

Science Curriculum

EYFS to Year 6

Overarching Principles

Science

Subject Vision

"Science is a way of thinking much more than it is a body of knowledge." – Carl Sagan

At Abingdon Primary School, we are committed to the delivery of an ambitious science curriculum which will sequentially build children's conceptual understanding, knowledge and specialist vocabulary through the specific disciplines of biology, chemistry and physics. By consistently building on children's prior knowledge and experiences, children will know more and remember more, reinforcing and further developing their understanding of the nature, processes and methods of science and working scientifically. This will enable children to answer scientific questions about the world around them, to recognise the power of rational explanation and make meaningful connections in the wider-curriculum, igniting a life-long curiosity about natural phenomena and the world around them. Through our diverse curriculum and with the support of our wider community, we will ensure that children are equipped to understand how major scientific ideas have contributed to change and the uses and implications of this learning in the ever-changing landscape of the 21st Century world.

Our principles for science – Placing SCIENCE at the heart of our teaching and learning

problem **S**olving and thinking critically and analytically

a**C**tive learning and planned, purposeful play

Inclusion, children can see themselves in our curriculum

Enquiry and investigation

collaboratio**N**

Contexts and communities, thinking of our wider curriculum and the world around us

Equipped for the future

Subject Intent

- **know that working scientifically is that the centre of learning how things work, including living things**
- **know that science is usually based on facts, not opinions**
- **know that there are 5 key enquiry types which enable the collection of different types of 'evidence' which lead to this knowledge and understanding being established**
- **know that science and geography are closely linked and that the world around us is made up of natural and human construction**
- **know that the universe follows unbreakable rules that are all about forces, matter and energy**
- **know that all matter (stuff) in the universe is made up of tiny building blocks and that the type, arrangement (state/change of state), and movement of the blocks is governed by forces which explains all of the properties of matter**
- **know that life on Earth began 4.5 million years ago and is made of living things are special collections of matter that use energy, grow and reproduce**

Teaching and Learning Overview

Abingdon Classroom: This is how we do it….		
Behaviour for learning		
Positive relationships • Mutual respect • Emotional support	Effective learning environment • Working walls • Celebration of learning	Engaging and relevant curriculum • Inclusive • Diverse
Effective Teaching and Learning		
Builds on and activates prior knowledge	Questioning	Talk
Vocabulary	Feedback	Sequenced steps to enable new learning
Modelling	Identifying and addressing misconceptions	Assessment for and of learning
Retrieval practice - long term memory	Adapted learning for the needs of individual pupils	Resources – to support, scaffold, challenge

Key Subject Specific Teaching Approaches

- answering and asking questions
- guided discussions
- reading books, autobiographical texts, articles and extracts
- using artefacts, samples, and digital resources including videos and visual images
- scientific writing to present/organise information, knowledge and findings
- exploring scientific 'concept cartoons'
- scientific drawing
- outdoor learning and educational visits
- problem solving and open-ended thinking tasks (mirroring analytical and reflexive thinking models)
- carrying out investigations and working scientifically using the 5 enquiry types:
  *Research using secondary sources
  *Comparative and fair testing
  *Observing over time
  *Pattern seeking
  *Identifying, classifying and grouping
- supporting children to work safely and develop independence carrying out investigations and fair testing, scaffolded through direct instruction and modelling/demonstration of the scientific method
- developing science capital and children's agency and identity in science
- opportunities for discovery-based learning and play-based pedagogy

The 5 enquiry types (E1-5)

E1: comparative and fair testing (controlled investigations)
E2: researching using secondary sources
E3: observing over time
E4: pattern seeking
E5: identifying, classifying and grouping

PSTT definitions and complimentary enquiry skills

Comparative / fair testing
Changing one variable to see its effect on another, whilst keeping all others the same.

Research
Using secondary sources of information to answer scientific questions.

Observation over time
Observing changes that occur over a period of time ranging from minutes to months.

Pattern-seeking
Identifying patterns and looking for relationships in enquiries where variables are difficult to control.

Identifying, grouping and classifying
Making observations to name, sort and organise items.

Teacher focus: delivered through planned teaching sequences and ensured exposure through curriculum coverage maps.

Asking questions
Asking questions that can be answered using a scientific enquiry.

Making predictions
Using prior knowledge to suggest what will happen in an enquiry.

Setting up tests
Deciding on the method and equipment to use to carry out an enquiry.

Observing and measuring
Using senses and measuring equipment to make observations about the enquiry.

Recording data
Using tables, drawings and other means to note observations and measurements.

Interpreting and communicating results
Using information from the data to say what you found out.

Evaluating
Reflecting on the success of the enquiry approach and identifying further questions for enquiry.

Pupil focus: the effective skills for learning and learning behaviours observable in (and facilitated by) high quality science lessons at Abingdon.

EYFS

Across nursery and reception, scientific knowledge and skills are explicitly taught as foundations for the KS1 National Curriculum. The focus is primarily to develop the scientific knowledge within the overarching topics using these units of learning as the vehicles of delivery.

Nursery Long Term Map	
Autumn 1	**Autumn 2**
Ourselves	**Seasonal Changes**
Links to KS1 Science - Animals including humans – Year 1	**Links to KS1 Science - Seasonal changes – Year 1**
Big Idea: Biology: Living things are special collections of matter that make copies of themselves, use energy and grow.	**Big Idea: The different kinds of life, animals, plants and microorganisms, have evolved over millions of generations into different forms in order to survive in the environments in which they live.**
Core Knowledge – End Points Know that our immediate family are people. Some families have pets. Pets are animals. Know that people and animals are different. Know that people have heads, shoulders, knees and toes; eyes, ears, mouth and nose.	**Core Knowledge – End Points** Know that: eyes are for looking; ears are for listening; fingers are for feeling. Know that they can use their bodies to explore objects around them like falling autumn leaves, conkers and acorns
Understanding the World - Working towards: Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class	*Understanding the World – Working towards:* Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
Spring 1	**Spring 2**
Weather / Houses and Homes	**Farm Animals and their babies**
Links to KS1 Science - Everyday materials – Year 1	**Links to KS1 Science - Seasonal changes –Year 1 / Animals including humans – Year 1**
Big Idea: The arrangement, movement and type of the building blocks of matter and the forces that hold them together or push them apart explain all the properties of matter.	**Living things are special collections of matter that make copies of themselves, use energy and grow.**
Core Knowledge – End Points Know different types of weather. Know that the weather can change each day. Know how to stay warm in cold weather and how to keep cool in hot weather. Know that ice is frozen water. Know that ice melts wen it stays out in the sunshine or a warm place. Know that healthy means to be happy and well – not sick and poorly. Know how-to gest washed. Know that being clean helps us to be healthy. Know which foods are healthy and which foods are unhealthy choices. Know that people need food, water and air to be grow strong and to be healthy.	**Core Knowledge – End Points** Know the names of some common farm animals and their babies. Know the egg, chick, chicken life cycle.
Understanding the World - Working towards: Understand some important process and changes in the natural world around them, including the seasons and changing states of matter	*Understanding the World - Working towards:* Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Explore the natural world around them, making observations and drawing pictures of animals and plants.

