



Science Curriculum Overview

At Winslow CE School our Science curriculum will enable pupils to develop:

- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.
- High levels of originality, imagination or innovation in the application of skills.
- The ability to undertake practical work in a variety of contexts, including fieldwork.
- A passion for science and its application in past, present and future technologies.

WORK
SCIENTIFICALLY

UNDERSTAND
PLANTS

UNDERSTAND
ANIMALS AND
HUMANS

INVESTIGATE LIVING
THINGS

UNDERSTAND
EVOLUTION &
INHERITANCE

INVESTIGATE
MATERIALS

UNDERSTAND
MOVEMENTS,
FORCES & MAGNETS

UNDERSTAND THE
EARTH'S MOVEMENT
IN SPACE

INVESTIGATE LIGHT
AND SEEING

INVESTIGATE SOUND
AND HEARING

UNDERSTAND
ELECTRICAL CIRCUITS

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	Autumn	Spring	Summer
Year 1	<p>Chemistry – materials: What is it made from? What material is it? Describing properties. Compare and group objects according to use and property.</p> <p><i>Identify and classify; Observe closely, using simple equipment.</i></p> <p>Biology – seasonal change: What happens in autumn? Deciduous & evergreen trees. Leaf rubbings. Name some deciduous trees.</p> <p><i>Observe closely, using simple equipment; Ask simple questions</i></p>	<p>Biology – plants/seasonal change: What happens in springtime? Name further trees/ flowering plants. Label stem, trunk, leaves, flower, petals. Quadrat sampling – count different flowers, e.g. buttercups, clover, daisies – graph. Compare to autumn. X link geography – weather In UK and Australia.</p> <p><i>Identify and classify; Observe closely, using simple equipment; Use observations and ideas to suggest answers to questions.</i></p>	<p>Biology – diffs and sims in animals inc humans: Explore and group animals into the 5 classifications. Define herbivore, carnivore, omnivore. Examine skeletons. Draw and label human body. Know the 5 senses and identify same in other animals.</p> <p><i>Identify and classify; Observe closely, using simple equipment; Perform simple tests; Gather and record data to help in answering questions</i></p>
Year 2	<p>Chemistry – materials: Revise material vocab. What are things made of? What could they be used for? Which materials are best suited for which jobs? Natural/Man-made materials. Absorbency. Which ball is the bounciest?</p> <p>X link Explorers – navigation, appearance of sun, moon orbit.</p> <p><i>Identify and classify; Observe closely, using simple equipment; Perform simple tests; Gather and record data to help in answering questions.</i></p>	<p>Biology – animals and their habitats: Where do different animals live? Why? What do different habitats provide? How do different plants and habitats depend on each other? How are they suited to habitat?</p> <p>School grounds habitat hunt, microhabitats – hedges, grass, ground, under wood. Stones. Simple food chains. Recap seasons and changes.</p> <p><i>Identify and classify; Ask simple questions; Use observations and ideas to suggest answers to questions.</i></p>	<p>Biology – what is needed for plants and animals to grow?: How do plants grow? Label diffs between seedling and mature plant. Investigate what happens if no water or no light? Animals –basic needs for survival. Life cycle of mammals and one insect to compare. Benefits of healthy diet – why? Benefits of exercise – why?</p> <p><i>Identify and classify; Perform simple tests; Gather and record data to help in answering questions; Use observations and ideas to suggest answers to questions.</i></p>

