



# Subject Handbook

Science



**St. John the Baptist**  
Catholic Primary School



# Our Science Curriculum



## Intent



- Ensuring 'quality first teaching' is achieved throughout the school through consistent delivery approaches and adherence to the sequential learning provided by the Primary Knowledge Curriculum.
- Ensuring that colleagues are aware of expectations
- Create positive and enthusiastic attitudes towards science
- Ensure all children make good progress over the course of the year.
- Action planning for future development
- Creating a stronger relationship with school governors to support science.



# Our Science Curriculum



## Implementation



- Ensuring that teaching within the subject is strong and promotes the acquisition of key knowledge, building on prior learning
- Leading professional development, providing guidance and support to colleagues
- Promoting the subject and championing the subject with colleagues and pupils
- Oversee assessment
- Meeting with 'science governor' and collaborating to strengthen the subject of science





# Our Science Curriculum



## Impact

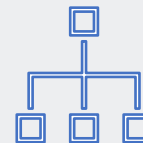


Monitoring the effectiveness of teaching and the impact on learning and standards

Evaluating and summarizing all aspects of the subject to define next steps for improvement.

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

# Curriculum Rationale



## Rationale and National Curriculum Coverage



The PKC Science curriculum aims to equip children with the foundations for understanding the world through a scientific lens. Pupils will be taught units of work that cover and go beyond the requirements of the National Curriculum in the specific disciplines of biology, chemistry and physics. Pupils will encounter people who have made significant contributions to the field of science over time, understanding that science has been a quest for understanding for many years, and will continue to be so in the future. Pupils will build a body of key foundational science knowledge as they work through the curriculum, asking questions and developing a sense of curiosity about the world around us.

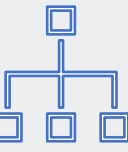
Following the PKC Science curriculum will give children an introduction to fascinating content such as the inner workings of the human body, animals and the environments they live in, plants and their features, forces in nature, what lies beyond the visible and what lies beyond the planet we live on. Over time their knowledge will deepen moving from recognising and naming parts of the human body to understanding how our muscles work, how our blood moves around our body and how our nervous system helps us to interact with the world.

Pupils will be encouraged to use the knowledge they learn in Science and apply it to investigations that test a theory or set out to answer a question. Importantly, substantive scientific knowledge is taught first, before pupils are asked to undertake enquiry. This helps them to fully understand the elements of the enquiry first, and to make informed observations about the processes they see. Gathering information, recording data, graphing data and interpreting findings are all essential skills that pupils will apply to new contexts as they work through the curriculum. Enquiries include observing over time, pattern seeking, identifying, classifying and grouping, comparative and fair testing and researching using secondary sources. Scientific enquiries provide children with a wealth of opportunities, but first and foremost they will help to deepen understanding of the nature, processes and methods of science as a discipline and how it differs from other subjects they are studying. Pupils will gain an understanding of the purpose and uses of science both today and in the future.

Throughout the science curriculum, children are taught that scientific discoveries have been made since time began around the world. The children learn about the work of scientists such as Lewis Howard Latimer, who invented the carbon filament that allowed Edison's lightbulb to light up the world. In Year 5 children learn about Jabir ibn Hayyan who is thought to have invented a crucial tool for the distillation process: the alembic. In Year 1 children learn about their senses and reflect upon the challenges faced by Helen Keller who achieved a university degree despite being blind and deaf from her early childhood. Importantly in Science, over time, children learn about scientists and their search for the truth. They learn that the people who have contributed to science, from Ancient Baghdad to Ancient Rome and beyond, are diverse and many voices make up the story of science.

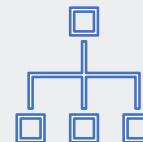
Our science curriculum builds knowledge incrementally. Pupils have multiple opportunities to secure and build on their knowledge and understanding as subject content is revisited at points throughout the curriculum. This helps children to master the knowledge and concepts whilst building up an extended specialist vocabulary. This incremental approach helps teachers to identify knowledge gaps and look back at previous content if they need to close gaps in knowledge or understanding. Our curriculum enables children to understand the important role that science plays in the sustainability of life on earth. We want children following this curriculum to be equipped to go forth into their secondary education with curiosity, passion and a desire for discovery.

