



Blessed Robert Widmerpool Science Coverage Overview

We want our children to develop an intrinsic desire to question the ways the world around them works, through progression of skills in enquiry to compliment study in biology, physics and chemistry.
 We use the National Curriculum guidelines in order to develop our scientific curriculum but our aim is to **make science relevant and exciting to our children, with purposeful outcomes that they care about achieving.**
 We aim to inspire our children by modelling an approach of **curiosity, questioning and scientific working with a love of learning more about how and why things happen.**
 We acknowledge that to **understand scientific terminology and apply its vocabulary to learning**, pupils need to access experiential learning to commit skills to long term memory.

We have placed equal emphasis upon study of key theories and practical skills in the sciences alongside the skills to work scientifically.
 We aim to ensure that all children can draw upon prior learning as they progress through each year group from EYFS to the end of Key Stage Two.
 We aim to meet the needs of all learners in our curriculum- challenging them and enabling them to problem solve and undertake learning at a deeper level.
 We encourage our children to talk about their learning in wider application beyond the scientific classroom.

	PLANNING	Conducting Experiments	Recording Evidence	Reporting Findings	Conclusions and Predictions	BIOLOGY		CHEMISTRY	PHYSICS		
EYFS	Asks questions about aspects of their familiar world. Generating a variety of ideas for testing (not always appropriate/ realistic)	Measure by direct comparison. Non-standard units of measurement. Simple comparative vocabulary – bigger, smaller	General sensory observations of animals and plants. Simple descriptions of the world around them. Looking at objects and pictures and discussing what they can see.	Talking about objects and events. Simple recording – pictures/images.	Noticing 'which worked best' – simple comparative statements. Answer initial question simply. Answer how and why questions about their experiences	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. Children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions					
Year 1	Ask simple questions when prompted Suggest ways of answering a question	Make relevant observations Conduct simple tests, with support	With prompting, suggest how findings could be recorded	Recognise findings	Gather and record data Use observations to suggest answers to questions	Animals inc. Humans Identify & name variety of common animals Identify & name a variety of common animals that are carnivores, herbivores and omnivores Describe & compare structure of a variety of common animals Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Seasonal Change Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies	Plants Identify and name variety of common wild and garden plants.	Everyday Materials Distinguish between an object and the material from which it is made Identify & name a variety of everyday materials. Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties		
Year 2	Ask simple questions	Observe closely, using simple equipment	Record and communicate their findings in a range	Identify and classify	Gather and record data to	Animals inc. Humans	Living Things & Habitats	Plants Observe describe how seeds / bulbs	Materials and their uses		

	Recognise that questions can be answered in different ways	Perform simple tests	of ways and begin to use simple scientific language		help answer questions Use their observations and ideas to suggest answers to questions	Notice animals, inc. humans, have offspring which grow into adults Find out and describe basic needs of animals, incl. humans, for survival Describe importance for humans of exercise, eating right amounts of different types of food, and hygiene	Explore, compare the differences between things living, dead, and have never been alive Identify most living things live in habitats to which suited, describe how different habitats provide for basic needs of different kinds of animals and plants, how depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats Describe how animals obtain food from plants and other animals, using idea of simple food chain, identify, name different sources of food	grow into mature plants Find out and describe how plants need water, light and suitable temp. to grow and stay healthy	Identify and compare suitability of variety of everyday materials for particular uses. Find out how shapes of solid objects can be changed.		
Year 3	Ask relevant questions when prompted Set up simple and practical enquiries, comparative and fair tests Set up comparative tests	Make systematic observations, using simple equipment Use standard units when taking measurements	Record findings in various ways With prompting, suggest how findings may be tabulated With prompting, use various ways of recording, grouping and displaying evidence	With prompting, suggest conclusions from enquiries Suggest how findings could be reported	Suggest possible improvements or further questions to investigate	Animals inc Humans Need for right types / amount of nutrition, they cannot make own food; get nutrition from what they eat Identify humans and some other animals have skeletons and muscles	Living Things & 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	Plants Identify & describe functions of different parts of flowering plants Explore the requirements of plants for life and growth 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	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 States of 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	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 the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change Sound Identify how sounds are made,	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,
Year 4	Ask relevant questions Plan different types of scientific enquiries to answer questions Set up simple and practical enquiries, comparative and fair tests	Make systematic and careful observations using a range of equipment, including thermometers and data loggers Take accurate measurements using standard units, where appropriate	Record findings using simple scientific language, drawings and labelled diagrams Record findings using keys, bar charts, and tables Gather, record, classify and present data in a variety of ways to help to answer questions	Report on findings from enquiries, including oral and written explanations, of results and conclusions Report on findings from enquiries using displays or presentations	Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings Use results to draw simple conclusions,	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					

					make predictions for new values, suggest improvements and raise further questions				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	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	depending on which poles are facing 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
Year 5	With prompting, plan different types of scientific enquiries to answer questions With prompting, recognise and control variables where necessary	Select, with prompting, and use appropriate equipment to take readings Take precise measurements using standard units	Take and process repeat readings	Record data and results Record data using labelled diagrams, keys, tables and charts Use line graphs to record data	Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships With support, present findings from enquiries orally and in writing Suggest further comparative or fair tests	Animals Inc Humans Describe the changes as humans develop to old age 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	Living Things & Habitats 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 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences	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	Properties and changing materials Compare and group together everyday materials on the basis of their properties. 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 Give reasons, based on evidence from	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	Earth in 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 Electricity
Year 6	Plan different types of scientific enquiries to answer questions	Take measurements using a range of scientific equipment	Record data and results of increasing complexity using	Report and present findings from enquiries, including conclusions and	Identify scientific evidence that has been used to support or						

	Recognise and control variables where necessary	Take measurements with increasing accuracy and precision Take repeat readings when appropriate	scientific diagrams and labels Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts Record data and results of increasing complexity using line graphs	causal relationships Report and presents findings from enquiries in oral and written forms such as displays and other presentation Report and present findings from enquiries, including explanations of, and degree of, trust in results	refute ideas or arguments Use test results to make predictions to set up further comparative and fair tests	transported within animals, including humans	Give reasons for classifying plants and animals based on specific characteristics	different ways and that adaptation may lead to evolution	comparative and fair tests 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.	to have a greater effect Light Recognise that light appears to travel in straight lines Use this 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	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 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
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