

## The Talbot Curriculum Science

In our Science curriculum, there are **key threads** that run through and across year groups. These threads will be explored across the academic journey of a Talbot Child.

Each thread is underpinned by **key concepts and vocabulary** that will be explicitly taught in Science.

The key threads are detailed below, in addition to the concepts and vocabulary that will be explicitly taught within each year group. There follows an overview organised by academic year group, which lists the area of study, an overarching question, the key concepts, a precis of the unit, including the skills and knowledge from the National Curriculum. The greater detail of the taught curriculum can be found in the individual knowledge organisers for each unit of study.

### Key Threads

Plants	Animals including humans	Forces	Earth and Space	Properties and changes of Materials including states of matter	Living things and their environments	Evolution	Classification and identification	Working Scientifically (integrated)
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Key Concepts & Vocabulary	
Yr	Working scientifically
EYFS	<p><b>Exploring the natural world, changing states of matter, seasonal change, using senses, <i>dinosaurs</i>, new growth, life cycles, health and well-being, our environment, our planet, pollution</b></p> <ul style="list-style-type: none"> <li>-going on a school tour and exploring the garden area/describe what they see, hear and feel whilst outside</li> <li>-investigating with jelly, ice</li> <li>- investigating changes in the weather and seasons on the school site, at the heath and at the park</li> <li>- investigating sight, hearing, touch, smell</li> <li>- <i>discussing herbivores carnivores</i></li> <li>- planting bean seeds and naming basic plant parts. Visiting the garden.</li> <li>-Noticing changes in life cycles - butterflies</li> <li>- Physical activity, teeth, healthy-eating and sleep</li> <li>- Recognising different environments from the one where we live – comparing animals from different countries versus the climate and habitat of those countries</li> <li>-Awareness of planets and the Solar System</li> <li>-To begin to understand the effects that pollution has on the community we live in – litter pick- recycle – plastic in the ocean - Stanley the turtle</li> <li>-Visiting Hengistbury Head an SSSI</li> </ul>
1	<p><b>Seasonal change, Everyday materials, Identify common animals, Our senses, Plants.</b></p> <ul style="list-style-type: none"> <li>- asking simple questions and recognising that they can be answered in different ways - observing closely, using simple equipment</li> <li>- performing simple tests - identifying and classifying - using their observations and ideas to suggest answers to questions - gathering and recording data to help in answering questions.</li> </ul>
2	<p><b>Uses of everyday materials, Living things and their habitats, Plants The basic needs of animals.</b></p> <ul style="list-style-type: none"> <li>- asking simple questions and recognising that they can be answered in different ways - observing closely, using simple equipment - performing simple tests - identifying and classifying - using their observations and ideas to suggest answers to questions - gathering and recording data to help in answering questions.</li> </ul>

3	<b>Light, Forces and Magnets, Rocks, Plants, Bones Muscles and Nutrition.</b>	- asking relevant questions and using different types of scientific enquiries to answer them - setting up simple practical enquiries, comparative and fair tests - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers - gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - 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 straightforward scientific evidence to answer questions or to support their findings.
4	<b>Digestion, teeth and food chains, Electricity, States of Matter, Classification, Sound, Classification and habitats.</b>	- asking relevant questions and using different types of scientific enquiries to answer them - setting up simple practical enquiries, comparative and fair tests - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers - gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - 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 straightforward scientific evidence to answer questions or to support their findings.
5	<b>Forces, Earth and Space, Properties and Changes of Materials, Lifecycles and reproduction, Human lifecycle.</b>	- 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 - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and 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, causal relationships and explanations of results, in oral and written forms such as displays and other presentations - identifying scientific evidence that has been used to support or refute ideas or arguments.
6	<b>Light, Human Body, Electricity, Classification, Evolution and inheritance.</b>	- 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 - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and 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, causal relationships and explanations of results, in oral and written forms such as displays and other presentations - identifying scientific evidence that has been used to support or refute ideas or arguments.



## Key Stage One

### SCIENCE CURRICULUM CONTENT

- The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.
- Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

### WORKING SCIENTIFICALLY

Pupils in year 1 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions. They should use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships. They should ask people questions and use simple secondary sources to find answers. They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.

