



Science Curriculum Map

Influences include; STEM learning, Primary Science Teaching Trust, British Science Association.

CLEAPSS (Health and Safety) member.

The National Curriculum aims for Key Stage 1 and Key Stage 2 are:

- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics (Substantive Knowledge)
- To develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them (Disciplinary Knowledge)
- Equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future (Disciplinary Knowledge)

Nursery

Curriculum content (Development Matters): Understanding the World

- Use all their senses in hands-on exploration of natural materials.
- Explore collections of materials with similar and/or different properties.
- Talk about what they see, using a wide vocabulary.
- Explore how things work.
- Plant seeds and care for growing plants.
- Explore and talk about different forces they can feel.
- Talk about the differences between materials and changes they notice.

The following areas of learning are interlinked with the Science Curriculum:

Communication Language

- Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
- Be able to express a point of view and to debate when they disagree.

Personal, Social and Emotional Development

- Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them.

<p>Physical development</p> <ul style="list-style-type: none"> • Be increasingly independent in meeting their own care needs. • Make healthy choices about food, drink, activity and tooth brushing. • Choose the right resources to carry out their own plan. • Use one-handed tools and equipment. <p>Mathematics</p> <ul style="list-style-type: none"> • Compare quantities using language: 'more than', 'fewer than'. • Make comparisons between objects relating to size, length, weight and capacity • Begin to describe a sequence of events, using words such as 'first', 'then...' 		
<p>Curriculum Content: Disciplinary Knowledge (practical scientific methods);</p> <p>These STEM skills are taught through-out the year, in all topics:</p> <ul style="list-style-type: none"> • Using one-handed tools. • Through prompts, questioning and guidance; asking simple questions and noticing what is around them. • Through careful provision, select activities that promote basic enquiry. 		
Autumn	Spring	Summer
<p>Me, Me, Me Explore me, explore my family by noting simple observations and asking basic questions to find out more.</p> <p>Celebration and colour Explore how simple things work.</p> <p>Seasons (Simple observations) What can we notice about outside? (influenced by weather/ plants outside/forest school area)</p>	<p>Once Upon a Time Explore and talk about the different forces they can feel. Floating and sinking, pushing and pulling; making basic observations and asking simple questions to explore. (Simple observations) Children will begin to explore freezing and melting talking about what they see using a wide range of vocabulary.</p> <p>Seasons (Simple observations) What do we notice about the outside? (influenced by weather/ plants outside/ discoveries in the forest school area)</p>	<p>Growing and Moving Plant seeds and make basic observations on how they grow Exploring stages of growth in living things such as caterpillars/ butterflies. Talk about what they see using a variety of language. Children will learn to respect living things. Understand the need to care and respect the environment and living things.</p> <p>Seasons What do we notice outside? (influenced by weather/ plants outside/ other seasonal features)</p>



Assessment:	Development Matters	Development Matters	Development Matters
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Reception	<p>Curriculum content (Development Matters [DM] & Early Learning Goals [ELG]): Understanding the World</p> <ul style="list-style-type: none">• Explore the natural world around them. (DM)• Describe what they see, hear and feel whilst outside. (DM)• Recognise some environments that are different to the one in which they live. (DM)• Understand the effect of changing seasons on the natural world around them. (DM)• Explore the natural world around them, making observations and drawing pictures of animals and plants. (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. (EYG)• Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. (EYG) <p>The following areas of learning are interlinked with the Science Curriculum.</p> <p>Communication Language</p> <ul style="list-style-type: none">• Learn / use new vocabulary in different contexts. (DM)• Ask questions to find out more and to check they understand what has been said to them. (DM)• Articulate their ideas and thoughts in well-formed sentences. (DM)• Connect one idea or action to another using a range of connectives. (DM)• Use talk to help work out problems and organise thinking and activities explain how things work and why they might happen. (DM)• Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary. (DM)• Participate in discussions, offering their own ideas, using recently introduced vocabulary. (EYG)• Offer explanations for why things might happen, making use of recently introduced vocabulary.(EYG)• Express their ideas and feelings about their experiences using full sentences with modelling and support from their teacher.(EYG) <p>Personal, Social and Emotional Development</p> <ul style="list-style-type: none">• Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate. (EYG)• Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions. (EYG)
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- Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (EYG)

