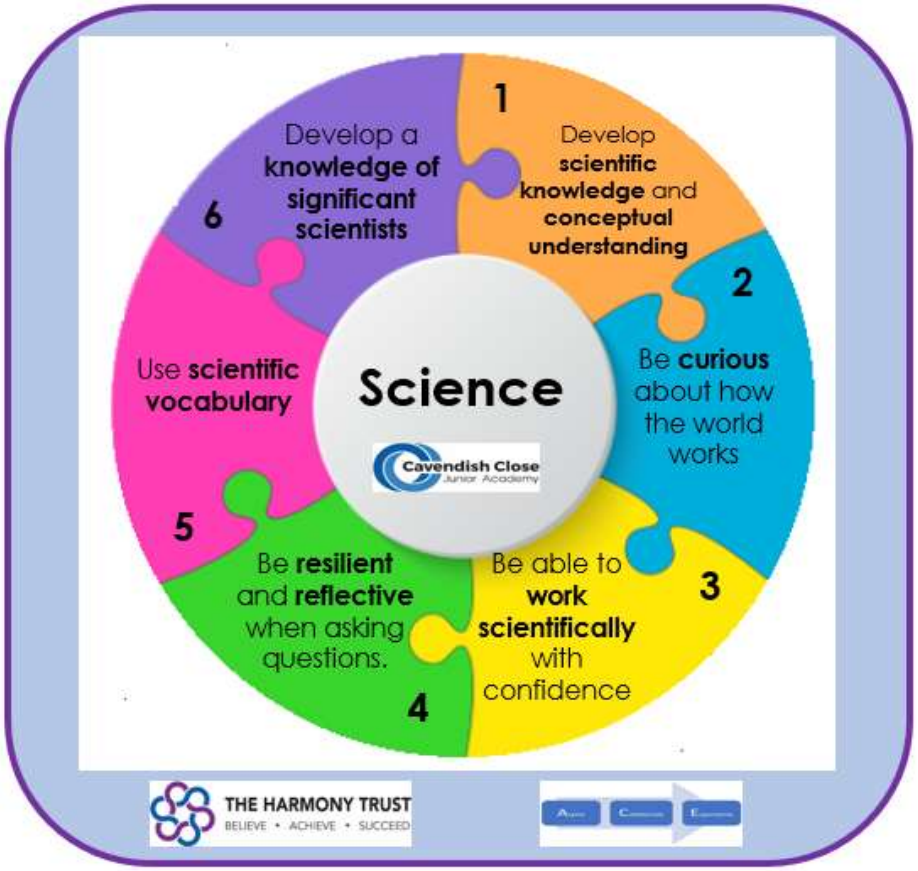
Science Intent

At Cavendish Close Junior Academy, we aim to deliver a curriculum that helps children aspire, collaborate and experience a variety of opportunities. We want to help children develop as scientists through a range of learning experiences that are underpinned by our key intentions for learning in this subject and develop a lifelong love of science through a stimulating, engaging and challenging environment.



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1. It is our intention that our children develop **scientific knowledge and conceptual understanding** through the specific disciplines of **biology, chemistry and physics**.
2. It is our intention to **ignite curiosity** in children about our universe which promotes respect for the living and non-living.
3. It is our intention that children are equipped with **a range of skills to work scientifically.**
4. It is our intention that our children learn to be **resilient and reflective** when asking questions about their own and others work.
5. It is our intention that children develop a **progressive scientific vocabulary** that enables them to confidently communicate and justify scientific ideas.
6. It is our intention that our children are **knowledgeable about a range of significant scientists** both from history and modern day.

Science Implementation

Cavendish Close Junior Academy

Units of study that are requirement of the national curriculum have been mapped out to instil curiosity and enable children to question Science through a range of situations.
Year 3 – plants, rocks and soils, forces and magnets, animals including humans and light.
Year 4 – states of matter, animals including humans, electricity, sound and all living things.
Year 5 – living things and their habitats, properties of materials, changes of materials, forces, earth and space and animals including humans.
Year 6 – light, evolution and inheritance, forces, electricity, animals including humans and living things and their habitats.

Key knowledge, skills and understanding are identified at the start of each science unit of work that link back to our key intentions, ensuring that all the key intentions are covered at least once within each science unit of work. Children will have opportunities to work scientifically throughout each unit alongside further developing their scientific skills. Furthermore, we will equip them with key vocabulary to be able to communicate and question their findings from investigations – this is also displayed on the front covers of each unit of work. We plan sequences of lessons that allow children to take small steps in their learning, which allows them to be confident and challenge themselves.

Lessons are thoughtfully sequenced with opportunities to complete retrieval tasks and metacognition opportunities within each unit, helping children commit learning to their long term memory. Children also have opportunities to recap prior learning from previous year groups through pre and post learning tasks, retrieval grids, thinkers keys and graphic organisers. These are presented to children in a variety of active ways to encourage and stimulate learning. Concepts taught are therefore reinforced by focusing on the key features of scientific enquiry so that pupils learn to use a variety of approaches to answer relevant scientific questions.

Scientific skills are mapped out progressively within each year group ensuring children make progress in their skill set year on year.

Science Implementation

Cavendish Close Junior Academy

Science coverage

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Rocks and Fossils (Chemistry)	Plants (Biology)	Light (Physics)	Forces and Magnets (Physics)	Forces and Magnets (Physics)	Animals including Humans (Biology)
Year 4	Sound (Physics)	Living things and their habitats (Biology)	Electricity (Physics)	States of Matter (Chemistry)	Animals including Humans (Biology)	Living things and their habitats (Biology)
Year 5	Living things and their habitats (Biology)	Forces (Physics)	Earth and Space (Physics)	Properties of Materials (Chemistry)	Changes of Materials (Chemistry)	Animals including Humans (Biology)
Year 6	Light (Physics)	Evolution and Inheritance (Biology)	Electricity (Physics)	Forces (Physics and Chemistry)	Animals including Humans (Biology)	Living things and their habitats (Biology)

Science Implementation

Cavendish Close Junior Academy

BIOLOGY

Year 3
- Plants
- Animals including humans

Year 4
- Animals including humans
- Living things and their habitats

Year 5
- Living things and their habitats
- Animals including humans

Year 6
- Evolution and inheritance
- Animals including humans
- Living things and their habitats

Science Implementation

Cavendish Close Junior Academy

Year 3
- Forces and Magnets
- Light

Year 4
- Electricity
- Sound

PHYSICS

Year 5
- Forces
- Earth and Space

Year 6
- Light
- Forces
- Electricity

Science Implementation

Cavendish Close Junior Academy

CHEMISTRY

Year 3
- Rocks and Fossils

Year 4
- States of Matter

Year 5
- Properties of Materials
- Changes of Materials

Year 6
- Forces unit (melting of ice)
- Grouping materials in Victorians topic
- Evolution and Inheritance (fossils)
- Properties of Materials during WW2 unit

Science Implementation

Cavendish Close Junior Academy

SCIENTISTS

Year 3
- Sir Joseph Banks
- Mary Anning
- Sir Isaac Newton
- Thomas Edison

Year 4
- William Beaumont
- William Gilbert
- Alexander Graham Bell
- Carl Linnaeus

Year 5
- Jane Goodall
- David Attenborough
- Nicolaus Copernicus
- Galileo Galilei
- Joseph Lister
- Florence Nightingale

Year 6
- Charles Darwin
- Alessandro Volta
- Nikola Tesla
- Carl Linnaeus
- Edward Jenner

Key Outcomes – Autumn 1

Year 3	Year 4	Year 5	Year 6
Rocks and Fossils 1. Children will be able to compare and group together different kinds of rocks on the basis of appearance and simple physical properties. 2. Children will be able to name six common rocks (sandstone, limestone, chalk, granite, slate, marble) 3. Children will understand that rocks are formed in three different ways (magma crystals = igneous; layers of sediment = sedimentary; extreme heat and pressure inside the Earth = metamorphic) 4. Children will know the difference between sedimentary, metamorphic and igneous rock. 5. Children will use knowledge of the properties of rocks to determine why particular rocks were selected for different tasks. 6. Children will be able to describe in simple terms how fossils are formed when things that have lived are trapped within rock. 7. Children will report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 8. Children will discover the contribution to science of the great 19th century fossil hunter ***Mary Anning.*** 9. Children will recognise that soils are made from rocks and organic matter.	**Sound** 1. Children will be able to identify how sounds are made, associating some of them with something vibrating. 2. Children will be able to recognise that vibrations from sounds travel through a medium to the ear. 3. Children will recognise that sounds get fainter as the distance from the source increases. 4. Children will be able to find patterns between the pitch of a sound and features of the object that produced it. 5. Children will be able to find patterns between the volume of a sound and the strength of the vibrations that produced it. 6. Children will begin to understand some of the workings of the human ear. 7. Children will investigate sound-proofing materials by planning and conducting an investigation into which material best reduces the sounds we hear. 8. Children will learn about the life and significant of ***Alexander Graham Bell.*** 9. Cross curriulcular ink to music as children will understand and explore how music is created, produced and communicated, including through the inter-related dimensions: pitch, duration, dynamics, tempo, timbre, texture, structure and appropriate musical notations.	**Living things and their Habitats** 1. Children will be able to describe the life process of reproduction in some plants and animals. 2. Children will be able to label the parts of a flowering plant, including male (anther, filament, stamen) and female structures (stigma, style, ovary, pistil). 3. Children will be able to define sexual and asexual reproduction. 4. Children will learn about processes of natural and artificial asexual reproduction in plants. 5. Children will be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 6. Children will learn about the lifecycle and reproduction of amphibians and insects. 7. Children will be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 8. Children will be able to record life cycles in the form of annotated scientific illustrations. 9. Children will learn about the significance of scientists: ***Jane Goodall*** and ***David Attenborough***.	**Light** 1. Children will recognise that light appears to travel in straight lines. 2. Children will 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. 3. Children will be able to 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. 4. Children will use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 5. Children will draw conclusions and provide answers based on scientific enquiry. 6. Children will describe the movement of light beams off of reflective surfaces and plan and carry out an investigation into the reflectiveness of given materials. 7. Children will be able to explain how a periscope works. 8. Children will investigate the size of a shadow in relation to the light source. 9. Children will plan and carry out an investigation into the strength of various magnifying lenses. 10. Children will understand that light can be bent when it is slowed down and recognise that white light can be split into 7 rainbow colours. 11. Children will investigate light colour mixing.

