

# SCIENCE PROGRESSION AT WYBUNBURY

## MATERIALS AND MATTER

**Sc1/3.1 Everyday materials**  
Sc1/3.1a: Investigate how an object can be made of two or more materials.  
Sc1/3.1b: Identify and name a variety of everyday materials, including wood, plastic, glass, metal, paper and cardboard, and rock.  
Sc1/3.1c: Describe the simple physical properties of a variety of everyday materials.  
Sc1/3.1d: Compare and group together a variety of everyday materials on the basis of their simple physical properties.

**Sc2/3.1 Uses of everyday materials**  
Sc2/3.1a: Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses.  
Sc2/3.1b: Compare how things move on different surfaces.  
Sc2/3.1c: Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, heating and stretching.

**Sc4/3.1 States of Matter**  
Sc4/3.1a: Compare and group materials together, according to whether they are solids, liquids or gases.  
Sc4/3.1b: 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).  
Sc4/3.1c: Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

**Sc5/3.1 Properties and Changes of Materials**  
Sc5/3.1a: Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity, electrical and magnetic, and response to magnets.  
Sc5/3.1b: Show that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.  
Sc5/3.1c: Use knowledge of solids, liquids and gases to decide how invisible particles are packed, including through floating, sinking and expanding.  
Sc5/3.1d: Give reasons based on evidence from comparison and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.  
Sc5/3.1e: Demonstrate that dissolving, mixing and changes of state are reversible changes.  
Sc5/3.1f: 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 acids on metal carbonate of salts.

## SPACE AND WEATHER

**Sc1/4.1 Seasonal Changes**  
Sc1/4.1a: Observe changes in weather patterns.  
Sc1/4.1b: Observe and describe weather associated with the seasons and how day length varies.

**Sc5/4.1 Earth and Space**  
Sc5/4.1a: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.  
Sc5/4.1b: Describe the movement of the Moon relative to the Earth.  
Sc5/4.1c: Describe the Earth, Earth and Moon as approximately spherical bodies.  
Sc5/4.1d: Use the idea of the Earth's rotation to explain day and night, and the apparent movement of the Sun across the sky.

**Sc3/4.2 Forces and Magnets**  
Sc3/4.2a: Compare how things move on different surfaces.  
Sc3/4.2b: Explain that some forces need contact between 2 objects, but magnets force can act at a distance.  
Sc3/4.2c: Explain how magnets attract or repel objects and how this affects some materials and not others.  
Sc3/4.2d: Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and observe some magnetic materials.  
Sc3/4.2e: Measure magnetic attraction forces.  
Sc3/4.2f: Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.

**Sc5/4.2 Forces**  
Sc5/4.2a: Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.  
Sc5/4.2b: Identify the effects of air resistance, water resistance and friction that act between moving surfaces.  
Sc5/4.2c: Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.

**Sc3/4.1 Light**  
Sc3/4.1a: Recognise that they need light in order to see things and that dark is the absence of light.  
Sc3/4.1b: Notice that light is reflected from surfaces.  
Sc3/4.1c: Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.  
Sc3/4.1d: Recognise that shadows are formed when light from a light source is blocked by an object.  
Sc3/4.1e: Find patterns in the way that the size of shadows changes.

## LIGHT

**Sc6/4.1 Light**  
Sc6/4.1a: Recognise that light appears to travel in straight lines.  
Sc6/4.1b: Use the observed lightness or darkness to explain that objects are seen because they give out or reflect light.  
Sc6/4.1c: Explain that some things become light sources when light comes from an object or from light sources.  
Sc6/4.1d: Use the observed lightness or darkness to explain why shadows have the same shape as the objects that cast them.

**Sc3/3.1 Rocks**  
Sc3/3.1a: Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.  
Sc3/3.1b: Describe in simple terms how fossils are formed when things that have lived are trapped within rock.  
Sc3/3.1c: Recognise that soils are made from rocks and organic matter.

