

Science Curriculum Map 2026 - 27

At Blue Coat, our Science Curriculum aims to equip children with the essential skills to become curious, well-rounded scientists. Through hands-on exploration of core skills—including observation, pattern seeking, classification, and fair testing—children become fully immersed in the scientific method. Our curriculum balances extended investigations (such as deep dives into ecosystems) with short-burst skill sessions (such as mastering data logging tools). We consistently encourage pupils to connect their learning to ground-breaking scientists and modern innovations.

Designed to be fun, engaging, and informative, our ultimate goal is to nurture lifelong, independent thinkers. To support our mixed classes, Lower KS2 is delivered on a 2-year rotation.

Progression of Skills Substantive Knowledge

Strand	Lower KS2	Year 5	Year 6
Plants (Biology)	Children can: classify plants in different ways (Living things)	Children can: - explain the lifecycles and processes of a range of different plants and trees. - use ID guides to identify plants. (Living things)	Children can: - classify plants in different ways using observable characteristics/ similarities and differences. - Give reasons for classifying plants based on characteristics (Living things)
Animals Including Humans (Biology)	Children can: - identify and label and draw main parts of the digestive system and explain the process. - Know the different types of teeth in their mouth: molars, pre molars, canines and incisors and their function. - identify animals and classify based on their teeth whether they are herbivore, omnivore and carnivore. - order and draw a range of lifecycles and food chains. - identify the producer, predators and prey.	Children can: - explain the changes that take place in boys and girls during puberty. - explain how a baby changes physically as it grows and what it is able to do at each stage. - Understand that different animals have different gestation periods. - Know the importance of physical and mental health.	Children can: - identify, label and draw parts of the circulatory system e.g. heart, blood vessels, capillaries, arteries, blood. - Understand the function of the different parts. - Understand how nutrients are transported around the body within animals and humans. - Know the impact of a balanced diet, exercise and lifestyle on the way their body's function. - Recognise the impact on all body systems learned so far.

Living Things/ Evolution and inheritance (biology)	Children can: • name living things in a range of habitats, giving key features that helped identify them. • give examples of how an environment might change both naturally and due to human impact. • Explain how changes in environment can be dangerous to animals and lead to extinction. • Know that some animals hibernate.	Children can: • Describe the lifecycles of mammals, amphibians and insects using diagrams. • describe similarities and differences between them. • Understand the term reproduction in plants and animals.	Children can: • give examples in the five vertebrate groups and some in the invertebrate group. • give key characteristics of these groups. • give examples of flowering and non-flowering plants. • identify unknown plants using ID and classification charts. • explain why animals belong to groups. • Know that Carl Linnaeus classify plants and animals. • explain the process of evolution and give examples of how plants and animals are suited/adapted to their environment. • Give examples of how animals have evolved over time. • Understand that fossils give us evidence of the past and know the process of fossilisation.
Seasonal Changes (biology) Earth and Space (physics) Light/ Sound (physics)	Children can: Sound- • describe different types of objects producing different sounds. • Know that sound is caused by vibrations. • describe how sound travels through different mediums e.g air, water, metal. • find patterns between pitch and volume and the features of the objects producing it. • Know that sounds get fainter as the distance from the sound increases.	Children can: Earth and space- • Know how the earth and moon move. • Know different planets in the solar system. • understand night and day by explaining the rotation of the earth on its axis. • Understand why shadows change using scientific vocabulary and the position of the sun. • explain how a sundial works. • explain why we have time zones.	Children can: Light- • describe using diagrams how light travels in straight lines, either from sources or reflected from other objects into our eyes. • explain how we see things and can label basic parts of the eye and explain their function. • describe with diagrams how light travels past translucent or opaque objects to form shadows of the same shape. • Know how to change the size of shadows by moving objects closer/further from light source.

