SCIENCE

Warden Hill PRIMARY SCHOOL

Science Curriculum Progression Map

At Warden Hill School, our science curriculum is rooted in our core vision: Unlocking the potential in every child. We believe that science inspires curiosity, fosters independence and nurtures an understanding of the world. Through our carefully designed curriculum, we empower children to belong, explore and succeed as confident, informed global citizens.

Belong
Science helps children make sense of the world and their place within it. At Warden Hill, we encourage children to see themselves as part of a wider community, learning how science and technology shape their lives today and in the future. We nurture a sense of responsibility and care for the planet, helping children feel connected to the world they live in.

Explore
Children are naturally curious, and our science curriculum channels that curiosity into meaningful enquiry and discovery. We give them the chance to ask questions, carry out experiments, and discover answers for themselves. They learn through a variety of enquiry approaches – such as observing over time, looking for patterns, classifying and grouping, comparative and fair testing, and researching using secondary sources. These experiences help children develop their working scientifically skills, including making predictions, recording results, drawing conclusions and communicating their findings clearly. We explicitly teach scientific vocabulary to enable our children to understand and use this language to explain their ideas.

Succeed
We want every child to succeed by applying their scientific knowledge to their everyday life. Our curriculum helps them make informed choices, respect living things and understand important issues that affect their world. Through practical investigations and enrichment experiences, children see how science is relevant to them and how it can make a difference.
At Warden Hill School, science unlocks potential by nurturing our children's curiosity today and shaping them into informed and responsible citizens of tomorrow.

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically skills • Ask relevant questions and make relevant comments. • Explore the natural world around them, making observations and drawing pictures of animals and plants.	**Working scientifically skills** • 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		**Working scientifically skills** • 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		**Working scientifically skills** • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and	

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• Grouping by identifying similarities and differences. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	• gathering and recording data to help in answering questions.		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.		labels, classification keys, tables, scatter graphs, bar and line graphs • 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 • identifying scientific evidence that has been used to support or refute ideas or arguments.	
Children will: • Plant seeds and care for growing plants • Name the basic stages of the life cycle of a plant • Develop an understanding of growth, decay and changes over time • Identify similarities and differences in relation to living things • Explore, observe and understand some important processes	**Plants** Children will: • 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** Children will: • Observe and describe how seeds and bulbs grow into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**Plants** Children will: • 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	**Living things and their habitats** Children will: • 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.	**Living things and their habitats** Children will: • 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. **Animals, including humans**	**Living things and their habitats** Children will: • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms,

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and changes in the natural world around them, including the seasons • Begin to record changes e.g. weather/seasonal changes • Begin to the life cycle of a human • Begin to group plants/animals • Begin to understand the need to respect and care for the natural environment and all living things • Talk about the features of their own immediate environment and how environments might vary from one another/compare and contrast • Identify and discuss similarities and differences in relation to materials • Select a material for a specific purpose	plants, including trees. **Animals, including humans** Children will: • 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	**Living things and their habitats** Children will: • Explore and compare the differences between things that are living, dead, and things that have never been alive. • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name	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. **Animals, including humans** Children will: • 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.	• Recognise that environments can change and that this can sometimes pose dangers to living things. **Animals, including humans** Children will: • 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. **States of Matter** Children will: • Compare and group materials together, according to whether they	Children will: • Describe the changes as humans develop to old age. **Properties and changes of materials** Children will: • 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	plants and animals. • Give reasons for classifying plants and animals based on specific characteristics. **Animals, including humans** Children will: • 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. • Describe the ways in which nutrients and water are transported within animals, including humans. **Evolution and inheritance** Children will: • Recognise that living things have changed over time and that fossils

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	with each sense. **Seasonal Changes** Children will: • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies. **Everyday materials** Children will: • 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 physical properties of a variety of	different sources of food. **Animals, including humans** Children will: • Notice that animals, including humans, have offspring which grow into adults. • 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. **Uses of everyday materials** Children will: • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic,	• Identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Rocks** Children will: • 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** Children will: • Recognise that they need light in order to see things and that	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. **Sound** Children will: • Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel through a	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. **Forces** Children will:	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** Children will: • 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

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	everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties.	glass, brick, rock, paper and cardboard for particular uses. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	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. **Forces and magnets** Children will: • Compare how things move on different surfaces. • Notice that some forces need contact between two objects, but magnetic forces	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. **Electricity** Children will: • 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.	• 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. **Earth and space** Children will: • 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.	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. **Electricity** Children will: • 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

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			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.	• 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.	• 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.	simple circuit in a diagram.

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By the time the children leave year 6, we expect that they:

Working Scientifically:

- Can understand and use scientific vocabulary.
- Ask their own questions about the scientific phenomena that they are studying and select appropriate ways to answer these questions.
- Investigate their own questions; recognising and controlling variables to ensure a fair test.
- Are curious and able to notice patterns, group and classify as well as using a wide range of secondary sources to find out more information.
- Can make predictions based on their current understanding of scientific phenomena.
- Are able to use a range of scientific equipment to take accurate and precise measurements and readings; with repeat readings where appropriate.
- Are able to record their results in a variety of ways such as through the use of scientific diagrams, classification keys, tables and graphs.
- Can describe and evaluate their own and others' scientific ideas.
- Are able to draw conclusions, explain and evaluate their methods and findings after investigations; communicating these in a variety of ways.
- Can ask further questions that could be investigated based on their data and investigations.

Knowledge:

- Know there are different types of forces and how they affect the way things move.
- Understand how electrical circuits work; recognising symbols and drawing simple circuit diagrams.
- Know about how and why we see objects and hear sounds. They understand what a shadow and that dark is the absence of light. They know that light travels in straight lines and that sound travels through a medium to the ear.
- Understand the processes of reproduction and photosynthesis, explaining their importance to life in the world.
- Name a variety of plants and animals in different habitats and can classify these plants and animals in different ways. They understand basic evolution and inheritance and how plants and animals have changed and adapted to their surroundings.
- Can explain the functions of organs and systems within the human body.
- Can name materials, understand how their properties affect their uses and investigate how materials can be changed. They know what makes a good insulator and conductor.
- Know how rocks and fossils are formed.
- Can understand, and explain the importance of, the water cycle.
- Can understand how solids, liquids and gases are formed through heating and cooling. They understand that some changes are reversible and some are not.
- Can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. They understand that this is what gives us night, day and different seasons throughout the year.