Physical development

- Know and talk about the different factors that support their overall health and wellbeing. (DM)
- Use a range of small tools. (EYG)

Mathematics

- Compare numbers. (DM)
- Compare length, weight and capacity. (DM)
- Compare quantities. (EYG)

Curriculum Content: Disciplinary Knowledge (practical scientific methods)

These STEM skills are taught through-out the year, in all topics:

- Use a range of small tools. (*Build on Nursery*)
- Through prompts, questioning and guidance; asking simple questions and noticing what is around them.
- Through careful provision, select activities that promote basic enquiry, make observations and comparisons
- Ask simple questions.

Autumn	Spring	Summer
<p>Marvellous Me Growth and change. Asking questions such as ...How have I changed?</p> <p>Celebrations Exploring light sources.</p> <p>Seasonal celebrations and safety.</p> <p>Seasons (Simple observations) What changes can we see in the outside with trees in Autumn? Children will explore the natural world around them and describe what they see hear and feel while they are outside. (<i>Build on Nursery</i>).</p>	<p>Superhero Powers Oral Health – children will learn why it is important to brush our teeth, visit the dentist and healthy food choices for our teeth to stay strong? Keeping my Body Healthy – children will learn that sleep and diet keep us healthy.</p> <p>Once Upon a Classic tale Growing plants (<i>Build on Nursery</i>) Asking questions- which tools should we use? Floating and sinking children will (<i>Building on Nursery</i>) simple predictions about which items we think might float or sink. Supporting</p>	<p>Globe Trekkers Habitats in our local area (links to Forest School). The children will learn some of the names of local plants and animals. Drawing pictures and taking digital photos of animals and plants they see. Building on children’s experience with freezing and melting in the Nursery children will understand some important processes and changes in the natural world around them and develop basic enquiry skills, making observations and comparisons through exploring small world areas made of ice and animals from the polar regions.</p>

		<p>children to express their opinions and give reasons.</p> <p>Seasons (Simple observations) What changes do we make with our clothes when we are outside? (<i>Build on Nursery</i>)</p>	<p>Creating environments using small world resources and linked texts. Creating environments using small world resources and linked texts.</p> <p>Eco-Warriors The impact of humans on the environment. Recycling. What do butterflies need to grow?; <i>building from Nursery's</i> observation of caterpillars and butterflies this topic explores the needs of the animal in more detail. Observational drawings are included in this topic too.</p> <p>Seasons (Simple observations) What changes can we see in Summer to our outside area? (<i>Build on Early Reception</i>)</p>
Assessment:	Development Matters	Development Matters	ELGs

Year 1	Curriculum content (National Curriculum): Substantive Knowledge; Seasons
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- Observe changes across the four seasons. (*Build on EYFS*)
- Observe and describe weather associated with the seasons and how day length varies. (*Build on EYFS*)

Animals including humans

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Everyday materials

- Distinguish between an object and the material from which it is made. Encourage comparing words.
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock (*Build on EYFS*)
- Describe the simple physical properties of a variety of everyday materials and consider some purposes.
- Compare and group together a variety of everyday materials on the basis of their simple physical properties (*Build on EYFS*)

Plants

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- Identify and describe the basic structure of a variety of common flowering plants, including trees.

