of the human body in labelled diagrams;</li> <li>ask simple scientific questions about the senses and answer them in different ways using their observations and ideas;</li> </ul> <ul style="list-style-type: none"> <li>record observations of the weather in writing and pictures in a weather diary.</li> </ul>	material, plastic, fabric, rough, smooth, shiny, dull, magnetic, transparent, flexible, waterproof   sense   season, autumn, temperature
<b>Autumn 2</b> <b>Traditional Tales</b>  Plants   Seasonal Changes	<ul style="list-style-type: none"> <li>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees;</li> </ul> <ul style="list-style-type: none"> <li>observe changes between autumn and winter, describe weather associated with autumn and winter, and how day length varies.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple scientific questions about plants and answer them in different ways using their observations and ideas;</li> <li>identify plants, recording observations in writing and pictures;</li> <li>classify trees as deciduous and evergreen, recording sorting in tables.</li> </ul> <ul style="list-style-type: none"> <li>record observations of autumn and winter in writing and pictures;</li> <li>record observations of day length in a class table.</li> </ul>	deciduous, evergreen

<b>Spring 1</b> <b>Jurassic Giants</b>  Animals	<ul style="list-style-type: none"> <li>• identify and name a variety of common animals including mammals, birds, fish, amphibians and reptiles, including pets;</li> <li>• identify and name a variety of common animals that are carnivores, herbivores and omnivores;</li> <li>• describe and compare the structure of a variety of common animals;</li> </ul>	<ul style="list-style-type: none"> <li>• ask simple scientific questions about animals and answer them in different ways using their observations and ideas;</li> <li>• observe animals, including invertebrates, closely using magnifiers and microscopes;</li> <li>• record observations of the structure of animals in labelled diagrams;</li> <li>• identify animals, recording observations in writing and pictures;</li> <li>• classify animals as mammals, birds, fish, amphibians and reptiles; and as carnivores, herbivores and omnivores; recording sorting in tables.</li> </ul>	mammal, amphibian, reptile, carnivore, herbivore, omnivore
Seasonal Changes	<ul style="list-style-type: none"> <li>• observe and describe weather associated with winter.</li> </ul>	<ul style="list-style-type: none"> <li>• record observations of the weather in writing and pictures in a weather diary.</li> </ul>	
<b>Spring 2</b> <b>Julia Donaldson</b> Plants Seasonal Changes	<ul style="list-style-type: none"> <li>• identify and name a variety of deciduous and evergreen trees;</li> <li>• observe changes between winter and spring, describe weather associated with spring and how day length varies.</li> </ul>	<ul style="list-style-type: none"> <li>• observe deciduous and evergreen trees closely using binoculars, recording observations in writing and pictures;</li> <li>• record observations of winter and spring in writing and pictures;</li> <li>• record observations of day length in a class table.</li> </ul>	deciduous, evergreen
<b>Summer 1</b> <b>Sunny</b> <b>Southbourne</b>  Plants	<ul style="list-style-type: none"> <li>• identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<ul style="list-style-type: none"> <li>• observe plants closely using magnifiers and microscopes;</li> <li>• record observations of the structure of plants in labelled diagrams;</li> <li>• measure the height of a plant using a ruler in cm over several weeks, recording data in own table.</li> </ul>	centimetres, height, increase
<b>Summer 2</b> <b>Planet Phonics</b> Seasonal changes	<ul style="list-style-type: none"> <li>• observe changes between spring and summer;</li> <li>• describe weather associated with summer and how day length varies.</li> </ul>	<ul style="list-style-type: none"> <li>• record observations of spring and summer in writing and pictures;</li> <li>• record observations of day length in a class table;</li> <li>• record observations of the weather in writing and pictures in a weather diary.</li> </ul>	season, summer, temperature



