



## Waddington and West Bradford CE Primary School SCIENCE CURRICULUM LONG TERM PLAN

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	<p><b><u>Marvellous Me!</u></b> Children: - Know about and use their senses when exploring (see, hear and feel) - experience and can discuss different weather conditions. - talk about changes in autumn - notice the different daily weather daily</p>	<p><b><u>Autumn Festivals</u></b> Children: - talk about changes in autumn (that they see, hear, feel when outside) - are aware of evergreen vs deciduous trees and their changes during seasons. - notice changes in weather from Autumn to Winter. - name some UK animals which hibernate - explore with torches to make different shadows and colours</p>	<p><b><u>Magical Tales</u></b> Children: - share stories leading to exploration of materials such as The Three Little Pig's houses and The Princess and the Pea's bed. - talk about changes in the weather and environment in winter, discussing what they see/feel/hear when outside. - explore the properties of ice and changing states of matter</p>	<p><b><u>Under the Sea</u></b> Children: - explore floating and sinking and create objects which float (sorting floating and sinking objects, and creating own floating objects), and consider the effect of adding weight (like passengers!) to the buoyancy of boats. - consider sea pollution and the impact it has on sea wildlife. - learn about the famous scientist <i>Archimedes</i> through the story Mr Archimedes Bath. - learn about seasonal changes in Spring, including naming Spring flowers</p>	<p><b><u>Growing</u></b> Children: - describe their environment, focusing on new Spring/Summer environmental changes (flowers, buds). - know that plants are living things. - know how to look after a plant. - consider life cycles of some seasonal animals e.g. butterfly, frog, chick/eggs. - learn to care for the natural environment and all living things. - explore foods which are grown including different types of vegetables and fruits. - consider healthy diets. - take photographs and draw pictures of plants and animals. - learn the names of some insects and invertebrates.</p>	<p><b><u>Amazing Animals!</u></b> Children: - describe their environment, focusing on new Spring/Summer environmental changes (flowers). - learn about some animal habitats around the world - explore water and it's states, what happens to it over time, what happens when colours are splashed on to it, what happens when salt is added to it</p>
Year 1	<p><b><u>Biology</u></b> <b><u>Animals, including humans 1 – All about me</u></b> Children will learn how 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.</p>	<p><b><u>Physics</u></b> <b><u>Seasonal Changes</u></b> Children learn how to observe changes across the 4 seasons and observe and describe weather associated with the seasons and how day length varies.</p>	<p><b><u>Chemistry</u></b> <b><u>Exploring Everyday Materials 1</u></b> Children learn how to: - 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 everyday materials. - compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p><b><u>Biology</u></b> <b><u>Plants</u></b> Children learn how to: - 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, including trees.</p>	<p><b><u>Biology</u></b> <b><u>Animals, including humans 2 – All about animals</u></b> Children learn how to: - 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).</p>	<p><b><u>Chemistry</u></b> <b><u>Exploring Everyday Materials 2</u></b> Children continue to explore materials, building on earlier learning from Exploring Everyday Materials 1 Children also apply their knowledge of materials by choosing appropriate materials for different uses e.g. structures which are strong or waterproof.</p>
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2	<b><u>Biology</u></b>	<b><u>Chemistry</u></b> <b><u>Uses of everyday materials</u></b>	<b><u>Biology</u></b>	<b><u>Biology</u></b> <b><u>Living things and their habitats</u></b>	<b><u>Biology</u></b> <b><u>Plants</u></b>	<b><u>Biology</u></b>



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	<p><b>Living things and their habitats – Habitats around the world</b></p> <p>Children will:</p> <ul style="list-style-type: none"> <li>- explore and compare the differences between things that are living, dead, and things that have never been alive;</li> <li>- learn how to 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.</li> <li>- learn how to identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>- learn how to describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li> </ul>	<p>Children learn how to:</p> <ul style="list-style-type: none"> <li>- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>- learn how to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>Animals, including humans 1 – Growth</b></p> <p>Children will:</p> <ul style="list-style-type: none"> <li>- notice that animals, including humans, have offspring which grow into adults.</li> <li>- find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>- learn how to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>	<p>Children will:</p> <ul style="list-style-type: none"> <li>- explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>- learn how to identify and name a variety of plants and animals in their habitats, including microhabitats;</li> <li>- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li> </ul>	<p>Children:</p> <ul style="list-style-type: none"> <li>- observe and describe how seeds and bulbs grow into mature plants;</li> <li>- find out and describe how plants need water, light and suitable temperature to grow and stay healthy.</li> </ul>	<p><b>Animals, including humans 2 – Life Cycles</b></p> <p>Children will learn that animals, including humans, have offspring which grow into adults.</p>
Year 3	<p><b>Chemistry</b> <b>Rocks</b></p> <p>Children</p> <ul style="list-style-type: none"> <li>- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>- learn how to describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>- learn how to recognise that soils are made from rocks and organic matter.</li> </ul>	<p><b>Physics</b> <b>Forces and Magnets</b></p> <p>Children:</p> <ul style="list-style-type: none"> <li>- compare how things move on different surfaces;</li> <li>- notice that some forces need contact between 2 objects,</li> <li>- know that magnetic forces can act at a distance</li> <li>- observe how magnets attract or repel each other and attract some materials and not others.</li> <li>- learn how to 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;</li> <li>- describe magnets as having 2 poles and they learn how to predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<p><b>Biology</b> <b>Animals, including humans</b></p> <p>Children learn:</p> <ul style="list-style-type: none"> <li>- how to identify that animals, including humans need the right types and amount of nutrition</li> <li>- that they cannot make their own food;</li> <li>- that they get nutrition from what they eat.</li> <li>- that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<p><b>Physics</b> <b>Light</b></p> <p>Children:</p> <ul style="list-style-type: none"> <li>- recognise that they need light in order to see things and that dark is the absence of light;</li> <li>- notice that light is reflected from surfaces;</li> <li>- recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</li> <li>- learn how to recognise that shadows are formed when the light from a light source is blocked by an opaque object;</li> <li>- find patterns in the way that the size of shadows change.</li> </ul>	<p><b>Scientific Enquiry</b></p>	<p><b>Biology</b> <b>Plants</b></p> <p>Children:</p> <ul style="list-style-type: none"> <li>- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li> <li>- 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.</li> <li>- investigate the way in which water is transported within plants and finally</li> <li>- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	<b>Physics</b>	<b>Biology</b>	<b>Biology</b>	<b>Physics</b>	<b>Biology</b>	<b>Chemistry</b>