Summer 1	Summer 2
Growing	**The Seaside and the Sea**
Links to KS1 Science – Plants – Year 1	**Links to KS1 Science - Animals including humans – Year 1**
Big Idea: Living things are special collections of matter that make copies of themselves, use energy and grow	**Big Idea: Big Idea: Living things on Earth came in huge variety of different forms that are all related because they all came from the same starting point 4.5 billion years ago.**
Core Knowledge – End Points Know how to recognise signs of new life that can be seen in the Spring and the Summer. Know how to plant and take care of and grow seeds. Know that all living things need food, water and air to live and grow.	**Core Knowledge – End Points** Know that boats float on water. Know some objects that float and some that sink. Know some sea animals can breathe and live under the sea water. Know some similarities between fish and people. Know people cannot breathe under the water.
Understanding the World - Working towards: Explore the natural world around them, making observations and drawing pictures of animals and plants. Understand some important process and changes in the natural world around them, including the seasons and changing states of matter.	*Understanding the World - Working towards*: Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class

Reception Long Term Map

Autumn 1	Autumn 2
Our Communities and the People that help us / This is me	**Me, you / celebrations and beliefs/ Autumn**
Links to KS1 Science - Animals including humans – Year 1	**Links to KS1 Science - Seasonal changes – Year 1 / Animals including humans – Year 1**
Big Idea: Biology: Living things are special collections of matter that make copies of themselves, use energy and grow. **Small question:** ***Is the oldest person in our class the tallest?***	**Big Idea: Living things are special collections of matter that make copies of themselves, use energy and grow.** **Big Idea: The different kinds of life, animals, plants and microorganisms have evolved over millions of generations into different forms in order to survive in the environments in which they live.** **Small question:** ***Would a squirrel make a good pet? Are all dogs the same?***
Core Knowledge – End Points Know the similarities and differences in each other Know there are similarities and differences within families Know common body parts including ankle, elbow, neck, stomach, shoulders, facial parts Know that some things stay the same and some things change as we grow up Know the 5 senses, hearing, sight, touch, taste and smell. Know that we can use different senses to observe the World around us	**Core Knowledge – End Points** Know that the season is Autumn Know what the weather changes in Autumn and the temperature decreases Know that Autumn is characterised by the changing colour of leaves and trees shedding their leaves Know the common parts of a tree (stick/branch/twig/leaf/bark) Know some common animals that may be seen in our environment in Autumn (dog/cat/fox/rabbit/squirrel/hedgehog/owl) Know that some animals can be pets and some animals are wild Know the name of these animals' homes Know that some Wild animals can be found in our environment and other Wild animals in other parts of the world Know the names of some Wild animals from other countries (elephant/tiger/lion/crocodile/camel etc)
ELG: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	*ELG:* Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter *ELG:* Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class
Spring 1	**Spring 2**
My World, Your World / Winter	**People, Cultures and Communities / Spring New Life**
Links to KS1 Science - Everyday materials – Year 1 / Seasonal Changes – Year 1	**Links to KS1 Science - Seasonal changes –Year 1 / Animals including humans – Year 1**
Big Idea: The arrangement, movement and type of the building blocks of matter and the forces that hold them together or push them apart explain all the properties of matter. **The Earth is tilted and spins on its axis leading to day and night, the seasons and the climate** **Small question:** ***Would a scarf be made from plastic? /paper?***	**Big Idea: The Earth is tilted and spins on its axis leading to day and night, the seasons and the climate.** **Living things are special collections of matter that make copies of themselves, use energy and grow.** **Small question:** ***Does a pineapple taste the same with your eyes closed?***
Core Knowledge – End Points Know that the season is Winter Know that Winter is the coldest season of the year and often brings snow and ice Know that if the temperature is very cold, water will freeze into ice and if the temperature gets warmer, the ice will melt into water. Know that in Winter, some animals hibernate until the warmer weather arrives Know which clothes are appropriate for Winter hat, scarf, coat, jumper, gloves, wellies Know that Winter clothes are made from materials to help us stay warm such as wool Know that Winter clothes are made from materials that are waterproof such as rubber	**Core Knowledge – End Points** Know that the season is Spring Know that Spring is the season on new life and we start to see more animals and plants beginning to grow Know that in Spring the weather can change and it can be rainy/sunny/cloudy Know that if it is sunny and rainy at the same time, we may see a rainbow Know that in Spring animals come out of hibernation Know that in Spring time the trees and plants begin to change and grow Know the names for some common fruits and vegetables such as pineapple, kiwi, mango, strawberry Know that a fruit has seeds and a vegetable does not

	Know that some fruits and vegetables need warmer climates to grow
ELG: Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate Move energetically, such as running, jumping, dancing, hopping, skipping and climbing	*ELG:* Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices Move energetically, such as running, jumping, dancing, hopping, skipping and climbing. Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps
Summer 1	**Summer 2**
Minibeasts / Farm Life	**Growing and Aspirations / Green Fingers**
Links to KS1 Science - Animals including humans – Year 1	**Links to KS1 Science – Plants – Year 1**
Big Idea: Living things on Earth came in huge variety of different forms that are all related because they all came from the same starting point 4.5 billion years ago. **Key Questions:** ***Would a cow make a good pet?*** ***Do all cows/horses look the same?***	**Big Idea: Living things are special collections of matter that make copies of themselves, use energy and grow** **Small question:** ***Are tomatoes always red?***
Core Knowledge – End Points Know that a farm is… Know the common animals that live on a farm such as horse, cow, chicken, pig, hen Know the similarities and differences between these animals Know the names for their baby animals Know where food comes from e.g milk,lamb,chicken,eggs	**Core Knowledge – End Points** Know that a garden is a place where plants and trees can grow Know that a plant is a living thing Know that plants need water and sunlight to help them grow Know that seeds and bulbs grow into flowers, plants and trees. Know that there are plants, trees and bushes Know that fruit and vegetables grow in the ground, on trees and on plants Know that in the Summer we may see more minibeasts such as butterflies, ladybirds, caterpillars and bees.
ELG: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter Explore the natural world around them, making observations and drawing pictures of animals and plants	*ELG:* Explore the natural world around them, making observations and drawing pictures of animals and plants Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class

