





Science Progression Map



"Somewhere, something incredible is waiting to be known"

Intent: To give all children a strong understanding of the world around them, allowing them to discover the processes and ideas that make our world work.

 Science Moss Hey Key Skills Progression Year Group: Reception 		
Autumn	Spring	Summer
<ul style="list-style-type: none"> -Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - tooth brushing - having a good sleep routine <ul style="list-style-type: none"> -Understand the effect of changing seasons on the natural world around them <ul style="list-style-type: none"> -Explore the natural world around them <ul style="list-style-type: none"> -Describe what they see, hear and feel whilst outside 	<ul style="list-style-type: none"> -Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - tooth brushing - having a good sleep routine <ul style="list-style-type: none"> -Recognise some environments that are different to the one in which they live <ul style="list-style-type: none"> -Understand the effect of changing seasons on the natural world around them <ul style="list-style-type: none"> -Explore the natural world around them <ul style="list-style-type: none"> -Describe what they see, hear and feel whilst outside 	<ul style="list-style-type: none"> -Understand the effect of changing seasons on the natural world around them <ul style="list-style-type: none"> -Explore the natural world around them <ul style="list-style-type: none"> -Describe what they see, hear and feel whilst outside
EARLY LEARNING GOALS <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. - 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. 		



Science
Moss Hey Progression Map
Year Group: One



Planning and Communication and Sources	Obtaining and Presenting Evidence	Considering Evidence and Evaluating	
<p>To draw simple pictures To talk about what they see and do To use simple charts to communicate findings To identify key features To ask questions</p>	<p>To test ideas suggested to them To say what they think will happen To use first hand experiences to answer questions To begin to compare some living things To make observations using appropriate senses To record observations To communicate observations orally, in drawing, labelling, simple writing and using ICT</p>	<p>To make simple comparisons and groupings To say what has happened To say whether what has happened was what they expected</p>	
Knowledge			
Plants	Animals including Humans	Materials	Seasonal Change
<p>To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>To identify and describe the basic structure of a variety of common flowering plants (petal, stem, leaves, roots), including trees.</p>	<p>To notice that animals, including humans, have offspring which grow into adults</p> <p>To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>To identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>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>To distinguish between an object and the material from which it is made</p> <p>To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>To describe the simple physical properties of a variety of everyday materials</p> <p>To compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p>To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>To observe changes across the four seasons</p> <p>To observe and describe weather associated with the seasons and how day length varies.</p>
Key Vocab			
<p>Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem</p>	<p>Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak</p>	<p>Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth</p>	<p>Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark</p>



Science
Moss Hey Progression Map
Year Group: Two



Planning and Communication and Sources	Obtaining and Presenting Evidence	Considering Evidence and Evaluating
<p>To use senses to help answer questions To use some scientific words to describe what they have seen and measured To compare several things</p>	<p>To explain why it might not be fair to compare two things To say whether things happened as they expected To suggest how to find things out To use prompts to find things out To organise things into groups To find simple patterns (or associations) To identify animals and plants by a specific criteria, eg, lay eggs or not; have feathers or not</p>	<p>To use text, diagrams, pictures, charts, tables to record their observations To communicate their findings verbally and in written form</p>

Knowledge

Animals including Humans(basic needs)	Living Things and Their Habitats	Uses of Everyday Materials	Plants
<p>To notice that animals, including humans, have offspring which grow into adults</p> <p>To find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>To explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>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</p> <p>To identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>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.</p>	<p>To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>To observe and describe how seeds and bulbs grow into mature plants</p> <p>To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>

Key Vocab

<p>Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p>	<p>Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert</p>	<p>Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>	<p>Seeds, Bulbs, Water, Light, Temperature, Growth</p>
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Science
Moss Hey Progression Map
Year Group: Three



Planning and Communication	Obtaining and Presenting Evidence	Considering Evidence and Evaluating
<p>To use different ideas and suggest how to find something out</p> <p>To make and record a prediction before testing</p> <p>To plan a fair test and explain why it was fair</p>	<p>To set up a simple fair test to make comparisons</p> <p>To explain why they need to collect information to answer a question</p> <p>To measure using different equipment and units of measure</p> <p>To make accurate measurements using standard units</p> <p>To use a range of equipment (including a data-logger) in a simple test</p> <p>To record observations in different ways, labelled diagrams, charts</p> <p>To describe what they have found using scientific language</p>	<p>To explain what they have found out and use their measurements to say whether it helps to answer their question</p> <p>To use text, diagrams, pictures, charts, tables to accurately record their observations</p>

Knowledge

Plants	Animals including Humans	Forces and Magnets	Rocks	Light
<p>To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>To 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</p> <p>To investigate the way in which water is transported within plants</p> <p>To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>To 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</p> <p>To identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>To compare how things move on different surfaces</p> <p>-To notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>-To observe how magnets attract or repel each other and attract some materials and not others</p> <p>-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</p> <p>-To describe magnets as having two poles</p> <p>-To predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>To describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>To recognise that soils are made from rocks and organic matter.</p>	<p>To recognise that they need light in order to see things and that dark is the absence of light</p> <p>To notice that light is reflected from surfaces</p> <p>To recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>To recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>To find patterns in the way that the size of shadows change.</p>