## St. Katharine's Primary School Science Curriculum Overview Year 2

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Autumn 1</b> <b>The BIG Adventure</b>  Animals, including humans  All living things & their habitats	<ul style="list-style-type: none"> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food &amp; air).</li> <li>explore and compare the differences between things that are living, dead, and things that have never been alive;</li> <li>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;</li> <li>identify and name a variety of plants and animals in their habitats, including micro-habitats.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple scientific questions about the basic needs of animals and their habitats, and answer them in different ways using their observations, data, research and ideas;</li> <li>research and observe to classify things as living, dead, and never been alive, recording their findings in a table;</li> <li>observe animals and plants closely using magnifiers and microscopes and use classification charts to identify them, recording their findings in a table;</li> <li>observe the conditions in different habitats, recording their findings in labelled diagrams;</li> <li>perform simple comparative tests to investigate how the conditions in different habitats affect the number and type of plants and animals that live there and record their data in tables.</li> </ul>	Habitat, micro-habitat, mammal, amphibian, reptile, deciduous, evergreen
<b>Autumn 2</b> <b>Animal Magic</b>  Animals, including humans	<ul style="list-style-type: none"> <li>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;</li> <li>notice that animals, including humans, have offspring which grow into adults.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple scientific questions about food chains;</li> <li>record their answers in a simple labelled food chain;</li> <li>ask simple scientific questions about animal offspring;</li> <li>record their answers in a simple labelled life cycle.</li> </ul>	Tadpole, food chain, producer, pupa, consumer, prey, predator, spawn, carnivore, omnivore, herbivore,
<b>Spring</b> <b>Sparks Will Fly</b>  <b>Fantastic Mr Dahl</b>  Uses of materials	<ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple scientific questions about the physical properties of materials;</li> <li>observe materials closely using magnifiers and microscopes;</li> <li>identify and classify materials, recording observations in tables;</li> <li>perform simple comparative tests to compare waterproofness, flexibility, strength, etc.;</li> <li>measure volume using pipettes, recording data in tables.</li> </ul>	material, flexible, rigid, waterproof, absorbent
<b>Summer 1 Colour Me Happy</b>  Plants	<ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants;</li> <li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple scientific questions about plant growth;</li> <li>observe and measure growing plants closely using magnifiers, microscopes and rulers;</li> <li>record their data in tables;</li> </ul>	root, germinate, centimetres, height, increase

		<ul style="list-style-type: none"> <li>• perform simple comparative tests to show that plants need light and water to stay healthy recording their findings in writing and pictures.</li> </ul>	
<b>Summer 2 Fit for Life</b>  Animals, including humans	<ul style="list-style-type: none"> <li>• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• ask simple scientific questions about of exercise, diet and hygiene;</li> <li>• answer their scientific questions in different ways using their observations, data, research and ideas;</li> <li>• draw labelled diagrams of healthy diets;</li> <li>• measure pulse rates using pulse meters, recording data in tables.</li> </ul>	Pulse rate, heart beat, blood, diet, healthy, unhealthy