Reception Vocabulary

Autumn		Spring		Summer		Working Scientifically
Baby, Child, Adult, Elderly, Boy, Girl, Male, Female, Head, Neck, Face, Shoulders, Arms, Legs, Hands, Feet, Knee, Fingers, toes, Eyes, Nose, Mouth, Chin	Season, Autumn, Change, Weather, Habitat, Tree, Bark, Branch, Twig, Stick, Leaf, Conker, Acorn, Pet, Wild, Dog, Cat, Fox, Squirrel, Rabbit, Badger, Hedgehog	Winter, hibernate, Cold, Frosty, Wet, Foggy, Ice, Snow, Melt, Drip, Solid, Liquid, Water, Material, Wool, Cotton, Rubber, Plastic, Warm, Cool, Thick, Thin, Soft, Hard, Comfortable, Waterproof, Light, Dark	Spring, Warm, Sunny, Rain, Cloud, Rainbow, New Life, Buds, Blossom, Smell, Taste, Touch, Hear, See	Farm, Farmyard, Farmhouse, Field, Barn, Stable, Hay, Pen, Pigsty, Foal, Lamb, Piglet, Calf, Duckling, Tractor, Scarecrow	Summer, Sunshine, Plants, Seeds, Bulbs, Soil, Compost, Plant Pot, Trowel, Wheel Barrow, Fruit, Vegetable, Root, Leaves, Stem, Flower, Sunlight, Warmth, Water, Care	Look closely, watch, touch, feel, smell, listen, same, different, ask questions, sort, group

KS1/2 Long Term Map – Working Scientifically

<table>
<tr><th></th><th colspan="3">Autumn</th><th colspan="2">Spring</th><th colspan="2">Summer</th></tr>
<tr><td>Year 1/2 WS</td><td colspan="7">During years 1 and 2, pupils will be taught to work scientifically using the following practical scientific methods, processes and skills in relation to enquiry types 1-5 (E1-5):
• asking simple questions and recognising that they can be answered in different ways.
• observing closely using equipment.
• performing tests.
• identifying and classifying.
• using their observations and ideas to suggest answers.
gathering and recording data to help answer questions.</td></tr>
<tr><td>Year 1</td><td colspan="2">Seasonal changes – Earth Science
Children will be exposed to the changes in the weather across the seasons – keeping a weather diary across a period and compare this to a different period of the year, drawing conclusions.
E3: Observation over time
E4: Pattern Seeking</td><td>Plants – Biology
Children will observe plants and to draw and label different plants, spotting similarities and differences. Including deciduous and evergreen trees, flowering plants and trees.
E2: Research using secondary sources</td><td>Everyday materials – Chemistry
Children compare a variety of materials based on their physical properties, deciding which are hard, soft, strong, weak, smooth, rough, etc.
E5: Identifying, grouping and classifying
Children undertake actions to test whether each material has the property (e.g. touching, weighing, etc)
E1: Comparative Testing</td><td>Revisit & build on previous learning

Seasonal changes – Earth Science

Plants – Biology – flowering plants

E3: Observation over time
E4: Pattern Seeking
E2: Research using secondary sources</td><td>Animals including humans – Biology
Children to find out if they can find anything that is the same for animals, thinking about what they do and how they look.
Children discover what is the same and what is different about their bodies.
E5: Identifying, grouping and classifying
E4: Pattern Seeking</td><td>Revisit & build on previous learning

Seasonal changes – Earth Science

E3: Observation over time
E4: Pattern Seeking</td></tr>
<tr><td>Year 2</td><td colspan="2">Everyday materials - Chemistry
Children test whether different materials are waterproof/absorbent.
E1: Comparative / Fair Testing
E5: Identifying, grouping and classifying</td><td colspan="2">Living things and their habitats – Biology
Children compare the differences between things that are living, dead and have never been alive. (Include misconceptions like the sun and the sea.).
E5: Identifying, grouping and classifying
E4: Pattern Seeking
E2: Research using secondary sources</td><td>Plants – Biology
Children observe a seed growing into a plant over a period of days and weeks
E5: Identifying, grouping and classifying
E3: Observation over time
E: 1 Comparative / Fair Testing</td><td>Animals Including Humans – Biology
Children use secondary sources to research growth and reproduction. Observing live insect reproduction.
E5: Identifying, grouping and classifying
E4: Pattern Seeking
E2: Research using secondary sources</td></tr>
<tr><td>Year 3/4 WS</td><td colspan="7">During years 3 and 4, pupils will be taught to work scientifically using the following practical scientific methods, processes and skills in relation to enquiry types 1-5:
• asking relevant questions and using different types of scientific enquiries to answer them;
• setting up simple practical enquiries, comparative and fair tests;
• making systematic observations and, where appropriate, taking accurate measurements using standard units, a range of equipment (including thermometers and dataloggers);
• gathering, recording, classifying and presenting data in a variety of ways to help answer questions;
• recording findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables;
• reporting on findings from enquiries (including oral/written explanations, displays/presentations of results/conclusions);</td></tr>
</table>

