



## Warton Nethersole's CE Primary School – Scheme of Work for Science

The following scheme ensures full coverage and a progression of skills in the three disciplines of Biology, Physics and Chemistry through the teaching of the National Curriculum for science programmes of study. The content for each year group in KS1 and KS2 is laid out in the 2014 Primary National Curriculum in England document and the early years foundation stage follows the guidelines for the [Early Years Foundation Stage \(EYFS\)](#) framework. As these programmes of study are required to be taught by the end of the key stage, it does allow for some flexibility in when the topics are taught, if it is needed, to suit mixed-age classes.

The curriculum has a strong emphasis on working scientifically throughout all year groups and the understanding is that this is taught as part of the programmes of study. The following are the requirements for the key stages.

### **KS1:**

Ask questions and recognise that these can be answered in different ways.

Observe closely using simple scientific equipment

Perform simple tests.

Identify and classify.

Use observations to suggest answers to questions.

Gather and record data to help answer questions.

### **Lower KS2 – building on prior knowledge and understanding**

Ask relevant questions and use different types of scientific enquiries to answer them.

Set up simple practical enquiries, comparative and fair tests.

Make systematic and careful observations – taking accurate measurements.

Gather, record, classify and present data in a variety of ways to answer questions.

Record findings using simple scientific language, drawings, bar charts, keys and tables.

Report on findings from enquiries.

Use results to draw simple conclusions make predictions, suggest improvements and raise further questions.

Identify differences, similarities or changes related to scientific ideas and processes.

Use straightforward scientific evidence to answer questions or to support findings.

### **Upper KS2 – building further on prior knowledge and understanding**

Plan different types of scientific enquiries to answer questions.

Take measurements using a greater range of scientific equipment with increasing accuracy, taking repeats when necessary.

Record data and results of increasing complexity using a range of methods.

Use test results to make predictions and carry out further tests.

Report and present findings in oral and written forms.

Identify scientific evidence that has been used to support or refute ideas or arguments.

Term	Reception	Year 1	Year 2	Year 3	Year 4 Maple Year 4 Rowan	Year 5	Year 6
<b>Autumn 1</b>	<b>Knowledge and Understanding of the world EYFS goals.</b>	<b>Seasonal changes</b> Observe changes Across the four seasons. Observe and describe the weather associated with the seasons and how day length changes.	<b>Living things and their habitats.</b> Explore and compare differences between things that are living, dead and have never been alive.	<b>Forces and Magnets</b> Compare how things move on different surfaces Notice that some forces need contact between 2 objects but magnets don't... Observe actions of magnets on each other and materials: Compare and group together materials based on magnetic properties... Describe magnets as having 2 poles Predict whether magnets repel or attract depending on which poles are facing...	<b>Sound (M)</b> <b>Identify how sounds are made...</b> Recognise that vibrations from sounds travel through a medium... Find patterns between pitch and features of sound-producing object... Find patterns between volume of sound and strength of vibrations... Recognise when sounds get fainter... <b>States of Matter (R)</b> Compare and group materials together based on whether they are solid liquid or gas... Observe when materials change state... Identify where evaporation and condensation come in to the water cycle...	<b>Properties and changes of materials (1)</b> Comparing and grouping materials on the basis of their properties. Using comparative and fair tests for particular use of materials – relate to everyday uses of materials.	<b>Animals including humans (1)</b> Identify and name the main parts of the human circulatory system. Describe the functions of heart, blood vessels and blood.
<b>Autumn 2</b>		<b>Everyday materials</b> Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials. Describe physical properties. Compare and group together materials on the basis of simple physical properties...	<b>Animals including humans</b> Notice that Animals including humans have offspring... Find out and describe the basic needs of animals, including humans, for survival... Describe the importance of exercise, hygiene, and diet... ...	<b>Light</b> Recognise that you need light to see things... Notice light is reflected from surfaces Recognise that light from the Sun is dangerous... Recognise that shadows are formed when light is blocked Find patterns in the way that shadows change.	<b>Electricity (M)</b> Identify common appliances which run on electricity... Construct simple series circuits identifying parts Identify whether a lamp will light or not... Recognise the function of a switch... Recognise some common conductors and insulators... <b>States of Matter (R) continued</b>	<b>Properties and changes of materials (2)</b> Reversible and irreversible changes – part of a separating materials study.	<b>Electricity</b> Associate brightness of a lamp or volume of a buzzer with amount and voltage of cells... Compare and give reasons for variations in how components function... Use recognised symbols in circuit diagrams.