## St. Katharine's Primary School Science Curriculum Overview Year 3

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Autumn 1</b> <b>Fables</b>  Light	<ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that dark is the absence of light;</li> <li>• notice that light is reflected from surfaces;</li> <li>• recognise that light from the sun can be dangerous and that there are ways to protect their eyes;</li> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object;</li> <li>• find patterns in the way that the size of shadows change;</li> <li>• compare and group together everyday materials on the basis of their properties, including their transparency.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about light and shadows;</li> <li>• use data loggers to accurately measure how light it is in locations, recording their data in their own table and bar chart;</li> <li>• investigate which materials reflect light, recording their findings in their own table;</li> <li>• research to find out how to protect their eyes, recording their findings in a labelled diagram;</li> <li>• set up a fair test to investigate the size of shadows;</li> <li>• use rulers to accurately measure the length of shadows, recording their data in their own table and bar chart;</li> <li>• write simple conclusions about the pattern and suggest improvements;</li> <li>• set up a comparative test to group materials according to their transparency;</li> <li>• use data loggers to accurately measure how much light the materials let through, recording their data in their own table and bar chart;</li> <li>• report their conclusions orally and suggest improvements.</li> </ul>	Shadow, transparent, translucent, opaque, reflect, reflection, data
<b>Autumn 2</b> <b>Living Planet</b>  Plants	<ul style="list-style-type: none"> <li>• identify and describe the functions of different parts of flowering plants: roots, stem / trunk, leaves and flowers;</li> <li>• 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;</li> <li>• investigate the way in which water is transported within plants;</li> <li>• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about plant growth;</li> <li>• observe using magnifiers and microscopes to identify the different parts of a flowering plant, recording their findings and describing the functions in a labelled diagram;</li> <li>• set up a fair test to investigate the requirements of plants for life and growth;</li> <li>• record findings and data in their own tables;</li> <li>• write a simple conclusion identifying the differences and similarities, and suggesting improvements;</li> <li>• set up a comparative test to investigate the way in which water is transported in carnations;</li> <li>• research to explore the part that flowers play in the life cycle of flowering plants, recording their findings in a labelled life cycle.</li> </ul>	function, nutrition, support, reproduction, nutrients, fertiliser pollination, seed, formation, seed dispersal
<b>Spring 1</b> <b>Stig of the Dump</b>  Rocks	<ul style="list-style-type: none"> <li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties;</li> <li>• describe in simple terms how fossils are formed when things that have lived are trapped within rock;</li> </ul>	<ul style="list-style-type: none"> <li>• observe rocks using magnifiers and microscopes and group them according to what they contain (grains, crystals, fossils, etc) recording their findings in tables;</li> <li>• set up a fair test to investigate the permeability of different rocks;</li> <li>• use measuring cylinders to accurately measure the volume of water, recording the data in their own tables and bar charts;</li> <li>• write a conclusion of their findings using simple scientific language and suggesting improvements;</li> </ul>	appearance physical properties absorbent, fossils, sedimentary rock , organic matter, crystals

	<ul style="list-style-type: none"> <li>• recognise that soils are made from rocks and organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about how soil and fossils are formed and research to answer them, recording their answers in labelled diagrams.</li> </ul>	
<b>Spring 2</b> <b>Ruthless Romans</b>  Materials	<ul style="list-style-type: none"> <li>• compare and group together everyday materials on the basis of their properties, including their hardness;</li> <li>• give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metal, wood and plastic.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about the properties of materials;</li> <li>• set up a comparative test to group materials according to their hardness;</li> <li>• record data in their own table and bar chart;</li> <li>• write a conclusion of their findings using simple scientific language and suggesting improvements.</li> </ul>	Fabric, rough, hard, smooth, brittle, waterproof
<b>Summer 1</b> <b>Jeremy Strong – The 100mph dog</b>  Magnets	<ul style="list-style-type: none"> <li>• notice that some forces need contact between two objects, but magnetic forces can act at a distance;</li> <li>• observe how magnets attract or repel each other and attract some materials and not others;</li> <li>• 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;</li> <li>• describe magnets as having two poles;</li> <li>• predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about magnets;</li> <li>• set up a comparative test to group materials as magnetic or non-magnetic, recording their findings in a table;</li> <li>• predict whether two magnets will attract or repel each other and set up a comparative test to test their predictions, recording their findings in labelled diagrams;</li> <li>• set up a fair test to investigate which magnetic is the strongest;</li> <li>• measure accurately using a ruler, recording data in their own table and bar chart;</li> <li>• write a conclusion of their findings using simple scientific language and suggesting improvements.</li> </ul>	North, south, pole, attract, repel, magnetic, metal, aluminium, brass, bronze, copper, iron, nickel, steel, zinc
<b>Summer 2</b> <b>Fuel for school</b>  Teeth & Nutrition	<ul style="list-style-type: none"> <li>• 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;</li> <li>• identify the different types of teeth in humans and their simple functions.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about teeth and nutrition;</li> <li>• research different food groups, using their findings to design healthy meals, recording them in labelled diagrams;</li> <li>• research teeth, recording their findings in a labelled diagram;</li> <li>• set up a comparative test to investigate which drink dissolves teeth the most;</li> <li>• measure accurately using measuring cylinders;</li> <li>• record findings in their own tables;</li> <li>• report their conclusions orally, identifying the differences and similarities, using simple scientific language and suggesting improvements.</li> </ul>	Diet, nutrition, protein, carbohydrate, vitamin, mineral, healthy, unhealthy, molar, premolar, canine, incisor