Materials (Chemistry) Rocks (Chemistry)	Children can: - name properties of solids, liquids and gasses. - explain process of melting and freezing. - Know the terms evaporation and condensation. - describe the water cycle. - Know materials have different melting points. - test a variety of materials to answer questions.	Children can: - explain every day uses of materials. - explain what dissolving is. - name equipment for filtering and sieving. - Know how to recover substances from solutions or mixtures by evaporation, filtering or sieving. - describe reversible and non-reversible changes to materials and give examples.	Children can: Recognise that things have changed over time and fossils provide information about living things that inhabited the Earth millions of years ago. (Evolution and Inheritance)
Forces (Physics) Electricity (Physics)	Children can: Electricity- - name the components in a circuit. - make a simple circuit. - control a circuit using a switch. - name some conductors and insulators. - use drawings to represent their circuits. - describe how a circuits works. - name some appliances that run on battery/mains. - Know how to make a bulb brighter.	Children can: - explain the effects of gravity acting on an unsupported object. - give examples of friction, water resistance and air resistance. - give examples of the benefits of high/low friction, water resistance and air resistance. - demonstrate how pulleys, levers and gears work. - know that these systems can make lifting heavy objects easier.	Children can: - Understand different forces and can apply this knowledge across different subjects e.g. geography. Electricity- - Understand voltage and amps. - Know how to make bulbs brighter, buzzers louder. - label and name components in a circuit. - draw circuits using symbols. - Make circuits to solve particular problems such as a quiet and a loud burglar alarm.

Progression of Skills Disciplinary Knowledge

Strand	Lower KS2	Year 5	Year 6
Asking Questions	Children: - Can ask a range of questions to sort and classify. - Can write a range of questions using own scientific knowledge.	Children: - Use scientific experiences to explore ideas and raise different higher order questions. - Can create further questions to investigate.	Children: - Can raise questions to further prove or disprove a scientific enquiry. - Can raise questions about a range of phenomena.

	Can answer questions independently using secondary sources.	Can raise questions and suggest reasons for similarities and differences	
Make Predictions	Children: - Make predictions that are detailed and explains their thinking, they link to tests, data and use scientific language. - Raise further predictions from results based on patterns.	Children: - Use subject knowledge, observations or previous learning to make predictions. Add detail and explanations. - Can identify a range of variables which could affect their investigations.	Children: - Use test results to make predictions to set up further comparative tests. - Use evidence to support predictions. - Develop predictions based on research and scientific knowledge.
Observation and Measurement	Children: - Make systematic and careful observations to ask questions and group objects using classification keys. - Observe closely and explain processes. - Identify similarities, differences or changes related to simple scientific ideas or processes. - Take and record accurate measurements using standards units to 2dp. Use data loggers to record. Use volt metres and begin to gather repeat readings to increase accuracy.	Children: - Observe carefully and make comparisons. - Observe changes over a period of time. - Make decisions about what to observe to answer questions. - Use observation skills and ID kits to identify plants and animals. - Take repeat measurements where appropriate. - Can find the average of data. - Select measuring equipment and use accurately e.g. ruler, tape measure, trundle wheel, force metres.	Children: - Can make accurate drawings of plants and animals based on observations. - Take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeat readings where appropriate. - When collecting measurements decide whether to increase sample size for validity and reliability. - Record measurements to 3dp. Use protractors, rulers, force metres, volt meters accurately

Planning enquiries	Children: • Can identify the type of enquiry needed to answer a question. • Follow a plan to carry out observations and tests. • Use a planning approach with more independence identifying variables and what needs measuring. • Children choose their method to carry out their investigation.	Children: • Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and changes. • Understand what type of scientific enquiry is needed to answer and prove/disprove scientific questions or phenomenon.	Children: • choose the type of enquiry needed to carry out their investigation. • can pose and answer their own questions, controlling variables where necessary independently. • Decide whether sample size needs to be increased for validity. • Identify a range of factors which may affect their investigation.
Recording	Children: • Record findings using systematic and careful observational drawings and labelled diagrams using scientific vocabulary. Children to present the same data in different ways. • Can create own tables with headings. • Can record using classification keys. • Can use Venn and Carroll diagrams with accuracy. • Can use discrete and continuous data using line/scatter graphs. • Can construct bar chart independently.	Children: • Present results in a variety of ways to help answer questions. • Can decide how to record from a range of approaches. • Can record ideas using accurate diagrams using scientific language. • Create own results table including cause and effect. • Record results systematically and repeat readings. • Use and develop classification keys. • Can classify in a number of ways. • Use line or scatter graphs to calculate range in a set of data using different scales. • Can produce line graphs with various increments.	Children: • Record data and results with increasing complexity e.g. accuracy of measurements. • Use scientific diagrams, models and labels accurately with clarity and using precise scientific language. • Calculate mean and range of a set of data. • Can use and produce classification keys independently by posing questions. • Can independently collect data and produce scatter and line graphs. • Can create bar charts and pie charts to present data.
Interpreting and concluding	Children: • Draw simple conclusions from results to answer questions and support their ideas.	Children: • Identify patterns and casual relationships that may be found in the natural environment.	Children: • Look for patterns and relationships using a suitable sample. Use oral and written forms such as displays to report conclusions, casual