## Lower Key Stage Two

### SCIENCE CURRICULUM CONTENT

- In Key Stage Two, pupils will be exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.
- Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

### WORKING SCIENTIFICALLY

Pupils in years 3 & 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Pupils should use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.

## Upper Key Stage Two

### SCIENCE CURRICULUM CONTENT

- The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should 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 things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.
- Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

### WORKING SCIENTIFICALLY

Pupils in years 5 & 6 should use their science experiences to: explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. They should use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. They should make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; choose the most appropriate equipment to make measurements and explain how to use it accurately. They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

Science Curriculum - Key Stage 1

Explicit vocabulary taught across all units of work: KS1 Science - To use a wide vocabulary of everyday scientific terms.

Year 1	Topic heading	Overarching Question	Key Concepts	Content Precis
Each half term (1/2 lessons)	Seasonal change	KQ: How does the weather change during the year in each season?	Winter Spring Summer Autumn Daylight Day length Climate Weather	<p>Pupils should observe and talk about changes in the weather and the seasons. Note: pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses.</p> <ul style="list-style-type: none"> <li>observe changes across the 4 seasons</li> <li>observe and describe weather associated with the seasons and how day length varies</li> </ul>
Aut 1 and 2	Everyday Materials	KQ: What are materials and what are their properties?	Materials Hardness Flexibility Transparent Opaque Natural Man-made Design	<p>Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties.</p> <ul style="list-style-type: none"> <li>distinguish between an object and the material from which it is made</li> <li>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>describe the simple physical properties of a variety of everyday materials</li> <li>compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>
Spr 1	Animals including humans Identify common animals	KQ: What animal is this?	Fish Reptile Amphibian Mammal Bird Carnivore Herbivore Omnivore	<p>Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study.</p> <ul style="list-style-type: none"> <li>identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals</li> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> </ul>

Year 1	Topic heading	Overarching Question	Key Concepts	Content Precis
Spr 2	Animals including humans: Our senses	KQ: What are our senses?	Body parts Senses Smell Taste Touch Sight Hearing	Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes. <ul style="list-style-type: none"> <li>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>
Sum 1	Animals including humans Identify common animals	KQ: What animal is this?	Fish Reptile Amphibian Mammal Bird Carnivore Herbivore Omnivore	Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. <ul style="list-style-type: none"> <li>identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals</li> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> </ul>
Sum 2	Plants	KQ : What type of plant is this?	Environment Growth Deciduous Evergreen Common/Rare Wild/Cultivated Plant structure Trees	Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted. <ul style="list-style-type: none"> <li>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul>

Science Curriculum KS1

Year 2	Topic heading	Overarching Question	Key Concepts	Content Precis
Aut 1	Uses of everyday materials	KQ: Why should I use this material?	Properties and uses of materials Suitability Sustainability	<p>Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing or different materials are used for the same thing. They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.</p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>
Aut 2	Uses of everyday materials	KQ: Why should I use this material?	Squashing Bending Twisting Stretching	<ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>
Spr 1/2	Living things and their habitats	KQ: Why do organisms live where they do?	Habitat Microhabitats Environment Living Deceased Organisms Ecosystems Food chains	<p>Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'microhabitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other.</p> <ul style="list-style-type: none"> <li>explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> </ul>

Year 2	Topic heading	Overarching Question	Key Concepts	Content Precis
Sum 1	Plants	KQ: What do healthy plants need to grow?	Germination Growth Reproduction Nutrients Temperature	<p>Pupils should use the local environment throughout the year to observe how plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants.</p> <ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants</li> <li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>
Sum 2	Animals including humans; The basic needs of animals	KQ: What do we need to survive?	Exercise Nutrition Reproduction Growth Offspring Hygiene Diet	<p>Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.</p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>