## St. Katharine's Primary School Science Curriculum Overview Year 4

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Autumn 1</b> <b>Firework</b> <b>Maker's</b> <b>Daughter</b>  Electricity	<ul style="list-style-type: none"> <li>• identify common appliances that run on electricity;</li> <li>• construct simple series electrical circuits, identifying &amp; naming basic parts: cells, wires, bulbs, switches &amp; buzzers;</li> <li>• 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;</li> <li>• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;</li> <li>• recognise some common conductors and insulators, and associate metals with being good conductors;</li> <li>• compare and group together everyday materials on the basis of their electrical conductivity.</li> </ul>	<ul style="list-style-type: none"> <li>• Research, using a range of secondary sources of information, to identify common appliances that run on electricity and how to work safely with electricity, reporting their findings orally;</li> <li>• write relevant questions about circuits, construct different circuits observing patterns about the brightness of lamps and report conclusions orally;</li> <li>• set up a comparative test to investigate which materials are the most effective for making a switch in a circuit;</li> <li>• measure the brightness of the lamp using a data logger, recording their data in their own table and bar chart;</li> <li>• write a conclusion in which they use scientific evidence to answer questions and support their findings, use scientific language and suggest improvements.</li> </ul>	circuit, cell, lamp, switch, metal, insulator, conductor, aluminium, brass, bronze, cell, circuit, component, copper, current, electric, iron, nickel, steel, zinc
<b>Autumn 2</b> <b>What's the</b> <b>Matter?</b>  States of Matter	<ul style="list-style-type: none"> <li>• compare and group materials together, according to whether they are solids, liquids (or gases);</li> <li>• observe that some materials melt or freeze / solidify when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</li> </ul>	<ul style="list-style-type: none"> <li>• Write relevant questions about materials changing state;</li> <li>• research to classify materials as solids or liquids, recording results in tables;</li> <li>• set up an observing changes over time investigation to observe the temperatures at which solids (chocolate, butter, ice) melt and solidify /freeze;</li> <li>• measure temperature accurately using thermometers and data loggers, recording data in their own tables and bar charts;</li> <li>• write a conclusion in which they identify changes, use scientific evidence to answer questions and support their findings, use scientific language and suggest improvements;</li> <li>• research, using a range of secondary sources of information, the temperature at which materials change state melt and solidify / freeze.</li> </ul>	Solidify Evaporation condensation, solid, liquid, gas Water vapour, Changing state, Degree Celsius, thermometer Temperature
<b>Spring 1</b> <b>Out of This</b> <b>World</b>  Space	<ul style="list-style-type: none"> <li>• describe the movement of the Earth, and other planets, relative to the Sun in the solar system;</li> <li>• describe the movement of the Moon relative to the Earth;</li> <li>• describe the Sun, Earth and Moon as approximately spherical bodies;</li> </ul>	<ul style="list-style-type: none"> <li>• Research, using a range of secondary sources of information, to find out about the movement of the Earth, and other planets, relative to the Sun and the movement of the Moon relative to the Earth, recording their findings in a labelled diagram;</li> <li>• write questions about and observe the apparent movement of the Sun over a day, recording their data a labelled diagram;</li> </ul>	Orbit, axis, spheres, spherical,