**Sc6/2.3 Evolution**  
Sc6/2.3a: Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.  
Sc6/2.3b: Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.  
Sc6/2.3c: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

## SOUND

**Sc6/4.1 Sound**  
Sc6/4.1a: Identify how sounds are made, associating some of them with something vibrating.  
Sc6/4.1b: Recognise that vibrations from sounds travel through medium to the ear.  
Sc6/4.1c: Use simple tests to compare the pitch or volume of sounds produced by different objects.  
Sc6/4.1d: Recognise how the volume of a sound and the strength of the vibrations that produce it.  
Sc6/4.1e: Demonstrate that dissolving, mixing and changes of state are reversible changes.  
Sc6/4.1f: 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 acids on metal carbonate of salts.

## EVOLUTION AND ROCKS

**Sc1/2.1 Plants**  
Sc1/2.1a: Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.  
Sc1/2.1b: Identify and describe the basic structure of a variety of common flowering plants, including trees.

**Sc2/2.1 Plants**  
Sc2/2.1a: Observe and describe how plants need water, light and a suitable temperature to grow and stay healthy.  
Sc2/2.1b: Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

**Sc3/2.1 Plants**  
Sc3/2.1a: Identify and describe the functions of different parts of flowering plants: roots, stem/bark, leaves and flowers.  
Sc3/2.1b: Explain the importance of plants for life and growth on land, water, rocks, fire and soil, and how plants have been used in a variety of ways.  
Sc3/2.1c: Investigate the ways in which water is transported within plants.  
Sc3/2.1d: Explain the part that flowers play in the life of flowering plants, including pollination, seed formation and seed dispersal.

**Sc1/2.2 Animals including humans**  
Sc1/2.2a: Identify and name some common animals including fish, amphibians, reptiles, birds, mammals, insects and humans.  
Sc1/2.2b: Identify and describe the basic structure of some common animals including humans.  
Sc1/2.2c: Identify some of the ways in which animals and humans are adapted to their environment.

**Sc2/2.2 Animals including humans**  
Sc2/2.2a: Observe and describe the basic needs of animals including humans: the usual needs are food and water.  
Sc2/2.2b: Describe the responses to human activities, including the effects of human actions on the environment and humans.

**Sc3/2.2 Animals including humans**  
Sc3/2.2a: Identify the simple functions of the basic parts of the digestive system in humans.  
Sc3/2.2b: Identify the different types of teeth in humans and their simple functions.  
Sc3/2.2c: Identify and describe a variety of adaptations, including camouflage, in animals and humans.

**Sc4/2.2 Animals including humans**  
Sc4/2.2a: Identify the different types of teeth in humans and their simple functions.  
Sc4/2.2b: Identify and describe a variety of adaptations, including camouflage, in animals and humans.

**Sc5/2.2 Animals, including humans**  
Sc5/2.2a: Describe the changes as humans develop to old age.

**Sc6/2.2 Animals including humans**  
Sc6/2.2a: Identify and describe the basic parts of the human circulatory system, and describe the functions of the heart.  
Sc6/2.2b: Recognise the need for other systems, such as the respiratory system, to supply the body with oxygen.  
Sc6/2.2c: Describe the basic structure and functions of a simple nervous system, including the brain.

## LIVING THINGS AND THEIR HABITATS

**Sc2/2.1 Living things and their habitats**  
Sc2/2.1a: Explain and compare the differences between things that are living, dead, and things that have never been alive.  
Sc2/2.1b: Identify the meaning of things that are living by using simple and descriptive words to describe the basic needs of different types of animals and plants.  
Sc2/2.1c: Identify and describe some types of plants and animals that live in different habitats.  
Sc2/2.1d: Describe how animals, plants and other living things are adapted to their habitats, using the idea of a simple food web, and identify and name the animals and plants.