Key Outcomes			
Year 3	**Year 4**	**Year 5**	**Year 6**
Rocks and Fossils <u>Working Scientifically</u> • Ask relevant questions and use different types of scientific enquiries to answer them. Children will devise their own fair tests for the hardness of rocks and test their permeability. • Make systematic and careful observations. Children will observe rocks closely and discover that they have different qualities and features. • Record findings using simple scientific language, drawings and labelled diagrams. • Set up simple practical enquiries and comparative and fair tests. • Make systematic and careful observations. They will use a rock identification key to discover what type of rock each sample is. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Gather, record, classify and present data in a variety of ways to help answer questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support findings.	**Sound** <u>Working Scientifically</u> • Ask relevant questions and use different types of scientific enquiries to answer them. Children will go on a sound walk through school and begin to think about how sound is made. • Use straightforward scientific evidence to answer questions or to support their findings. Children will be able to explain that sounds are made when an object vibrates. • Set up simple practical enquiries and comparative and fair tests. They will investigate pitch and volume by exploring different instruments and the sounds they make (music link). • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • 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. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	**Living things and their Habitats** <u>Working Scientifically</u> • Record data and results of increasing complexity using scientific diagrams and labels. • Identify scientific evidence that supports or refute ideas or arguments. • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Children will set up an investigation into artificial asexual reproduction in flowering plants • Report and present 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. Children will draw botanical illustrations that show the life cycle of some plants that reproduce sexually.	**Light** <u>Working Scientifically</u> • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary: investigate the length of shadows; how light is reflected; the mixing of light. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Children will measure the length of shadows and observe and record how these re affected as they move closer or further away from the light source/ • Record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs. • Report and present 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. At the end of the unit children will present a case for a court appearance giving evidence from each of their investigations to justify who they believe the culprit is.

Key Outcomes – Autumn 2

Year 3	Year 4	Year 5	Year 6
Plants 1. Children will 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. 2. Children will be able to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers/petals and create a labelled, annotated diagram to represent this. 3. Children will classify food plants and be able to explain which parts of the plant we can eat. 4. Investigate the way in which water is transported within plants. They will also spot differences in the health of seedlings and begin to think about reasons. 5. Children will learn about the life and work of ***Sir Joseph Banks*** 6. 6) Children will be able to name male female parts of the flower (stigma, style, stamen, ovary, ovules). 7. 7Children will understand that flowers vary in size, colour, shape and form but all play a crucial role in reproduction. 8. Children will be able to explain how fruits develop from pollinated flowers. 9. Children will discover the role played by insects in pollination. 10. Children will understand that the function of a fruit is to produce and disperse seeds	**Living things and their habitats** 1. Children will understand the characteristics of a living thing and to begin to consider that living things can be grouped in a variety of ways. 2. Children will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. 3. Children will know the seven characteristics of a living thing (movement, respiration, sensitivity, nutrition, excretion, reproduction, growth). 4. Children will carefully observe and record the living things in the local area. 5. Children will be able to observe features of living things and sort them into different groups. 6. Children will know that scientists are able to classify living things by closely observing them. 7. Children will know how to use branching databases and classification keys.	**Forces** 1. Children will be able to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. 2. Children will learn about life and the significance of ***Galileo Galilei*** 3. Children will be able to define gravity and resistance and identify balanced and unbalanced forces. 4. Children will be able to identify the effects of air resistance, that acts between moving surfaces and plan an investigation into the effectiveness of various parachutes. 5. Children will be able to recognise that some mechanisms, including levers and pulleys, allow a smaller force to have a greater effect. 6. Children will recognise that gear mechanisms allow a smaller force to have a greater effect. 7. Children will identify the effects of friction, that acts between moving surfaces. 8. Children will investigate the effect ground friction has on movement. 9. Children will be able to identify the effects of water resistance, that acts between moving surfaces.	**Evolution and Inheritance** 1. Children will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. 2. Children will understand that variation occurs within offspring as well as across species. 3. Children will examine the evidence demonstrating how plants have evolved. 4. Children will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 5. Children will be able to suggest how some animals and plants are adapted to extreme environments. 6. Children will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. 7. Children will recognise the role fossils have in the development of evolutionary theory. 8. To research the life and work of ***Charles Darwin.*** 9. Children will design an animal that should thrive and survive in a given environment. 10. Children will examine how the fossil record helps us understand evolutionary relationships. 11. Children will plan an investigation to find out which tool is best at picking up seeds. 12. Children will understand that animals and plants are consistently changing and adapting to their environment by conducting a snail hunt around the school ground sand explaining why certain snails are located in specific surroundings.

Key Outcomes			
Year 3	**Year 4**	**Year 5**	**Year 6**
Working Scientifically • Ask relevant questions and using different types of scientific enquiries to answer them. • Set up simple practical enquiries and comparative and fair tests through a seedling investigation. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Children will classify food plants according to the part of the plant that is eaten. • Gather, record, classify and present data in a variety of ways to help answer questions through diagrams and models to show the labelled parts of a plants and show which parts are edible. Children will classify the plants according to human use for: leaves, roots, flowers, fruits and seeds. • Make systematic and careful observations. • Children will measure the height of seedlings in cm at each observation point . • Identify differences, similarities or changes related to simple scientific ideas and processes. • Children will use data loggers to measure light levels and temperature over a 24 hour period when investigating how the transportation of water affects the seedlings. • Children will report on findings from enquiries, including oral and written explanations. They will present their results from their seedling investigation in a bar graph and parts of a plant through diagrams and notes. • Children will use results to draw simple conclusions, make predictions and think of further questions to investigate.	**ngs and their habitats** Working Scientifically • Ask relevant questions and use different types of scientific enquiries to answer them. The children will answer questions about diet by extracting data from a food survey and displaying it in tables and bar charts. Children will then use these to look for patterns and trends. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data logger. • Children will investigate how muscles work in pairs. • Gather, record, classify and present data to help answer questions. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Working Scientifically • Identify scientific evidence that has been used to support or refute ideas or arguments Children will set up and carry out a parachute investigation to determine which one travels the slowest and safetst. • 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 when appropriate (parachute investigation. • Children will investigate how pulleys work and note the correlation between the effort required and the number of pulleys. • Record data and results of increasing complexity using scientific diagrams and labels, and tables. • Use test results to make predictions to set up further comparative and fair tests. • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral form.	**and Inheritance** Working Scientifically • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (bird beak investigation) • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs (bird beak investigation and snail hunt). • Report and present 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 (bird beak investigation, snail hunt).

Key Outcomes – Spring 1

Year 3	Year 4	Year 5	Year 6
Light 1) Children will recognise that they need light in order to see things and that dark is the absence of light. 2) Children will know that light is reflected from surfaces. 3) Children will know that light from the sun can be dangerous and identify ways to protect their eyes. 4) Children will recognise that shadows are formed when the light from a light source is blocked by an opaque object. 5) Children will find patterns in the way that the size of shadows change. 6) Children will learn that white light is composed of a spectrum of coloured light. 7) Children will learn about the life and significance of ***Thomas Edison.***	**Electricity** 1. Children will be able to identify common appliances that run on electricity (eg microwave, hoover, hair dryer) 2. Children will be able to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 3. Children will be able to recognise some common conductors and insulators, and associate metals with being good conductors. 4. Children will be able to identify the dangers associated with electricity in the home and begin to recognise that the dangers are often associated with materials that are good conductors. 5. Children will be able to 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. 6. Children will be able to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. 7. Children will learn about the life and significance of ***William Gilbert.***	**Properties of Materials** 1. Children will compare and group together everyday materials on the basis of their properties, including their hardness, transparency, and conductivity (electrical and thermal). 2. Children will be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. 3. Children will explore thermal insulating properties. 4. Children will pan and implement investigations to compare absorbency, strength and durability and apply knowledge of fabric properties to suggest fitness for purpose. 5. Children will investigate the electrical conductivity/insulation of materials. 6. Children will investigate materials which combine sound=proofing with comfort. .	**Electricity** 1. Children will 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. 2. Children will use recognised symbols when representing a simple circuit in a diagram. 3. Children will be able to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. 4. Children will be able to Identify from circuit diagrams those circuits that will or won't work. 5. Children will be able to describe how a dimmer switch affects resistance. 6. Children will design an electric car and create a prototype of their design, explaining how all of their components work. 7. Children will learn about the life and significance of ***Alessandro Volta*** and ***Nikola Tesla***

Key Outcomes

Year 3

Light

Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them. Children will learn through investigation that light travels in straight lines.
- Make systematic and careful observations.
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Gather, record, classify and present data in a variety of ways to help answer questions.
- Record findings using simple scientific language, drawings and labelled diagrams.
- Use straightforward scientific evidence to answer questions or to support their findings. Children will investigate the properties of mirrors and reflection.
- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Record and predict which colours show up best and least in the dark. Children will predict and then investigate how well different colours and materials reflect light in a simulated dark cave. They will record findings by sorting and classifying colour samples, noting observations and drawing conclusions.

Year 4

Electricity

Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests. Children will investigate which materials are good or bad conductors.
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Use straightforward scientific evidence to answer questions or to support findings.

Year 5

Properties of Materials

Working Scientifically

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Children will plan an investigation to test the hardness of the materials. They will also investigate which materials make the best thermal insulators.
- Children will investigate possible food packaging materials.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using tables and scatter graphs. (Hardness investigation – table and scatter graph form; thermal insulators – line graph).
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Year 6

Electricity

Working Scientifically

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. The children will plan and carry out a series of simple circuit investigations.
- Children will explore the effects f voltage of electrical components.
- Report and present 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.
- Children will create annotated drawing to reflect their design ideas for a dimmer switch.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using tables, scatter graphs, bar and line graphs.
- Children will analyse the designs of others and give feedback.
- Use test results to make predictions to set up further comparative and fair tests.
- Identify scientific evidence that has been used to support or refute ideas or arguments.
- Children will effectively use appropriate materials, tools and equipment.