	- Look for casual relationships in data and identify evidence that refutes/supports ideas. - Report on findings to an audience orally and in writing using appropriate scientific vocabulary for a range of audiences. - use evidence to suggest values for different items tested using the same method. - Draw conclusions based on straightforward evidence and current subject knowledge to support their findings, - Suggest improvements and raise further questions.	- interpret data to generate simple comparative statements based on evidence. - Use results to draw conclusions and can identify external factors that cannot be controlled e.g.temperature inside and outside. - Use scientific language and illustrations to discuss, communicate and justify scientific ideas. - Can use comparative statements to explain results and how things work.	relationships and give an explanation of the degree of trust in their results. - Make suggestions for ideas that can be explored using pattern seeking. - Can spot anomalies and identify results that do not fit the overall pattern. - Use data to refute or support ideas or arguments. - Focus on scientific reasons for overall pattern rather than a comparison. - Use labelled diagrams to support their explanation. - Use ideas from secondary sources to support their ideas, choosing appropriate websites. - Create detailed models to explain processes such as circulatory system and lifecycles.
Evaluating	Children: - Evaluate and communicate their methods and findings. - Suggest ways to improve what they have already done. - Begin to evaluate different aspects of their enquiries such as equipment. - Begin to understand how the enquiry improves outcomes from their questions. - Use different charts to evaluate such as ranking scales, star diagrams and success ladders. - Suggest points for development based on the weakest aspects.	Children: - Evaluate and decide when further observations, comparative and fair tests might be needed. - Evaluate different aspects of their enquiries such as equipment and accuracy of measurements. - State how the enquiry improves outcomes from their questions. - Can relate their results to the question and state if their test has enabled them to answer it. - Use a range of charts to evaluate such as ranking scales, star diagrams including those with negative numbers. - Suggest next steps based on the weakest aspects and state how this will help them or the test progress or give different results.	Children: - Can describe and evaluate their own and other people's scientific ideas using evidence from a range of sources. - Evaluate their choice of method, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources. - Use scientific language and evaluate how their enquiry has answered the question.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
LKS2	Electricity Is electricity a force we should fear, or a gift we should celebrate?	Animals Including Humans If our teeth and digestive system are built for survival, how do we choose wisely to look after them?	States of Matter If gases are invisible, how do they bring shape, life, and joy to our everyday lives?	Science Week and Climate Focus	Sound How can we change simple vibrations into an explosion of joy and music?	Living Things and Their Habitats How do living things show courage when their homes change and their world shrinks?
	Physics	Biology	Chemistry		Physics	Biology
Year 5	Space Is the dark of space something to fear, or a canvas of endless wonder?	Properties of Materials Does it take more courage to change a material forever, or to try and put it back the way it was?	Forces How does scientific wisdom allow a single person to lift a mountain?	Science Week and Climate Focus	Living Things and Their Habitats How can a creature completely reinvent itself just to survive and bring joy to the world?	Animals Including Humans If our bodies change at every stage of life, how do we use wisdom to look after ourselves and others?
	Physics	Chemistry	Physics		Biology	Biology
Year 6	Light How does ordinary white light hide a secret rainbow of pure joy ?	Evolution and Inheritance How much courage does it take for a species to change its very nature to survive a changing world?	Electricity How do we use scientific wisdom to control a force that has the power to either light up a room or disrupt our lives?	Science Week and Climate Focus	Animals Including Humans How can a muscle the size of your fist beat 100,000 times a day without ever taking a rest?	Living Things and Their Habitats How does scientific wisdom help us appreciate the invisible creatures that rule our world?
	Physics	Biology	Physics		Biology	Biology