

Cassop Primary School



Science Curriculum Plan

Year 6 SCIENCE	
Topic	Inheritance, evolution, adaptation
Question	How have we evolved?
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests
NC Progression Skills Statements	<ul style="list-style-type: none"> * 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

Year 6 SCIENCE	
Topic	Electricity
Question	How bright? How loud?
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests
NC Progression Skills Statements	<ul style="list-style-type: none"> * 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 recognized symbols when representing a simple circuit in a diagram

Year 6 SCIENCE	
Topic	Light
Question	How do we see light?
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests
NC Progression Skills Statements	<ul style="list-style-type: none"> * 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

UKS2 SCIENCE		
Topic	Animals including humans	
Question	How do we change as we grow?	How do our bodies function well?
	Year 5	Year 6
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests 	
NC Progression Skills Statements	<ul style="list-style-type: none"> * Describe the changes as humans develop to old age 	<ul style="list-style-type: none"> * Identify and name the main parts of the 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

Year 5 SCIENCE		
Topic	Properties and changes of materials	
Question	Are changes of state reversible?	
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations 	

	<ul style="list-style-type: none"> * Use test results to make predictions to set up further comparative and fair tests
<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * 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 describe 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

Year 5 SCIENCE	
Topic	Earth and Space
Question	How does the Earth move?
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests
NC Progression Skills Statements	<ul style="list-style-type: none"> * Describe the movement of the Earth, and other planets, relative to the Sun * 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

Year 5 SCIENCE	
Topic	Forces
Question	What force is working?
Working Scientifically	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests

UKS2 SCIENCE			
Topic	Living Things and their Habitats		
Question	Can you use a classification key?	How does a species grow and live on?	How are they classified?
	Year 4	Year 5	Year 6
Year 4 Working Scientifically	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 		

<p>Year 5/6 Working Scientifically</p>	<ul style="list-style-type: none"> * Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary * Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate * Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Identify scientific evidence that has been used to support or refute ideas or arguments * Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations * Use test results to make predictions to set up further comparative and fair tests 		
<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * Recognise that living things can be grouped in a variety of ways * Explore and use classification keys to help group, identify and name a variety of living things in their local area and wider community * Recognise that environments can change and that this can sometimes pose dangers to living things 	<ul style="list-style-type: none"> * 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 	<ul style="list-style-type: none"> * Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals * Give reasons for classifying plants and animals based on specific characteristics

<p>Year 4 SCIENCE</p>			
<p>Topic</p>	<p>Electricity</p>		
<p>Question</p>	<p>Will the lamp light up?</p>		
<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 		

<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * Identify common appliances that run on electricity * Construct a simple series circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzes * 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
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Year 4 SCIENCE	
Topic	States of Matter
Question	How will you measure evaporation?
<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * 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 * Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Year 4 SCIENCE	
Topic	Sound
Question	How can we change the pitch and volume of a sound that we make?

<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * 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

<p>LKS2 SCIENCE</p>		
<p>Topic</p>	<p>Animals including humans</p>	
<p>Question</p>	<p>Do all animals have a skeleton?</p>	<p>What are the processes of eating and how do they work?</p>
	<p>Year 3</p>	<p>Year 4</p>
<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 	

<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * Identify that animals, including humans, need the right type 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 	<ul style="list-style-type: none"> * 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
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<p>Year 3 SCIENCE</p>		
<p>Topic</p>	<p>Rocks</p>	
<p>Question</p>	<p>What is a fossil?</p>	
<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 	
<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * 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 a rock * Recognise that soils are made from rocks and organic matter 	

<p>Year 3 SCIENCE</p>		
<p>Topic</p>	<p>Light</p>	
<p>Question</p>	<p>Is a shadow always the same size?</p>	

<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * Recognise that they need light in order to see things and that dark is the absence of light * Notice that light is reflected off 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 a solid object * Find patterns in the way that the size of shadows change

<p>Year 3 SCIENCE</p>	
<p>Topic</p>	<p style="text-align: center;">Forces and Magnets</p>
<p>Question</p>	<p style="text-align: center;">Is it magnetic?</p>
<p>Working Scientifically</p>	<ul style="list-style-type: none"> * Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests * Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables * Gather, record, classify and present data in a variety of ways to help in answering questions * Identify differences, similarities or changes related to simple scientific ideas and processes * Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use straightforward scientific evidence to answer questions or to support their findings * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

<p>NC Progression Skills Statements</p>	<ul style="list-style-type: none"> * 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 materials on a basis on 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 * 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 and friction, that act between moving surfaces * Recognise that some mechanisms, including levers, gears and pulleys, allow a smaller force to have a greater effect
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Year 2 SCIENCE	Autumn	Spring	Summer
Topic	Everyday materials	Animals, including humans	Living Things and their Habitats
Question	What is it made of?	How do we survive and grow?	Are all habitats the same?
Working Scientifically	<ul style="list-style-type: none"> * Ask simple questions and recognise that they can be answered in different ways * Observe closely, using simple equipment * Perform simple tests * Gather and record data to help in answering questions * Identify and classify * Use their observations and ideas to suggest answers to questions 		
NC Progression Skills Statements	<ul style="list-style-type: none"> * 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 	<ul style="list-style-type: none"> * 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, air) * Describe the importance for humans of exercise, eating the right amounts of different types of foods, and hygiene 	<ul style="list-style-type: none"> * Explore and compare the difference 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 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 micro-habitats * Describe how animals obtain their food from plants and other animals, using the

			idea of a simple food chain, and identify and name different sources of food
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ONGOING: Plants

How do plants grow well?

* 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

Year 1 SCIENCE	Autumn	Spring	Summer
Topic	Everyday materials	Animals, including humans	Plants
Question	What is it made of?	How do we survive and grow?	What plant is it?
Working Scientifically	<ul style="list-style-type: none"> * Ask simple questions and recognise that they can be answered in different ways * Observe closely, using simple equipment * Perform simple tests * Gather and record data to help in answering questions * Identify and classify * Use their observations and ideas to suggest answers to questions 		
NC Progression Skills Statements	<ul style="list-style-type: none"> * Distinguish between an object and the material from which it is made * Identify and name a variety of everyday materials, inc 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 a basis of their simple properties 	<ul style="list-style-type: none"> * 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, inc pets) * Identify, name, draw and label the basic parts of the human body and say which 	<ul style="list-style-type: none"> * 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

		part of the body is associated with each sense	
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ONGOING: Seasonal changes

What is it like outside today?

- * Observe changes across the four seasons
- * Observe and describe weather associated with the seasons and how day length varies

Science in the Early Years

Science is DISCOVERY

*** Science can be seen throughout the classroom, both indoors and outdoors. Children explore and discover throughout child led and adult led play. Children have access to a wide range of scientific resources. The classroom has an ever changing 'Curiosity Cube' for specific exploration.**

Aims

EYFS: Understanding the World

The EYFS Understanding the World strand involves guiding children

- * to make sense of their physical world and their community through opportunities
- * to explore, observe and find out about people, places, technology and the environment.

30-50mths

- * Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.
- * Can talk about some of the things they have observed such as plants, animals, natural and found objects.
- * Talks about why things happen and how things work.
- * Developing an understanding of growth, decay and changes over time.
- * Shows care and concern for living things and the environment.

40-60mths

Looks closely at similarities, differences, patterns and change.

Early Learning Goal

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.

Preparation for the Working Scientifically NC

- * Asking questions and answering in different ways
- * Making close observations
- * Using simple equipment
- * Simple tests and explorations
- * Simple measuring
- * Identifying and classifying
- * Use their observations and ideas to suggest answers to questions