# Curriculum Overview



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	The Human Body	Animals and their Needs	Seasons and Weather	Taking Care of the Earth	Plants	Materials and Magnets
Year 2	The Human Body	Living Things in their Environments	Electricity	Materials and Matter	Plants	Astronomy
Year 3	The Human Body	Cycles in Nature	Light	Rocks	Plants	Forces and Magnets
Year 4	The Human Body	Classification of Plants and Animals	Ecology	The Water Cycle	Sound	Electricity
Year 5	The Human Body	Materials	Living Things	Forces	Astronomy	Meteorology
Year 6	The Human Body	Classification of Living Things	Electricity	Light	Reproduction	Evolution

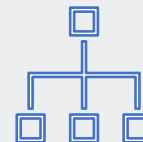
# Curriculum Coverage



	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
<b>Year 1</b>	<b>The Human Body</b> <ol style="list-style-type: none"> <li>1. Introduction to Our Body and Our Senses</li> <li>2. Eyes and Sight</li> <li>3. Ears and Hearing</li> <li>4. Touch, taste and smell</li> <li>5. Understanding Sensory Impairment</li> </ol>	<b>Animals and their Needs</b> <ol style="list-style-type: none"> <li>1. Amazing Animals (Introduction to Animals)</li> <li>2. Grouping animals: Fish, amphibians, reptiles, birds and mammals</li> <li>3. Grouping animals: carnivores, herbivores and omnivores</li> <li>4. Animals as pets</li> <li>5. Describing animals</li> </ol>	<b>Seasons and Weather</b> <ol style="list-style-type: none"> <li>1. The four seasons</li> <li>2. Tools to record the weather</li> <li>3. Using a graph to show information about the weather</li> <li>4. Clouds and what they tell us: cirrus, cumulus and stratus</li> <li>5. Weather forecasting</li> </ol>	<b>Taking Care of the Earth</b> <ol style="list-style-type: none"> <li>1. Taking Care of the Earth</li> <li>2. Earth's Natural Resources</li> <li>3. Logging</li> <li>4. Pollution</li> <li>5. Recycling</li> </ol>	<b>Plants</b> <ol style="list-style-type: none"> <li>1. What plants need</li> <li>2. Parts of plants</li> <li>3. Seeds</li> <li>4. Deciduous and evergreen plants</li> <li>5. Plants we eat</li> </ol>	<b>Materials and Magnets</b> <ol style="list-style-type: none"> <li>1. Everyday Materials</li> <li>2. Properties of Materials</li> <li>3. Uses of Materials</li> <li>4. Magnets</li> <li>5. Investigation</li> </ol>
<b>Year 2</b>	<b>The Human Body</b> <ol style="list-style-type: none"> <li>1. Animals, including humans, survival and offspring</li> <li>2. The Skeletal System, The Muscular System and Exercise</li> <li>3. The Digestive system and Healthy Eating</li> <li>4. The Circulatory system</li> <li>5. Germs, diseases and preventing illness</li> </ol>	<b>Living Things in their Environments</b> <ol style="list-style-type: none"> <li>1. Dead or Alive</li> <li>2. What is a habitat?</li> <li>3. Rainforest and Desert habitats</li> <li>4. Meadow habitats</li> <li>5. Underground habitats</li> </ol>	<b>Electricity</b> <ol style="list-style-type: none"> <li>1. Introduction to Electricity</li> <li>2. Safety</li> <li>3. Exploring Circuits (A)</li> <li>4. Exploring Circuits (B)</li> <li>5. Investigating conductive and non-conductive materials</li> </ol>	<b>Plants</b> <ol style="list-style-type: none"> <li>1. Plants around us</li> <li>2. Seeds and bulbs</li> <li>3. Comparative test 1</li> <li>4. Comparative Test 2</li> <li>5. Food and Farming</li> </ol>	<b>Materials and Matter</b> <ol style="list-style-type: none"> <li>1. Materials and their uses</li> <li>2. George de Mestral and Velcro</li> <li>3. Matter under the microscope</li> <li>4. Changing Solid Objects</li> <li>5. Liquids and their properties</li> </ol>	<b>Astronomy</b> <ol style="list-style-type: none"> <li>1. Introduction to Astronomy</li> <li>2. Model the Solar System</li> <li>3. Orbit and Rotation</li> <li>4. The Moon and its Phases</li> <li>5. Constellations</li> </ol>
<b>Year 3</b>	<b>The Human Body</b> <ol style="list-style-type: none"> <li>1. The Muscular System</li> <li>2. The Skeletal System</li> <li>3. The Nervous System</li> <li>4. Preparing to Eat</li> <li>5. The Digestive System</li> </ol>	<b>Cycles in Nature</b> <ol style="list-style-type: none"> <li>6. The Four Seasons (prior learning)</li> <li>7. Seasonal Cycles in Plants</li> <li>8. Life Cycle of a Plant</li> <li>9. Animal Migration</li> <li>10. Life Cycle of a Frog</li> </ol>	<b>Light</b> <ol style="list-style-type: none"> <li>1. Light and Dark</li> <li>2. Transparent and opaque surfaces</li> <li>3. Mirrors and reflection</li> <li>4. Shadows</li> <li>5. Finding patterns in changing shadows</li> </ol>	<b>Plants</b> <ol style="list-style-type: none"> <li>1. Botany and Flowering Plants</li> <li>2. Requirements for life and growth</li> <li>3. Water transportation in plants</li> <li>4. Pollination in Flowering Plants</li> <li>5. Seed Dispersal</li> </ol>	<b>Rocks</b> <ol style="list-style-type: none"> <li>1. Sorting rocks</li> <li>2. How Rocks are Formed</li> <li>3. Permeability</li> <li>4. Fossils</li> <li>5. Soil</li> </ol>	<b>Forces and Magnets</b> <ol style="list-style-type: none"> <li>1. Forces (Gravity)</li> <li>2. Friction</li> <li>3. Magnet</li> <li>4. Magnetic Poles and Fields</li> <li>5. Investigating the strength of magnets</li> </ol>



