

Science – Subject Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Reception	EYFS Area of Learning: Understanding the World – The Natural World <i>ELG: Explore the natural world; make observations of animals and plants; understand important processes and changes in the natural world, including the seasons and changing states of matter.</i> - Asking simple questions and recognising that they can be answered in different ways, - Observing closely, using simple equipment - Performing simple tests - Term 1 senses, what you can hear/taste - Term 2 – Autumn to Winter/ hibernation - Term 3 planting, growth of a flower/ durability of materials - Term 4 Mini beasts/butterfly life cycles/ changing in seasons - Term 5 talking about floating and sinking - Term 6 changing seasons - Decaying of vegetables – change over time - Magnetic investigations - Magnifying glasses - Mud garden/ mini beast hotels - School trip to Broomhill Park – observing the natural world					
Year 1	Seasonal Changes -Observe changes across the four seasons, - Observe and describe weather associated with the seasons and how day length varies Skills progression In Year 1, we would expect observing as a skill to look like this: Go on a ‘welly walk’ in school grounds to collect leaves	Everyday Materials -Distinguish between an object and the materials from which it is made, -Identify and name a variety of everyday materials, -Describe the simple physical properties of a variety of everyday materials, including wood, plastic, glass, metal, water and rock -Compare and group together a variety of everyday materials on the basis of their simple physical properties, Skills progression In Year 1, we would expect observing as a skill to look like this...	Animals including Humans: (Human Body) - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Animals including Humans: (Animals) -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,	Plants -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. Skills progression In Year 1, we would expect observing as a skill to look like this: Go on a ‘welly walk’ in school grounds to collect leaves	Thinking Scientifically This is an opportunity to retrieve their science learning from throughout the term, teach further lessons on anything children are less clear on and focus on develop Thinking Scientifically skills through practical science. Seasonal Changes (compare back to term 1 and information they’ve gathered through the year). -Observe changes across the four seasons, - Observe and describe weather associated with the seasons and how day length varies

Science – Subject Overview

Year 2	Living things and their habitats -Explore and compare the difference between things that are living, dead and things that have never been alive. -Identify that most living things live in habits to which they are suited and describe how different habitats prove for the basic needs of different kinds of animals and plants. -Identify and name a variety of plants and animals in their habitats, - Describe how animals obtain their food from plants and other animals, including the idea of a simple food chain. Skills progression In Year 2, we would expect observing as a skill to look like this...	Uses of Everyday Materials -Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for its particular uses. -Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Animals including humans (human body) - Animals, including humans, have offspring which grow into adults (baby, toddler, child, teenager, adult) - Humans need water, food and air for survival, - Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Animals including humans (animals) -Animals have offspring which grow into adults (e.g., egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep). -Find out and describe the basic needs of animals for survival	Plants -Observe and describe how seeds and bulbs grow into mature plants, -Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (Note: seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them).	Thinking Scientifically Apply everything they've learnt over the year to scientific enquiry e.g. using simple features to compare objects, materials and living things, sort and group them, observe changes over time and begin to notice patterns and relationships. Ask people questions and use secondary sources to find answers. Use simple measurements and equipment to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they've found it in. Record and communicate findings in a range of ways and begin to use simple scientific language. Skills progression
Year 3						
Skills progression In Year 3, we would expect observing as a skill to look like this...	Light -Recognise they need light in order to see things and darkness is the absence of light -Notice that light is reflected from surfaces	Animals Including Humans (Human body) -Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Animals Including Humans (Animals) -Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot	Rocks -Compare and group together different kinds of rocks on the basis of their appearance and physical properties	Plants -Identify and describe the function of different parts of flowering plants: roots, stem/trunk, leaves and flowers	Forces and Magnets -Compare how things move on different surfaces, -Notice that some forces need contact between 2 objects but magnetic forces can act as a distance,