Curriculum Content: Disciplinary Knowledge (practical scientific methods);

These STEM skills are taught through-out the year, in all topics:

- Asking simple questions and recognising that they can be answered in different ways with prompts and support (what, why, when, where. Use the sentence opener prompt cards to support and encourage the use of this language).
- Performing simple tests. (*Build on increased independence throughout year*).
- Observe closely using resources provided during practical investigations such as magnifying glasses and maths measuring skills. (*Build on EYFS*)
- Sort and group objects to identify and classify.
- Using their observations and ideas to suggest answers to questions. (*Build on EYFS*)
- Gather and recording data to help in answering questions. Apply maths skills in science tasks. (*Build on EYFS*)

	Curriculum Content: Understand the uses and implications of Science: Disciplinary Knowledge;		
	<ul style="list-style-type: none"> Introduce how Science is used in the real world. 		
	Autumn	Spring	Summer
	Seasons (and seasonal influences on plants, including trees) Also developing “When” questions to note changes and observations. Using the local environment to enhance learning. <i>(Build on EYFS)</i> Animals including Humans. This also provides opportunities to apply basic sorting and classifying.	Seasons (and seasonal influences on plants including trees) Developing comparisons between seasons that they have covered, noting changes and similarities. Continue to use the local environment to enhance learning <i>(Build on previous Year 1 knowledge & vocabulary)</i> Everyday materials This also provides the opportunity to experiment with a wide range of materials to explore basic properties and uses. Developing questioning and observational skills.	Seasons (and seasonal influences on plants including trees) Ensuring comparisons are made, noting changes and similarities with more reasons <i>(building on previous Year 1 , knowledge, language and comparisons)</i> Continue to use the local environment to enhance learning Plants This also provides opportunities to apply plant observations/ vocabulary and knowledge from seasons topic. <i>Build on EYFS</i> understanding of plants.
Assessment:	Summative assessments recorded on Arbor		

Year 2	Curriculum content (National Curriculum): Substantive Knowledge; Uses of everyday materials <ul style="list-style-type: none"> Know the different materials that everyday objects are made from. <i>(Build on from Year 1)</i> Identify and compare the suitability of a variety of everyday materials for particular uses. <i>(Build on from Year 1)</i> Consider alternatives and explain why my choice is the best - using question starters such as “What..., when..., why..., how..., using evidence from...” Explore how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching, while others remain rigid. Living Things and Their Habitats <ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead, and things that have never been alive.
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- Identify that most living things live in habitats to which they are suited.
- Go on to describe how different habitats provide for the basic needs of different kinds of animals and plants and explain why with reasons, thinking about similarities and differences.
- Describe and justify how animals obtain their food from plants and other animals. I can use a simple food chain and name the different sources of food on it.
- Identify and name what exists in micro-habitats

Growth and survival

- Identify and explain the importance for humans to exercise, eat the right amounts of different types of food, and behave hygienically for a healthy life style.
- Explore cause and effect; if we do not do these things what could happen and why?
- Understand that animals, including humans, have offspring which grow into adults in a life cycle.
- Explain what happens in each stage of the life cycle of a butterfly and give reasons why, using observations and real data.
- Investigate and describe the basic needs of animals, including humans, for survival (water, food and air).

Plants

- Observe and describe how seeds grow into mature plants (*grow plants for best experience, measure, assess best conditions, compare to ensure building on from previous years*)
- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (*Build on from Year 1*)

Curriculum Content: Disciplinary Knowledge (practical scientific methods);

These STEM skills are taught through-out the year, in all topics:

- Deepen the skill of asking simple questions and recognise that they can be answered in different ways. Develop adding detail to answers and explaining why with 'because' and 'so'.
- Perform simple tests with ever increasing independence and complexity. (*Build on Year 1*)
- Encourage children to also develop evaluating skills as they carry out tests.
- Use secondary sources to answer and ask questions in different ways.
- Observe carefully using simple equipment and write in full sentences with ever increasing independence.
- Sort and group objects to identify and classify. Using question starters such as "What..., when..., why..., how..." to develop evaluating and reasoning skills. (*Build on Year 1*)