	• using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; • identifying differences, similarities or changes related to simple scientific ideas and processes; using scientific evidence to answer questions/support findings.					
Year 3	**Plants– Biology** Children give both a parsley plant and a small cactus minimal water over a period and observe the changes (perhaps drawing the result) ***E3: Observation over time*** ***E1: Comparative / Fair Testing***	**Animals including humans – Biology** Children use information from science encyclopaedias / text / internet to label a human skeleton and answer simple questions about it. ***E2: Research using secondary sources***	**Forces and Magnets – Physics** Children sort materials into magnetic and non-magnetic materials using a magnet and find other materials around the room that are magnetic. ***E5: Identifying, grouping and classifying***	**Rocks and Fossils – Earth Science / Chemistry** Using criteria, children sort rock samples (and pictures) into the three types. Do all igneous, sedimentary and metamorphic rocks share the same features? ***E4: Pattern Seeking***	**Light – Physics** Children gather data on light levels over the period of an hour and over the period of 24 hours. Children interpret the gathered data. ***E3: Observation over time*** On a sunny day, using a metre stick, children note the changing length of a shadow thrown by a metre stick or other object. ***E3: Observation over time***	
Year 4	**Living things and their habitats - Biology** Children to put animals into groups in a variety of ways (e.g. where they live, what they eat, how they move, how many legs, etc) moving on to using classification keys to differentiate between closely related animals. ***E5: Identifying, grouping and classifying***		**Animals including humans - Biology** Children explore the simple functions of the basic parts of the digestive system in humans. ***E2: Research using secondary sources***	**Sound - Physics** Children to make a basic guitar or flute with different notes to show how different vibrations make notes of different pitch. ***E4: Pattern Seeking***	**States of matter - Physics** Children to observe and record as ice melts in different conditions (e.g. outside vs radiator, wrapped in insulation vs not) ***E3: Observation over time*** ***E1: Comparative / Fair Testing***	**Electricity – Physics** Children to create a small circuit to test whether objects are conductors or insulators (e.g. circuit with bulb which lights when a gap in the circuit is bridged.) ***E1: Comparative / Fair Testing***
Year 5/6 WS	**During years 5 and 6, pupils will be taught to work scientifically using the following practical scientific methods, processes and skills in relation to enquiry types 1-5:** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Using test results to make predictions to set up further comparative and fair tests. • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of 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.					
Year 5	**Forces - Physics** Children to create parachutes, changing a variable to try to isolate what is needed for an effective parachute (e.g. changing parachute material, size, shape, etc) ***E1: Comparative / Fair Testing***	**Earth and Space – Earth Science** Children keep a moon diary over the period of a month (focusing on moon shape) and a moon diary for one clear evening (focusing on position in the sky) and analyse their results. ***E3: Observation over time***	**Properties and changes of materials - Chemistry** Children to stir a small amount of salt, sugar, small stones and sand into water and to observe what happens with each and to determine which is soluble in water and which is insoluble in water ***E5: Identifying, grouping and classifying*** Children use filtering and evaporation to separate a mixture of sand, salt and stones. ***E4: Pattern Seeking***		**Animals Including Humans – Biology** Children to predict the gestation period of some animals based on mass ***E4: Pattern Seeking***	**Living things and their habitats - Biology** Children use a variety given information and online resources to research and describe the life cycles of different animals, looking for the similarities between each. ***E2: Research using secondary sources***
Year 6	**Electricity – Physics** Children create circuits to investigate the effect of different voltages on different components. ***E4: Pattern Seeking***	**Living things and their habitats – Biology** Children to think about the relationship between living things and their environment and to explain	**Light – Physics** Children to use mirrors and torches to investigate how light travels in straight lines and reflects off mirrors. ***E4: Pattern Seeking***	**Animals including Humans - Biology** Children to investigate the effect of exercise on heart rate and how long it takes for their pulse to return to the resting		**Evolution and Inheritance – Biology** Children will use evidence to prove evolution ***E2: Research using secondary sources***

	E1: Comparative / Fair testing	how adaptions help them survive ***E5: Identifying, grouping and classifying***		rate after exercising for a minute. ***E1: Comparative / Fair testing*** ***E3: Observation over time***		

Reviewed annually to accommodate term dates
Year 6 to Combine Units of Study as necessary

KS1/2 Key Questions

	Autumn		Spring		Summer	
Year 1	**Seasonal changes – Earth Science** *Question – Why does the weather change over the year?*	**Plants – Biology** *Question – How are plants different and what do they have in common?*	**Everyday materials – Chemistry** *Question -What are things made from, and why?*	**Seasonal changes – Earth Science** *Question – Why does the weather change over the year?* **Plants – Biology** *Question – How are plants different and what do they have in common?*	**Animals including Humans - Biology** *Question – How are animals different?*	**Seasonal changes – Earth Science** *Question – Why does the weather change over the year?*
Year 2	**Everyday materials – Chemistry** *Question – How do we choose the right material for a purpose?*		**Living things and their habitats – Biology** *Question – How do we know something is alive, and how does it survive?*		**Plants – Biology** *Question - Do plants grow the same amount in different environments?*	**Animals including humans – Biology** *Question – What do animals, including humans, need to grow, stay healthy, and become adults?*
Year 3	**Plants – Biology** *Question - How do the different parts of a plant help it grow and make new plants?*	**Animals including Humans – Biology** *Question - How does what we eat help our bodies grow, move and stay healthy?*	**Forces and Magnets – Physics** *Question – How can forces make things move without touching them?*	**Rocks & Fossils – Chemistry** *Question – How do rocks change and become part of the world around us?*	**Light – Physics** *Question - How does light help us see the world around us?*	
Year 4	**Living things and their habitats - Biology** *Question - How can we identify and group living things, and how can changes to their environment affect them?*		**Animals including humans - Biology** *Question - How does food help us, and what happens to it when we eat it?*	**Sound - Physics** *Question – How are sounds made and how do they reach our ears?*	**States of matter – Physics** *Question – How does temperature change the state of materials?*	**Electricity - Physics** *Question – How can we make electricity work?*
Year 5	**Forces – Physics** *Question – What makes things move the way they do?*	**Earth and Space- Earth Science**. *Question - How do the Earth, Moon and other planets move in space, and how does Earth's rotation cause day and night?*	**Properties and changes of materials – Chemistry** *Question – How can we test different materials and explain how they can be changed or separated?*		**Animals including Humans – Biology** *Question – What are the different stages of human development from childhood to old age?*	**Living things and their habitats – Biology** *Question - How are the life cycles of different animals and plants different, and how do they reproduce?*
Y e	**Electricity – Physics**	**Animals including humans – Biology**	**Light – Physics**	**Living things and their habitats – Biology**		**Evolution and inheritance – Biology**

	Question - Is it possible to change how bright a bulb is or how loud a buzzer is?	*Question – How does the circulatory system respond to the way we live?*	*Question - Why can I hear round corners but not see round corners?*	*Question – How do living things adapt to survive in their habitats?*		*Question - Why do different species of animals look different?*