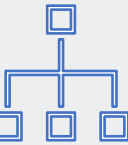
# Curriculum Coverage



Year 4	<b>The Human Body</b> <ol style="list-style-type: none"> <li>Cells and Nutrients</li> <li>Teeth and Senses</li> <li>Digestion</li> <li>A Healthy Diet</li> <li>Vitamins and Minerals</li> </ol>	<b>Classification of Plants and Animals</b> <ol style="list-style-type: none"> <li>Introduction to classification</li> <li>Classes of vertebrates: Fish and Amphibians</li> <li>Classes of vertebrates: Reptiles, Birds and Mammals</li> <li>Classes of invertebrates: Insects, Arachnids and Molluscs</li> <li>Classification of plants</li> </ol>	<b>Ecology</b> <ol style="list-style-type: none"> <li>Living things and Habitats</li> <li>Natural Cycles</li> <li>Web of Living Things</li> <li>Human Threats to the Environment</li> <li>Ecology in our Local Area</li> </ol>	<b>Sound</b> <ol style="list-style-type: none"> <li>What is sound?</li> <li>Speed of sound</li> <li>Qualities of sound – Pitch and Volume</li> <li>Human Voice</li> <li>Ears- how we hear</li> </ol>	<b>The Water Cycle</b> <ol style="list-style-type: none"> <li>States of Matter</li> <li>Evaporation</li> <li>Condensation</li> <li>Precipitation</li> <li>The Water Cycle</li> </ol>	<b>Electricity</b> <ol style="list-style-type: none"> <li>Electrical Safety</li> <li>Parts of a circuit</li> <li>Switches</li> <li>Thomas Edison and Lewis Latimer</li> <li>Investigating conductive and non-conductive materials</li> </ol>
Year 5	<b>The Human Body:</b> <ol style="list-style-type: none"> <li>Human Growth Stages</li> <li>Adolescence and Puberty</li> <li>Slowing Down</li> <li>Growth in Humans and Animals</li> <li>Preparation for Assessment (research and scientific drawing)</li> </ol>	<b>Materials</b> <ol style="list-style-type: none"> <li>Properties of materials</li> <li>Which material is best?</li> <li>Solubility- which materials are most soluble/what solubility means</li> <li>Separating mixtures- sieving, filtering, evaporating</li> <li>Reversible changes- dissolving, mixing, change of state</li> </ol>	<b>Living Things</b> <ol style="list-style-type: none"> <li>Life cycles of plants and animals in our local area</li> <li>Reproduction in Plants</li> <li>Life cycles of Mammals and Amphibians</li> <li>Life cycles of insects and birds</li> <li>The work of David Attenborough and Jane Goodall</li> </ol>	<b>Forces</b> <ol style="list-style-type: none"> <li>Forces including gravity</li> <li>Air resistance, water resistance and friction</li> <li>Guided investigation: Paper Drop</li> <li>Guided investigation: Paper Drop</li> <li>Pulleys, gears and levers</li> </ol>	<b>Astronomy</b> <ol style="list-style-type: none"> <li>The Big Bang and the expanding universe</li> <li>Gravity</li> <li>Our Solar System</li> <li>The Moon</li> <li>Our Galactic neighbourhood</li> </ol>	<b>Meteorology</b> <ol style="list-style-type: none"> <li>Meteorology and the Atmosphere</li> <li>The Ozone Layer</li> <li>Air Movement</li> <li>Cold and Warm Fronts</li> <li>Thunder and Lightning</li> </ol>
Year 6	<b>The Human Body</b> <ol style="list-style-type: none"> <li>The Heart: Circulation of the Blood</li> <li>Blood Vessels and Transport</li> <li>Components of Human Blood</li> <li>Blood Pressure and Heart Rate</li> <li>Heart Rate- an Investigation</li> </ol>	<b>Classification of Living Things</b> <ol style="list-style-type: none"> <li>Classifying organisms</li> <li>Cells: Plant and Animal cells</li> <li>Taxonomy</li> <li>Vertebrates</li> <li>Invertebrates</li> </ol>	<b>Electricity</b> <ol style="list-style-type: none"> <li>Simple Series Circuits</li> <li>Parallel Circuits</li> <li>Switches</li> <li>Planning an investigation</li> <li>Investigation</li> </ol>	<b>Light</b> <ol style="list-style-type: none"> <li>How light travels</li> <li>How we see</li> <li>Shadows and their shapes</li> <li>The Colour of Light</li> <li>Making a periscope</li> </ol>	<b>Reproduction</b> <ol style="list-style-type: none"> <li>Asexual reproduction</li> <li>Sexual reproduction in non-flowering plants</li> <li>Sexual reproduction in flowering plants</li> <li>Reproduction in animals</li> <li>Growth stages</li> </ol>	<b>Evolution</b> <ol style="list-style-type: none"> <li>Fossils and Evolution</li> <li>Inheritance</li> <li>Adaptation</li> <li>Charles Darwin</li> <li>Alfred Wallace</li> </ol>



