



## Science Curriculum Map

### Science Curriculum Intent:

At Heather Avenue Infant School, we understand and recognise the needs of all our children and families, and in response offer a story rich, topic based curriculum, underpinned by the Early Years Foundation Stage or National Curriculum.

In Science we provide a practical and exploratory programme where children develop their skills, ideas and knowledge so that they are of an open mind and have a positive approach to the world.

We strive for all children to build on their natural curiosity and to shape this into scientific enquiry. Our children observe and ask questions with intrigue and excitement, they develop the skills required to investigate, predict, collect evidence, test their own hypotheses and reason. Children develop their skills to become confident decision makers, able to work independently or collaboratively.

We learn about plants, animals, habitats, changing seasons and materials (please see our curriculum map below for a more detailed overview). Our children develop a knowledge and understanding of the correct vocabulary for each area. Skills developed in reading, writing and maths support children in their investigative work, recording and reasoning.

We encourage children to develop a respect for the care and safety of their environment and all living things.

We believe that each child should complete their time with us as an enthusiastic learner across all areas of a broad and balanced curriculum, ready for the next phase of their educational journey. We strive to prepare pupils for the opportunities, responsibilities and experiences of the next phase of their education and future life by giving them a wide range of real-life, memorable experiences.



### **Science Curriculum Implementation:**

All staff members are given training on our Science curriculum and how to effectively implement it; the majority of this is completed as part of our staff meetings and led by the Science subject leader, as well as by relevant external providers as required. Teachers have a good understanding of science and its component parts, including; questioning, observing, hypothesising, testing and reasoning.

Our curriculum maps (with identified key vocabulary) are used to create medium term plans which show the sequence of learning and links to our class topics. Science is taught as a block of work, with links to the class topic, this ensures that learning is built on progressively allowing children to develop their knowledge and skills effectively, as well as giving time to use and apply their learning.

During their time with us, children learn from high quality stimuli; all teachers scaffold learning and skills so that children develop their understanding as well as building the confidence needed to carry out and complete their own work. Blocks of work result in a product/outcome created independently/collaboratively by the children. Further links are made across the curriculum for all subjects to ensure learning is embedded and revisited where appropriate.

All staff ensure that there are high expectations across school, with high challenge/low threat leading to a growth mindset and lots of genuine positive praise for positive behaviours, progress and success in all areas of school life.

Teachers are adept at assessing children using their own professional knowledge via formative and summative assessments. Assessments are recorded on Classroom Monitor and Tapestry. Children who require additional support are quickly identified and supported via differentiation / intervention. Those requiring extension are identified and mastery approaches used to further progress their learning.



Consistently high standards of teaching are implemented across the curriculum and can be seen via learning walks, book scrutiny and through discussions with children and staff. SLT and subject leaders play a pivotal role in monitoring this process. Our Local Advisory Board and Trust further monitor our provision.

**Science Curriculum Impact:**

Children achieve well at Heather Avenue Infant School and leave with firm foundations in Science. They have the skills to ask questions, observe/investigate, hypothesise, test and reason. Children are able to use other areas of learning to complement their learning and progress. Children are prepared for continued success and the next phase of their educational journey.

**Science Curriculum Map**

	Skills	Knowledge	Topic Titles
Rec	<p>Can comment and ask questions about aspects of their familiar world e.g. the place where they live or the natural world</p> <p>Can talk about some of the things they have observed e.g. plants, animals, natural and found objects</p> <p>Can talk about why things happen and how things work</p>	<p>To be able to name some objects found in the natural world e.g. conker, acorns, pine cone, chestnut</p> <p>To be able to name the four seasons and the connected weather</p> <p>To know what a plant needs to grow and to be able to name some plants</p> <p>To be able to name and describe some common</p>	<p>Autumn: Magical Me</p> <p>Spring: To Infinity and Beyond <b>or</b> Dinosaur Roar</p> <p>Summer: Journeys and Teddy Bear Picnic</p>