KS1/2 Progression of Core Knowledge – End Points

	Autumn		Spring		Summer	
Year 1	**Seasonal changes – Earth Science** Know that days are longer in the summer and shorter in winter Know that weather changes through the year, getting hotter in the summer and colder in the winter Know that the four seasons are spring, summer, autumn and winter and know the order of the cycle	**Plants – Biology** Know and name a variety of common wild and garden plants, including deciduous and evergreen trees Know and describe the basic structure of a variety of common flowering plants, including trees	**Everyday materials – Chemistry** Know that an object is made from/of a material Know some examples of everyday materials, including wood, plastic, glass, metal, water and rock Know the physical properties of a variety of everyday materials Know how to group together and compare a variety of everyday materials based on their simple physical properties.	**Seasonal changes – Earth Science** Know that days are longer in the summer and shorter in winter Know that weather changes through the year, getting hotter in the summer and colder in the winter Know that the four seasons are spring, summer, autumn and winter and know the order of the cycle **Plants – Biology** Know and name a variety of common wild and garden plants, including deciduous and evergreen trees Know and describe the basic structure of a variety of common flowering plants, including trees	**Animals including Humans – Biology** Know a variety of common animals including fish, amphibians, reptiles, birds and mammals Know the structure of a variety of common animals Know a variety of common animals that are carnivores, herbivores and omnivores Know the basic parts of the Human body. Know that eyes are associated with sight, ears with sound, nose with smell, tongue with taste and skin with touch	**Seasonal changes – Earth Science** Know that days are longer in the summer and shorter in winter Know that weather changes through the year, getting hotter in the summer and colder in the winter Know that the four seasons are spring, summer, autumn and winter and know the order of the cycle
Year 2	**Everyday materials – Chemistry** Know that materials can have useful properties for a given job. Know some reasons why some everyday materials are more suitable than others for uses Know how the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		**Living things and their habitats – Biology** Know that some things are living, dead and somethings have never been alive and the difference between these. Know that most living things live in habitats and that these habitats are suited to provide for the basic needs Know a variety of plants and animals and their habitats including micro habitats Know how animals obtain their food from plants and other animals, using the idea of a simple food chain. Know that wildlife friendly environments help protect wildlife.		**Plants – Biology** Know that seeds and bulbs grow into mature plants and describe the process Know that plants need water, light and a suitable temperature to grow and stay healthy Know that factors will affect the growth of plant	**Animals including humans – Biology** Know that animals including humans produce offspring which grow into adults (Life Cycles) Know the basic needs of animals, including humans are water, food and air

						Know the importance of human exercise, eating the right amounts of different food types, and hygiene
Year 3	**Plants– Biology** Know how to identify and describe the functions of different parts of flowering plants; roots, stem/trunk, leaves and flowers Know that plants need air, light, water, nutrients from soil, and room to grow Know how the requirements vary from plant to plant Know how water is transported withing plants Know the part flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	**Animals including humans – Biology** Know that animals including humans need the right types and amount of nutrition Know that animals including humans cannot make their own food; they get nutrition from what they eat Know that humans and some other animals have skeletons and muscles for support, protection and movement	**Forces and Magnets – Physics** Know that objects can move differently on different surfaces Know that some forces need contact between two objects Know that magnetic forces can act at a distance Know that magnets attract or repel each other Know that magnets attract some materials and not others Know how to compare and group together a variety of everyday materials based on whether they are attracted to a magnet Know the names of some magnetic materials Know that magnets have two poles Know how to predict whether two magnets will attract or repel each other, depending upon which pole they are facing	**Rocks and Fossils – Chemistry and Earth Science** Know how to compare and group together different kinds of rocks based on their appearance and simple physical properties Know how fossils are formed when things that have lived are trapped within rock Know that soils are made from rocks and organic matter	**Light - Physics** Know that we need light to see things and that darkness is the absence of light Know that light is reflected when it travels from a light source and then 'bounces' off an object Know that everything that we can see is either a light source or something that is reflecting light from a light source into our eyes Know that light from the Sun can be dangerous and that there are ways to protect our eyes Know that patterns can be seen in the way that the size of shadows changes	
Year 4	**Living things and their habitats – Biology** Know that living things can be grouped in a variety of ways Know that classification keys can be used to help group, identify and name a variety of living things in their local and wider environment Know that environments can change and that this can sometimes pose dangers to living things		**Animals including humans – Biology** Know the simple features of the basic parts of the digestive system in humans Know the different types of teeth in humans and their simple functions Know and identify producers, predators and prey.	**Sound – Physics** Know how sounds are made, associating some of them with something vibrating Know that vibrations from sounds travel through a medium to the ear Know how to find patterns the pitch of sound and the features of the object that produced it Know how to find patterns between the volume of sound and the strength of the vibrations that produce it Know that sounds get fainter as the distance from the sound source increases	**States of matter – Physics** Know how to compare and group materials together, according to whether they are solids, liquids or gases Know that some materials change state when they are heated or cooled Know how to measure or research the temperature at which this happens in degrees Celsius (0C) Know the role played by evaporation and condensation in the water cycle Know how this is associated with the rate of evaporation and temperature	**Electricity – Physics** Know the names of some common appliances that run on electricity Know how to construct a simple series electrical circuit, identifying and m=naming its basic parts, including cells, wires, bulbs, switches and buzzers Know whether a lamp will light in a simple series circuit, based on whether the lamp is part of a complete loop with a battery Know that a switch opens and closes a circuit and associate this with whether

						a lamp lights in a simple circuit Know some common conductors and insulators, and associate metals with being good conductors
Year 5	**Forces – Physics** Know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Know the effects of air resistance, water resistance and friction, that act between moving surfaces. Know that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	**Earth and Space – Earth Science / Physics** Know the position and movement of the Earth and other planets, relative to the Sun in the solar system Know how the Moon moves in relation to the Earth Know the Sun, Earth and Moon are all approximately spherical objects Know the concept of the Earth's rotation to describe the cycle of day and night and the Sun's apparent motion in the sky	**Properties and changes of materials – Chemistry** Know how to compare and group together everyday materials based on their properties including harness, solubility, transparency, conductivity (electrical and thermal) and response to magnets Know that some materials will dissolve in liquid to form a solution Know how to recover a substance from a solution Know how mixtures might separate through filtering, sieving and evaporating		**Animals Including Humans** Know the stages of human development from childhood to old age Know that there are different gestations periods in animals and humans	**Living things and their habitats – Biology** Know the differences in the life cycles of a mammal, an amphibian, an insect and a bird Know and describe the life process of reproduction in some plants and animals
Year 6	**Electricity – Physics** Know the association between the brightness of a lamp or the volume of a buzzer with the number of voltage cells used in the circuit Know how to 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 Know the symbols that are required to represent a simple circuit in a diagram	**Animals including humans – Biology** Know how to identify and name the main parts of the human circulatory system Know how to describe the functions of the heart, blood vessels and blood Know that diet, exercise, drugs and lifestyle impact the way that the body functions Know how nutrients and water are transported around animals including humans	**Light – Physics** Know how we see and how light travels Know that mirrors reflect light and help us see objects Know that a prism changes rays of light to show the spectrum Know that refraction changes the direction in which light travels Know how light enables us to see colours	**Living things and their habitats – Biology** Know how living things are classified into broad groups according to common observable characteristics Know that these are based on similarities and differences, including micro-organisms, plants and animals Know how to classify plants and animals based on specific characteristics and give reasons for it		**Evolution and inheritance – Biology** Know that living things have changed over time Know that fossils provide information about living things that inhabited the Earth millions of years ago Know that living things produce offspring of the same kind Know that normally offspring vary and not identical to their parents Know how animals and plants are adapted to suit their environment in different ways Know that adaption may lead to evolution