Science – Subject Overview

	-Recognise that light from the sun can be dangerous and there are ways to protect eyes -Recognise that shadows are formed when the light from a light source is blocked by an opaque object, -Find patterns in the way that the size of shadows change		make their own food; they get nutrition from what they eat	-Describe in simple terms how fossils are formed when things that have lived are trapped within rocks -Recognise that soils are made from rocks and organic matter	-Explore the requirements of plants for life and growth and how they vary from plant to plant -Investigate the way in which water is transported with plants -Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal <i>(Note – pupils can be introduced to the idea that plants make their own food but do not need to know how this happens)</i>	-Observe how magnets attract or repel each other and attract some materials and not others, -Compare and group together a variety of everyday materials on the basis of whether they're attracted to a magnet, and identify some magnetic materials -Describe magnets as having 2 poles -Predict whether 2 magnets will attack or repel each other, depending on which poles are facing.
Year 4 Skills progression In Year 4, we would expect observing as a skill to look like this...	Sound -Identify how sounds are made, associating some of them with something vibrating, -Recognise that vibrations from sound travel through a medium to the ear, -Find patterns between the pitch of a sound and features of the object that produced it -Find patterns between the volume of a sound and the strength of the vibrations that produced it -Recognise that sounds get fainter as the distance from the sound source increases	Animals including humans – Digestive System -Describe the simple function of the basic parts of the digestive systems in humans, -Identify the different types of teeth in humans and their simple functions	States of matter -Compare and group materials together, according to whether they are solids, liquids or gases, -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, -Identify the part played by evaporation and condensation in the water cycle and associate the rates of evaporation with temperature	Electricity -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 common conductors and insulators and associate metals with being good conductors- - Identify whether or not a lamp will light in a simple series circuit, based whether or not the lamp is part of a complete loop with a battery, -Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	Animals, including Humans – Food Chain - Construct and interpret a variety of food chains, identifying producers, predators and prey.	Living things and their habitat -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 thing in their local and wider environment, -Recognise that environments can change and this can be sometimes pose dangers to living things.

Science – Subject Overview

Year 5 Skills progression In Year 5, we would expect observing as a skill to look like this...						
	Earth and Space -Describe the movement of the Earth and other plants relative to the sun in the solar system, -Describe the movement of the moon relative to the Earth, -Describe the sun, Earth and moon as approximately spherical bodies, -Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Forces - Explain that unsupported objects fall towards the Earth because of the forces of gravity acting between the Earth and the falling object, -Identify the effect of air resistance, water resistance and friction, that act between moving surfaces, -Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	Properties and changes of materials -Compare and group together everyday materials based on their properties, -Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution -Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including filtering, sieving and evaporation - Give reasons, based on evidence, from comparative and fair tests, for the particular use of everyday materials, demonstrate that dissolving, mixing and changes of state are reversible changes, -Explain that some changes result in the formation of new materials and this kind of change is not usually reversible.		Living things and their habitats - describe the life process of reproduction in some plants and animals Describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird	Animals including humans: -Describe the changes as humans develop to old age
Year 6 Skills progression In Year 6, we would expect observing as a skill to look like this...						
	Animals, including humans – Circulatory System -identify and name the main parts of the human circulatory system and describe the functions of the heart blood vessels and blood - Describe the way in which nutrients and water are transported within humans September – Heart Dissection	Animals, including humans – Healthy Living -Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function,	Living things and their habitats 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 -Give reasons for classifying plants and animals based on specific characteristic	Evolution and Inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago, -Recognise that living things produce offspring of the same kind but normally offspring vary and are not identical to their parents -Identify how animals and plants are adapted to suit their environment in different ways and that	Electricity -Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells using in the circuit, -Compare and give reasons for variation in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches, -Use recognised symbols when representing a	Light -Recognise that light appears to travel in straight lines, -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, -Explain that we see things because light travels from light sources to our eyes or from light sources to objects and to our eyes, -Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Science – Subject Overview

				adaptation may lead to evolution.	simple circuit in a diagram, <i>(Note: pupils are expected to learn only about series circuit, not parallel circuits. Pupils should be taught to take the necessary precautions for working safely with electricity)</i>	
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Substantiative Knowledge threads:

Biology - the study of living things and their interactions with the environment, including life processes, reproduction, inheritance, and evolution.

Plants - how plants grow, reproduce and interact with their environment.

Animals - how animals grow, survive and function.

Human body – how the human body grows, functions and stays healthy.

Living Things & Environments - how living things are classified, interact with one another and depend upon their environments.

Chemistry - the composition and behaviour of matter, including the properties of materials and how they change.

Materials - the properties, uses and changes of materials.

Physics - the forces, energy and interactions that explain how the physical world works.

Forces & Motion - how forces affect objects and their movement.

Energy -how light, sound and electricity behave and interact.

Earth Science - the processes and systems that shape Earth, its place in space, and how it changes over time.

Earth Systems & Space - Earth's materials and processes, seasonal patterns and Earth's place within the Solar System.