

SCIENCE PROGRESSION AT WYBUNBURY

MATERIALS AND MATTER

Sc1/3.1 Everyday materials

Sc1/3.1a distinguish between an object and the material from which it is made
Sc1/3.1b identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, 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, twisting 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 thermal, 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 mixtures might be separated, including through filtering, sieving and evaporating
Sc5/3.1d give reasons, based on evidence from comparative 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 acid on bicarbonate of soda

SPACE AND WEATHER

Sc1/4.1 Seasonal Changes

Sc1/4.1a observe changes across the 4 seasons
Sc1/4.1b observe and describe another 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 Sun, 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 realise that some forces need contact between 2 objects, but magnetic forces can act at a distance
Sc3/4.2c observe how magnets attract or repel each other and attract some materials and not others
Sc3/4.2d compare and group together examples of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
Sc3/4.2e describe magnets as having 2 poles
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 the light from a light source is blocked by a solid object
Sc3/4.1e find patterns in the way that the size of shadows change

LIGHT

Sc6/4.1 Light

Sc6/4.1a recognise that light appears to travel in straight lines
Sc6/4.1b 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
Sc6/4.1c 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
Sc6/4.1d use the idea that light travels in straight lines 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

EVOLUTION AND ROCKS

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

Sc4/4.1 Sound

Sc4/4.1a identify how sounds are made, associating some of them with something vibrating
Sc4/4.1b recognise that vibrations from sounds travel through a medium to the ear
Sc4/4.1c find patterns between the pitch of a sound and features of the object that produced it
Sc4/4.1d find patterns between the volume of a sound and the strength of the vibrations that produced it
Sc4/4.1e recognise that sounds get fainter as the distance from the sound source increases

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

Sc2/2.2 Plants

Sc2/2.2a observe and describe how seeds and bulbs grow into mature plants
Sc2/2.2b 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/trunk, leaves and flowers
Sc3/2.1b explain the requirements of plants for life and growth: air, light, water, nutrients from soil, and how to grow and how they vary from plants to plants
Sc3/2.1c investigate the way in which water is transported within plants
Sc3/2.1d explain the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Sc1/2.2 Animals including humans

Sc1/2.2a identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
Sc1/2.2b identify and name a variety of common animals that are animals, including humans
Sc1/2.2c describe and explain the evolution of a variety of common animals: fish, amphibians, reptiles, birds and mammals
Sc1/2.2d identify, explain, define and label the basic parts of the human body and which part of the body is associated with a function

Sc2/2.3 Animals including humans

Sc2/2.3a realise that animals, including humans, have offspring which grow into adults
Sc2/2.3b find out about and describe the basic needs of animals, including humans, for survival: water, food and air
Sc2/2.3c describe the importance for humans of exercise, using the right amounts of different types of food, and hygiene

Sc3/2.2 Animals including humans

Sc3/2.2a 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
Sc3/2.2b identify that humans and some other animals have skeletons and muscles for support, protection and movement

Sc4/2.2 Animals including humans

Sc4/2.2a describe the simple functions of the basic parts of the digestive system in humans
Sc4/2.2b identify the different types of teeth in humans and their simple functions
Sc4/2.2c construct and interpret a variety of food chains, identifying producers, predators and prey

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 explain the role of the parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
Sc6/2.2b explain the transport of food, oxygen, sugar and glucose in the way that babies, children
Sc6/2.2c describe the ways in which nutrients and water are transported within animals, including humans, and identify and name different sources of food

ANIMALS INCLUDING HUMANS

LIVING THINGS AND THEIR HABITATS

Sc2/2.1 Living things and their habitats

Sc2/2.1a explore and compare the differences between things that are living, dead, and things that have never been alive
Sc2/2.1b identify that many living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different types of animals and plants, and how they depend on each other
Sc2/2.1c identify and name a variety of plants and animals in their habitats, including microorganisms
Sc2/2.1d 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

Sc4/2.1 All Living Things

Sc4/2.1a recognise that living things can be grouped in a variety of ways
Sc4/2.1b explore 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 life 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 brightness 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 recognised 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"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.
Reception Continued	Physical Development	<ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing: <ul style="list-style-type: none"> - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian
Reception	Communication and Language	<ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen. • Use new vocabulary in different contexts.

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

ELG

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