Key Vocabulary Progression KS1/KS2

Key Vocabulary Progression

	Autumn		Spring		Summer		Working Scientifically
Year 1	**Seasonal changes – Earth Science** Season, weather, storm, frost, fog, snow, sunshine, change, **winter, spring, autumn, summer**	**Plants - Biology** Wild, flowering, branch, roots, stem, leaf, trunk, petal, **energy, growth, deciduous, evergreen**	**Everyday materials – Chemistry** Opaque, transparent, absorb, wood, plastic, glass, metal, wood, rock, rough, **hard, soft, smooth, waterproof**	**Seasonal changes – Earth Science** Season, weather, storm, frost, fog, snow, sunshine, change, **winter, spring, autumn, summer** **Plants - Biology** Wild, flowering, branch, roots, stem, leaf, trunk, petal, **energy, growth, deciduous, evergreen**	**Animals including Humans – Biology** amphibian, reptile, **mammal, herbivore, carnivore, omnivore,** head, shoulders, knees, toes, torso, neck, shoulders, hands, feet, **senses, human, body, see, hear, feel, taste, smell, skin**	**Seasonal changes – Earth Science** Season, weather, storm, frost, fog, snow, sunshine, change, **winter, spring, autumn, summer**	Observe, changes, patterns, grouping and sorting, compare, identify, measure, record, observing over time, classifying, experience, data, equipment, questions, test, investigate, explore, magnifying glass,
Year 2	**Every day materials - Chemistry** **Properties,** rigid**, suitable, unsuitable, absorbent,** squash, bend, twist, stretch, compare, investigate, review, table		**Living things and their habitats– Biology** decay, environment, **foodchain, micro habitat, alive, dead, never been alive, non-living, living, wildlife**		**Plants – Biology** Germinate, suitable, **stages of growth, survive, temperature, environment,** nutrients,	**Animals Including Humans – Biology** Hygiene, exercise, air, survive, **offspring, adult, young, healthy Reproduction, life cycle**	
Year 3	**Plants – Biology** Seed formation, seed dispersal, nectar, anther, ovary, pollen, style, stigma, stamen, **pollination, reproduce, extinction, fertiliser**	**Animals including Humans - Biology** protection, support, movement, bones, skull, **nutrition, diet, skeleton, muscles**	**Forces and Magnets - Physics** North, south, sliding, friction, elastic, resist, repulsion, **magnetic, non-magnetic, attraction, pole**	**Rocks and Fossils – Chemistry / Earth Science** Crystals, grains, igneous, metamorphic, **sedimentary, rock, fossil, weather, particle**	**Light - Physics** Mirror, reflective surface, opaque**, light, dark, reflect, shadow**		Develop, enquiry, practical Enquiry, fair test, comparative Test, relationships, conclusion, accurate, thermometer, data logger, estimate, data, diagram, key (identifying), table, chart, bar chart, results, predictions, explanation, reason, similarity, difference, question, evidence, information, findings, criteria, values, properties characteristics
Year 4	**Living things and their habitats - Biology** Fungi, climate, pollution, native, non-native, species, organism, land development, **endangered, deforestation, population, species** , producer, preditor, consumer		**Animals including Humans - Biology** Small intestine, large intestine, oesophagus, canine, incisor, molar, premolar, wisdom teeth, **organ, liver, stomach, digestive system**	**Sound - Physics** frequency, insulation, **sound, volume, pitch, vibration,**	**States of matter – Chemistry** heating, cooling, evaporation, condensation**, solid, liquid, gas, melting, freezing,**	**Electricity - Physics** Series, lamp, motor, switch, cell, wire, buzzer, **electricity, circuit, appliance, energy**	
Year 5	**Forces - Physics** Friction, levers, pulleys, gears, springs**, gravity, air resistance, water resistance**	**Earth and Space – Earth Science** Planets, Mercury, Venus, Mars, Jupiter, Saturn, Neptune, Uranus, Spherical	**Properties and changes of materials – Chemistry** Filtering, sieving, reaction, reversable, irreversible, **solution, mixing, separating, dissolve**		**Animals Including Humans – Biology** **Gestation period, development, puberty, mass**	**Living things and their habitats - Biology** **Life processes, sexual, asexual**	Variables, in/dependent variable, control variable, justify, scientific argument, casual relationship, precision, scatter graph, line graph,

		bodies, rotation, orbit, satellite, **Solar system, Moon, Earth, stars**					
Year 6	**Electricity – Physics** Symbol, **conductor, insulator, complete, incomplete**	**Animals including humans – Biology** Lungs, vessels. Lifestyle, disease, drugs, water, transportation, nutrient transportation, **circulatory system, oxygen, heart, blood**	**Light – Physics** **Light source, periscope, spectrum, refraction**	**Living things and their habitats – Biology** Variation**. Organism, micro-organism, classification, characteristics**		**Evolution and inheritance – Biology** Variation, **evolve, inherit, evolution, inheritance**	