Key Outcomes – Spring 2

Year 3	Year 4	Year 5	Year 6
Forces and Magnets 1. Children will understand that there are different types of forces and be able to identify them (gravity, friction, magnestism) 2. Children will investigate the effects of friction on different surfaces. 3. Understand that forces are pushes and pulls which can make things move, stop or change shape. 4. Children will understand that some forces need contact between two objects 5. Set up and conduct a comparative fair test, record measurements and discuss results. 6. Children will learn about life and the significance of ***Sir Isaac Newton***	**States of Matter** 1. Children will understand that materials can be classified into different states (solids, liquids and gases) and begin to use simple practical enquiries and scientific evidence to support their findings. 2. Children will be able to explain to others, the evidence for gases and to describe how gases move. 3. Children will understand, through practical tasks, that materials change state when they are heated or cooled and to describe this process using scientific language (see vocab sheet). 4. Children will be able to ask a question about evaporation and set up a practical enquiry that will provide the scientific evidence to answer it. 5. Children will know that water moves in a cycle due to changes in temperature causing the water to change from one state to another. 6. Children will apply their knowledge of the water cycle in their geography unit about the weather and climate change.	**Changes of Materials** 1. Children will compare and group together everyday materials on the basis of their properties, including their solubility and response to magnets. 2. Children will know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. 3. Children will use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. 4. Children will be able to demonstrate that dissolving, mixing and changes of state are reversible changes. 5. 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. 6. Children will be able to define and explain oxidation. 7. Children will learn about the life and significance of ***Joseph Lister*** and ***Florence Nightingale.*** .	**Forces** 1. Children will understand that objects can be categorised by their ability to float. 2. Children will be able to define and explain buoyancy. 3. Children will understand what displacement is. 4. Children will investigate how an iceberg displaces water. 5. Children will understand that much of the iceberg is under the water and investigate how it melts in different temperature water baths. 6. Children will begin to understand how de-icers work in icy conditions. 7. Children will learn about the key principles behind how a rocket works.

Key Outcomes

Year 3	Year 4	Year 5	Year 6
Forces and Magnets Working Scientifically • Set up simple practical enquiries and comparative and fair tests. Children will ask questions and investigate how toy vehicles move on different surfaces. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment. Children will be able to group items using a magnet. They will investigate how magnets attract some materials and not others. • Ask relevant questions and use different types of scientific enquiries to answer them. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Children will be able to explain why magnets attract some materials. They will also understand that opposite poles attract and like poles repel. • Identify differences, similarities or changes related to simple scientific ideas and processes.	**States of Matter** Working Scientifically • Ask and begin to answer questions about the evidence of gases around us. • Use scientific language to describe what happens when a subject changes state (see vocab sheet_ • Set up simple practical enquiries to investigate factors that speed up evaporation. • Use a data logger to record temperature and time and make careful observations over time. • Use scientific language to explain evaporation and condensation. • Report on findings from enquiries, including oral explanations • Use straightforward scientific evidence to answer questions or to support their findings • Record findings using simple scientific language, drawings, labelled diagrams. • Identify misconceptions and classify materials into solids, liquids and gases.	**Changes of Materials** Working Scientifically • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Children will investigate filtration, evaporation and sieving methods in order to separate materials. They will also plan and carry out an investigation into the impact of certain ingredients on an end product. • Record data and results of increasing complexity using scientific diagrams and labels, tables and line graphs and photographs. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Use test results to make predictions to set up further comparative and fair tests. • Report and present 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. • Identify scientific evidence that has been used to support or refute ideas or arguments.	**Forces** Working Scientifically • 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 when appropriate. Children will accurately measure the temperature of the water baths and observe the effect on the size of the ice berg). • Record data and results of increasing complexity using tables and scatter graphs. • Use test results to make predictions to set up further comparative and fair tests. • Report and present findings from enquiries, including conclusions and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments

Key Outcomes – Summer 1

Year 3

rces and Magnets

1. Children will notice that some forces need contact between two objects, but magnetic forces can act at a distance.
2. Children will explore forces and discover that gravity and magnetism can act without contact.
3. Children will observe how magnets attract or repel each other and attract some materials and not others.
4. Children will be able to describe magnets as having two poles (North and South)
5. Children will explore how magnets behave towards each other and form theories to explain it.
6. Children will understand that magnets have 2 poles and that opposite poles attract and like poles repel.
7. Children will 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.

Year 4

nimals including Humans

1. Children will learn about the first stage of the digestive system (cephalic phase).
2. Children will be able to describe the simple functions of the basic parts of the digestive system in humans.
3. Children will learn about the life and significance of ***William Beaumont.***
4. Children will be able to identify the different types of teeth in humans and their simple functions (incisors – chew food; canines – tear and rip food; molars – crush and grind food).
5. Children will be able to construct and interpret a variety of food chains, identifying producers, predators and prey.
6. Children will be able to explain the different diets of carnivores, herbivores and omnivores.
7. Children will be able to define 'predator', 'prey' and 'producer'.
8. Children will be able to make links between plants and animals in the form of food chains.

Year 5

arth and Space

1. Children will be able to describe the movement of the Earth and other planets relative to the Sun in the solar system.
2. Children will be able to describe the movement of the Moon relative to the Earth.
3. Children will be able to describe the Sun, Earth and Moon as approximately spherical bodies.
4. Children will be able to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
5. Children will create a scaled solar system using spherical representations.
6. Children will understand the difference between geo and heliocentric solar system and how views have evolved.
7. Children will learn about the works of ***Nicolaus Copernicus*** and ***Galileo Galilei.***
8. Children will use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
9. Children will observe, measure, record and identify patterns for changing shadows throughout a day.
10. Children will be able to match lunar phases to relative positions of the Moon, Sun and Earth.

Year 6

nimals including Humans

1. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
2. Children will be able to identify the components of blood, describe their functions, and note the different blood groups alongside naming the three types of blood vessel (veins, arteries and capillaries).
3. Children will explore the structure and function of the human heart and investigate and understand that heart size and speed relates to age, fitness and activity and can be improved.
4. Children will be able to describe the ways in which nutrients and water are transported within animals, including humans.
5. Children will know that nutrients and water are transported around the body in the blood.
6. Children will know that diffusion and *osmosis* are processes that move nutrient and water in the body.
7. Children will be able to demonstrate how blood transports nutrients, water, gases and waste around the body.
8. Children will explore and demonstrate how the circulatory system works including the role of the heart.
9. Children will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
10. Children will be able to identify those aspects of a diet that are healthy and unhealthy and the impact diet can have on the body, using scientific evidence alongside examining the amount and types of exercise that keep a child and adult body healthy.
11. Children will be able to identify how drugs impact on the way the human body functions and understand that certain drugs can be used for positive effect in the form of medicine.
12. Children learn about the life and significance of ***Edward Jenner***

Key Outcomes

Year 3		Year 4		Year 5		Year 6	
Forces and Magnets	Working Scientifically • Set up simple practical enquiries and comparative and fair tests. Children will ask questions and investigate how toy vehicles move on different surfaces. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment. Children will be able to group items using a magnet. They will investigate how magnets attract some materials and not others. • Ask relevant questions and use different types of scientific enquiries to answer them. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Children will be able to explain why magnets attract some materials. They will also understand that opposite poles attract and like poles repel. • Identify differences, similarities or changes related to simple scientific ideas and processes.	**Animals including Humans**	Working Scientifically • Ask relevant questions and use different types of scientific enquiries to answer them. • Use straightforward scientific evidence to answer questions or to support findings. Children will compare teeth of a herbivore and carnivore and consider why they are different. • Set up simple practical enquiries and comparative and fair tests. Children will investigate which drinks are bad for the teeth. • Identify differences, similarities or changes related to simple scientific ideas and processes. Children will use everyday objects to explore the human digestive system.	**Earth and Space**	.Working Scientifically • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Children will suggest enquiry questions to back up a series of statements about the Earth the Sun and the Moon. • Identify scientific evidence that has been used to support or refute ideas or arguments. Children will carry out shadow investigations which help support the idea that the Earth moves on it's axis. • Record data of increasing complexity using tables, scatter graphs, bar and line graphs. Children will use fruit to create a model of the solar system. They will research, collate and create graphs for data about the planets. • Report and present 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. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Children will observe, measure and identify patterns I changing shadows across a day. • Children will use scientific knowledge and logic to solve time problems.	**Animals including Humans**	Working Scientifically • Identify scientific evidence that has been used to support or refute ideas or arguments. • Children will investigate and understand that the heart size and speed relates to age, fitness and activity and can be improved. • Children will investigate and recreate heart rates for varying levels of exertion – giving explanations for observations. • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Children will investigate diffusion and osmosis. • Report and present findings from enquiries, including conclusions, causal relationships and explanations of results. • Identify scientific evidence that has been used to support or refute ideas or arguments. • Children will create line graphs to record the resting heart rate compared to the heart rate after exercise and explain their results.