Science Curriculum – KS2

Scientific vocabulary explicitly taught across all units of work

Year 3	Topic heading	Overarching Question	Key Concepts	Content Precise
Aut 1	Light	KQ: What makes a shadow?	Shadows Reflections Opaque Transparent Translucent Ultra Violet	<ul style="list-style-type: none"> <li>recognise that they need light in order to see things and that dark is the absence of light</li> <li>notice that light is reflected from surfaces</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>find patterns in the way that the size of shadows changes</li> </ul>
Aut 2	Forces and Magnets	KQ: How does a magnetic force work?	Friction Magnetism Attract Repel Magnetic materials Poles	<ul style="list-style-type: none"> <li>compare how things move on different surfaces</li> <li>notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>observe how magnets attract or repel each other and attract some materials and not others</li> <li>compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>describe magnets as having 2 poles</li> <li>predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul>
Spr 1	Forces and Magnets	KQ: How does a magnetic force work?	Friction Magnetism Attract Repel Magnetic materials Poles	<ul style="list-style-type: none"> <li>compare how things move on different surfaces</li> <li>notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>observe how magnets attract or repel each other and attract some materials and not others</li> <li>compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>describe magnets as having 2 poles</li> <li>predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul>

Year 3	Topic heading	Overarching Question	Key Concepts	Content Precis
Spr 2	Rocks	KQ: Why are rocks different?	Physical properties Igneous Metamorphic Sedimentary Fossilisation Solubility	<ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>recognise that soils are made from rocks and organic matter</li> </ul>
Sum 1	Plants	KQ: What do the different parts of flowering plants do?	Plant structure Germination Pollination Fertilisation Seed Formation Seed Dispersal Xylem/Phloem	<ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>
Sum 2	Bones, muscles and nutrition	KQ: What do we need to eat and how do we move?	Nutrition Diet Eat well plate Skeleton Bones Cartilage Muscles Endo/Exo/Hydrostatic	<ul style="list-style-type: none"> <li>identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> <li>identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>

Science Curriculum – KS2

Scientific vocabulary explicitly taught across all units of work.

Year 4	Topic heading	Overarching Question	Key Concepts	Content Precis
Aut 1	Digestion, teeth and food chains	KQ: How do we process food in our body?	Ingestion Digestion Absorption Excretion Teeth Food chains Ecosystem Producers Predators Prey	<ul style="list-style-type: none"> <li>describe the simple functions of the basic parts of the digestive system in humans</li> <li>identify the different types of teeth in humans and their simple functions</li> <li>construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>
Aut 2	Electricity	KQ: What is electricity and how do we use it?	Appliances Circuits Power Components Switches Conduction Insulation	<ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>
Spr 1	States of matter	KQ: How can this material be changed?	States Evaporation Condensation Boiling, Melting Temperature Water Cycle	<ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>

Year 4	Topic heading	Overarching Question	Key Concepts	Content Precis
Spr 2	Classification	KQ: How do we classify our environment?	Classify Identify Environment Climate Pollution	<ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> </ul>
Sum 1	Sound	KQ: How do we hear sounds?	Vibration Ear structure Wave Volume Decibels Pitch	<ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating</li> <li>recognise that vibrations from sounds travel through a medium to the ear</li> <li>find patterns between the pitch of a sound and features of the object that produced it</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> <li>recognise that sounds get fainter as the distance from the sound source increases</li> </ul>
Sum 2	Classification and habitats	KQ: Are we spoiling our home?	Classify Identify Environment Climate Pollution Human impact Ecology Population Deforestation	<p>Humans should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks or garden ponds and the negative effects of population and development, litter and deforestation.</p> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>

**Science Curriculum**

**Scientific vocabulary explicitly taught across all units of work**

<b>Year 5</b>	<b>Topic heading</b>	<b>Overarching Question</b>	<b>Key Concepts</b>	<b>Content Precis</b>
<b>Aut 1</b>	Forces	KQ: What forces are acting on us?	Gravity Friction Air resistance Water resistance Gears Levers /Pulleys	<ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</li> </ul>
<b>Aut 2</b>	Earth and space	KQ: How do the objects in our Solar System move?	Planets Star Moon Orbit Solar system Universe Geocentric / Heliocentric	<ul style="list-style-type: none"> <li>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>describe the movement of the Moon relative to the Earth</li> <li>describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky</li> </ul>
<b>Spr 1</b>	Properties and changes of materials	KQ: Can we investigate the properties of materials?	Solubility Conductivity Magnetic Transparency Flexibility Rigidness/ hardness Dissolving Solutions Solute/Solvent Filtering Evaporating Condensing Sieving Reversible/Irreversible Burning Reactivity	<ul style="list-style-type: none"> <li>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</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</li> </ul>