# Curriculum Coverage



Working Scientifically KS1		Year 1				Year 2							
		Human Body	Animals and their Needs	Seasons and Weather	Taking Care of the Earth	Plants	Materials and Magnets	The Human Body	Living Things and their Environments	Electricity	Plants	Materials and Matter	Astronomy
<b>Statutory</b>													
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				✓		✓	✓				✓	✓	✓
<b>Notes and guidance</b>													
use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships			✓			✓	✓						✓
ask people questions and use simple secondary sources to find answers		✓			✓			✓		✓			
use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out				✓		✓					✓	✓	✓
record and communicate their findings in a range of ways and begin to use simple scientific language (with help)			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Working Scientifically Lower KS2				Year 3				Year 4							
				The Human Body	Cycles in Nature	Plants	Light	Rocks	Forces and Magnets	The Human Body	Classification	Ecology	Sound	States of Matter and the Water cycle	Electricity
<b>Statutory</b>															
asking relevant questions and using different types of scientific enquiries to answer them						✓		✓	✓			✓	✓		
setting up simple practical enquiries, comparative and fair tests						✓		✓	✓		✓	✓	✓	✓	✓
making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers						✓	✓		✓		✓				
gathering, recording, classifying and presenting data in a variety of ways to help in answering questions				✓	✓	✓		✓	✓		✓	✓	✓		
recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables				✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions				✓				✓	✓						
using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions						✓				✓	✓	✓	✓		✓
identifying differences, similarities or changes related to simple scientific ideas and processes				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
using straightforward scientific evidence to answer questions or to support their findings								✓	✓						
<b>Notes and guidance</b>															
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				✓		✓		✓		✓					
collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data						✓		✓				✓			
make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used				✓				✓	✓		✓	✓	✓	✓	
how to use new equipment, including thermometers and data loggers					✓				✓					✓	✓
collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data								✓	✓						
look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions					✓					✓	✓	✓	✓	✓	✓
making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done									✓		✓	✓	✓		
use relevant scientific language to discuss their ideas and communicate their findings				✓				✓			✓	✓	✓	✓	✓

Working Scientifically Upper KS2				Year 5				Year 6							
				Human Body	Materials	Living Things	Forces	Astronomy	Meteorology	The Human Body	Classification	Electricity	Light	Reproduction	Evolution
<b>Statutory</b>															
planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary				✓	✓		✓					✓	✓		
taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate				✓	✓		✓		✓			✓	✓		
recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs				✓			✓		✓			✓	✓		
using test results to make predictions to set up further comparative and fair tests				✓	✓		✓					✓			
reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations				✓	✓	✓	✓					✓	✓		
identifying scientific evidence that has been used to support or refute ideas or arguments				✓	✓	✓	✓	✓				✓	✓		
<b>Notes and guidance</b>															
plan the most appropriate type of scientific enquiry to use to answer scientific questions				✓	✓	✓	✓			✓					
recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why				✓	✓		✓					✓			
use and develop keys and other information records to identify, classify and describe living things and materials					✓	✓					✓		✓	✓	✓
make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them				✓	✓		✓	✓		✓		✓			
choose the most appropriate equipment to make measurements and explain how to use it accurately					✓				✓	✓					
decide how to record data from a choice of familiar approaches					✓		✓					✓			
look for different causal relationships in their data and identify evidence that refutes or supports their ideas				✓	✓		✓	✓				✓			
use their results to identify when further tests and observations might be needed				✓	✓		✓			✓		✓			
talk about how scientific ideas have developed over time				✓				✓					✓		