Term	Reception	Year 1	Year 2	Year 3	Year 4 Maple Year 4 Rowan	Year 5	Year 6
Spring 1		<b>Animals including humans</b> Identify, name draw and label the basic parts of the human body and say which part of the body is associated with each sense.	<b>Uses of everyday materials</b> Identify and compare suitability of a variety of everyday materials...  Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching...	<b>Animals including humans</b> <b>Nutrition</b> Identify that animals including humans need right type and amount of nutrition... Identify that humans and some other animals have skeletons and muscles...	<b>Animals including humans(M)</b> Nutrition Describe the simple functions of the digestive system... Identify teeth and functions... Construct and interpret a variety of food chains including producers...  <b>Sound (R)</b>	<b>Forces</b> Explain falling objects in terms of gravity... Identify effects of air and water resistance and friction... Recognise that some mechanism (inc levers pulleys gears) allow a smaller force to have greater effect...	<b>Living things and their habitats</b> Describe how living things are classified into broad groups according to common observable characteristics. Give reasons for classifying plants and animals.
Spring 2		<b>Animals including humans</b> 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 ...		<b>Rocks</b> Compare and group rocks on basis of appearance and simple physical properties... Describe in simple terms how fossils are formed... Recognise that soils are made from rocks and organic matter.	<b>States of Matter (M)</b> (continue into next term if necessary)	<b>Earth and Space</b> (continued into next half term) Describe the movement of the Earth and other planets relative to the Sun... Describe the movement of the Moon relative to the Earth Describe Sun Earth and Moon as roughly spherical. Use the idea of Earth's rotation to explain day and night	<b>Animals including humans (2)</b> Recognise the impact of diet, exercise, drugs and lifestyles on the way bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.

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Summer 1		<p><b>Plants</b> Identify and name common wild and garden plants including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants including trees...</p>	<p><b>Habitats and food chains</b> Identify that most living things live in habitats to which they are suited and describe different habitats ...</p> <p>Identify and name a variety of plants and animals in their habitats including microhabitats Describe how animals obtain food from plants and other animals using simple food chains...</p>	<p><b>Plants</b> Identify and describe functions of different parts of flowering plants... Explore requirements of plants for life and growth ... Investigate the way in which water is transported within plants Explore the part flowers play in life cycle of plants inc pollination seed formation and seed dispersal.</p>	<p><b>Living things and their habitats (R + M)</b> 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 local and wider environment. Recognise that environments can change and sometimes pose dangers to living things...</p>	<p><b>Living things and their habitats</b> Explain the differences in life cycles of mammal, amphibian, insect and bird. Animal and plant life process of reproduction.</p>	<p><b>Evolution including inheritance</b> Recognise that living things have changed over time. Recognise living things produce offspring of the same kind which may vary from their parents. Identify how plants and animals are adapted to their environment.</p>
Summer 2			<p><b>Plants</b> Find out and observe and describe how seeds and bulbs grow into mature plants... Describe how plants need water, light and a suitable temperature to grow and stay healthy...</p>		<p>Construct and interpret a variety of food chains including producers...</p>	<p><b>Animals including humans</b> Describe the changes as humans develop to old age ...</p>	<p><b>Light</b> Recognise that light appears to travel in straight lines Use this to explain that objects are seen because they reflect or give out light ... Explain how we see things ... Explain the shape of shadows ...</p>

Key:

Chemistry

Physics

Biology