	<ul style="list-style-type: none"> Use observations and ideas to suggest answers to questions. (<i>Towards the end of the year encourage the use of evidence to support, ready for Year 3</i>) Gather and record data to help in answering questions. 		
	Curriculum Content: Understand the uses and implications of Science: Disciplinary Knowledge;		
	<ul style="list-style-type: none"> How Science is used in the real world. Mentioning how skills can be applied to STEM careers when being taught. 		
	Autumn	Spring	Summer
	<p>Use of Everyday Materials Including experiments exploring properties, their uses and sorting.</p> <p>Living things and their habitats This provides opportunities to explore the different needs of animal groups (<i>Building on Year 1</i>). During this term, habitats are introduced, understanding what this means and how they suit the inhabitants.</p>	<p>Growth and Survival Links are made from Autumn Term on living things to help identify what humans need for a healthy lifestyle. Furthermore, opportunities to explore cause and effect when following healthy options (or not) are provided.</p> <p>Living things and their habitats. This part of the learning journey, links previous learning in Year 2 with food chains and micro-habitats.</p>	<p>Growth and Survival Learning is built on from what has been learnt in Spring, applying knowledge, skills and language; focusing on how this applies to life cycles and the needs of animals</p> <p>Growing plants This includes comparing conditions (<i>Build on Year 1</i>)</p>
Assessment:	Summative assessments recorded on Arbor		

Year 3	<p>Curriculum content (National Curriculum): Substantive Knowledge;</p> <p>Plants</p> <ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers (<i>build on language from Year 1 and 2 in explanations and comparisons</i>) Explore the requirements of plants for life and growth (<i>building on what a plant needs from KS1</i>) and how they vary from plant to plant. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
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Animals, including humans

- 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. (*building on Year 2*)
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Rocks

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

Light

- Recognise that they need light in order to see things and that dark is the absence of light.
- Notice that light is reflected from surfaces.
- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
- Recognise that shadows are formed when an opaque object blocks the light from a light source.
- Find patterns in the way that the size of shadows change.

Forces and Magnets

- Compare how things move on different surfaces.
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- Observe how magnets attract or repel each other and attract some materials and not others.
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- Describe magnets as having two poles.
- Predict whether two magnets will attract or repel each other, depending on which poles are facing.

Curriculum Content: Disciplinary Knowledge (practical scientific methods);

These STEM skills are taught through-out the year, in all topics:

	<ul style="list-style-type: none"> • Asking questions and using different approaches to answer them. Using question starters (<i>until greater independence is established and then develop the application of evidence</i>). • Setting up and administering simple, practical, fair tests – including evaluating and comparing. • Observe systematically and carefully. Accurately measure using standard units and using a range of equipment (<i>applying mathematical skills and understanding</i>) • Gather, record, classify and present data in a variety of ways to help in answering questions by using evidence, apply data, using graph skills. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (evaluate) • Identify differences, similarities or changes to simple scientific ideas and processes. This includes cause and effect. • Using straightforward scientific evidence to answer questions ensuring that the key questions are answered. 		
	<p>Curriculum Content: Understand the uses and implications of Science: Disciplinary Knowledge;</p> <ul style="list-style-type: none"> • Grow an understanding of how Science is used in the real world and in various STEM careers 		
	Autumn	Spring	Summer
	<p>Rocks, Fossils and Soil This new topic also develops grouping and comparing skills from Year 2</p> <p>Forces and Magnets This new topic introduces simple diagrams too.</p>	<p>Plants and living things This also provides children opportunities to apply their knowledge of plants from KS1, when considering variations, exploring the functions in each part of the plant.</p> <p>Light and Shadows An introduction into understanding terminology (such as reflection) and core concepts related to light and shadows are made, building a foundation for Year 6.</p>	<p>Animals including Humans Opportunities re also made to explore cause and affect; on chosen food choices. This builds on Year 2.</p>
Assessment:	Summative assessments recorded on Arbor		