	Shows care and concern for living things and the environment  Looks closely at similarities, differences, patterns and change	minibeasts  To be able to categorise farm and wild animals and pets  To be able to comment on the changes of the properties of objects e.g. paint, ice and food	
<b>Y1</b>	<p><b>Working Scientifically:</b></p> <p>Ask simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p> <p><b>Vocabulary:</b> question, observe, answer, observing, equipment, identify, sort, group, record (diagram - chart), compare, contrast,</p>	<p><b>Plants:</b></p> <p>Identify and name a variety of common wild and garden plants</p> <p>Know the difference between deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p> <p><b>Vocabulary:</b> common, wild plants, garden plants, deciduous, evergreen, tree, trunk, branches, leaf, root, plant, leaves, bud, flowers, blossom, petals, stem, fruit, vegetables, bulb, seed</p> <p><b>Animals, including humans:</b></p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (goldfish,</p>	<p><b>Autumn:</b> Muck, Mess and Mixtures or Turn Back Time (alternating)</p> <p><b>Spring:</b> Let's Go On a Super Safari or Jungle Fever (alternating)</p> <p><b>Summer:</b> Get Set Go! or My Amazing Body (alternating)</p>



	describe	<p>shark, frog, newt, snake, tortoise, chicken, budgie, dog, cat, whale)</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (dog, cat, human, rabbit, guinea pig, rats)</p> <p>Describe and compare the structure of a variety of common animals (fish - gills vs lungs, amphibians, reptiles, birds and mammals, including pets)</p> <p>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><b>Vocabulary:</b> common animals, fish, amphibians, reptiles, birds, mammals, pets, carnivores, meat, cat, dog, lion, tiger, fox, shark, killer whale, eagle, hawk, snake, tyrannosaurus rex, herbivores, plants, cow, hamster, tortoise, triceratops, omnivores, meat, plants, badger, human, bear, chickens, head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth</p> <p><b>Everyday materials:</b></p> <p>Know the difference between an object and the material</p>	
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		<p>from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p><b>Vocabulary:</b> material, wood, plastic, glass, metal, water, rock, properties, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, rigid, waterproof, absorbent, brick, paper, fabrics, plastic, foil</p> <p><b>Seasonal changes:</b></p> <p>Observe and understand the changes across the four seasons (at least one lesson per term )</p> <p>Observe and describe weather associated with the seasons and how day length varies (at least one lesson per term)</p> <p><b>Vocabulary:</b> season, summer, winter, autumn, spring, day, daytime, weather, wind, rain, snow, hail, sleet, fog, sun,</p>	
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		hot, warm, cold	
Y2	<p><b>Working Scientifically:</b></p> <p>Ask simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Perform simple comparative tests</p> <p>Identify and classify</p> <p>Use observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p> <p><b>Vocabulary:</b> question, observe, answer, observing, equipment, identify, classify, sort, pattern, group, record (diagram - chart), map, data, compare, contrast, describe, biology, chemistry, physics</p>	<p><b>Living things and their habitats:</b></p> <p>Explain the differences between things that are living, dead, and things that have never been alive</p> <p>Know the term habitat and describe what it means</p> <p>Explain that most living things live in habitats to which they are suited</p> <p>Explain how different habitats provide the basic needs of different animals and plants, and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>Explain how animals obtain their food from plants and other animals, using the idea of a simple food chain</p> <p>Identify and name different sources of food</p> <p><b>Vocabulary:</b> living, dead, never alive, habitats, micro-organisms, food, food chain, sun, grass, cow, human, alive, healthy, logs, leaf, litter, shelter, seashore, woodland,</p>	<p><b>Autumn:</b> Muck, Mess and Mixtures or Turn Back Time (alternating)</p> <p><b>Spring:</b> Let's Go On a Super Safari or Jungle Fever (alternating)</p> <p><b>Summer:</b> Get Set Go! or My Amazing Body (alternating)</p>



		<p>ocean, rainforest, conditions, hot, warm, cold, dry, damp, wet, bright, shade, dark</p> <p><b>Plants:</b></p> <p>Observe and describe how seeds and bulbs grow into mature plants</p> <p>Explain how plants need water, light and a suitable temperature to grow and stay healthy</p> <p><b>Vocabulary:</b> water, light, suitable temperature, grow, healthy, germination, reproduction</p> <p><b>Animals, including humans:</b></p> <p>Explain that animals, including humans, have offspring which grow into adults</p> <p>Explain the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Explain the importance for humans of exercise, eating the right amounts of different types of food and hygiene</p> <p><b>Vocabulary:</b> offspring, grow, adults, nutrition, reproduce, survival, water, food, air, exercise, hygiene, egg, chick,</p>	
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		<p>chicken, egg, caterpillar, pupa, butterfly, spawn, tadpole, frog, lamb, sheep, baby, toddler, child, teenager, adult</p> <p><b>Use of everyday materials:</b></p> <p>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>Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <p><b>Vocabulary:</b> wood, metal, plastic, glass, brick, rock, paper, cardboard, squashing, bending, twisting, stretching, metal, coins, cans, cars, table legs, wood, matches, floors, telegraph poles, spoons, plastic, wood, metal</p>	
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