Key Vocabulary - Glossary

Word	Definition
Animals and Plants Including Humans - Biology	
acid	Any substance that gives off hydrogen ios in water and forms salts by combining with certain metals.
amphibian	Any organism that is able to live both on land and in water
anther	The part of a stamen that produces and contains pollen
anus	The opening at the far end of the digestive tract through which stool leaves the body
aorta	The largest artery in the body
artery	Arteries carry blood away from the heart and transport oxygen and useful nutrients to the body's cells
atrium	One of the two upper chambers in the heart that receives blood from the circulatory system
Balanced diet	Eating a wide variety of foods in the right proportions, and consuming the right amount of food and drink to achieve and maintain a healthy body weight
bile	A fluid that is made and released by the liver and stored in the gallbladder
Blood vessels	Blood Vessels circulate blood throughout the body
body	A combination of parts and systems that work together to perform the necessary functions of life
bulb	The name given to the underground bud or stem of a seed plant at resting stage
canines	The sharp pointy teeth in mammals' mouths
capillary	The smallest type of blood vessel
carnivore	An animal that mostly eats meat
cartilage	A tough, flexible tissue that lines joints and gives structure to the nose, ears, larynx, and other parts of the body
Circulatory system	The system that contains the heart and the blood vessels and moves blood throughout the body
contract	The tightening, shortening, or lengthening of muscles when you do some activity
cranium	Part of the skull that encloses the brain
deciduous	A tree of bush that sheds its leaves once a year
digestion	The breaking down of food into other substances that can be absorbed and used by the body
dispersal	The spreading of things over a wide area
duodenum	The first part of the small intestine
energy	The force that causes things to move
enzymes	Biological catalysts that speed up reactions
evergreen	Trees and bushes that do not loose their leaves in Autumn or Winter
exchange	The act of giving or taking one thing in return for another
excretion	The process of removing wastes and excess water from the body
exercise	Physical activity and increasing the heart rate beyond resting levels
extinction	The complete disappearance of a species from Earth
femur	The femur bone in the thigh is the longest and strongest bone in the body
fertilization	The process in which gametes (an egg and sperm) fuse to form a zygote
fibula	The smaller of the two bones in the lower leg
flower	The part of the plant that is responsible for reproduction
fruit	The fleshy or dry ripened ovary of a plant, which encloses the seed or seeds
function	The way that parts of an organism are used by the organism
habitat	The natural home or environment of a plant, animal or other organism
herbivore	Animals whose primary food source is plant-based
humerus	The arm bone between your shoulder and your elbow
hygiene	The practice of keeping yourself and your surroundings clean, especially in order to prevent illness or the spread of diseases
incisors	The flat teeth at the front of the mouth used for cutting food
insect	A type of small invertebrate animal which are part of a larger group of invertebrates called arthropods
invertebrate	Animals without a backbone or bony skeleton
Large intestine	The long, tub- shaped organ in the abdomen that completes the process of digestion
leaf	Any usually flattened green outgrowth from the stem of a vascular plant
mammal	Warm-blooded vertebrate animals that give birth to live babies and produce milk to feed their young
mandible	The largest, strongest bone in the face
molars	The teeth at the back of the mouth, used for grinding food up
nectar	The sweet liquid in the middle of a flower
oesophagus	The hollow, muscular tube that passes food and liquid from the throat to the stomach

offspring	The young born of living organisms
omnivore	An organism that eats both plants and meat
organ	A group of tissues in a living organism that have been adapted to perform a specific function
ovary	A part of the female reproductive organ
ovule	A part of a flower which contains the female seed cell, and after pollination becomes a seed
patella	The bone at the front of your knee joint. The kneecap
peristalsis	A series of wave-like muscle contractions that move food through the digestive tract
petal	A part of a plant that protects and surrounds the reproductive parts of a flower
plant	A living thing that grows in earth, in water, or on other plants
pollen	A fine powdery substance produced by flowering plants, which contains the male sex cell
pulse	The heart rate
radius	One of the two large bones in the forearm
rectum	The end part of the large intestines that connects the colon to the anus
replenished	To fill or build up again
reptile	Cold-blooded air-breathing vertebrates
Resting heart rate	The number of times the heart beats in one minute
ribcage	The cage-like structure of bones that frames the chest cavity
roots	The important underground part of all vascular plants
saliva	The clear, watery fluid in the mouth made by the salivary glands
skeleton	The framework of bones and cartilage that supports and protects the soft tissues and the internal organs of the body
Small intestine	The organ that carries out most of the digestive process, absorbing almost all of the nutrients from food into the bloodstream
stamen	The male reproductive part of the flower
stem	The stem carries water and nutrients to different parts of a plant
sternum	The long flat bone that forms the centre front of the chest wall
stigma	A part of the female reproductive system, where pollen is captured
stomach	A muscular organ which mixes food and drink with acid
structure	An arrangement of parts to form an organ, system of living thing
style	A long, slender stalk that often connects the ovule-bearing ovary and stigma
survival	The ability of an organism or species to live and thrive in its environment
temperature	The degree of hotness or coldness measured on a definite scale
tibia	The larger, stronger and anterior of the two bones in the leg below the knee
tongue	A muscular organ in the mouth that aids chewing, speaking and breathing
tree	A tall, woody plant
trunk	The main, woody stem of a tree
ulna	The long, thin bone in the lower part of the arm
vein	Blood vessels located throughout the body that collect oxygen-poor blood and return it to the heart
ventricle	Pumps blood out of the heart to the lungs or around the body
vertebrate	An animal that has a backbone and a skeleton
vitamin	A nutrient that the body needs in small amounts to function and stay healthy
Everyday Materials - Chemistry	
absorption	The process of one material (adsorbate) being retained, dissolved or absorbed by another
chemistry	The field of science that studies the properties of matter and how matter interacts with energy
conductor	A substance or material that allows electricity to flow through it
crystallization	The process of formation of solid crystals from solution, melt or by deposition directly from gas
deformation	The result of physical stress acting upon and object, causing a change in the shape of that object
dissolve	When a solid and liquid mix to make a new liquid, called a solution
filter	A process by which impurities or particles are removed from a fluid, either a liquid or a gas
flexible	A material that can bend without breaking and can absorb a considerable amount of deformation by flexing
friction	A force between two surfaces that are sliding or trying to slide across each other
insoluble	A material that does not absorb water
irreversible	A change is called irreversible if it cannot be changed back again
matter	Anything that has weight and takes up space is called matter
property	The characteristics of a particular substance that can be observed in a chemical reaction
rigid	Stiff or fixed, not able to be bent or moved
saturation	When a liquid (solvent) cannot dissolve anymore of the substance (solute)
sieve	The process of removing particles from a mixture based on differences in particle size
soluble	A substance that can dissolve into a solvent

