Chadsgrove Curriculum Long Term Planning: Pioneers Pathway - Science

Curriculum Intent

Chadsgrove's Science curriculum is designed to ignite curiosity and ensure that all pupils have the opportunity to explore and understand the world in which they live while developing scientific skills and knowledge. Through engaging and meaningful learning experiences, we aim to equip pupils with the scientific understanding and literacy they need to participate as fully as possible in society and to make sense of the world around them.

Within the Pioneers Curriculum Pathway, the Science curriculum is based on the programmes of study from the National Curriculum and provides pupils with access to key scientific concepts and enquiry skills. The curriculum is adapted to meet the diverse needs and abilities of our pupils so that all learners can access scientific learning at an appropriate level while developing their confidence, independence and curiosity.

Our intention is for pupils to develop an understanding of scientific ideas through exploration, observation and practical investigation. Opportunities to revisit and build upon prior learning enable pupils to embed core concepts and deepen their knowledge over time. Through this approach, we aim to foster enjoyment of Science while supporting pupils to develop curiosity about the natural and human-made world.

Curriculum Implementation

Teaching in Science takes account of pupils' individual learning styles and encourages them to explore, observe and investigate the world around them through practical and engaging experiences. Pupils are supported to develop curiosity about natural and human-made phenomena, to ask questions about what they notice and to begin to explain their ideas using appropriate scientific language.

Pupils are enabled to develop their scientific enquiry skills through activities such as observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative tests and gathering information from a range of sources. They are supported to make predictions, discuss their observations and consider whether their findings are reasonable.

Through Science, pupils are encouraged to communicate their ideas and discoveries in a variety of ways, including discussion, practical demonstration, written recording, photographs, diagrams or the use of AAC where appropriate. Learning experiences aim to develop independence, thinking skills and an understanding of how science relates to everyday life and the wider world.

The table below contains content from the programmes of study from the National Curriculum for Science in Key Stages 1 and 2 for pupils in Pioneers 1 and 2. This content will be adapted in teachers' Medium Term Plans to reflect the learning needs, abilities and interests of the pupils in their class.

WORKING SCIENTIFICALLY	
Pioneers 1	***Pioneers 2***
• 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	• 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 and data loggers • 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

Pioneers 1

Term	Autumn 2025	Spring 2026	Summer 2026
Topic	People and Places	Amazing Animals	Out at Sea
National Curriculum Content	**Animals including humans** • Find out about and describe the basic needs of animals including humans for survival (water, food and air) • Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene	**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)	**National Curriculum: Seasonal Changes** • Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies

Term	**Autumn 2026**	**Spring 2027**	**Summer 2027**
Topic	**All about me**	**Let's Build**	**Out and About**
National Curriculum Content	**Animals including humans** • To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • Notice that animals, including humans, have offspring which grow into adults	**Everyday materials** • Distinguish between an object and the material from which it is made • Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock • Describe the simple properties of materials / compare and group Identify and compare the suitability of a variety of everyday materials for particular uses • Compare and group together a variety of everyday materials on the basis of their simple physical properties • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**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 flowering plants, including trees
Term	**Autumn 2027**	**Spring 2028**	**Summer 2028**
Topic	**Wonderful World**	**Perfect Plants**	**Journeys**
	Animals including humans • Describe and compare the structure of a variety of common animals **Living things and their habitats** • Explore and compare the differences between things that are living, dead, and things that have never been alive	**Plants** • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy • Observe and describe how seeds and bulbs grow into mature plants	**Living things and their habitats** • 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 • Describe how animals obtain their food using the idea of a simple food chain

Pioneers 2

Term	Autumn 2025	Spring 2026	Summer 2026
Topic	Africa	Our Community / Britain	Celebrations and Food and Drink
National Curriculum Content	**Living Things and Their Habitats** • 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 • 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	**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 • 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 / Sound** • 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 the light from a light source is blocked by an opaque object • Find patterns in the way that the size of shadows change • 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
Term	Autumn 2026	Spring 2027	Summer 2027
Topic	Victorian Britain	The Human Body	Asia
	Forces and Magnets / Electricity • 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 • Identify common appliances that run on	**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 • Identify that humans and some other animals have skeletons and muscles for support, protection and movement • 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 • Describe the changes as humans develop to old age	**Plants** • Identify and describe the functions of different parts of flowering plants roots stem trunk leaves and flowers • 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 • 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

	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		

Term	Autumn 2027	Spring 2028	Summer 2028
Topic	**How Things Move and Work**	**Mysteries / Time Travel**	**Rivers and Coasts**
National Curriculum Content	**Rocks and Soils / States of Matter** • 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 • 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 • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	**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	**Properties and Changes of Materials** • Compare and group together everyday materials on the basis of their properties including 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 • 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

Pioneers 3

Pupils in Pioneers 3 work towards an Entry Level Science Qualification. Pupils are encouraged to develop their scientific knowledge, skills and understanding enabling to achieve a WJEC Entry Pathways: Science Today accreditation at either Entry 2 or Entry 3, with units selected to provide meaningful coverage of key scientific concepts across biology, chemistry and physics.
Pupils will develop their understanding of the world through practical, engaging and relevant topics. Learning focuses on building knowledge of living things, materials, energy, and physical processes, while promoting key scientific skills such as observation, prediction, investigation and evaluation. Pupils are encouraged to explore cause and effect, ask questions and communicate their findings in a variety of ways.
Units are carefully chosen to enable pupils to build evidence towards their Entry Level accreditation, ensuring that learning is purposeful and clearly aligned with assessment outcomes. Opportunities for repetition, consolidation and application are embedded throughout the curriculum so that pupils can demonstrate their knowledge and skills with increasing independence and confidence.

This implementation plan will be updated on a yearly basis to reflect the current pupils in the class, their interests and our partnership with Bromsgrove School.

Curriculum Impact

In Pioneers 1 and 2, Chadsgrove P Steps are used to measure pupils' progress in Science. Progress is monitored through ongoing formative assessment. Evidence of learning and progress can be found in pupils' work folders. These include teacher marking and annotations, annotated photographs of pupils engaged in activities where appropriate and Assessment Trackers showing progress towards individual targets. Pupils are also encouraged to reflect on their own learning and, where appropriate, use RAG-rated self-evaluation to consider their progress and achievements.

Pupils' progress towards their P Steps is recorded using our digital assessment system, SOLAR, which breaks learning into small developmental steps and allows staff to track pupil progress over time. Assessment information is reviewed regularly and recorded termly on the whole school tracking system to ensure progress is monitored and appropriate support or interventions can be implemented where needed.

Pupils work towards individual targets linked to their EHCP outcomes. These targets are incorporated into teachers' Medium Term Plans and reviewed regularly to ensure continued development of knowledge, understanding and skills.

Pioneers 3 pupils follow the accredited WJEC Pathways Science Today qualification and will be assessed according to the criteria set out in this course. Pupils work towards either Entry 2 or Entry 3 assessment criteria, which develops their key scientific skills.

As well as the Learning Outcomes outlined in this Long Term Plan, pupils will also be working towards their personalised targets, relating to their EHCP outcomes. Pupils' targets are regularly reviewed and monitored to ensure continued progression of both knowledge and skills.

Through the curriculum as a whole, pupils develop subject knowledge and skills alongside communication, independence and methods of recording their learning, including handwriting, typing or the use of AAC where appropriate. Learning experiences aim to be engaging, practical and accessible so that pupils can apply their understanding, communicate their ideas and build foundations for future learning both within school and beyond.