# Progression of Knowledge



National Curriculum statements in red are from other linked topics.

## Plants

<b>Birth to three</b>	<ul style="list-style-type: none"> <li>Explore natural materials, indoors and outside.</li> </ul>
<b>Nursery</b>	<ul style="list-style-type: none"> <li>Use all their senses in hands-on exploration of natural materials.</li> <li>Explore collections of materials with similar and/or different properties.</li> <li>Plant seeds and care for growing plants.</li> <li>Understand the key features of the life cycle of a plant and an animal.</li> <li>Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul>
<b>Reception</b>	<ul style="list-style-type: none"> <li>Draw information from a simple map. (Reception – Living things and their habitats)</li> <li>Explore the natural world around them. (Reception – Living things and their habitats)</li> <li>Describe what they see, hear and feel whilst outside. (Reception – Living things and their habitats)</li> <li>Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)</li> <li>Understand the effect of changing seasons on the natural world around them. (Reception – Seasonal changes)</li> </ul>
<b>Year 1</b>	<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>
<b>Year 2</b>	<ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants.</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> <li>Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)</li> </ul>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li> <li>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.</li> <li>Investigate the way in which water is transported within plants.</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</li> </ul>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</li> </ul>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>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. (Y6 - Living things and their habitats)</li> <li>Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</li> </ul>
<b>Key Stage 3</b>	<ul style="list-style-type: none"> <li>Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.</li> </ul>

## Animals, including humans

<b>Birth to three</b>	<ul style="list-style-type: none"> <li>Explore natural materials, indoors and outside.</li> <li>Make connections between the features of their family and other families.</li> <li>Notice differences between people.</li> </ul>
<b>Nursery</b>	<ul style="list-style-type: none"> <li>Use all their senses in hands-on exploration of natural materials.</li> <li>Begin to make sense of their own life-story and family's history.</li> <li>Understand the key features of the life cycle of a plant and an animal.</li> <li>Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul>
<b>Reception</b>	<ul style="list-style-type: none"> <li>Talk about members of their immediate family and community.</li> <li>Name and describe people who are familiar to them.</li> <li>Recognise some environments that are different to the one in which they live.</li> </ul>
<b>Year 1</b>	<ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</li> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>
<b>Year 2</b>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults.</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>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. (Y2 - Living things and their habitats)</li> </ul>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</li> <li>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</li> </ul>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> <li>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. (Y6 - Living things and their habitats)</li> <li>Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</li> </ul>

## Living things and their habitats

<b>Birth to three</b>	<ul style="list-style-type: none"> <li>Explore natural materials, indoors and outside.</li> </ul>
<b>Nursery</b>	<ul style="list-style-type: none"> <li>Use all their senses in hands-on exploration of natural materials.</li> <li>Explore collections of materials with similar and/or different properties.</li> <li>Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul>
<b>Reception</b>	<ul style="list-style-type: none"> <li>Draw information from a simple map.</li> <li>Explore the natural world around them.</li> <li>Describe what they see, hear and feel whilst outside.</li> <li>Recognise some environments that are different to the one in which they live.</li> </ul>
<b>Year 1</b>	<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)</li> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)</li> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)</li> <li>Observe changes across the four seasons. (Y1 - Seasonal change)</li> </ul>
<b>Year 2</b>	<ul style="list-style-type: none"> <li>Explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>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.</li> <li>Identify and name a variety of plants and animals in their habitats, including microhabitats.</li> <li>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.</li> <li>Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including humans)</li> </ul>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)</li> </ul>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways.</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</li> </ul>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>Describe the life process of reproduction in some plants and animals.</li> </ul>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</li> <li>Give reasons for classifying plants and animals based on specific characteristics.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and inheritance)</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance)</li> </ul>