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	<p><b>Sound</b> Children:</p> <ul style="list-style-type: none"> <li>- identify how sounds are made, associating some of them with something vibrating;</li> <li>- recognise that vibrations from sounds travel through a medium to the ear;</li> <li>- find patterns between the pitch of a sound and features of the object that produced it;</li> <li>- find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> <li>- recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	<p><b>Living things and their habitats – Conservation</b> Children recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p><b>Animals including humans</b> Children:</p> <ul style="list-style-type: none"> <li>- describe the simple functions of the basic parts of the digestive system in humans;</li> <li>- identify the different types of teeth in humans and their simple functions;</li> <li>- construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<p><b>Electricity</b> Children:</p> <ul style="list-style-type: none"> <li>- identify common appliances that run on electricity;</li> <li>- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>- 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;</li> <li>- recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;</li> <li>- recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>	<p><b>Living things and their habitats</b> Children:</p> <ul style="list-style-type: none"> <li>- recognise that living things can be grouped in a variety of ways;</li> <li>- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</li> </ul>	<p><b>States of Matter</b> Children:</p> <ul style="list-style-type: none"> <li>- compare and group materials together, according to whether they are solids, liquids or gases;</li> <li>- 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);</li> <li>- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>
Year 5	<p><b>Chemistry</b> <b>Properties of Materials</b> Children:</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- know that some materials will dissolve in liquid to form a solution,</li> <li>- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating;</li> <li>- learn how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> </ul>	<p><b>Biology</b> <b>Animals, including humans</b> Children describe the changes as humans develop to old age.</p>	<p><b>Physics</b> <b>Earth and Space</b> Children:</p> <ul style="list-style-type: none"> <li>- learn about the Earth and the celestial bodies in our solar system</li> <li>- explore the planets - from Mercury to Neptune</li> <li>- explore how scientific ideas surrounding Earth's movement and placement have changed and developed over time.</li> <li>- deepen their understanding of the Moon, time zones and the night and day cycle.</li> </ul>	<p><b>Physics</b> <b>Forces</b> Children learn how to:</p> <ul style="list-style-type: none"> <li>- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object;</li> <li>- identify the effects of air resistance, water resistance and friction, that act between moving surfaces;</li> <li>- recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul>	<p><b>Biology</b> <b>Living Things and their habitats</b> Children:</p> <ul style="list-style-type: none"> <li>- deepen their understanding of life cycles, reproduction and animal characteristics.</li> <li>- are introduced to asexual reproduction and metamorphosis to help the children understand how life cycles are constantly progressing.</li> <li>- learn about David Attenborough or Jane Goodall</li> <li>- research their favourite creature</li> <li>- create their own reports on world-renowned scientists.</li> </ul>	<p><b>Chemistry</b> <b>Changes of Materials</b> Children learn how to:</p> <ul style="list-style-type: none"> <li>- describe how to recover a substance from a solution</li> <li>- demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>- 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.</li> </ul>
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Year 6	<p><b>Biology</b> <b>Animals, including humans</b> Children:</p>	<p><b>Physics</b> <b>Light</b> Children:</p>	<p><b>Biology</b> <b>Living things and their habitats</b></p>	<p><b>Physics</b> <b>Electricity</b> Children:</p>	<p><b>Biology</b> <b>Evolution and inheritance</b> Children:</p>	<p><b>Sustainability and Climate Change</b></p>



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	<ul style="list-style-type: none"> <li>- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood;</li> <li>- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function;</li> <li>- learn how to describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>	<ul style="list-style-type: none"> <li>- recognise that light appears to travel in straight lines</li> <li>- 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;</li> <li>- 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;</li> <li>- learn how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>	<p>Children:</p> <ul style="list-style-type: none"> <li>- identify the kingdoms of life and classify living things within those kingdoms. – are introduced to the Linnean system of classification and will be able to develop their practical scientific skills though investigating mould growth on bread and mushroom spore dispersal.</li> </ul>	<ul style="list-style-type: none"> <li>- learn to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit;</li> <li>- learn how to 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;</li> <li>- use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	<ul style="list-style-type: none"> <li>- are introduced to the key concepts of evolution and inheritance, including animal characteristics and fossils.</li> <li>- will learn about inherited traits and apply their knowledge to various animals and plants.</li> <li>- will be introduced to the work of Mary Anning and Charles Darwin.</li> <li>- will learn about the history of the human race and discover links between extinct animals and those which are still living today.</li> </ul>	<p><b><u>Looking after our Environment</u></b></p> <p>Children explore:</p> <ul style="list-style-type: none"> <li>- what the climate is, how it changes, the difference between a man-made and natural environment and where different types of animals live.</li> </ul>
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**Working Scientifically** is described separately in the programme of study, but must **always** be taught through and clearly related to the teaching of the content stated in the planning. **Biology** – Life processes and living things. **Chemistry** – Materials and their properties. **Physics** – Physical Processes.