

Science Curriculum Overview 2026-27

At HVPA, we map our programme of study across the school by combining the scientific aims and objectives of the National Curriculum. Within each unit, 'golden threads' provide linked learning across the science curriculum. Progressively tiered language/scientific terms are mapped into each unit, and ensures pupils' scientific vocabulary develops hierarchically. Each year, pupils engage with at least one 'working scientifically' unit which allows them to explore curriculum concepts through enquiry based learning.

	Term One	Term Two	Term Three	Term Four	Term Five	Term Six
Year One	Living and Non-Living Things <i>Prove it – All animals and humans have the same five senses!</i>	Night and Day <i>Prove it – The seasons change, but day and night don't</i>	Everyday Materials – General properties <i>Prove it – No material is completely waterproof</i>	Science Week Unit	Plants – common names and types of plant <i>Prove it' – All plants have leaves</i>	Seasonal Changes <i>Prove it – it's always cold in winter and hot in summer</i>
Coverage	Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets. Pupils should have plenty of opportunities to learn the names of the main body parts through games, actions, songs and rhymes. Pupils might work scientifically by: using their observations to compare and contrast animals.	Pupils might work scientifically by: making tables and charts; and making displays of what happens in the world around them, including day length, as the seasons change.	Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties. Pupils should explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil. Pupils might work scientifically by: performing simple tests to explore questions.	Pupils should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, They should 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 found it out. With help, they should begin to use simple scientific language.	Pupils should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem). Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants.	Pupils should observe and talk about changes in the weather and the seasons. Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.
Year Two	Growing and Changing <i>Prove it – Humans and animals need the same things to live and grow</i>	Everyday Materials – Flammable and inflammable <i>Prove it – Houses can be fireproof!</i>	Nutrition and Exercise <i>Prove it – If it tastes sweet, it's unhealthy</i>	Science Week Unit	Animals and their Habitats <i>Prove it – If something moves, it is alive</i>	Plants – what do plants need to survive? <i>Prove it – All plants need soil to grow.</i>
Coverage	Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs. The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child,	Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (e.g. metal can be used for coins, cans, cars and table legs) or different materials are used for the same thing (spoons can be made from plastic, wood and metals). They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.	Pupils in years 2 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions. They should 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 found it out. With help, they should begin to use simple scientific language.	Pupils in years 2 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions. They should 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 found it out. With help, they should begin to use simple scientific language.	Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'microhabitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should study a variety of plants and animals within their habitat and observe how living things depend on each other. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in	Pupils should use the local environment throughout the year to observe how plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants. Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.

	teenager, adult.				woodland, in the ocean, in the rainforest.	
Year Three	Survival – diet and nutrition <i>Prove it – All animals (including humans) need the same nutrition and diet</i>	Light <i>Prove it – When it's light, EVERYTHING forms a shadow</i>	Magnets <i>Prove it – All Metal is Magnetic!</i>	Science Week Unit	Plants – naming plant parts and functions <i>Prove it – The flower is the most important part of any plant</i>	Rocks <i>Prove it – A rock is a rock is a rock!</i>
Coverage	Pupils should continue to learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions. Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy, and design meals based on what they find out.	Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.	Pupils should observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe).	Pupils in years 3 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn how to use new equipment and collect data from their own observations and measurements, and record and analyse this data.	Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction. Pupils might work scientifically by: comparing the effect of different factors on plant growth. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.	Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment. Pupils might work scientifically by: observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils could explore different soils and identify similarities and differences between them.
Year Four	Teeth and Digestion <i>Prove it – Teeth are THE most important part of digestion for all animals</i>	States of Matter <i>Prove it – Water is the only material that can be all three states of matter</i>	Sound <i>Prove it – Big sounds need big energy to make them!</i>	Science Week Unit	Electricity <i>Prove it – Metal is essential to make electricity 'move'</i>	Living Things – Classification <i>Prove it – More than 50 types of animals call High Street home</i>
Coverage	Pupils should be introduced to the main body parts associated with the digestive system, for example: mouth, tongue, teeth, oesophagus, stomach, and small and large intestine, and explore questions that help them to understand their special functions. Pupils might work scientifically by: comparing the teeth of carnivores and herbivores and suggesting reasons for differences; finding out what damages teeth and how to look after them. They might draw and discuss their ideas about the digestive system and	Pupils should explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). Pupils should observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled. Pupils might work scientifically by: grouping and classifying a variety of different materials; exploring the effect of temperature on substances such as chocolate. They could research the	Pupils should explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways. Pupils might work scientifically by: finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. They might make earmuffs from a variety of different materials to investigate which provides the best insulation	Pupils in years 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to	Pupils should construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6. Pupils might work scientifically by: observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and	Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals, flowering plants and non-flowering plants. Pupils could begin to put vertebrate animals into groups, for example: fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms,