Year 5	Topic heading	Overarching Question	Key Concepts	Content Precis
Spr 2	Properties and changes of materials	KQ: Can we investigate the properties of materials?	Solubility Conductivity Magnetic Transparency Flexibility Rigidness/ hardness Dissolving Solutions Solute/Solvent Filtering Evaporating Condensing Sieving Reversible/Irreversible Burning Reactivity	<ul style="list-style-type: none"> <li>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</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</li> </ul>
Sum 1	Lifecycles and Reproduction (Living things and their habitats)	KQ: How are plant and animal lifecycles similar or different to each other?	Reproduction Asexual /sexual Vertebrates Invertebrates Pollination Fertilisation	<ul style="list-style-type: none"> <li>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>describe the life process of reproduction in some plants and animals</li> </ul>
Sum 2	Human lifecycle (Animals Including humans)	KQ: What happens as we get older?	Life cycles Aging Puberty Reproduction	<ul style="list-style-type: none"> <li>describe the changes as humans develop to old age.</li> <li>Pupils should learn about the changes experienced in puberty.</li> <li>Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans</li> </ul>

## Science Curriculum

Scientific vocabulary explicitly taught across all units of work.

Year 6	Topic heading	Overarching Question	Key Concepts	Content Precis
Aut 1	Light	KQ: How does light travel?	Rays Photons Reflection Refraction Angle of incidence Angle of reflection Shadows Sources	<ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines</li> <li>use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</li> <li>explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</li> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>
Aut 2	Human Body (Animals including humans)	KQ: Why is it important to be healthy?	Circulatory system Heart Lung Blood Absorption Nutrition Exercise Obesity Malnutrition	<ul style="list-style-type: none"> <li>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>describe the ways in which nutrients and water are transported within animals, including humans</li> </ul>
Spr 1	Electricity	KQ: Have you got the power?	Circuits Components Symbols Series Parallel Voltage Brightness Electrons	<ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>use recognised symbols when representing a simple circuit in a diagram</li> </ul>

Year 6	Topic heading	Overarching Question	Key Concepts	Content Precis
Spr 2	Classification	KQ: How do we identify organisms?	Kingdom Phylum Class Order Family Genus Species Keys Classification Vertebrate Invertebrate	<ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> <li>Give reasons for classifying plants and animals based on specific characteristics</li> <li>Look at the classification system in more detail, how are broad groups then sub-divided?</li> </ul>
Sum 1	Classification	KQ: How do we identify organisms?	Flora Fauna Fungi Microbes	<ul style="list-style-type: none"> <li>Through direct observations, sub-classify commonly found vertebrates and invertebrates.</li> <li>Give reasons for groupings – define characteristics</li> <li>Study relevant scientists, Carl Linnaeus</li> <li>Use classification systems and keys</li> <li>Research unfamiliar organisms and place in the classification system</li> <li>Look at all five kingdoms including micro-organisms</li> </ul>
Sum 2	Evolution and inheritance	KQ: Where did we come from?	Fossil record Pentadactyl limb Genetics Genetic variation Mutation Recombination Offspring Generation Adaptation	<ul style="list-style-type: none"> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>

Science – Unit Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Exploring the natural world  Changing states of matter	Seasonal Change  Using senses	Further seasonal change  <i>Dinosaurs</i>	New growth and Life cycles  Health and well-being	Comparing environments, animals, climate and habitat	Our planet  Pollution and its effects
Year1	Seasonal Change  Everyday materials	Seasonal Change  Everyday materials	Seasonal Change  Identify common animals	Seasonal Change  Our senses	Seasonal Change  Identifying common animals	Seasonal Change  Plants
Year 2	Uses of everyday materials	Uses of everyday materials	Living things and their habitats	Living things and their habitats	Plants	The basic needs of animals
Year 3	Light	Forces and Magnets	Forces and Magnets	Rocks	Plants	Bones, muscles and nutrition
Year 4	Digestion, teeth and food chains	Electricity	States of Matter	Classification	Sound	Classification and habitats
Year 5	Forces	Earth and Space	Properties and changes of materials	Properties and changes of materials	Lifecycles and Reproduction	Human lifecycle
Year 6	Light	Human Body	Electricity	Classification	Classification	Evolution and inheritance