	<ul style="list-style-type: none"> <li>• use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.</li> </ul>	<ul style="list-style-type: none"> <li>• write a conclusion in which they make predictions for new values, use scientific language; suggest improvements, and use scientific evidence to answer questions and support their findings.</li> </ul>	
<b>Spring 2</b> <b>Invaders and Settlers</b>  Forces	<ul style="list-style-type: none"> <li>• compare how things move on different surfaces;</li> <li>• explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object;</li> <li>• identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about friction, air resistance, water resistance and gravity and set up comparative and fair tests to answer them including investigating different surfaces, falling shapes and boats of different shapes ;</li> <li>• measure accurately force meters recording data in their own tables and bar charts;</li> <li>• write a conclusion in which they raise further questions, identify differences, similarities or changes related to forces, make predictions for new values, use scientific language, suggest improvements; and use scientific evidence to answer questions and support their findings.</li> </ul>	Gravity, air resistance, water resistance, friction, accelerate, decelerate, force, surface
<b>Summer 1</b> <b>Rio to Rainforest</b>  Living things and their habitats	<ul style="list-style-type: none"> <li>• recognise that living things can be grouped in a variety of ways;</li> <li>• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment;</li> <li>• recognise that environments can change and that this can sometimes pose dangers to living things;</li> <li>• construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>• Observe using magnifiers and microscopes, or research, using simple guides and keys, to identify animals and plants found in the two different habitats, recording their findings in their own classification keys;</li> <li>• research, using a range of secondary sources of information, to classify these animals as vertebrates: mammals, birds, fish, amphibians, reptiles, and invertebrates: snails and slugs, worms, spiders, and insects; and plants as flowering and non-flowering plants, recording results in tables;</li> <li>• research, using a range of secondary sources of information, food chains in these habitats, recording their findings in labelled food chains;</li> <li>• write relevant questions and research to explore how human impact (both positive and negative) affects environments.</li> </ul>	Habitat, food chain, producer, consumer, prey, predator, carnivore, omnivore, herbivore,
<b>Summer 1</b> <b>Seashore</b> Living things and their habitats			
<b>Summer 2</b> <b>Unique Me</b>  Animal Skeletons	<ul style="list-style-type: none"> <li>• identify that humans and some animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>• write relevant questions about skeletons and muscles;</li> <li>• research, using a range of secondary sources of information, to answer them;</li> <li>• report findings, in written form, using a range of simple scientific language and labelled diagrams;</li> <li>• measure accurately using rulers, recording data in their own tables and bar charts.</li> </ul>	Skull, protection skeleton, support, movement, nutrition, minerals, vitamins, carbohydrates



## St. Katharine's Primary School Science Curriculum Overview Year 5

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Autumn 1</b> <b>Kensuke's Kingdom</b>  Light  Investigate how Michael can use his knowledge of light to escape from the island.	<ul style="list-style-type: none"> <li>• recognise that light appears to travel in straight lines;</li> <li>• 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;</li> <li>• 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;</li> <li>• use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>	<ul style="list-style-type: none"> <li>• take precise, repeated measurements using data loggers and record them in tables and bar charts;</li> <li>• record information in light diagrams;</li> <li>• plan a fair test, including recognising and controlling variables, to investigate the size of shadows;</li> <li>• take precise, repeated measurements using metre rulers and record them in tables and line graphs;</li> <li>• report conclusions, in written forms, in which they identify relationships and explain the degree of trust in results;</li> <li>• draw a labelled scientific diagram to explain why shadows have the same shape as the objects that cast them.</li> </ul>	opaque, translucent, transparent, lux, data, data logger, variable, median average, axes, relationship, degree of trust.
<b>Autumn 2</b> <b>Tomb Raiders</b>  Animals including humans  Research the position and function of the organs removed during mummification.	<ul style="list-style-type: none"> <li>• describe the functions of the basic parts of the digestive system in humans;</li> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood;</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>	<ul style="list-style-type: none"> <li>• draw a labelled scientific diagram of the human digestive system and circulatory system;</li> <li>• research, using a range of secondary sources of information, to describe the functions of the digestive and circulatory system organs;</li> <li>• plan a pattern seeking investigation, to investigate their own question about pulse rate;</li> <li>• take precise, repeated measurements using pulse meters, metre rulers and tape measures and record them in tables and scatter graphs;</li> <li>• report conclusions, in written forms, in which they identify relationships and explain the degree of trust in results.</li> </ul>	Absorb, arteries, atrium, bile, bladder, capillaries, carbon dioxide, circulatory, deoxygenated, digest, digestive, enzymes, excretory, faeces, filter, gullet, hydrochloric, intestines, kidneys, liver, lungs, muscles, nutrients, oesophagus, organ, oxygen, oxygenated, protein, pulmonary, pulse, respiration, saliva, starch, stomach, trachea, urine, vein, ventricle, vessels, correlation

