

Year 3 Science Progression Map

	<u>Autumn 1</u>	
Topic	Rocks and Fossils	
Unit Aim	To explore and understand different types of rocks by investigating their properties, learning how fossils are formed, and discovering how soil is created from rocks and organic matter, so we can describe, compare, and group rocks based on what we observe.	
Prior Learning	KS1 - Children will have learnt some of the properties of rocks during topics about different materials.	
Knowledge	<u>Programme of Study</u>	<u>Working Scientifically</u>
	Understand what fossils are and how they are formed. Understand that soil is made up of rocks and organic matter. Investigate the properties of rocks. Describe and compare different types of rock. Compare and group rocks based on their simple physical properties.	I can set up simple, practical enquiries, comparative and fair tests. I can make systematic and careful observations. I can gather and present data. I can record findings.
Vocabulary	rock, chalk, limestone, sandstone, granite, marble, slate, igneous, sedimentary, metamorphic, properties, hard, durable, waterproof, acidity, magma, temperature, soil, minerals, permeable, impermeable, fossils, fossilisation, organism, decompose, skeleton, sediment	
Future Learning	Rocks and soils are not studied again in KS2.	
	KS3 - Children will study rocks in more detail. They will look at the rock cycle and how rocks are formed.	
KS2 End Point	To build an extensive vocabulary and discuss our observations of the world around us.	

	<u>Autumn 2</u>	
Topic	Light	
Unit Aim	To explore how light works by identifying different light sources, understanding how light is reflected, learning how shadows are formed and change, and recognising how to stay safe in sunlight.	
Prior Learning	KS1 - Children do not study light as a separate topic. However, as part of seasonal changes topic, children will have observed and talked about changes in the weather and the seasons and will have talked about the dangers of the sun.	
Knowledge	<u>Programme of Study</u>	<u>Working Scientifically</u>
	I can identify light sources. I can recognise that light is reflected from surfaces. I can recognise that light from the sun can be dangerous and that there are ways to protect your eyes and skin from the sun. I can recognise that shadows are formed when the light from a light source is blocked by an object. I can find patterns in the way that the length of shadows change. I can understand that light is reflected from surfaces.	I can set up simple, practical enquiries, comparative and fair tests. I can make systematic and careful observations.
Vocabulary	light source, light, dark, absence, reflect, luminous, natural, manmade, reflective, surface, see, light, travel, straight, lines, bounce, reflected, light source, damage, protection, sun protection, ultraviolet rays, visible, shadow, opaque, transparent, translucent, block	
Future Learning	Year 6 - children will consolidate previous learning by exploring the way that light behaves, including light sources, reflection and shadows. Pupils will make predictions and investigate the relationship between light sources, objects and shadows and understand how the eye works. Children could extend their experience of light by looking at rainbows, prisms, colours in soap bubbles, colour filters and bending light in water. KS3 – Children will learn that human sight is based on the ability to see red, blue and green light and that the colour of an object depends on the colours of light that it absorbs and scatters. Light travels at 300 million metres per second in a vacuum and different colours of light have different frequencies. The path that light takes can be bent (refracted) and that transparent materials can be shaped into lenses and prisms to alter the path of light by refraction (convex and concave lens). The ray model can describe the formation of an image in a mirror and how objects appear different colour	
KS2 End Point	To build an extensive vocabulary and discuss our observations of the world around us.	

	<u>Spring 1</u>	
Topic	Forces and Magnets	
Unit Aim	To explore how objects move and how magnets work by investigating different surfaces, understanding magnetic forces, and comparing materials, so we can make predictions, carry out fair tests, and use our results to draw simple conclusions.	
Prior Learning	Year 2 – Children will have explored different forces before, during the ‘uses of everyday materials’ topic in Year 2.	
Knowledge	<u>Programme of Study</u>	<u>Working Scientifically</u>
	I can compare how different things move. I can plan a fair test to compare how objects move on different surfaces. I can explore how magnetic forces act at a distance I can compare and group various everyday materials based on whether they are attracted to a magnet. I can predict whether two magnets will attract or repel each other. I can record my findings using simple scientific vocabulary. I can use my results to draw simple conclusions.	I can set up simple, practical enquiries, comparative and fair tests. I can record findings using simple scientific language, drawings and labelled diagrams. I can make systematic and careful observations. I can report on enquiry findings, including oral and written explanations, displays or presentations of results and conclusions. I can gather and present data.
Vocabulary	force, push, pull, move, movement, fair, more, less, hard, soft, magnet, force, contact, distance, magnetic pole, attract, repel, material, predict, strength, strongest, weakest, results	
Future Learning	Year 5 - Children will study forces again in Year 5. Children will build upon their knowledge of simple pushes and pulls from Y3 by exploring more difficult concepts such as gravity, friction and air resistance. Magnets are briefly looked at again in Y5 ‘properties and changes of materials’ topic, where they compare and group materials based on their response to magnets. KS3 - Children will further study forces in physics lessons. They will deepen their understanding of pushes, pulls, friction, gravity and resistance. They will also be introduced to diagrams showing forces, forces measured in newtons and the relationship between force and motion. Magnets are studied again during the electricity topic in KS3, where children are taught about electromagnetism, magnetic fields and the Earth's magnetism.	
KS2 End Point	To build an extensive vocabulary and discuss our observations of the world around us.	