## Evolution and inheritance

<b>Birth to three</b>	<ul style="list-style-type: none"> <li>Make connections between the features of their family and other families.</li> <li>Notice differences between people.</li> </ul>
<b>Nursery</b>	<ul style="list-style-type: none"> <li>Begin to understand the need to respect and care for the natural environment and all living things. (Nursery – Living things and their habitats)</li> </ul>
<b>Reception</b>	<ul style="list-style-type: none"> <li>Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)</li> </ul>
<b>Year 1</b>	
<b>Year 2</b>	<ul style="list-style-type: none"> <li>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. (Y2 - Living things and their habitats)</li> <li>Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)</li> </ul>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)</li> </ul>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</li> </ul>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)</li> </ul>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>
<b>Key Stage 3</b>	<ul style="list-style-type: none"> <li>Heredity as the process by which genetic information is transmitted from one generation to the next.</li> <li>A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model.</li> <li>The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection.</li> <li>Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction.</li> </ul>

# Progression of Vocabulary



Word	Definition	Subject	Year Group	Unit	Term	Where is the Vocabulary found?
Abdomen	A key word to be taught and defined by teachers	Science	4	Classification of Plants and Animals	Autumn 2	Lesson Plan
Absorb	A key word to be taught and defined by teachers	Science	1	Plants	Summer 1	Lesson Plan
Absorb	A key word to be taught and defined by teachers	Science	3	Light	Spring 1	Lesson Plan
Absorb	To take in or soak up.	Science	3	Plants	Spring 2	Knowledge Organiser
Absorb	A key word to be taught and defined by teachers	Science	3	Plants	Spring 2	Lesson Plan
Absorbant	A key word to be taught and defined by teachers	Science	1	Materials and Magnets	Summer 2	Lesson Plan
Accurate	A key word to be taught and defined by teachers	Science	1	Seasons and Weather	Spring 1	Lesson Plan
Acorns	A key word to be taught and defined by teachers	Science	3	Plants	Spring 2	Lesson Plan
Adapt	A key word to be taught and defined by teachers	Science	2	Living things and their Environments	Autumn 2	Lesson Plan
Adapt	To change	Science	6	Evolution	Summer 2	Lesson Plan
Adaptation	Process of changing to suit a particular environment	Science	6	Evolution	Summer 2	Knowledge Organiser
Adaptation	Many plants and animals have adapted so they can survive in a particular	Science	2	Living things and their Environments	Autumn 2	Knowledge Organiser
Adolescence	The period following the onset of puberty during which a young person de	Science	5	The Human Body	Autumn 1	Knowledge Organiser
Affect	A key word to be taught and defined by teachers	Science	6	Human Body	Autumn 1	Lesson Plan
Ageing	A key word to be taught and defined by teachers	Science	5	Human Body	Autumn 1	Lesson Plan
Air	A key word to be taught and defined by teachers	Science	1	Animals and their Needs	Autumn 2	Lesson Plan
Air	A key word to be taught and defined by teachers	Science	1	Taking Care of the Earth	Spring 2	Lesson Plan
Air mass	A large body of air in the atmosphere	Science	5	Meteorology	Summer 2	Knowledge Organiser
Air Resistance	A kind of friction that slows objects down when they travel through air	Science	5	Forces	Spring 2	Knowledge Organiser
algae	A non-flowering aquatic plant	Science	4	Classification of Plants and Animals	Autumn 2	Lesson Plan
Alive	A plant or animal that is alive moves, grows and reproduces.	Science	2	Living things and their Environments	Autumn 2	Knowledge Organiser
Amphibian	A cold-blooded animal that can live in water and on land	Science	1	Animals and their Needs	Autumn 2	Lesson Plan
Amphibian	A cold-blooded vertebrate that begins life underwater and develops the al	Science	5	Living Things	Spring 1	Knowledge Organiser
Amphibian	A cold-blooded animal that can live in water and on land	Science	1	Animals and their Needs	Autumn 2	Knowledge Organiser
Amphibian	A cold-blooded vertebrate that begins life underwater and develops the al	Science	4	Classification of Plants and Animals	Autumn 2	Lesson Plan
Amphibian	A cold-blooded vertebrate that begins life underwater and develops the al	Science	6	Classification of Living Things	Autumn 2	Lesson Plan
Amphibian	A cold-blooded animals who live partly in water and partly on land, they u	Science	4	Classification of Plants and Animals	Autumn 2	Knowledge Organiser