Key Outcomes – Summer 2

Year 3	Year 4	Year 5	Year 6
Animals including Humans 1) Children will 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. 2) Children will understand that animals (including humans) can be grouped by what they eat (carnivores, herbivores and omnivores). 3) Children will revise learning on herbivores, carnivores and omnivores. 4) Children will understand the 5 food groups and the proportions of each needed to create a healthy, balanced diet (proteins, carbohydrates, fats, fruits, vegetables and dairy). 5) Children will know the nutritional properties of carbohydrates, fruit and vegetables, proteins and dairy foods as well as importance of limiting fat and sugar intake. 6) Children will understand that not all animals have an internal skeleton and that the presence of this is an important feature in classifying them. 7) Children will know that a skeleton is needed for support, protection and movement. 8) Children will understand how muscles work in pairs to allow movement and maintain posture. 9) Children will investigate whether people who do more sport have stronger muscles. 10) Children will know the diaphragm is used in breathing and the lungs transfer oxygen to the blood. 11) Children will know that muscles need more oxygen to work hard and this affects breathing rate.	**Living things and their habitats** 1. Children will begin to consider how the local environment has changed and why these changes may have happened. 2. Children will consider aspects of the school grounds that have changed and have a class debate about a hypothetical scenario that would bring about environmental change. 3. Children will be able to recognise that environments can change and that this can sometimes pose dangers to living things. 4. Children will consider some of the natural changes that could happen to an environment and to understand what some living things can do to survive such changes. 5. Children will look at the potential impact of deforestation. 6. Children will learn about bumblebees and the impact of their declining numbers are. 7. Children will plan how to make a positive change to a small local area considering the impact on people and other living things. 8. Children will learn about the life of ***Carl Linnaeus.***	**Animals including Humans** 1. Children will be able to describe the changes as humans develop to old age. 2. Children will look for patterns in animal gestation periods and draw logical conclusions. 3. Children will explore the key stages of human foetal development. 4. Children will recognise and explore key milestones in baby and child development. 5. Children will identify and understand the changes in the adolescent human body during puberty and recognise and identify those changes during puberty that are gender specific. 6. Children will explore the key features and emotional changes in puberty in both boys and girls. 7. Children will be able to identify physical and mental changes that happen from adulthood to old age. 8. Children will be able to identify, order and explain the 6 key stages in a human life and create a human timeline diagram.	**Living things and their Habitats** 1. Children will describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. 2. Children will be able to give reasons for classifying plants and animals based on specific characteristics. 3. Children will recap who ***Carl Linnaeus*** was and learn about his classification system. 4. Children will explore classification systems, understanding that they group according to similarities and differences. 5. Children will be able to identify similarities and differences between living things in order to determine their classification and use classification keys to sort living things according to observable characteristics. 6. Children will be able to test out classification keys and identify potential flaws. 7. Children will be observe, research and record features of a range of leaves found in their local environment and design a key to classify leaves found in their local environment. 8. Children will be able to describe the key characteristics of unusual living things from around the world and use descriptions of features, and online research, to attempt to classify unusual living things. 9. Children will design, describe and name a new creature that characteristically sits within the Animalia classification.

Key Outcomes			
Year 3	**Year 4**	**Year 5**	**Year 6**
Animals including Humans Working Scientifically • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Use straightforward scientific evidence to answer questions or to support findings - pattern seeking enquiry. • Children will review data from a food survey and present their data in bar charts.	**Living things and their habitats** Working Scientifically • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries and comparative and fair tests. Children will conduct an experiment that highlights of greenhouse effect is. • Make systematic and careful observations and, where appropriate, take accurate measurements using thermometers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. They will record temperatures over time in tables and graphs. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions or to support findings. Children will plan how to make a positive change to a small, local area.	**Animals including Humans** Working Scientifically • Record data using tables, scatter graphs, bar and line graphs. • Children will look for patterns in animal gestation periods. • Create a scientific diagram to show the key stages of foetal development. • Children will be able to create growth graphs and predict growth patterns. • Report and present 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. • Children will be able to create a venn diagram to show changes in both boys and girls during puberty. • Identify scientific evidence that has been used to support or refute ideas or argument. • Record data using scientific diagrams and labels.	**Living things and their Habitats** Working Scientifically • Plan different types of scientific enquiries to answer questions. • Record results of increasing complexity using scientific diagrams and labels, and classification keys. Children will create classification routes for a range of living things. • Children will group animals, microorganisms and plants into broad groups then sub groups according to observable features. • Report and present findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations. • Children will make a classification system for sweets. • Record data and results of increasing complexity using classification keys. • Children will observe, record and classify local area living things. • Identify scientific evidence that has been used to support or refute ideas or arguments.

Science: key knowledge, skills and concepts

Intention 1: Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.

Year 3

Biology

- Children will identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.
- Children will 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.
- Children will investigate the way in which water is transported within plants.
- Children will explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
- Children will 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.
- Children will identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Chemistry

- Children will compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
- Children will describe in simple terms how fossils are formed when things that have lived are trapped within rock.
- Children will recognise that soils are made from rocks and organic matter.

Year 4

Biology

- Children will recognise that living things can be grouped in a variety of ways.
- Children will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
- Children will recognise that environments can change and that this can sometimes pose dangers to living things.
- Children will describe the simple functions of the basic parts of the digestive system in humans.
- Children will identify the different types of teeth in humans and their simple functions.
- Children will construct and interpret a variety of food chains, identifying producers, predators and prey.

Chemistry

- Children will compare and group materials together, according to whether they are solids, liquids or gases.
- Children will observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).
- Children will identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Year 5

Biology

- Children will describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Children will describe the life process of reproduction in some plants and animals.
- Children will describe the changes as humans develop to old age.

Chemistry

- Children will 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.
- Children will know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
- Children will use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
- Children will give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- Children will demonstrate that dissolving, mixing and changes of state are reversible changes.
- Children will 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 6

Biology

- Children will 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.
- Children will give reasons for classifying plants and animals based on specific characteristics.
- Children will identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
- Children will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
- Children will describe the ways in which nutrients and water are transported within animals, including humans.
- Children will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
- Children will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- Children will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Science: key knowledge, skills and concepts

Intention 1: Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.

Year 3	Year 4	Year 5	Year 6
Physics • Children will recognise that they need light in order to see things and that dark is the absence of light. • Children will notice that light is reflected from surfaces. • Children will recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Children will recognise that shadows are formed when the light from a light source is blocked by an opaque object. • Children will find patterns in the way that the size of shadows change. • compare how things move on different surfaces • notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing.	**Physics** • Children will identify how sounds are made, associating some of them with something vibrating. • Children will recognise that vibrations from sounds travel through a medium to the ear. • Children will find patterns between the pitch of a sound and features of the object that produced it. • Children will find patterns between the volume of a sound and the strength of the vibrations that produced it. • Children will recognise that sounds get fainter as the distance from the sound source increases. • Children will identify common appliances that run on electricity. • Children will construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Children will 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. • Children will recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Children will recognise some common conductors and insulators, and associate metals with being good conductors.	**Physics** • Children will describe the movement of the Earth and other planets relative to the sun in the solar system. • Children will describe the movement of the moon relative to the Earth. • Children will describe the sun, Earth and moon as approximately spherical bodies. • Children will use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. • Children will explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Children will identify the effects of air resistance, water resistance and friction, that act between moving surfaces. • Children will recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	**Physics** • Children will recognise that light appears to travel in straight lines. • Children will 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. • Children will 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. • Children will use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. • Children will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Children will 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. • Children will use recognised symbols when representing a simple circuit in a diagram. • Forces and chemistry

Science: key knowledge, skills and concepts

Intention 2: Ignite curiosity in children about our universe which promotes respect for the living and non-living.

Year 3	Year 4	Year 5	Year 6
• Children will investigate the importance of a skeleton in humans. • Children will be able to explain how shadows are formed. • Children will investigate how different colours reflect light. • Children will investigate everyday materials on the basis of whether they are attracted to a magnet. • Children will observe rocks closely and discover that they have different qualities and features.	• Children will apply their knowledge of the water cycle in geography about the weather and climate change. • Children will investigate factors which speed up evaporation. • Children will set up practical enquiries to investigate which drinks are bad for the teeth. • Children will use everyday objects to explore the digestive system. • Children will investigate patterns between the pitch of a sound and features of the object that produces it. • Children will construct simple series electrical circuits.	• Children will learn about the lifecycle and reproduction of amphibians and insects. • Children will look for patterns in animal gestation periods. • Children will identify the effects of air resistance. • Children will describe the movement of the moon relative to the Earth. • Children will match lunar phases to relative positions of the Moon, Sun and Earth. • Children will explore thermal insulating properties. • Children will demonstrate that dissolving, mixing and changes of state are reversible changes.	• Children will be able to explain how a periscope works. • Children will investigate light colour mixing. • Children will give reasons for variations in how components function. • Children will investigate the effect of the water temperature on an ice berg.

Science: key knowledge, skills and concepts

Intention 3: Children are equipped with a range of skills to work scientifically.

Year 3	Year 4	Year 5	Year 6
• Ask relevant scientific questions. • Sett up simple practical enquiries and fair tests. • Make careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers. • Gather, record and present data to help in answering questions. • Record findings using simple scientific language, drawings and labelled diagrams. • Report on findings from enquiries, including oral and written explanations. • Use results to draw simple conclusions, make predictions for new values. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions.	• 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. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions or to support their findings.	• Plan different types of scientific enquiries to answer questions. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make predictions to set up further fair tests. • Report and present findings from enquiries, in oral and written forms such as displays and other presentations. • Begin to identify scientific evidence that has been used to support or refute ideas or arguments.	• 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 when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make predictions to set up further comparative and fair tests. • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments.

Science: key knowledge, skills and concepts

Intention 4: Children learn to be resilient and reflective when asking questions about their own and others work.

Year 3	Year 4	Year 5	Year 6
• Ask some relevant questions and use different types of scientific enquiries to answer them. • Begin to explore everyday phenomena and the relationships between living things and familiar environments. • Begin to develop their ideas about functions, relationships and interactions. • Begin to raise their own questions about the world around them. • Begin to make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple. comparative and fair tests, finding things out using secondary sources.	• Ask relevant questions and usedifferent types of scientific enquiries to answer them. • Explore everyday phenomena and the relationships between living things and familiar environments. • Develop their ideas about functions, relationships and interactions. • Raise their own questions about the world around them. • Make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.	• Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. • Begin to recognise some more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. • Begin to recognise that scientific ideas change and develop over time. • Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. • Begin to recognise more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. • Recognise that scientific ideas change and develop over time. • Select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.

Science: key knowledge, skills and concepts

Intention 5: Develop a progressive scientific vocabulary that enables them to confidently communicate and justify scientific ideas.

Year 3	Year 4	Year 5	Year 6
• Begin to use some scientific language to talk about what they have found out. • Begin to use relevant scientific language. • Begin to use comparative and superlative language. • *See separate slides*	• Use some scientific language to talk and write about what they have found out. • Use relevant scientific language. • Use comparative and superlative language. • *See separate slides*	• Begin to read, spell and pronounce scientific vocabulary correctly. • Begin to use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas. • Begin to confidently use a range of scientific vocabulary. • Begin to use conventions such as trend, rogue result, support prediction and -er word generalisation. • Beginning to use scientific ideas when describing simple processes. • Begin to use the correct science vocabulary. • *See separate slides*	• Read, spell and pronounce scientific vocabulary correctly. • Use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas. • Confidently use a range of scientific vocabulary. • Use conventions such as trend, rogue result, support prediction and -er word generalisation. • *See separate slides*

Intention 6: Children are knowledgeable about a range of significant scientists both from history and modern day.