<b>Spring 1 Fiesta Time</b>  Sound  Investigate how to change the pitch and volume of a Spanish guitar.	<ul style="list-style-type: none"> <li>• identify how sounds are made, associating some of them with something vibrating;</li> <li>• recognise that vibrations from sounds travel through a medium to the ear;</li> <li>• find patterns between the pitch of a sound and features of the object that produced it;</li> <li>• find patterns between the volume of a sound and the strength of the vibrations that produced it;</li> <li>• recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	<ul style="list-style-type: none"> <li>• carry out comparative tests to investigate how to change the pitch and volume of a sound;</li> <li>• orally report conclusions in which they identify relationships;</li> <li>• classify birds recording findings in a classification key</li> </ul>	conductor, decibel, insulator, pitch, spherical, taut, tension, vibrate, vibrations, volume, waves.
<b>Spring 2 Patterns &amp; Pillars</b>  Electricity  Investigate how to make the lights brighter and the call to prayer louder.	<ul style="list-style-type: none"> <li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit;</li> <li>• 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;</li> <li>• use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	<ul style="list-style-type: none"> <li>• plan a fair test, including recognising and controlling variables, to investigate the brightness of lamps and the volume of buzzers;</li> <li>• take precise, repeated measurements using data loggers and record them in tables and bar or line graphs;</li> <li>• report conclusions, in written forms, in which they identify relationships, explain results and explain the degree of trust in results, and use test results to make predictions about how to set up further fair tests;</li> <li>• record information in circuit diagrams.</li> </ul>	aluminium, brass, bronze, cell, circuit, component, copper, current, decibels, electric, electrons, flow, insulator, iron, nickel, steel, symbol, volts, zinc
<b>Summer 1 Cycles &amp; Circles</b>  States of matter  Investigate the water cycle.	<ul style="list-style-type: none"> <li>• compare and group materials together, according to whether they are solids, liquids or gases;</li> <li>• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature;</li> <li>• demonstrate that changes of state are reversible changes.</li> </ul>	<ul style="list-style-type: none"> <li>• Research to classify materials as solids liquids or gases, recording results in tables;</li> <li>• record the water cycle in a labelled scientific diagram;</li> <li>• plan an observing changes over time investigation, to investigate their own question about the rate of evaporation;</li> <li>• take precise, repeated measurements using measuring cylinders, recording them in tables and bar or line graphs;</li> <li>• report conclusions, in written forms, in which they identify relationships, explain results and explain the degree of trust in results, and use test results to make predictions about how to set up further fair tests.</li> </ul>	Solid, liquid, gas, vapour, evaporate, evaporation, condense, condensation, solidify, particle, atom, molecule, nitrogen, oxygen, carbon dioxide, argon, hydrogen, helium
<b>Summer 2 The Highwayman</b>  Living things & their habitats	<ul style="list-style-type: none"> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird;</li> <li>• describe the life process of reproduction in some plants and animals;</li> </ul>	<ul style="list-style-type: none"> <li>• Research, using a range of secondary sources of information, to classify animals as vertebrates: mammals, birds, fish, amphibians, reptiles, and invertebrates: protozoa, coelenterates, flatworms, annelid worms, molluscs, echinoderms or arthropods (arachnids, crustaceans, insects and myriapods) recording results in tables;</li> </ul>	mammal, amphibian, reptile, invertebrates, protozoa, coelenterates, flatworms, annelid

<p>Animals including Humans</p> <p>Research to compare the lifecycles of humans, other animals and plants.</p>	<ul style="list-style-type: none"> <li>• describe the changes as humans develop to old age;</li> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> </ul>	<ul style="list-style-type: none"> <li>• observe using microscopes and research, using a range of secondary sources of information, to identify and describe the functions of the reproductive organs of a flowering plant, recording findings in a labelled diagram;</li> <li>• research and compare the life cycles of a flowering plant, a mammal, an amphibian, an insect and a bird, recording findings in labelled diagrams;</li> <li>• research, using a range of secondary sources of information, to investigate the impact of diet, exercise, drugs and lifestyle on the way their bodies function, reporting their findings orally.</li> </ul>	<p>molluscs, echinoderms, arthropods, arachnids, crustaceans, myriapods, absorb, anther, dispersal, disperse, excrete, excretion, fertilisation, filament, germinate, germination, ovary, ovule, photosynthesis, pollen, pollination, reproduction, sepal, stamen, stigma, style</p>
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## St. Katharine's Primary School Science Curriculum Overview Year 6