	<u>Spring 2</u>	
Topic	Plants	
Unit Aim	To explore how plants grow and survive by identifying their different parts and functions, understanding how water is transported, and learning how plants reproduce and disperse seeds.	
Prior Learning	Year 1 – Children learnt about the basic structure of plants and trees and noticed that deciduous trees lose their leaves while evergreen trees keep their leaves all year. Year 2 – Children studied how plants grow from seeds and bulbs in more detail. They will have looked at what plants need to grow and stay healthy	
Knowledge	<u>Programme of Study</u>	<u>Working Scientifically</u>
	I can understand what a plant needs to grow. I can identify, locate and describe the function of different parts of a flowering plant. I can identify, locate and describe the function of the roots in plants. I can investigate the way in which water is transported within plants. I can understand how plants reproduce. I can understand how seeds are dispersed.	I can ask relevant questions. I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations. I can record findings. I can report on findings
Vocabulary	plant, tree, flower, roots, stem, leaf, seed, bulb, nutrients, pollination, formation, dispersal	
Future Learning	Year 5 – Children will revisit reproduction in flowering plants and find out about asexual reproduction in plants. Year 6 – Children will learn how plants are adapted to survive in different environments, including how their features help them compete for light, water and nutrients. KS3 – Children will study plants in much closer detail, observing the cell structure and how plants create their own food through photosynthesis.	
KS2 End Point	To build an extensive vocabulary and discuss our observations of the world around us.	

	<u>Summer 1</u>	
Topic	Animals including Humans (Nutrition)	
Unit Aim	To understand how living things get the nutrition they need by exploring different food groups, investigating the nutritional value of foods, and learning how energy is transferred through food chains and food webs.	
Prior Learning	Year 1 – Children looked at how to group animals including based on their diet. KS1 - Children learnt about balanced diets and food groups.	
Knowledge	<u>Programme of Study</u>	<u>Working Scientifically</u>
	I can understand the different food groups and the nutrition they provide. I can explore the nutritional value of different food. I can understand that animals need the right nutrition. I can create a food chain and explain what it shows. I can create a food web.	Compare and contrast the diet of different animals.
Vocabulary	food groups, nutrients, nutrition, nutritious, carbohydrates, proteins, fats, water, fibre, vitamins, minerals, sugars, healthy, survive, omnivore, carnivore, herbivore, saturated fats, unsaturated fats, sugar, salt, energy, plants, diet, food chain, organisms, food web.	
Future Learning	Year 4 – Children will recap grouping animals in different ways based on their features, nutrition and skeleton. Year 5 – Children will explore how humans change over time. Year 6 – Children will learn about the impact exercise, diet, drugs and lifestyle have on the human body as well as learning about how water and nutrients are transported around the body. KS3 – Children will study the skeleton and muscles in more depth including biomechanics where they will investigate the interaction between the muscles and bones. They will also study nutrition in more depth looking at the requirements for a healthy diet, calculations for energy requirements and the consequences of imbalances.	
KS2 End Point	To build an extensive vocabulary and discuss our observations of the world around us.	

	<u>Summer 2</u>	
Topic	Animals including Humans (Muscles and Bones)	
Unit Aim	To understand how bones and muscles support, protect, and help humans and animals move, by identifying their functions and carrying out simple investigations.	
Prior Learning	Year 1 – Children looked at how to group animals including based on their diet. Year 2 – Children studied animals and their offspring and the basic needs that animals need to survive.	
Knowledge	<u>Programme of Study</u>	<u>Working Scientifically</u>
	I can identify that humans have bones for support, protection and movement. I can plan and carry out an investigation about if our bones can affect what we do I can identify that humans have muscles for support, protection and movement. I can identify that animals have bones for support, protection and movement.	I can set up a simple comparative test I can record findings I can record and present data I can draw simple conclusions
Vocabulary	skeleton, bones, protect, support, movement names of key bones (femur, skull, collarbone, jaw, hip, kneecap, ribcage, shoulder blade, spine), muscles, support, protect, movement, contract, relax, backbone, spinal column, vertebrate, invertebrate	
Future Learning	Year 4 – Children will recap grouping animals in different ways based on their features, nutrition and skeleton. They will also create classification keys based on their study. Year 5 – Children will explore how humans change over time. Year 6 – Children will learn about the impact exercise, diet, drugs and lifestyle have on the human body as well as learning about how water and nutrients are transported around the body. KS3 – Children will study the skeleton and muscles in more depth including biomechanics where they will investigate the interaction between the muscles and bones. They will also study nutrition in more depth looking at the requirements for a healthy diet, calculations for energy requirements and the consequences of imbalances.	
KS2 End Point	To build an extensive vocabulary and discuss our observations of the world around us.	