	compare them with models or images.	temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. They might observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.	against sound. They could make and play their own instruments by using what they have found out about pitch and volume.	make them for and the type of simple equipment that might be used. They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, and record and analyse this data.	some cannot be used to connect across a gap in a circuit.	spiders, and insects. Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.
Year Five	Friction and Air Resistance <i>Prove it – Without friction, we would all be unsafe</i>	Plant Reproduction <i>Prove it – Without bees, all plants would die!</i>	Materials <i>Prove it – If something gets hot, it will eventually burn</i>	Science Week Unit	Earth and Space <i>Prove it – Orbit, revolve and rotate all mean the same thing.</i>	Animal Reproduction and Puberty <i>Prove it – Every animal goes through the same stages of life as a human</i>
Coverage	Pupils should explore falling objects and raise questions about the effects of air resistance. They should explore the effects of air resistance by observing how different objects fall. They should experience forces that make things begin to move, get faster or slow down. Pupils should explore the effects of friction on movement and find out how it slows or stops moving objects. Pupils should explore the effects of levers, pulleys and simple machines on movement. Pupils might find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.	Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in plants in the vegetable garden or flower border. Pupils should find out about sexual and asexual reproduction in plants. Pupils might work scientifically by: observing and comparing the life cycles of plants in their local environment with other plants around the world, asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs.	Pupils should build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4. They should explore reversible changes, including evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes. Pupils should explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda.	Pupils in years 5 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, and record and analyse this data.	Pupils should be introduced to a model of the sun and Earth that enables them to explain day and night. Pupils should learn that the sun is a star at the centre of our solar system and that it has 8 planets.). They should understand that a moon is a celestial body that orbits a planet. Pupils should find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus.	Pupils should observe life-cycle changes in a variety of living things, for example, animals in the local environment. Pupils should find out about different types of reproduction, including sexual reproduction in animals. Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.
Year Six	Whole Body Health <i>Prove it – ALL drugs are bad for the human body</i>	Evolution and Inheritance <i>Prove it – Animals are still evolving but humans are not</i>	Light <i>Prove it – Light only ever travels in straight lines</i>	Science Week Unit	Electricity <i>Prove it – The higher the voltage, the brighter the bulb</i>	Animal Classification <i>Prove it – Common traits (e.g. flight) mean common ancestors</i>
Coverage	Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function.	Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by	Pupils should build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. They should talk about what happens and make predictions. Pupils might work scientifically by: designing and making a periscope and using the idea that	Pupils in years 6 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying;	Building on their work in year 4, pupils should construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit in a	Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail. They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations

	Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	considering different breeds of dog. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.	light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light by looking at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water, and coloured filters.	and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, and record and analyse this data.	diagram using recognised symbols. Pupils might work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.	where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another. Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.
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Forces	Working Scientifically	Animals including Humans	Plants	Materials	Electricity, Light and Sound
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Working Scientifically



Planning an Enquiry



Observing Closely



Taking Measurements



Making Predictions



Interpreting Results



Drawing Conclusions



Asking Scientific Questions



Gathering and Recording Results



Presenting Results



Evaluating an Enquiry

Scientific Enquiry



Identifying, Classifying and Grouping



Comparative and Fair Testing



Observing Over Time



Pattern Seeking



Problem Solving



Research