**Sc4/2.1 All Living Things**  
Sc4/2.1a: Recognise that living things can be grouped in a variety of ways.  
Sc4/2.1b: Explain and use classification keys to help group, identify and name a variety of living things in their local and wider environment.  
Sc4/2.1c: Recognise that environments can change and that this can sometimes pose dangers to living things.

**Sc5/2.1 Living things and their habitats**  
Sc5/2.1a: Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.  
Sc5/2.1b: Describe the process of reproduction in some plants and animals.

**Sc6/2.1 Living things and their habitats**  
Sc6/2.1a: Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.  
Sc6/2.1b: Give reasons for classifying plants and animals based on specific characteristics.

## ELECTRICITY

**Sc4/4.2 Electricity**  
Sc4/4.2a: Identify common appliances that run on electricity.  
Sc4/4.2b: Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.  
Sc4/4.2c: 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.  
Sc4/4.2d: Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.  
Sc4/4.2e: Recognise some common conductors and insulators, and associate metals with being good conductors.

**Sc6/4.2 Electricity**  
Sc6/4.2a: Associate the lightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.  
Sc6/4.2b: 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.  
Sc6/4.2c: Use recognized symbols when representing a simple circuit in a diagram.

# PRE-SCHOOL: BIRTH TO THREE

## Understanding the World

Birth to three - babies, toddlers and young children will be learning to:

- Repeat actions that have an effect.
- Explore materials with different properties.
- Explore natural materials, indoors and outside.
- Explore and respond to different natural phenomena in their setting and on trips.

**THE SCIENCE LINKS IN EYFS (DEVELOPMENT MATTERS 2020)**

# PRE-SCHOOL: THREE TO FOUR YEAR OLDS

## RECEPTION

	Understanding the World	<ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel while they are outside.</li> <li>• Recognise some environments that are different to the one in which they live.</li> <li>• Understand the effect of changing seasons on the natural world around them.</li> </ul>
Reception Continued	Physical Development	<ul style="list-style-type: none"> <li>• Know and talk about the different factors that support their overall health and wellbeing:                             <ul style="list-style-type: none"> <li>- regular physical activity</li> <li>- healthy eating</li> <li>- toothbrushing</li> <li>- sensible amounts of 'screen time'</li> <li>- having a good sleep routine</li> <li>- being a safe pedestrian</li> </ul> </li> </ul>
Reception	Communication and Language	<ul style="list-style-type: none"> <li>• Learn new vocabulary.</li> <li>• Ask questions to find out more and to check what has been said to them.</li> <li>• Articulate their ideas and thoughts in well-formed sentences.</li> <li>• Describe events in some detail.</li> <li>• Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen.</li> <li>• Use new vocabulary in different contexts.</li> </ul>

Science		
Three and Four-Year-Olds	Communication and Language	<ul style="list-style-type: none"> <li>• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"</li> </ul>
	Physical Development	<ul style="list-style-type: none"> <li>• Make healthy choices about food, drink, activity and toothbrushing.</li> </ul>
	Understanding the World	<ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials.</li> <li>• Explore collections of materials with similar and/or different properties.</li> <li>• Talk about what they see, using a wide vocabulary.</li> <li>• Begin to make sense of their own life-story and family's history.</li> <li>• Explore how things work.</li> <li>• Plant seeds and care for growing plants.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> <li>• Explore and talk about different forces they can feel.</li> <li>• Talk about the differences between materials and changes they notice.</li> </ul>

## ELG

ELG	Communication and Language	Listening, Attention and Understanding	<ul style="list-style-type: none"> <li>• Make comments about what they have heard and ask questions to clarify their understanding.</li> </ul>
	Personal, Social and Emotional Development	Managing Self	<ul style="list-style-type: none"> <li>• Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</li> </ul>
	Understanding the World	The Natural World	<ul style="list-style-type: none"> <li>• Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> <li>• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</li> <li>• Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>