Year 4	<p>Curriculum content (National Curriculum): Substantive Knowledge;</p> <p>Living Things and their Habitats</p> <ul style="list-style-type: none">• Recognise that living things can be grouped in a variety of ways.• Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.• Recognise that environments can change and that this can sometimes pose dangers to living things. (<i>Build on Year 2</i>) <p>Animals, including humans</p> <ul style="list-style-type: none">• Describe the simple functions of the basic parts of the digestive system in humans.• Identify the different types of teeth in humans and their simple functions.• Construct and interpret a variety of food chains, identifying producers, predators and prey. (<i>Build on Year 2</i>) <p>States of Matter</p> <ul style="list-style-type: none">• Compare and group materials together, according to whether they are solids, liquids or gases• Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature <p>Sound</p> <ul style="list-style-type: none">• Identify how sounds are made, associating some of them with something vibrating.• Recognise that vibrations from sounds travel through a medium to the ear.• Find patterns between the pitch of a sound and features of the object that produced it.• Find patterns between the volume of a sound and the strength of the vibrations that produced it.• Recognise that sounds get fainter as the distance from the sound source increases.
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Electricity

- Identify common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.

Curriculum Content: Disciplinary Knowledge (practical scientific methods);

These STEM skills are taught through-out the year, in all topics:

- Asking questions and using different approaches to answer them (this includes different scientific enquiries or secondary sources (*Build on Year 3*))
- Setting up and administering simple, comparative, practical FAIR tests-including evaluating, reasoning and evidence are also beginning to be used. (*Build on Year 3*)
- Observe systematically and carefully. Accurately measure using standard units and using a range of equipment (*Build on Year 3*)
 - With increased independence- Gather, record, classify and present data in a variety of ways to help in answering questions (*Build on Year 3*)
 - With increased independence -Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables (*Build on Year 3*)
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results & conclusions. (*Build on Year 3*)
- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- Identify similarities, differences or changes & explain/ justify using scientific evidence to support findings.
- Identify differences, similarities or changes to simple scientific ideas and processes. This includes cause and effect.

Curriculum Content: Understand the uses and implications of Science: Disciplinary Knowledge;

- Develop an understanding of how skills, knowledge and language in Science are used in the real world.
- Become more aware of STEM careers helping to dismissing stereotypes.

	Autumn	Spring	Summer
	<p>Animals including Humans Links from Year 2, carnivores etc., are made when exploring the functions of different teeth. Exploring the digestive system also provides the chance to record in a different way.</p> <p>Solids Liquids and Gases This topic also provides opportunities to develop the skill of drawing and labelling diagrams</p>	<p>Living Things and their Habitats This topic lends itself to greater classifications skills, building on sorting skills from previous year groups.</p> <p>Sound Learning how sound is made forms essential foundations for Year 6. This also provides opportunities for graphs.</p>	<p>Electricity A popular topic, lending itself to ample investigative opportunities, preparing learners for Year 6. Comparisons are developed, encouraging the use of evidence (building on from Year 3)</p>
Assessment:	Summative assessments recorded on Arbor		

Year 5	<p>Curriculum content (National Curriculum): Substantive Knowledge;</p> <p>Living things and their habitats</p> <ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals. <p>Animals, including humans</p> <ul style="list-style-type: none"> Describe the changes as humans develop to old age. Links to PSHE/SRE Researching the gestation periods. Links to PSHE /SRE <p>Properties and change of materials</p> <ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
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- Demonstrate that dissolving, mixing and changes of state are reversible changes.
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

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Earth and Space

- Describe the movement of the Earth and other planets relative to the sun in the solar system.
- Describe the movement of the moon relative to the Earth.
- Describe the sun, Earth and moon as approximately spherical bodies.
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Forces

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- Identify the effects of air resistance, water resistance and friction that act between moving surfaces.
- Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.