Year 3	Year 4	Year 5	Year 6
•Children to know and understand the significance of **Joseph Banks** and his botanical research. •Children will understand how **Mary Anning's** findings contributed to important changes in scientific thinking. •Children will learn about the significance of **Sir Isaac Newton** and be able to explain why he is considered one of the most influential scientists. •Children will learn about the life and inventions of **Thomas Edison** and how they have influenced modern technology (phonograph, motion picture camera and the light bulb).	• Children will recognize the significance of **William Beaumont** and his research on the digestive system. •Children understand the significance of **William Gilbert** and how his studies on electricity have influenced modern science. • Children will understand how **Alexander Graham Bell**'s invention of the telephone revolutionised technology. •Children will begin to understand and recognise **Carl Linnaeus**' classification systems.	•Children will explore the significance of **Jane Goodall** and **David Attenborough** and how their research has influenced science today. •Children will learn about life and the significance of ***Galileo Galilei*** when understand forces and gravity. •Children will learn about the lives and significance of ***Joseph Lister*** and ***Florence Nightingale*** and the impact they have had on modern day science and medicine. •Children will learn about the works of ***Nicolaus Copernicus*** and be able to explain the heliocentric system.	•To research the life and work of ***Charles Darwin*** and understand the significance of his work in relation to evolution. •Children will learn about the life and significance of ***Alessandro Volta*** and ***Nikola Tesla*** when studying electricity. • Children will begin to understand the significance of the work of **Edward Jenner** In relation to vaccines and cures. •Children will recap who ***Carl Linnaeus*** was and learn about his classification systems, applying their learning to investigations and explaining their reasoning.

Science Implementation

Cavendish Close Junior Academy

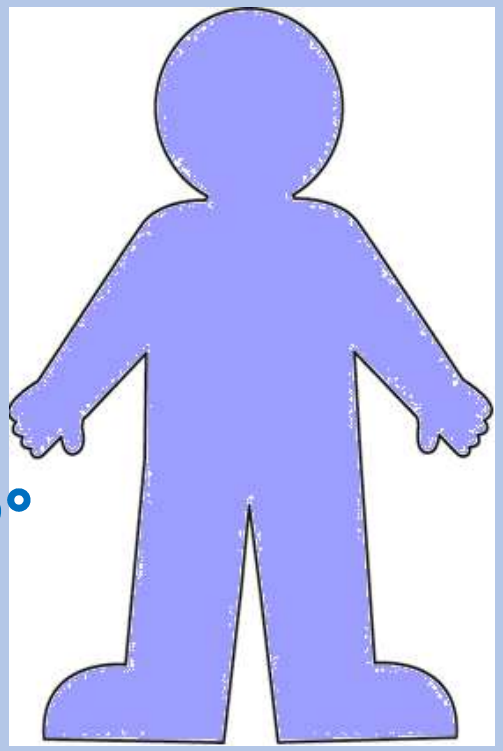
Year 3 overview

Year 3						
	Rocks and Fossils (Chemistry)	Plants (Biology)	Light (Physics)	Forces and Magnets (Physics)	Forces and Magnets (Physics)	Animals including Humans (Biology)

Science Implementation

Cavendish Close Junior Academy

A great year 3 **biologist** will:



Scientific Knowledge
Understand what a plan requires to live.
Name the key parts of a flower.
Identify the functions of different parts of plants.

Curious
Investigate the importance of a skeleton in animals.

Working Scientifically
Classify food plants. Know the nutritional properties of foods and create bar charts to review and present data.

Asking Questions
Explain how plants grow and thrive.
Investigate if people who do sports have stronger muscles.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings.
(see year 3 sheet)

Significant Individuals
Develop their knowledge of Sir Joseph Banks and explain his significance to Science.

Science Implementation

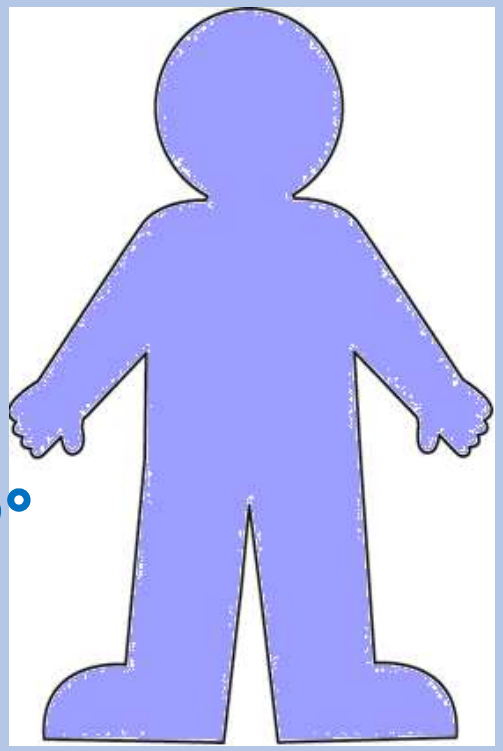
Cavendish Close Junior Academy

A great year 3 **physicist** will:

<u>Scientific Knowledge</u>
Identify different types of forces.
Identify some magnetic materials.
Recognise that we need light to see and that it reflects off shiny surfaces.

<u>Curious</u>
Explain how shadows are formed.
Investigate how different colours reflect light.
Investigate everyday materials on the basis of whether they are attracted to a magnet.

<u>Working Scientifically</u>
Compare and group together different types of rocks .
Investigate how the size of a shadow changes.
Compare and group together everyday materials



<u>Asking Questions</u>
Explore how magnets behave towards each other.

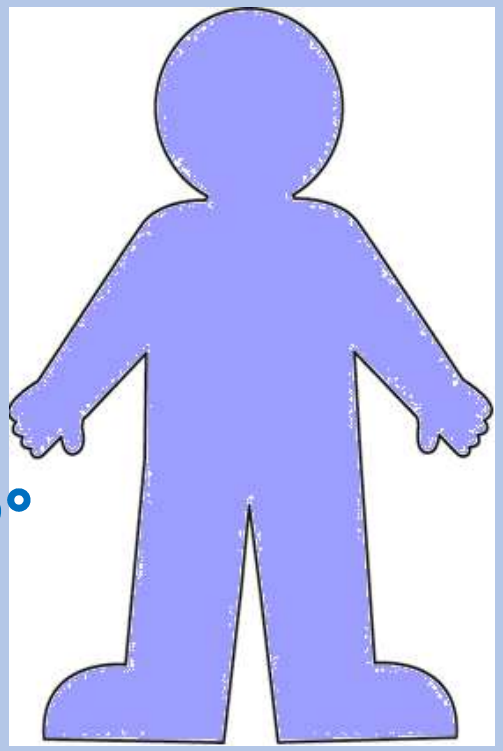
<u>Scientific Vocabulary</u>
Develop and improve their scientific vocabulary to enable them to explain their findings
(see year 3 sheet)

<u>Significant Individuals</u>
Understand the life and significance of Mary Anning and Sir Isaac Newton.

Science Implementation

Cavendish Close Junior Academy

A great year 3 **chemist** will:



Scientific Knowledge
Know the difference between sedimentary, metamorphic and igneous rock.

Curious
Observe rocks closely and discover that they have different qualities and features.

Working Scientifically
Compare and group together different types of rocks.
They will use a rock identification key to discover what type of rock each sample is.

Asking Questions
Use knowledge of the properties of rocks to determine why particular rocks were selected for different tasks.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 3 sheet)

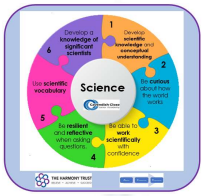
Significant Individuals
Develop their knowledge of Mary Anning and explain her significance to Science.

Year 3 Vocabulary – Plants 1

			Year 2
Plants	Flowers	Wilting	Disperse
Growth	Petals	Yellowing	Bean
Light	Shoots	Requirement	Wind Pollination
Warmth	Buds	Measure	Bulb
Air	Fruits	Record	Hydroponics
Soil	Seeds	Table	Dry
Water	Classify	Line graph	Wet
Investigate	Data logger	Bar graph	Moist
Seedlings	Light level	Transported	Germination
Research	Temperature	Height	Nutrients
Root	Stem	Leaves	Predict

Year 3 Vocabulary – Plants 2

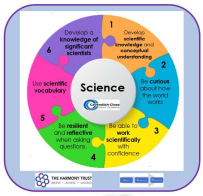
Botany	Ovules	Seed head	Year 2
Botanist	Carpel	Parent plant	Disperse
Botanical	Pollen	Dispersal	Bean
Reproduction	Pollination	Germination	Wind Pollination
Male	Fertilisation	Investigate	Bulb
Female	Fruits	Fair test	Hydroponics
Stigma	Pods	Record	Dry
Style	Seeds	Results	Wet
Stamen	Nut		Moist
Ovary	Berry		Nutrients
			Predict



Year 3 Vocabulary – Rocks and Fossils

Cavendish Close Junior Academy

Rock	Brick	Survey	Soil
Sandstorm	Tile	Data	Micro-organisms
Limestone	Concrete	Database	Organic Matter
Chalk	Igneous	Fossil	Particles
Granite	Sedimentary	Ichthyosaur	Sand
Slate	Metamorphic	Plesiosaur	Silt
Marble	Permeable	Ammonite	Fair test
Classification	Acid	Sediment	Compare
Observation	Erosion	Minerals	Sort
Petrologist	Identification key	Mould	Predict
Man-made		Cast	