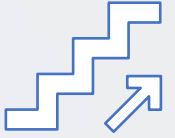


# Progression of Vocabulary



Cerebellum	A key word to be taught and defined by teachers	Science	3	Human Body	Autumn 1	Lesson Plan
Cerebral	A key word to be taught and defined by teachers	Science	3	Human Body	Autumn 1	Lesson Plan
Cerebrum	A key word to be taught and defined by teachers	Science	3	Human Body	Autumn 1	Lesson Plan
Ceres	A key word to be taught and defined by teachers	Science	5	Astronomy	Summer 1	Lesson Plan
Chalky	A key word to be taught and defined by teachers	Science	3	Rocks	Summer 1	Lesson Plan
Chemicals	A key word to be taught and defined by teachers	Science	1	Taking Care of the Earth	Spring 2	Lesson Plan
Chemicals	A key word to be taught and defined by teachers	Science	4	Ecology	Spring 1	Lesson Plan
Chew	A key word to be taught and defined by teachers	Science	2	Human Body	Autumn 1	Lesson Plan
Chlorophyll	A key word to be taught and defined by teachers	Science	6	Classification of Living Things	Autumn 2	Lesson Plan
Chloroplast	A key word to be taught and defined by teachers	Science	6	Classification of Living Things	Autumn 2	Lesson Plan
Circuit	A path which electricity flows around	Science	4	Electricity	Summer 2	Knowledge Organiser
Circuit	A path which electricity flows around	Science	2	Electricity	Spring 1	Knowledge Organiser
Circuit	A path which electricity flows around	Science	6	Electricity	Spring 1	Knowledge Organiser
Circuit	A path which electricity flows around	Science	4	Electricity	Summer 2	Lesson Plan
Circulate	A key word to be taught and defined by teachers	Science	2	Human Body	Autumn 1	Lesson Plan
Circulation	A key word to be taught and defined by teachers	Science	2	Human Body	Autumn 1	Lesson Plan
Circulatory system	Bodily system made up of the heart, blood vessels and blood that delivers	Science	6	Human Body	Autumn 2	Knowledge Organiser
Cirrus	A cloud forming thin, wispy strands. From the Latin meaning ringlet or curl	Science	1	Seasons and Weather	Spring 1	Lesson Plan
Cirrus	A cloud forming thin, wispy strands. From the Latin meaning ringlet or curl	Science	4	States of Matter and the Water Cycle	Summer 1	Lesson Plan
Class	A key word to be taught and defined by teachers	Science	6	Classification of Living Things	Autumn 2	Lesson Plan
Classification	The arrangement of animals and plants into groups according to their obs	Science	4	Classification of Plants and Animals	Autumn 2	Lesson Plan
Classification	The arrangement of animals and plants into groups according to their obs	Science	6	Classification of Living Things	Autumn 2	Knowledge Organiser
Claw	A key word to be taught and defined by teachers	Science	1	Animals and their Needs	Autumn 2	Lesson Plan
Clay	A key word to be taught and defined by teachers	Science	3	Rocks	Summer 1	Lesson Plan
Climate	The weather conditions in a region over a length of time	Science	5	Meteorology	Summer 2	Knowledge Organiser
Cloning	A key word to be taught and defined by teachers	Science	6	Reproduction	Summer 1	Lesson Plan
Clouds	A cloud is a collection of tiny droplets of water in the sky; when the drople	Science	1	Seasons and Weather	Spring 1	Knowledge Organiser
Cluster	A key word to be taught and defined by teachers	Science	5	Astronomy	Summer 1	Lesson Plan

# Progression of Skills

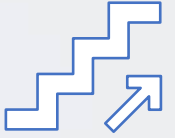


## Working Scientifically

Year 1 & 2	Year 3 & 4	Year 5 & 6
<b>Asking questions and recognising that they can be answered in different ways</b>		
<b>Asking simple questions and recognising that they can be answered in different ways</b> <ul style="list-style-type: none"><li>• While exploring the world, the children develop their ability to ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen). Where appropriate, they answer these questions.</li><li>• The children answer questions developed with the teacher often through a scenario.</li><li>• The children are involved in planning how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered.</li></ul>	<b>Asking relevant questions and using different types of scientific enquiries to answer them</b> <ul style="list-style-type: none"><li>• The children consider their prior knowledge when asking questions. They independently use a range of question stems. Where appropriate, they answer these questions.</li><li>• The children answer questions posed by the teacher.</li><li>• Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when secondary sources can be used to answer questions that cannot be answered through practical work. They identify the type of enquiry that they have chosen to answer their question.</li></ul>	<b><i>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</i></b> <ul style="list-style-type: none"><li>• Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry.</li><li>• Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work.</li></ul>



# Progression of Skills



## Working Scientifically

### Making observations and taking measurements

#### **Observing closely, using simple equipment**

- Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations.
- They begin to take measurements, initially by comparisons, then using non-standard units.