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<p>Year 3</p>	<p>Physics – light and seeing: What is light? What is dark? Sources of light. Light is reflected from surface into eyes, when light blocked, forms shadow. How do shadows change during the day? Apparent movement of sun, movement of Earth in solar system.</p> <p><i>Ask relevant questions; Identify differences, similarities or changes related to simple, scientific ideas and processes; Gather, record, classify and present data in a variety of ways to help in answering questions.</i></p> <p>Chemistry – Rocks and soils inc fossils: Sketch and describe different rocks. Test properties of different rocks. Group and compare different rocks. How are rocks formed? Sedimentary and igneous processes. How are fossils formed – practical using jelly babies. Soil profile.</p> <p><i>Identify differences, similarities or changes related to simple, scientific ideas and processes; Set up simple, practical enquiries and comparative and fair tests; Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables; Use straightforward, scientific evidence to answer questions or to support their findings.</i></p>	<p>Biology – keeping healthy: What is skeleton for? What else has a skeleton? What if they don't have a skeleton? Food groups, what makes a healthy diet? What is healthy for other creatures - vet visit. Recap herbivore, omnivore, carnivore. Plan healthy menu for different people. If healthy, need also to be fit – how do we keep muscles fit> how do they work?</p> <p><i>Ask relevant questions; Identify differences, similarities or changes related to simple, scientific ideas and processes; Set up simple, practical enquiries and comparative and fair tests; Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</i></p>	<p>Biology – keeping plants healthy: Revise part of plant. Learn parts of flowering plant. Explore and document water transport through plants. Investigate effect of growing conditions on plants. Look at plants which survive without one of them. Life cycle of flowering plant. Importance of bees. Seed dispersal.</p> <p><i>Ask relevant questions; Identify differences, similarities or changes related to simple, scientific ideas and processes; Set up simple, practical enquiries and comparative and fair tests; Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests; Use straightforward, scientific evidence to answer questions or to support their findings.</i></p> <p>Physics – making things move inc magnets: Plan an investigation around how much force is needed to move an object. Describe how forces work. Compare and group objects based on their magnetic properties. Use the correct vocabulary to describe magnets. Investigate how distance can affect the magnetic abilities of an object. Observe how magnets can attract and repel.</p> <p><i>Ask relevant questions; Set up simple, practical enquiries and comparative and fair tests; Record findings using simple</i></p>
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			<i>scientific language, drawings, labelled diagrams, bar charts and tables; Use straightforward, scientific evidence to answer questions or to support their findings</i>
Year 4	<p>Physics – electricity: What uses for electricity around us? Construct simple circuits. Problem solve with circuits. Investigate switches. Investigate conductors and insulators. Electrical circuits symbols. Electrical safety.</p> <p><i>Identify differences, similarities or changes related to simple, scientific ideas and processes; Set up simple, practical enquiries and comparative and fair tests; Gather, record, classify and present data in a variety of ways to help in answering questions; Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.</i></p>	<p>Physics – sound and hearing: How are sounds made? Vibrations. Sound map outside. Vibrations travel. Pitch – link to length of string or tube. Volume and strength of vibration. Distance – volume.</p> <p><i>Ask relevant questions; Set up simple, practical enquiries and comparative and fair tests; Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables; Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</i></p> <p>Biology – Eating and the human body: Teeth and their functions – humans. Compare teeth of other animal. Visit from a dentist. Digestion – process, organs. Read and create food chains, identifying producer, predator and prey.</p> <p><i>Identify differences, similarities or changes related to simple, scientific ideas and processes; Set up simple, practical enquiries and comparative and fair tests; Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests; Use straightforward, scientific evidence to</i></p>	<p>Chemistry – states of matter: Solids, liquids and gases. Heating and cooling to change state. Investigate temperature when this occurs. Evaporation and condensation – when does this occur? Basic water cycle – x link Geography from Spring.</p> <p><i>Identify differences, similarities or changes related to simple, scientific ideas and processes; Set up simple, practical enquiries and comparative and fair tests; Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</i></p> <p>Biology – living things and their habitats: How would you group animals? Introduce classification. Keys – learn how to use, devise own. Impact of environmental change on habitats and their inhabitants.</p> <p><i>Ask relevant questions; Identify differences, similarities or changes related to simple, scientific ideas and processes; Gather, record, classify and present data in a variety of ways to help in answering questions.</i></p>

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		<i>answer questions or to support their findings.</i>	
Year 5	<p>Chemistry – properties of materials; Use previous knowledge to sort materials. Solutions. Separating mixtures. Best uses for materials after fair tests.</p> <p><i>Use test results to make predictions to set up further comparative and fair tests; Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments; Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work; Plan enquiries, including recognizing and controlling variables where necessary; Present findings in written form, displays and other presentations.</i></p> <p>Physics – forces and movement: Gravity. Drag forces, friction. Relayed force through mechanisms.</p> <p><i>Plan enquiries, including recognizing and controlling variables where necessary; Use test results to make predictions to set up further comparative and fair tests; Take measurements, using a range of scientific equipment, with increasing accuracy and precision; Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models</i></p>	<p>Physics – Earth and space: Movement of Earth within solar system. Moon phases. Earth, sun and moon – links and similarities and differences. Earth’s rotation – day and night. Earth’s orbit – seasons. Stars/constellations.</p> <p><i>Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments; Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models; Present findings in written form, displays and other presentations.</i></p> <p>Biology – life cycles and reproduction: Describe and compare life cycles of amphibians, insects and birds. Life processes (reproduction) in plants and animals (inc sexual reproduction in humans – nurse/puberty?)</p> <p><i>Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments;</i></p>	<p>Physics – light and seeing: How does light travel? Sundial investigation. Images created by light reflection. How does the eye work? Periscope investigation – when used?</p> <p><i>Use test results to make predictions to set up further comparative and fair tests; Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments; Take measurements, using a range of scientific equipment, with increasing accuracy and precision; Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions</i></p>

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<p>Year 6</p>	<p>Biology – circulatory system: Identify and name parts of the system; learn functions of parts. Examine impact of diet and healthy lifestyle. How are nutrients and water transported and used?</p> <p><i>Use test results to make predictions to set up further comparative and fair tests; Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments; Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work; Take measurements, using a range of scientific equipment, with increasing accuracy and precision</i></p> <p>Biology – evolution and inheritance: How have living things changed over time? Explore evidence provided by fossils. Learn about variation in offspring and inherited features. How have living things adapted to their environment? Understand how adaptation leads to evolution. (Follows on from Humans topic).</p> <p><i>Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments; Present findings in written form, displays and other presentations.</i></p>	<p>Physics – electricity: Explore simple circuits; investigate effect of number of cells on brightness of bulb or volume of buzzer. Represent components in diagrams with accurate symbols.</p> <p><i>Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments; Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions; Plan enquiries, including recognizing and controlling variables where necessary;</i></p>	<p>Biology – classification: Grouping living things – own reasons. Learn about animal kingdom, phylum, class, order, family, genus, species. Using keys to identify and sort living things. Devising keys based on specific characteristics. (Links with Rainforest topic in Humanities).</p> <p><i>Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments;</i></p>
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