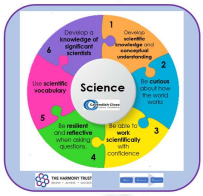


Year 3 Vocabulary – Forces and Magnets

Force
Push
Pull
Theory
Fair test
Investigate
Measure
Gravity
Contact

Results
Table
Friction
Time
Record
Magnet
Magnetism
Magnetic
Non-magnetic

Attract
Attraction
Theory
Repel
Repulsion
Poles
North
South



Year 3 Vocabulary – Animals including humans

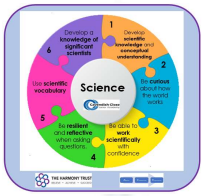
Herbivore
Carnivore
Omnivore
Nutrition
Diet
Food chain
Data
Table
Bar chart
Carbohydrates
Proteins
Dairy

Fats
Sugars
Vitamins
Minerals
Fibre
Growth
Repair
Health
Energy
Vertebrate
Invertebrate
Bone

Skeleton
Skull
Ribcage
Pelvis
Femur
Muscles
Joints
Tendons
Contract
Relax

Biceps
Triceps
Scatter graph
Lungs
Diaphragm
Lung capacity
Investigate
Measure
Compare

<u>Year 2</u>
Egg
Chick
Hatch
Baby
Adult
Grow
Change
Feathers
Observe
Record



Year 3 Vocabulary – Light

Light
White light
Visible light
Colour
Spectrum
Refraction
Light source
Energy

Reflector
Reflect
Predict
Investigate
Reflective
Materials
Mirror
Reflection

Image
Concave
Convex
Transparent
Translucent
Opaque
Shadow
Measure

Science Implementation

Cavendish Close Junior Academy

Year 4 overview

Year 4	Sound (Physics)	Living things and their habitats (Biology)	Electricity (Physics)	States of Matter (Chemistry)	Animals including Humans (Biology)	Living things and their habitats (Biology)

Science Implementation

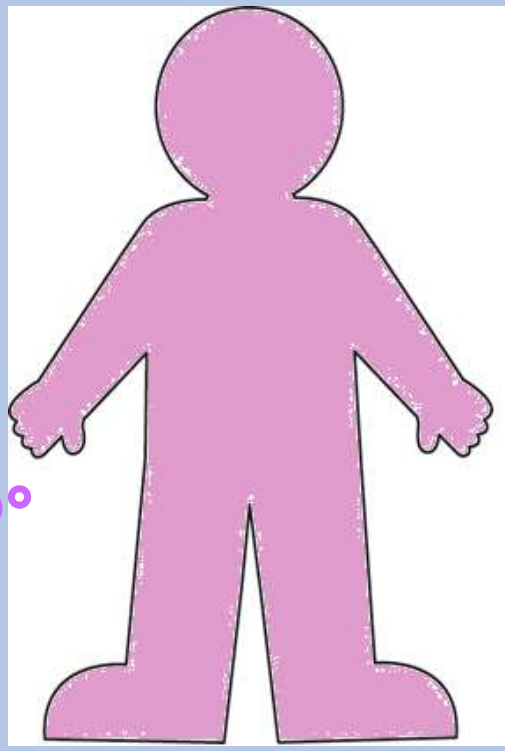
Cavendish Close Junior Academy

A great year 4 **biologist** will:

Scientific Knowledge
Describe simple functions of the digestive system.
Identify different types of teeth.

Curious
Set up practical enquiries to investigate which drinks are bad for the teeth.
Use everyday objects to explore the digestive system.

Working Scientifically
Compare teeth of a herbivore and omnivore and explain why they are different.
Set up simple practical enquiries to investigate the teeth and digestive system.



Asking Questions
Explain why certain drinks are bad for the teeth.
Explore the function of the digestive system.

Scientific Vocabulary
Define predator, prey, producer, herbivore, carnivore and omnivore.
Develop and improve their scientific vocabulary to enable them to explain their findings
(see year 4 sheet)

Significant Individuals
Develop their knowledge of William Beaumont and Carl Linnaeus and explain their significance to Science.

Science Implementation

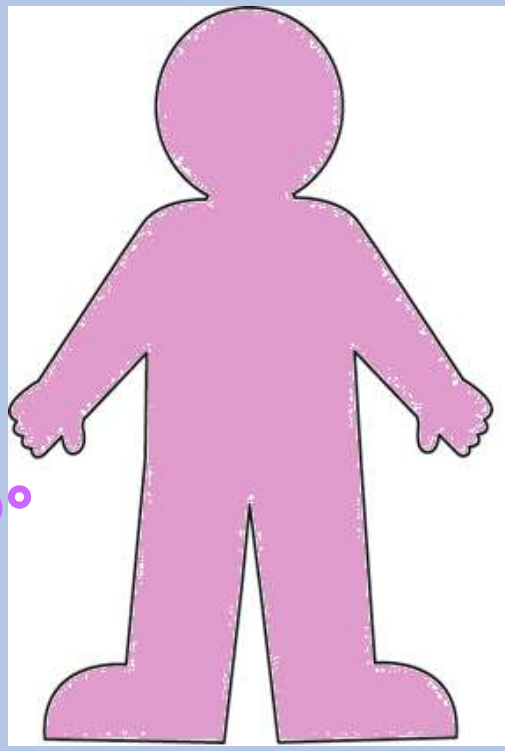
Cavendish Close Junior Academy

A great year 4 **physicist** will:

Scientific Knowledge
Identify how sounds are made and recognise that vibrations travel through a medium.
Identify common appliances that run on electricity.

Curious
Investigate patterns between the pitch of a sound and features of the object that produces it.
Construct simple series electrical circuits.

Working Scientifically
Investigate sound-proofing materials by planning and conducting an investigation.
Investigate the function of a switch in a circuit.



Asking Questions
Begin to understand some of the workings of the human ear.
Identify dangers associated with electricity.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 4 sheet)

Significant Individuals
Develop their knowledge of Alexander Graham Bell and William Gilbert and explain their significance to Science.

Science Implementation

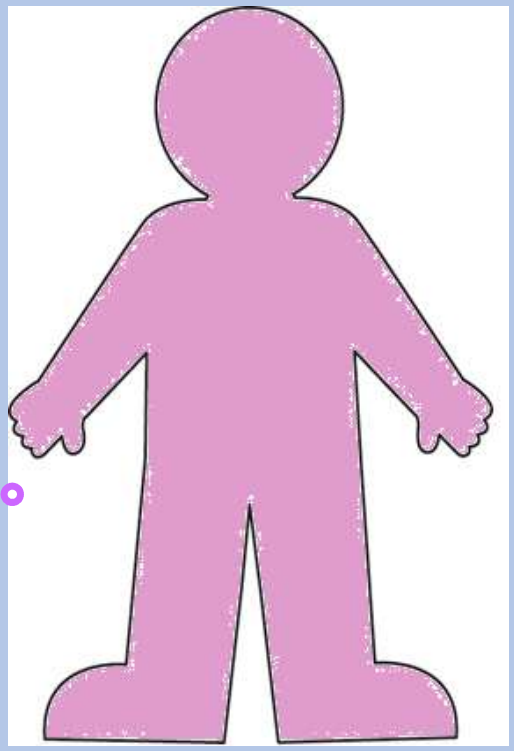
Cavendish Close Junior Academy

A great year 4 **chemist** will:

Scientific Knowledge
Understand that materials can be classified into different states.
Know that water moves in a cycle due to changes in temperature.

Curious
Apply their knowledge of the water cycle in geography about the weather and climate change.
Investigate factors which speed up evaporation.

Working Scientifically
Understand that materials change shape when they are heated or cooled.
Use data loggers to record temperature and make careful observations over time.



Asking Questions
Ask questions about evaporation and set up practical enquiries to answer them.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 4 sheet)

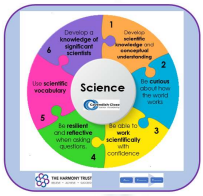
Year 4 Vocabulary – States of Matter

Solid
Liquid
State
Matter
Particle
Grain
Category
Classify
Group

Evidence
Question
Discuss
Gas
Proof
Explain
Solidifying
Freezing
Melting

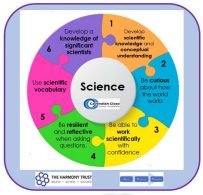
Condensing
Evaporating
Thermometer
Temperature
Celsius
Fahrenheit
Degrees
Evaporation
Condensation

Precipitation
Ice
Rain
Clouds
Vapour
Transpiration
Cycle
Change



Year 4 Vocabulary – Animals including humans

Teeth	Nutrition	Omnivore
Incisors	Mouth	Diet
Molars	Oesophagus	Food chain
Canines	Stomach	Producer
Jaw	Small intestine	Predator
Evidence	Large intestine	Prey
Digestion	Rectum	Consumer
Chew	Anus	Impact
Saliva	Faeces	Present
Question	Herbivore	Display
Digestive system	Carnivore	Explain

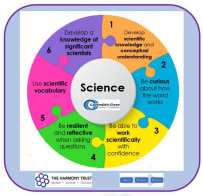


Year 4 Vocabulary – Electricity

Electricity
Circuit
Switch
Battery
Plug
Mains
Appliance
Device
Wire

Crocodile clip
Bulb
Buzzer
Connection
Power
Cell
Danger
Power

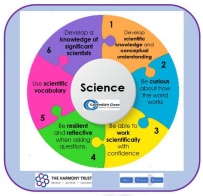
Electrocute
Socket
Safety
Energy
Flow
Current
Conductor
Insulator



Year 4 Vocabulary – Sound

Cavendish Close Junior Academy

Sound	Transmit	Volume	Factor
Listen	Medium	Loudness	Prediction
Hear	Air	Amplitude	Results
Ears	Water	Pitch	Resources
Noise	Solid	Frequency	Planning
Loud	Source	Sign-language	Muffle
Quiet	Soundwaves	Investigation	Evidence
Silent	Particles	Fair test	Conclusion
Vibrations	Travel	Variable	Evaluate



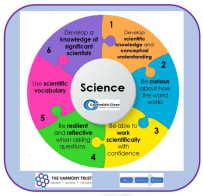
Year 4 Vocabulary – Living things and their habitats 1

Alive
Dead
Movement
Reproduction
Sensitivity
Nutrition
Excretion
Respiration
Growth
Habitat

Local
Living thing
Plant
Animal
Insect
Natural
Man-made
Observation
Record
Vertebrate

Invertebrate
Arachnid
Question
Classify
Sort
Group
Similar
Different
Branching database
Identify