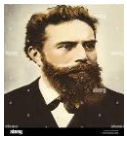
solute	A substance that is dissolved into a solvent
solution	A mixture of two or more substances that stays evenly mixed
solvent	A liquid in which a substance (solute) is dissolved
suitability	The quality of being right or appropriate for a particular purpose
surface	The outermost layer of a material or substance
thermal	Caused by or related to heat or temperature
twist	To turn something repeatedly
waterproof	Impervious to water – do not let water through
Seasonal Changes – Earth Science	
clouds	A mass of water drops or ice crystals suspended in the atmosphere
energy	Something that can make matter move or heat up
freezing	The process that causes a substance to change from a liquid to a solid
ice	Water that is frozen into a solid state
melting	A process that causes a substance to change from a solid to a liquid
orbit	A regular, repeating path that once object takes around another
reflection	When light travelling through one material bounces off a different material
season	A period of the year distinguished by special climatic conditions
snow	Small white ice crystals formed directly from the water vapor of the air
sun	The star at the centre of the solar system
wind	The movement of air
Living things and their habitats - Biology	
abdomen	The area of the body that contains the pancreas, stomach, intestines, liver, gallbladder, and other organs.
adolescence	The period of transition between childhood and adulthood
alive	Something that is able to react to its surroundings, grow, reproduce, feed and get rid of waste
antennae	Sensory organs that help an insect perceive and navigate the environment
arachnid	A type of arthropod (an invertebrate with an exoskeleton and segmented body parts)
arthropod	A type of invertebrate that has a exoskeleton
bacteria	Small organisms, or living things that can be found in all-natural environments. They are made of a single cell
birth	The act or process of bearing or bringing forth offspring
characteristics	Traits or qualities
chrysalis	The middle stage of a butterfly's metamorphosis
Classification key	A series of questions that determine an organisms' physical characteristics
Climate change	The shift in the Earth's usual weather conditions over many years
consumer	An organism that cannot produce its own food and must eat other plants and/or animals to get energy
dead	Deprived of life
decay	The breakdown of dead matter
embryo	The initial stage of development for a multicellular organism
environment	The physical surroundings on Earth
extinction	The permanent disappearance or elimination of a species
fledgling	A young bird that has just grown flight feathers or learned to fly
Food chain	Shows how plants and animals depend on each other as their source of food
fungi	A simple organism, or living thing, that is neither a plant nor an animal
hatchling	A young bird or animal that has just emerged from an egg
kingdom	A big group used to organise all living things based in their similar feature and how they are related
larva	A young wingless often wormlike form that hatches from the egg of many insects
Life cycle	The stages a living thing goes through from birth to death, including growth and reproduction
Life span	The period of time between the birth and death of an organism
metamorphosis	The changing of one organism into another form
microhabitat	A small place where living things can survive
Micro-organism	Living things that are too small to be seen with the naked eye
Never been alive	Non-living things that do not need food, water or air
nutrients	Substances found in food that help the body grow and survive
pollution	The introduction of harmful materials into the environment
pupa	An immature insect, in the stage of development just before adulthood
reproduction	A biological process by which an organism reproduces an offspring that is biologically similar to the organism
species	A group of organisms that can successfully breed to produce fertile offspring

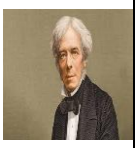
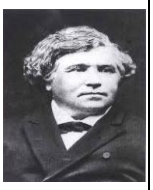
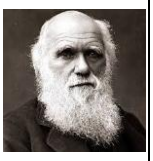
thorax	The area of the body between the neck and abdomen
virus	An infectious particle that needs a living cell to grow and make copies of itself
weaning	The withdrawal of access to milk
womb	A muscular organ in the female reproductive system
Physics - Forces and Magnets	
acceleration	The rate at which an object's speed or direction changes over time
Air resistance	A type of friction that occurs when an object moves through the air, acting as a force that slows it down
attraction	A force that draws two objects or particles towards each other
buoyancy	The ability of an object to float or rise when submerged in a fluid
effort	The force or exertion required to perform a task or move an object
Force meter	Also know as a Newton Meter – A tool used to measure the size of a force
fulcrum	The fixed point around which a lever pivots
gravity	A natural force that pulls all objects with mass or energy towards each other
magnetic	The force of attraction or repulsion between magnets
mass	The amount of matter or stuff that makes up an object
Newton	A measurement that is used to measure force
Non-magnetic	A material that does not exhibit magnetic properties
pivot	The fixed point around which an object can rotate or turn
repulsion	The force that causes like objects to push away from each other
resistance	a measure of how hard it is for electricity to pass through a component
Sliding friction	The force that resists the movement of one object sliding against another
Static friction	The force that prevents and object at rest from moving
streamlined	The shape designed to reduce resistance when moving through a fluid
Terminal velocity	The average speed of particles in gas, liquid or solid due to their thermal motion
Physics - Light	
Angle of incidence	The angle between an incoming light ray and a line perpendicular to the surface it's hitting
Angle of reflection	The angle at which a reflected ray of light bounces off a surface
data logger	A small, portable electronic device that records data
Incident ray	A ray of light that is pointing towards and striking a surface
opaque	Something that allows no light through it
periscope	An instrument used for observing over, around or through an obstacle or object which is prevented by direct line of sight
photons	The smallest possible particles of light
refraction	The bending of light
spectrum	The range of light wavelengths that people can see
translucent	Allowing light to pass through, but not showing clear and distinct images
transparent	Allows light to pass completely through
Physics - Sound	
frequency	The number of waves that pass a given point in one second
instrument	A device that produces musical sounds
medium	The matter that supports sound
percussion	A musical instrument sounded by striking, shaking or scraping
pitch	How high or low sound is
transverse	A wave that oscillates perpendicularly to the direction of the waves advance
vacuum	The absence of any matter
vibration	Quickly moving back and forth or up and down about a point of equilibrium
volume	How low or quiet sound is
wave	A disturbance in medium that carries energy without a net movement of particles
Physics - Electricity	
circuit	A closed loop that electricity can flow around
component	A basic part in a circuit that uses electricity to make something happen
applience	An instrument or device designed for a particular use or function

Key Scientists

A scientist just like me!

Key figures in the field

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception		Animals Including Humans  Hamza Yassin				Earth Science  Mae Jemison
Year 1		Plants  David Attenborough	Everyday Materials  Ole Kirk Christiansen	Seasonal Changes  George James Symmons	Animals Including Humans  Linda Brown Buck	
Year 2	Everyday Materials  Charles Macintosh		Living things and their habitats  Prem Singh Gill		Plants  George Washington Carver	Animals Including Humans  Mary Mainard Daly
Year 3	Plants  Tim Smit	Animals Including Humans  Wilhelm Conrad Röntgen	Forces and Magnets  Orville Wright	Rocks and Fossils  Estella Atekwana	Light  Hasan Ibn Al-Haythorn	

Year 4	**Living things and their habitats**  Carl Linnaeus		**Animals including Humans**	**Sound**  Frederick Mchkinley Jones	**States of Matter**  Michael Faraday	**Electricity**  William Gilbert
Year 5	**Forces**  Isaac Newton	**Earth and Space**  Neil DeGrasse Tyson	**Properties and Changes of Material**  Stephanie Kwolek		**Animals including Humans**  Jaqueline Dunkley-Bent	**Living things and their**  **habitats** Janaki Ammal
Year 6	**Electricity**  Nikola Tesla	**Animals including Humans**  Charles Richard Drew	**Light**  Edme Hippolyte Marie-Davy	**Living things and their habitats**  Carolus Linnaeus		**Evolution and**  **Inheritance** Charles Darwin