Focus	Curriculum Content	Working Scientifically Skills	Vocabulary
<b>Autumn 2</b>  <b>The Boy in the Striped Pyjamas</b>  Forces	<ul style="list-style-type: none"> <li>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>	<ul style="list-style-type: none"> <li>Independently plan a noticing patterns investigation to investigate their own question about levers, pulleys or gears;</li> <li>take precise, repeated measurements using force meters, recording them in tables and line graphs with equally spaced, labelled scales that fit the page;</li> <li>report conclusions, in written form, in which they: identify relationships, explain results, explain the degree of trust in results, identify the scientific evidence that has been used to support or refute ideas or arguments, and use test results to make predictions to set up further comparative and fair tests.</li> </ul>	Force, lever, pulley, gear, mechanism, Newtons
<b>Spring 1</b> <b>Because There's No Planet B</b>  Living things & their habitats  Evolution & Inheritance	<ul style="list-style-type: none"> <li>describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals;</li> <li>give reasons for classifying plants and animals based on specific characteristics;</li> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago;</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents;</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>	<ul style="list-style-type: none"> <li>Research, using a range of secondary sources of information, the work of scientists such as Carl Linnaeus;</li> <li>observe using microscopes and research, using a range of secondary sources of information, to identify animals and plants found in the immediate environment;</li> <li>classify animals as vertebrates: mammals, birds, fish, amphibians, reptiles, and invertebrates: protozoa, coelenterates, flatworms, annelid worms, molluscs, echinoderms or arthropods (arachnids, crustaceans, insects and myriapods) and plants as: flowering plants, conifers, ferns and mosses, recording results in tables and classification keys;</li> <li>Research, using a range of secondary sources of information, the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace;</li> <li>research, using a range of secondary sources of information, their own question about how variation in offspring over time leads to adaptation to environment, recording their findings in labelled diagrams and reporting their conclusions orally.</li> </ul>	Vertebrate, mammal, amphibian, reptile, invertebrate, protozoa, coelenterates, flatworms, annelid molluscs, echinoderms, arthropods, arachnids, crustaceans, myriapods, moss, fern, conifer.
<b>Spring 2</b> <b>Pig Heart Boy</b>  Properties and changes of materials	<ul style="list-style-type: none"> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution;</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating;</li> </ul>	<ul style="list-style-type: none"> <li>independently plan a fair test investigation, including recognising and controlling variables, to investigate their own question about the rate of dissolving;</li> <li>take precise, repeated measurements using stopwatches, thermometers and data loggers, recording them in tables and line graphs with equally spaced, labelled scales that fit the page;</li> <li>report their conclusions, in written form, in which they: identify relationships, explain results, explain the degree of trust in results, identify</li> </ul>	Dissolve, solute, solvent, saturated, evaporate, filtration, reversible, irreversible, carbon dioxide, bicarbonate of soda, anomaly

	<ul style="list-style-type: none"> <li>• demonstrate that dissolving and mixing are reversible changes;</li> <li>• 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.</li> </ul>	<p>the scientific evidence that has been used to support or refute their ideas or arguments, and use test results to make predictions to set up further comparative and fair tests;</p> <ul style="list-style-type: none"> <li>• independently plan an investigation, to investigate their own question about separating mixtures reporting their conclusions in a labelled diagram;</li> <li>• independently plan an observing changes over time investigation to classify changes as reversible or irreversible, recording results in tables and reporting their conclusions orally, identifying the scientific evidence that has been used to support or refute their ideas.</li> </ul>	
<p><b>Summer 2 Macbeth</b></p> <p>Animals including humans</p>	<ul style="list-style-type: none"> <li>• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• Describe the ways in which nutrients and water are transported within animals, including humans</li> </ul>	<ul style="list-style-type: none"> <li>• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>• Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>• Using test results to make predictions to set up further comparative and fair tests</li> <li>• 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</li> <li>• Identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>	<p>Lungs, heart, aorta, bronchioles, atrium, ventricles, capillaries, blood vessels, inhalation, exhalation, alveoli, diaphragm</p>