Variety
Explore
Key
Details
Linnaeus
Year 2
Categories
Classification
Features
Dependence
Micro-habitat



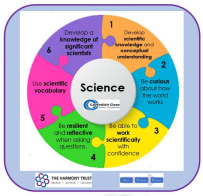
Year 4 Vocabulary – Living things and their habitats 2

Environment
Change
Living thing
Danger
Adapt
Threat
Climate
Greenhouse

Thermometer
Test
Carbon dioxide
Results
Graph
Table
Impact

Positive
Negative
Fish
Amphibians
Reptiles
Birds
Mammals

<u>Year 2</u>
Growth
Germination Planting
Edible
Mini-beasts
Habitat
Food chain
Energy
Transfer
Predators
Harvest
Grow
Allotment
Produce
Soil
Wash
Cook



Science Implementation

Cavendish Close Junior Academy

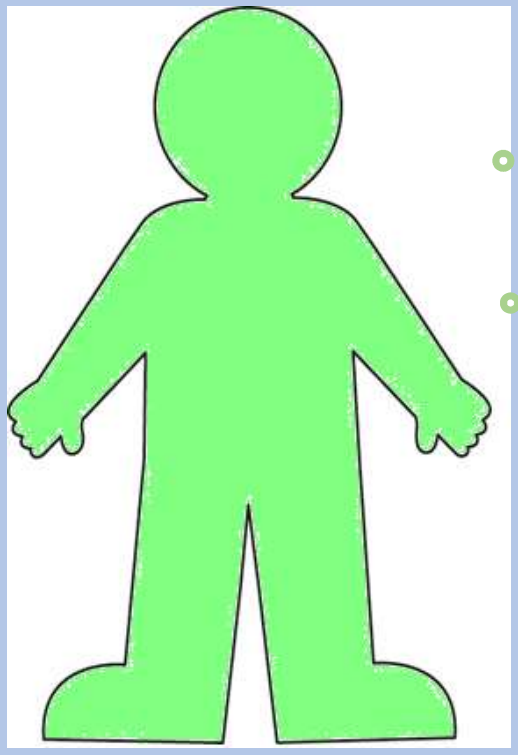
Year 5 overview

Year 5	Living things and their habitats (Biology)	Forces (Physics)	Earth and Space (Physics)	Properties of Materials (Chemistry)	Changes of Materials (Chemistry)	Animals including Humans (Biology)

Science Implementation

Cavendish Close Junior Academy

A great year 5 **biologist** will:



Scientific Knowledge
Describe the life process of reproduction in some plants and animals.
Describe the changes as humans develop to old age.

Curious
Learn about the lifecycle and reproduction of amphibians and insects.
Look for patterns in animal gestation periods.

Working Scientifically
Record the cycles in the form of annotated scientific illustrations.
Create Venn diagrams to show changes in both boys and girls during puberty.

Asking Questions
Explore artificial asexual reproduction in flowering plants.
Explore the key stages of foetal development.

Scientific Vocabulary
Define sexual and asexual reproduction.
Develop and improve their scientific vocabulary to enable them to explain their findings
(see year 5 sheet)

Significant Individuals
Develop their knowledge of Jane Goodall and David Attenborough and explain their significance to Science.

Science Implementation

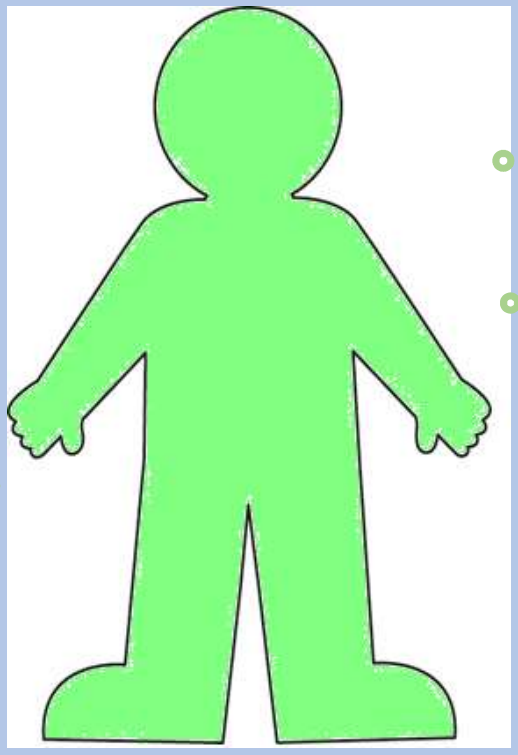
Cavendish Close Junior Academy

A great year 5 **physicist** will:

Scientific Knowledge
Define gravity and resistance and identify balanced and unbalanced forces.
Describe the movement of the Earth and other planets relative to the Sun and the solar system.

Curious
Identify the effects of air resistance.
Describe the movement of the moon relative to the Earth.
Match lunar phases to relative positions of the Moon, Sun and Earth,

Working Scientifically
Plan an investigate to investigate the effectiveness of various parachutes.
Investigate the effect ground friction has on movement.
Carry out shadow investigations which help support the idea that the Earth moves on it's axis.



Asking Questions
Identify the effects of friction.
Recognise that some mechanisms allow a smaller force to have a greater effect,.
Explain day and night.

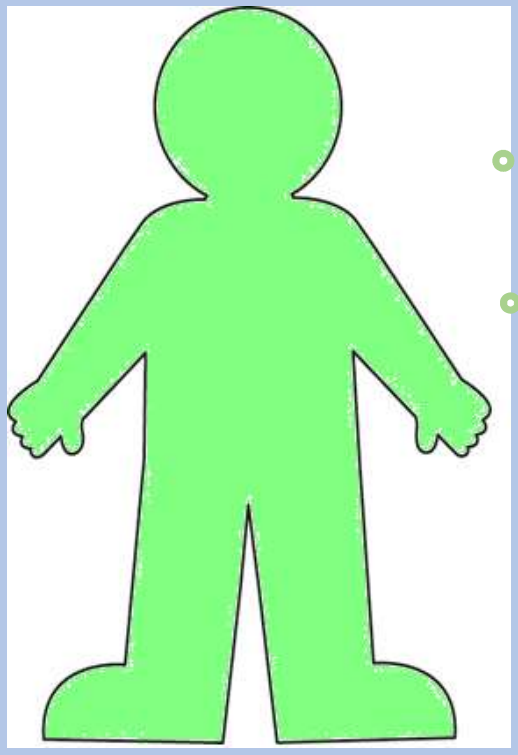
Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 5 sheet)

Significant Individuals
Develop their knowledge of Galileo Galilei and Nicolaus Copernicus and explain their significance to Science.

Science Implementation

Cavendish Close Junior Academy

A great year 5 **chemist** will:



Scientific Knowledge
Compare and group together everyday materials on the basis of their properties.
Know that some materials will dissolve in liquid to form a solution.

Curious
Explore thermal insulating properties.
Demonstrate that dissolving, mixing and changes of state are reversible changes.

Working Scientifically
Investigate which materials make the best thermal insulators.
Investigate filtration, evaporation and sieving methods in order to separate materials.

Asking Questions
Investigate electrical conductivity of materials.
Explain that some changes result in the formation of new materials.
Define and explain oxidation.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 5 sheet)

Significant Individuals
Develop their knowledge of Joseph Lister and Florence Nightingale and explain their significance to Science.

Year 5 Vocabulary – Living things and their habitats

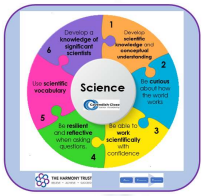
Gamete
Stamen
Stigma
Carpel
Pistil
Pollination
Germination
Flowering
Sexual
Asexual

Reproduction
Life cycle
Seed
Pollen
Anther
Filament
Style
Ovary
Botanical
Illustration

Dissection
Corm
Bulb
Spores
Cutting
Fern
Moss
Liverwort
Tubers
Non-flowering

Propagation
Artificial
Natural
Metamorphosis
Amphibian
Insect
Mammal
Bird
Gestation
Foetus

Sperm
Egg
Uterus
Chick
Egg
Baby
Adult
Naturalist
Observation
Conservation
Endangered



Year 5 Vocabulary – Forces

Support

Force

Fall

Earth

Gravity

Air resistance

Friction

Balancing force

Weight

Newtons

Resistance force

Variables

Moving surfaces

Accuracy

Precision

Causal-relationships

Mechanisms

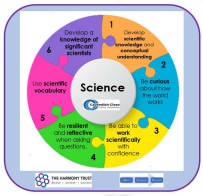
Levers

Pulleys

Transfers

Refute

Water resistance



Year 5 Vocabulary – Properties of Materials

Opinion

Fact

Variables

Accuracy

Precision

Scatter-graphs

Material names

Property names

Enquiry

Line graph

Causal relationship

Degree of trust

Thermal

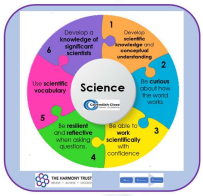
Insulator

Conductor

Bar Chart

Support

Refute

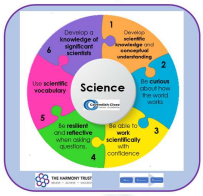


Year 5 Vocabulary – Changes of Materials

Variables
Accuracy
Precision
Enquiry
Solid
Liquid
Gas
Dissolve
Soluble

Solute
Solution
Line graph
Insoluble
Filter
Sieve
Magnet
Magnetism
Evaporation

New material
Degree of trust
Opinion
Fact
Scatter graphs
Mixture
Heating
Burning
Cooking
Reaction



Year 5 Vocabulary – Earth and Space

Earth	Spin	Mars	Scatter graph	Time-zone
Planets	Night	Jupiter	Line graph	Greenwich-meantime
Sun	Day	Saturn	Geocentric	Gnomon
Solar-system	Orbit	Uranus	Heliocentric	Eclipse
Moon	Opinion	Neptune	Orrery	Reflection
Celestial body	Fact	Pluto	Axis	Telescope
Sphere	Support	Dwarf planet	Shadow clock	Satellite
Spherical	Refute	Orbit	Sundial	Tide
Rotate	Mercury	Accuracy	Astronomical	Mass
Rotation	Venus	Precision	Variables	Gravity

