

Curriculum Progression Map 2020 2021

Belong: Our ambitious science curriculum aims to develop our children’s understanding of the world around them, so they feel they belong to the world as global citizens. Our science education provides the foundations for understanding their world through the specific disciplines of biology, chemistry and physics. Through our lessons, children extend their awareness of the way in which their lives are influenced by science and technology both now and in the future.

Explore: Our children are taught both the knowledge and scientific enquiry skills to enable them to explore the world around them. At Warden Hill, scientific enquiry skills are embedded in each topic the children study and these skills are revisited and developed throughout their time at school. We ensure that the scientific enquiry skills are built-on and developed throughout their time at Warden Hill so that our children can use equipment, conduct experiments, build arguments and explain concepts. Specialist vocabulary for topics is taught, allowing children to effectively communicate their ideas. Children build upon their knowledge by making links to prior learning therefore embedding this understanding into their long-term memory. Our children ask questions about their surroundings, and they are excited and curious about natural phenomena.

Succeed: Our children are encouraged to become independent learners. They succeed by answering their own questions through different types of scientific enquiries. They recognise that they can explain aspects of their daily life and their surroundings using their scientific knowledge. Our curriculum develops our children’s respect for living organisms and the physical environment, helping them to make meaningful changes. Children learn to question and discuss science-based issues that may affect their own lives and the future of the world.

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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.	Animals including humans <ul style="list-style-type: none"> Children will: name and locate parts of the human body, including those related to the senses. describe and compare the observable features of animals from a range of groups 	Animals, including humans <p>Children will:</p> <ul style="list-style-type: none"> describe the importance of exercise, a balanced diet and hygiene for humans describe the basic needs of animals for survival identify the main changes as young animals, including humans, grow into adults 	Plants <p>Children will:</p> <ul style="list-style-type: none"> name, locate and describe the functions of the main parts of plants, including those involved in transporting water and nutrients describe the requirements of plants for life and growth Forces and magnets	Sound <p>Children will:</p> <ul style="list-style-type: none"> use the idea that sounds are associated with vibrations, and that they require a medium to travel through, to explain how sounds are made and heard. describe the relationship between the pitch of a sound and the features of its 	Properties and changes of materials <p>Children will:</p> <ul style="list-style-type: none"> group and identify materials in different ways according to their properties, based on first-hand observation justify the use of different everyday materials for different uses, based on their properties 	Living things and their habitats <p>Children will:</p> <ul style="list-style-type: none"> use the observable features of plants, animals and micro-organisms to group, classify and identify them into broad groups, using keys or other methods. Electricity <p>Children will:</p>

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	<ul style="list-style-type: none"> group animals according to what they eat <p>Seasonal Changes Children will:</p> <ul style="list-style-type: none"> describe seasonal changes <p>Everyday materials Children will:</p> <ul style="list-style-type: none"> distinguish objects from materials and describe their properties identify and group everyday materials <p>Plants Children will:</p> <ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants 	<ul style="list-style-type: none"> describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships <p>Uses of everyday materials Children will:</p> <ul style="list-style-type: none"> Identify and compare materials and suggest reasons for their suitability for different uses <p>Plants Children will:</p> <ul style="list-style-type: none"> describe the basic needs of plants for survival and the impact of changing these. Identify the main changes as seeds and bulbs grow into mature plants <p>Living things and their habitats Children will:</p> <ul style="list-style-type: none"> identify whether things are alive, dead or have never lived 	<p>Children will:</p> <ul style="list-style-type: none"> describe the effects of simple forces that act at a distance (magnetic forces, including those between like and unlike magnetic poles) <p>Animals, including humans Children will:</p> <ul style="list-style-type: none"> Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food. name and describe the functions of the main parts of the musculoskeletal system. <p>Rocks Children will:</p> <ul style="list-style-type: none"> group and identify rocks in different ways according to their properties, based on first-hand observation. Recognise that soils are made from rocks and organic matter. 	<p>source; and between the volume of a sound, the strength of the vibrations and the distance from its source.</p> <p>Electricity Children will:</p> <ul style="list-style-type: none"> 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. 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 <p>Animals, including humans Children will:</p> <ul style="list-style-type: none"> Children will: name and describe the 	<ul style="list-style-type: none"> identify and describe what happens when dissolving occurs in everyday situations describe how to separate mixtures and solutions into their components identify, with reasons, whether changes in materials are reversible or not <p>Forces Children will:</p> <ul style="list-style-type: none"> describe the effects of simple forces that involve contact (air and water resistance, friction) and that act at a distance (gravity). identify simple mechanisms, including levers, gears and pulleys, that increase the effect of a force <p>Earth and space Children will:</p> <ul style="list-style-type: none"> describe the shapes and relative movements of the Sun, Moon, Earth 	<ul style="list-style-type: none"> use simple apparatus to construct and control a series circuit, and describe how the circuit may be affected when changes are made to it use recognised symbols to represent simple series circuit diagrams <p>Light Children will:</p> <ul style="list-style-type: none"> use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects. describe the formation and shape of shadows. <p>Evolution and inheritance Children will:</p> <ul style="list-style-type: none"> use the basic ideas of inheritance, variation and adaptation to describe how

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		<ul style="list-style-type: none"> name different plants and animals and describe how they are suited to different habitats 	<ul style="list-style-type: none"> describe how fossils are formed <p>Light Children will:</p> <ul style="list-style-type: none"> use the idea that light from light sources enters our eyes to explain how we see. Find patterns in the way that the size of shadows change. 	<p>functions of the main parts of the digestive system.</p> <ul style="list-style-type: none"> construct and interpret food chains <p>Living things and their habitats Children will:</p> <ul style="list-style-type: none"> explain how environmental changes may have an impact on living things. <p>States of Matter Children will:</p> <ul style="list-style-type: none"> describe the characteristics of different states of matter and group materials on this basis describe how materials change state at different temperatures, using this to explain everyday phenomena, including the water cycle 	<p>and other planets in the solar system</p> <ul style="list-style-type: none"> explain the apparent movement of the sun across the sky in terms of the Earth's rotation and that this results in day and night <p>Living things and their habitats Children will:</p> <ul style="list-style-type: none"> describe and compare different reproductive processes and life cycles in animals. name, locate and describe the functions of the main parts of plants, including those involved in reproduction <p>Animals, including humans Children will:</p> <ul style="list-style-type: none"> Describe the changes as humans develop to old age. 	<p>living things have changed over time and evolved</p> <ul style="list-style-type: none"> describe how fossils provide evidence for evolution <p>Animals, including humans Children will:</p> <ul style="list-style-type: none"> name and describe the functions of the main parts of the circulatory system describe the effects of diet, exercise, drugs and lifestyle on how the body functions

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.