Curriculum Content: Disciplinary Knowledge (practical scientific methods);

These STEM skills are taught through-out the year, in all topics:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables in a fair test. Children need to expand on their reasons using the as “If I were to..., When I ..., Compared to...” to strengthen independent thinking.
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate to check validity.
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, *scatter graphs**, bar and *line graphs** (* *These are new skills and require maths links*)
- 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 and degree of trust in results, in oral and written forms such as displays and other presentations (*Build on Year 4*)
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

	<p>Curriculum Content: Understand the uses and implications of Science: Disciplinary Knowledge;</p> <ul style="list-style-type: none"> • Deepen an understanding of how skills, knowledge and language in Science are used in the real world. • Demonstrate STEM career opportunities. Where possible have speakers in and prepare purposeful questions. 		
	Autumn	Spring	Summer
	<p>Properties and Change of Materials This topic builds on knowledge of solid, liquids and gases (<i>Year 4</i>) to decide how mixtures can be separated in different ways. Opportunities for comparative tests and recording are made. When grouping materials, magnetic properties from Year 3 are also developed.</p>	<p>Forces Again, opportunities to make links to Year 3 and magnets are built upon. Children to use given phrases such as “compared to..., if I were to explain...” to articulate in more detail. More complex graphs are taught and applied.</p> <p>Earth and Space This topic lends itself to teaching how to manage secondary sources effectively too.</p>	<p>Life Cycles References to previous learning and experiences (eg observing caterpillars) on life cycles are made (KS1) SRE/PSHE links are carefully made.</p>
Assessment:	Summative assessments recorded on Arbor		

Year 6	<p>Curriculum content (National Curriculum): Substantive Knowledge;</p> <p>Living things and their habitats</p> <ul style="list-style-type: none"> • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. • give reasons for classifying plants and animals based on specific characteristics. <p>Animals including humans</p> <ul style="list-style-type: none"> • Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (<i>Build on Year 3</i>) • Describe the ways in which nutrients and water are transported within animals, including humans.
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Evolution and inheritance

- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (*Build on Year 4*)
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Light

- Recognise that light appears to travel in straight lines.
- Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.
- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (*Build on Year 3 on how shadows form*)

Electricity

- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. (*Build on Year 4*)
- Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
- Use recognised symbols when representing a simple circuit in a diagram.

Curriculum Content: Disciplinary Knowledge (practical scientific methods);

These STEM skills are taught through-out the year, in all topics:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables in a fair test. including recognising and controlling variables in a fair test. Children need to expand on their reasons such as “If I were to..., When I ..., Compared to...” to strengthen independent thinking. (*Build on Year 5*)

	<ul style="list-style-type: none"> • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate to check validity. <i>(Build on Year 5 and widen various reasons for doing this).</i> • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. <i>(Build on Year 5)</i> • Using test results to make predictions to set up further comparative and fair tests. <i>(Build on Year 5)</i> • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. <i>(Build on Year 4 and 5)</i> 		
	<p>Curriculum Content: Understand the uses and implications of Science: Disciplinary Knowledge;</p> <ul style="list-style-type: none"> • Continue to deepen an understanding of how skills, knowledge and language in Science are used in the real world. • Demonstrate STEM career opportunities. Where possible have speakers in and prepare purposeful questions. 		
	Autumn	Spring	Summer
	<p>Electricity Opportunities to make careful observations, comparisons and justifications are made with circuits, building on Year 4. Diagrams are also developed, including the use of symbols.</p> <p>Living things and their habitats Opportunities to explore famous scientists such as Carl Linnaeus are also made regarding classification.</p>	<p>Evolution and Inheritance This also provides the opportunity to build on previous knowledge of habitats to then explore adaptation.</p> <p>Light Key concepts from Year 3 are revisited and deepened. Language is developed to expand explanations. More complex graphs are also taught to explain phenomena.</p>	<p>Animals including humans This topic also lends itself to more complex diagrams, building on prior KS2 learning.</p>
Assessment:	Summative assessments recorded on Arbor final assessments sent to DfE		