Key Vocab

Air, Light, Water, Nutrients, Soil, Reproduction, Pollination, Transportation, Dispersal, Flow	Movement, Muscles, Bones, Skull, Nutrition, Skeletons,	Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull	Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent, sedimentary, metamorphic, igneous, volcano, intrusive, extrusive, porous, permeable, palaeontologist	Light, Shadows, Mirror, Reflective, Dark, Reflection, Translucent transparent
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Science
Moss Hey Progression Map
Year Group: Four



Planning and communication	Obtaining and Presenting Evidence	Considering Evidence and Evaluating
<p>To plan a fair test and isolate variables, explaining why it was fair and which variables have been isolated</p> <p>To decide which information needs to be collected and decide the best way for collecting it</p>	<p>To set up a simple fair test to make comparisons</p> <p>To suggest improvements and predictions</p> <p>To take measurements using different equipment and units of measure and record what they have found in a range of ways</p> <p>To make accurate measurements using standard units</p> <p>To explain their findings in different ways (display, presentation, writing)</p>	<p>To use their findings to draw a simple conclusion</p> <p>To find any patterns in the evidence or measurements</p> <p>To make a prediction based on something they have found out</p> <p>To evaluate what they have found using scientific language, drawings, labelled diagrams, bar charts and tables</p> <p>To use straightforward scientific evidence to answer questions or to support their findings</p> <p>To identify differences, similarities or changes related to simple scientific ideas or processes</p>

Knowledge

Animals including Humans	Living Things and Their Habitats	States of Matter	Electricity	Sound
<p>To describe the simple functions of the basic parts of the digestive system in humans</p> <p>To identify the different types of teeth in humans and their simple functions</p> <p>To construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>To recognise that living things can be grouped in a variety of ways</p> <p>To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>To compare and group materials together, according to whether they are solids, liquids or gases</p> <p>To 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)</p> <p>To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>-To identify common appliances that run on electricity</p> <p>-To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>-To 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</p> <p>-To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>-To recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>To identify how sounds are made, associating some of them with something vibrating</p> <p>To recognise that vibrations from sounds travel through a medium to the ear</p> <p>To find patterns between the pitch of a sound and features of the object that produced it</p> <p>To find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>To recognise that sounds get fainter as the distance from the sound source increases.</p>

Key Vocab

Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar	Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats	Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators	Volume, Vibration, Wave, Pitch, Tone, Speaker
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Science
Moss Hey Progression Map
Year Group: Five



Planning and Communication and Sources	Obtaining and Presenting Evidence	Considering Evidence and Evaluating
To plan and carry out a scientific enquiry to answer questions, including recognising and controlling variables where necessary To make a prediction with reasons To use test results to make predictions to set up comparative and fair tests	To take measurements using a range of scientific equipment with increasing accuracy and precision To take repeat readings when appropriate To record more complex data and results using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs	To report and present findings from enquiries through written explanations and conclusions To use a graph to answer scientific questions

Knowledge

Animals including Humans	Properties and Changes of Materials	Forces	Earth and Space	Living things and their Habitats
To describe the changes as humans develop to old age.	-To 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 -To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution -To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating -To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic -To demonstrate that dissolving, mixing and changes of state are reversible changes -To 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.	To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object To identify the effects of air resistance, water resistance and friction, that act between moving surfaces To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	To describe the movement of the Earth, and other planets, relative to the Sun in the solar system To describe the movement of the Moon relative to the Earth To describe the Sun, Earth and Moon as approximately spherical bodies To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird To describe the life process of reproduction in some plants and animals.

Key Vocab

Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty	Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing	Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation	Mammal, Reproduction, Insect, Amphibian, Bird, Offspring
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Science
Moss Hey Progression Map
Year Group: Six



Planning and Communication and Sources	Obtaining and Presenting Evidence	Considering Evidence and Evaluating
<p>To explore different ways to test an idea, choose the best way, and give reasons</p> <p>To vary one factor whilst keeping the others the same in an experiment. To explain why they do this</p> <p>To plan and carry out an investigation by controlling variables fairly and accurately</p> <p>To make a prediction with reasons</p> <p>To use information to help make a prediction</p> <p>To use test results to make further predictions and set up further comparative tests</p> <p>To explain, in simple terms, a scientific idea and what evidence supports it</p> <p>To present a report of their findings through writing, display and presentation</p>	<p>To explain why they have chosen specific equipment (incl ICT based equipment)</p> <p>To decide which units of measurement they need to use</p> <p>To explain why a measurement needs to be repeated</p> <p>To record their measurements in different ways (incl bar charts, scatter graphs, tables and line graphs)</p> <p>To take measurements using a range of scientific equipment with increasing accuracy and precision</p>	<p>To find patterns in data and explain what it shows</p> <p>To use a graph to answer scientific questions</p> <p>To link what they have found out to other science?</p> <p>To suggest how to improve their work and say why they think this</p> <p>To record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models</p> <p>To report findings from investigations through written explanations and conclusions</p> <p>To identify scientific evidence that has been used to support to refute ideas or arguments</p> <p>To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms</p>

Knowledge

Living things and their habitats	Evolution and inheritance	Animals including humans	Light	Electricity
<p>To 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</p> <p>To give reasons for classifying plants and animals based on specific characteristics.</p>	<p>To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>To describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>To recognise that light appears to travel in straight lines</p> <p>To 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</p> <p>To 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</p> <p>To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p>To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p> <p>To use recognised symbols when representing a simple circuit in a diagram.</p>

Key Vocab

Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics	Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration	Refraction, Reflection, Light, Spectrum, Rainbow, Colour, filters Travels, reflect	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell
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