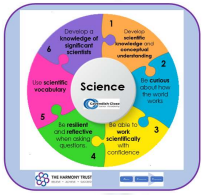
Year 5 Vocabulary – Animals including humans

Scatter graph
Line graph
Bar chart
Causal-relationships
Support
Refute
Gestation
Life-cycle

Sperm
Egg
Foetus
Scientific-diagram
Development
Nutrition
Uterus
Baby

Child
Growth
Comparison
Centile
Healthy
Adolescence
Adolescent
Puberty

Teenager
Reproduction
Aging
Old-age
Elderly
Change
Death
Timeline



Science Implementation

Cavendish Close Junior Academy

Year 6 overview

Year 6	Light (Physics)	Evolution and Inheritance (Biology)	Electricity (Physics)	Forces (Physics and Chemistry)	Animals including Humans (Biology)	Living things and their habitats (Biology)

Science Implementation

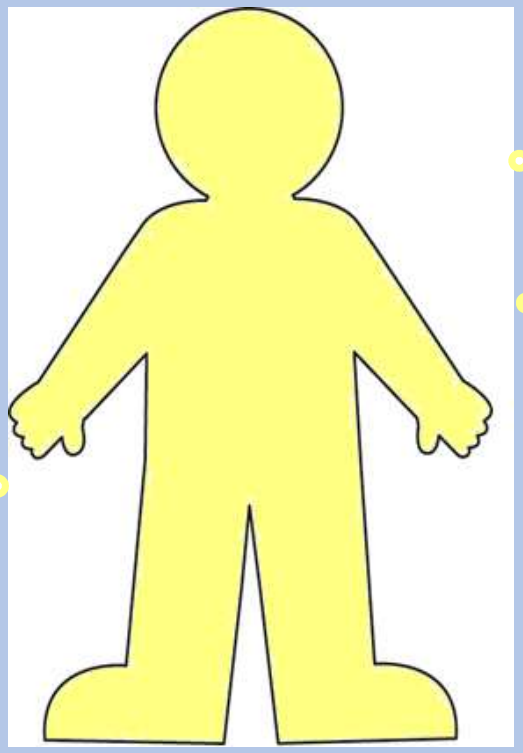
Cavendish Close Junior Academy

A great year 6 **biologist** will:

Scientific Knowledge
Understand that variation occurs within offspring as well as across species.
Understand that plants and animals are consistently changing and adapting to their environment.
Identify the main parts of the human circulatory system.
Describe how living things can be classified.

Curious
Examine the evidence demonstrating how plants have evolved.
Recognise the role fossils have in the development of evolutionary theory.
Explore the structure and function of the human heart.
Test our classification keys and explore their flaws.

Working Scientifically
Plan an investigation, recognising and controlling variables to investigate how the size of shape of a bird's beak affects its chances of survival.
Investigate and understand that the heart size and speed relates to age, fitness and activity and that it can be improved.



Asking Questions
Suggest how some plants and animals are adapted to extreme environments.
Design an animal that should thrive and survive in the rainforest.
Recognise the impact of diet, exercise, drugs and lifestyle on the way the body functions.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 6 sheet)

Significant Individuals
Develop their knowledge of Edward Jenner, Charles Darwin and Carl Linnaeus explain their significance to Science.

Science Implementation

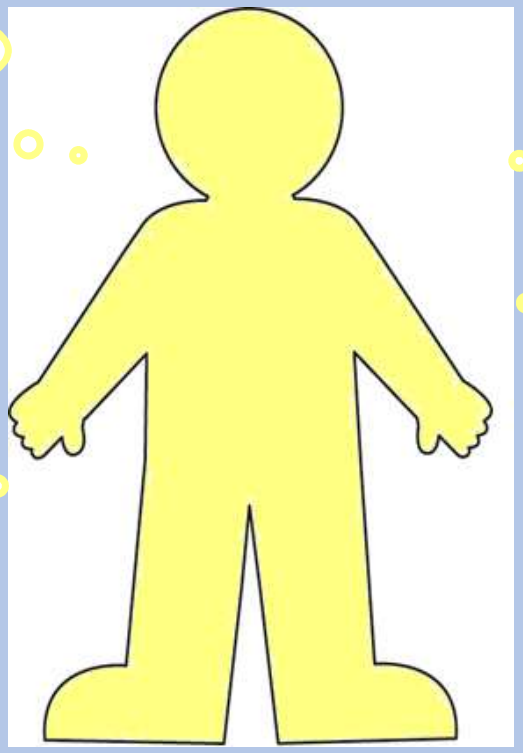
Cavendish Close Junior Academy

A great year 6 **physicist** will:

Scientific Knowledge
Recognise that light appears to travel in straight lines.
Recognise that white light can be split into 7 rainbow colours.
Use recognised symbols when representing a simple circuit diagram.
Understand that objects can be categorised by their ability to float.

Curious
Explain how a periscope works.
Investigate light colour mixing.
Give reasons for variations in how components function.
Investigate the effect of the water temperature on an ice berg.

Working Scientifically
Investigate the size of the shadow in relation to the light source.
Use data loggers to measure the amount of light reflected in a periscope.
Explore the effects of voltage on electrical components.



Asking Questions
Explain why shadows have the same shape as the objects which cast them.
Associate the brightness of a lamp with the number of voltage cells used in a circuit.

Scientific Vocabulary
Understand what displacement is.
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 6 sheet)

Significant Individuals
Develop their knowledge of Allesandro Volta and Nikola Tesla explain their significance to Science.

Science Implementation

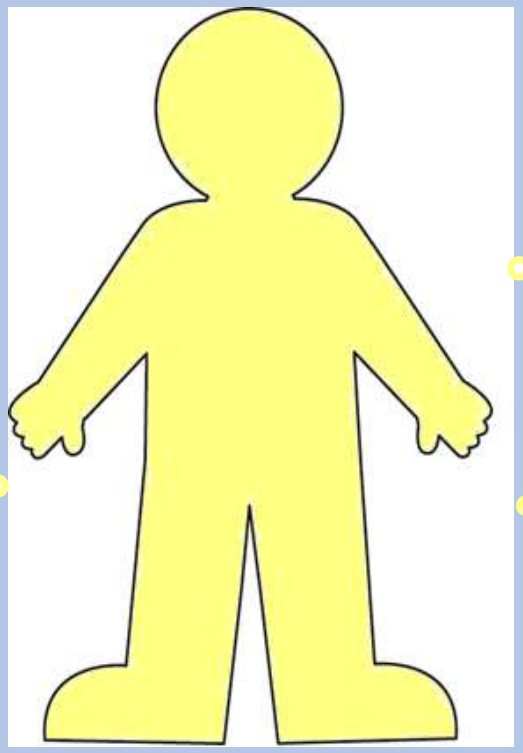
Cavendish Close Junior Academy

A great year 6 **chemist** will:

Scientific Knowledge
Investigate how an iceberg melts in different temperature water baths.
Begin to understand how de-icers work in icy conditions.

Curious
Investigate which substance makes the best de-icer.
Investigate the materials of Victorian toys.
Investigate the different uses of materials by 'make do and mend' during WW2.

Working Scientifically
Group materials (Victorian toys).
Take accurate measurements of the size of the iceberg and temperature of the water,
Present findings in a graph.



Asking Questions
Explain how the temperature of the water affects the size of the ice berg.
Explain why certain materials were put to different uses.
Explain how a de-icer works.

Scientific Vocabulary
Develop and improve their scientific vocabulary to enable them to explain their findings (see year 6 sheet)

Year 6 Vocabulary – Light

Light	Shadow	Opaque
Light source	Block	Translucent
Dark	Absorb	Straight
Reflect	Direct	Rainbow
Reflective	Direction	Colours
Mirror	Transparent	Periscope

Year 6 Vocabulary – Evolution and inheritance

Offspring

Characteristics

Vary

Variation

Inherit

Inheritance

Environment – variation

Suited

Suitable

Adaptation

Natural – selection

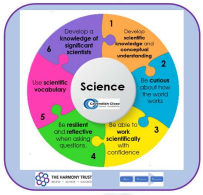
Evolution

Fossils

Theory

Opinion

Cladogram

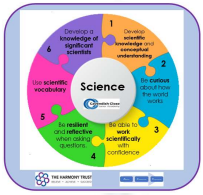


Year 6 Vocabulary – Forces

Force
Upthrust
Water resistance
Buoyancy
Displacement
Ice
Ice-berg
Weight
Thrust

Mass
Temperature
Thermometer
Record
Measure
Observations
Results
Conclusion
Launch

Line graph
Titanic
Melting
Stopwatch
Time
Investigation
Rocket
Newton
Third law



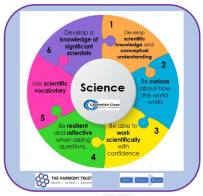
Year 6 Vocabulary – Electricity

Electricity
Electrical
Circuit
Complete-circuit
Circuit symbol
Components
Cell
Battery
Positive
Negative

Terminal
Short-circuit
Connect
Connection
Loose-connection
Wire
Crocodile clips
Bulb
Bright
Dim

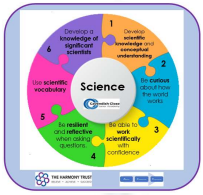
Switch
Buzzer
Volume
Motor
Faster
Slower
Voltage
Current
Conductor
Insulator

Metal
Enquiry
Question
Investigation
Findings
Resistance
Scatter graph
Causal-relationship
Appliance



Year 6 Vocabulary – Animals including humans

Blood	Lungs	Addiction
Vessels	Nutrients	Disease
Arteries	Water	Medicine
Veins	Circulatory	Alcohol
Capillaries	Exercise	Cigarettes
Heart	Diet	Stimulant
Pumps	Lifestyle	Depressant
Oxygen	Health	Analgesic
Carbon-dioxide	Drugs	Hallucinogen



Year 6 Vocabulary – Living things and their habitats

Classification
Kingdom
Phylum
Class
Order
Family
Genus
Species

Linnaeus
Opinion
Similarities
Differences
Classification key
Group
Observations
Support
Refute
Branching

Micro-organism
Organism
Taxonomy
Fungus
Mushroom
Mollusc
Crustacean