

Heelands School

Science Progression Map

Intent

At Heelands School it is our intention to develop in all young people a lifelong curiosity and interest in the sciences. When planning science, we intend that pupils have the opportunity, wherever possible, to learn through varied systematic investigations, encouraging them to ask and answer scientific questions about the world around them. As children progress through the year groups, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions. Each PlanIt unit has an accompanying knowledge organiser which can be used to help reinforce the key knowledge for each unit as set out in the science national curriculum. The knowledge organisers help children to consolidate and retain the science knowledge they have learnt and also reinforce key scientific vocabulary from each unit. The PlanIt Science scheme of work ensures that children have a varied, progressive and well-mapped-out science curriculum that provides the opportunity for progression across the full breadth of the science national curriculum for KS1.

Implementation

The acquisition of key scientific knowledge is an integral part of our science lessons. Linked knowledge organisers enable children to learn and retain the important, useful and powerful vocabulary and knowledge contained within each unit. The progression of skills for working scientifically are developed through the year groups and scientific enquiry skills are of key importance within lessons. The progression of these skills is set out in the PlanIt Science Progression Map. Each lesson has a clear focus. Scientific knowledge and enquiry skills are developed with increasing depth and challenge as children move through the year groups. They complete investigations and hands-on activities while gaining the scientific knowledge for each unit. Interwoven into the teaching sequence are key assessment questions, identified in green on lesson plans. These allow teachers to assess children's levels of understanding at various points in the lesson. They also enable opportunities to recap concepts where necessary. The sequence of lessons helps to embed scientific knowledge and skills, with each lesson building on previous learning. There is also the opportunity to regularly review and evaluate children's understanding. Activities are effectively differentiated so that all children have an appropriate level of support and challenge.

Impact

Progress is measured through a child's ability to know more, remember more and explain more. This can be measured in different ways in our units. The use of green key questions ensures opportunities are built into the lesson for ongoing assessment. Attainment and progress can be measured across the school using our assessment spreadsheets. The impact of using the full range of resources included in the science unit will also be seen across the school with an increase in the profile of science. The learning environment across the school will be more consistent with science technical vocabulary displayed, spoken and used by all learners. Whole-school and parental engagement will be improved through the use of science-specific home learning tasks and shared use of knowledge organisers. Children who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the relevance of what they learn in science lessons to real-life situations and also the importance of science in the real world.

Level Expected at the End of EYFS

We have selected the **most relevant** statements from Development Matters age range Reception as well as highlighting the statements within the ELGs **which feed into** the programme of study for Science. For more detail about linked subject progression within the EYFS Framework, please refer to [these documents](#)

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 help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts.
	Personal, Social and Emotional Development		<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 • toothbrushing • sensible amounts of ‘screen time’ • having a good sleep routine • being a safe pedestrian
	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.
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.

KEY STAGE 1 NATIONAL CURRICULUM EXPECTATIONS

	Year 1	Year 2	The Year 1 Scientist	The Year 2 Scientist	
Animals Including Humans	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 (fish, amphibians, reptiles, birds and mammals including pets); 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>Pupils should be taught to:</p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults; find out about and describe the basic needs of animals, including humans, for survival (water, food and air); describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<p>Can name different animals</p> <p>Knows that animals can be classified by what they eat</p> <p>Can name different body parts of animals eg wings, tails, paws and can compare them.</p> <p>Can label body parts and knows which part of the body is associated with each sense.</p>	<p>Can name a range of animals and their young eg cow & calf, hen and chick</p> <p>Knows that humans have babies that grow into adults</p> <p>Know that we need water, food and air to survive</p> <p>Knows how to keep healthy and why it's important</p>	
Plants	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 	<p>Knows the names of some common plants in their area</p> <p>Know the difference between deciduous and evergreen trees</p> <p>Can label the parts of a plant</p>	<p>Knows how seeds and bulbs grow into plants</p> <p>Knows that plants need certain conditions to survive</p>	
Seasonal change	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> observe changes across the 4 seasons; observe and describe weather associated with the seasons and how day length varies. 	Living Things & their Habitats	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> explore and compare the differences between things that are living, dead, and things that have never been alive; 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 identify and name a variety of plants and animals in their habitats, including microhabitats; describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, identify and name different sources of food. 	<p>Can name the four seasons</p> <p>Can talk about how the seasons are different</p> <p>Can use weather related vocabulary eg snow, frost, sunny, temperature, day, night</p>	<p>Knows the difference between alive and dead</p> <p>Knows that living things need a specific habitat</p> <p>Knows that habitats are important to maintain life</p> <p>Can describe a simple food chain</p>
Materials	<p style="text-align: center;">Everyday Materials</p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> distinguish between an object and the material from which it is made; identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock; describe the simple physical properties of a variety of everyday materials; compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<p>Uses of Everyday Materials</p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses; find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 		<p>Can recognize materials like wood, plastic, metal, glass</p> <p>Can talk about how they look, feel and smell</p> <p>Can describe materials as soft, hard, bendy, stiff, materials, rough, transparent</p> <p>Can think of ways to group materials together</p>	<p>Knows why some materials are more suitable for a specific purpose</p> <p>Knows that some solid objects can be changed by a simple force like squashing or twisting</p>

	Year 1	Year 2	The Year1 Scientist	The Year 2 Scientist
Working Scientifically	<p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways; • observing closely, using simple equipment; • performing simple tests; • identifying and classifying; • using their observations and ideas to suggest answers to questions; • gathering and recording data to help in answering questions 	<p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways; • observing closely, using simple equipment; • performing simple tests; • identifying and classifying; • using their observations and ideas to suggest answers to questions; • gathering and recording data to help in answering questions 	<p>Can look at things and ask questions.</p> <p>Can use what they have seen to answer questions</p> <p>Can do simple tests to answer questions</p> <p>Can use simple equipment to measure and record data eg measure rainfall with a rain gauge.</p>	<p>Can hypothesise using their growing scientific knowledge</p> <p>Suggests ways to test their hypotheses</p> <p>Can make 'I think because' statements</p> <p>Is beginning to be able to draw conclusions from their findings</p>

This PlanIt Progression Map has been written to support practitioners who have chosen to adopt the PlanIt scheme in part or in full. This curriculum progression map shows the progression across the programme of study requirements from year 1 to year 6. Statements here are taken directly from the national curriculum science programmes of study.