#### **Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers**

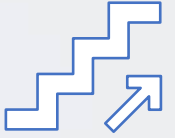
- The children make systematic and careful observations.
- They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.

#### **Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate**

- The children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.
- During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value).



# Progression of Skills



## Working Scientifically

### Recording and presenting evidence

#### Gathering and recording data to help in answering questions

- The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.
- They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs.
- They classify using simple prepared tables and sorting rings.

#### Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

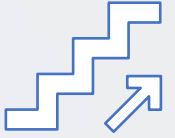
##### Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

- The children sometimes decide how to record and present evidence. They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams.
- Children are supported to present the same data in different ways in order to help with answering the question.

#### Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

- The children decide how to record and present evidence. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.
- Children present the same data in different ways in order to help with answering the question.

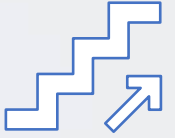
# Progression of Skills



## Working Scientifically

Answering questions and concluding		
<p><b><i>Using their observations and ideas to suggest answers to questions</i></b></p> <ul style="list-style-type: none"> <li>Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources.</li> </ul>	<p><b><i>Using straightforward scientific evidence to answer questions or to support their findings</i></b></p> <ul style="list-style-type: none"> <li>Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence.</li> </ul>	<p><b><i>Identifying scientific evidence that has been used to support or refute ideas or arguments</i></b></p> <ul style="list-style-type: none"> <li>Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer.</li> <li>They talk about how their scientific ideas change due to new evidence that they have gathered.</li> <li>They talk about how new discoveries change scientific understanding.</li> </ul>
<p><b><i>Using their observations and ideas to suggest answers to questions</i></b></p> <ul style="list-style-type: none"> <li>The children recognise 'biggest and smallest', 'best and worst' etc. from their data.</li> </ul>	<p><b><i>Identifying differences, similarities or changes related to simple scientific ideas and processes</i></b></p> <ul style="list-style-type: none"> <li>Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships.</li> </ul> <p><b><i>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i></b></p> <ul style="list-style-type: none"> <li>They draw conclusions based on their evidence and current subject knowledge.</li> </ul>	<p><b><i>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</i></b></p> <ul style="list-style-type: none"> <li>In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.</li> </ul>

# Progression of Skills



## Working Scientifically

### Evaluating and raising further questions and predictions

<p><b>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</b></p> <ul style="list-style-type: none"> <li>They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry.</li> </ul>	<p><b>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</b></p> <ul style="list-style-type: none"> <li>They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.</li> <li>They identify any limitations that reduce the trust they have in their data.</li> </ul>
<p><b>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</b></p> <ul style="list-style-type: none"> <li>Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface.</li> <li>Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.</li> </ul>	<p><b>Using test results to make predictions to set up further comparative and fair tests</b></p> <ul style="list-style-type: none"> <li>Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.</li> </ul>

### Communicating their findings

<p><b>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</b></p> <ul style="list-style-type: none"> <li>They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary.</li> </ul>	<p><b>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</b></p> <ul style="list-style-type: none"> <li>They communicate their findings to an audience using relevant scientific language and illustrations.</li> </ul>
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# Assessment



## Written Assessment

Children are assessed at the end of each Science unit, where they complete a multiple-choice quiz as well as an essay-style task. The task is designed to consolidate learning as well as giving the class teacher a clear understanding of knowledge retention.

## Summative Assessment

Children are formally assessed using Family Fisher Trust.

What kind of muscle is the heart?	A A voluntary muscle	
	B A bicep	
	C An involuntary muscle	
	D An endoskeleton muscle	
What is an endoskeleton?	A A skeleton on the inside of the body	
	B A backbone	
	C A skeleton on the outside of the body	
	D A joint	
What do nerves do?	A Breaks up food in the mouth	
	B Connects the skull to the spinal cord	
	C Joins bones together	
	D Carries messages around the body	
What is a reflex action?	A A voluntary action	
	B An instant action that happens without us choosing to	
	C A slow action	
	D Something that requires a message from the brain	
Why is our digestive system important?	A It uses involuntary muscles	
	B It sends signals to our brain	
	C Helps the body absorb energy and nutrients from food	
	D It helps send messages around the body	

### Assessment Outcome

To be able to describe one of the many systems in our body.

#### Scientific knowledge and understanding:

Our body contains different systems that enable us to grow, move and respond to the world around us.

Our digestive system breaks down food into energy and nutrients.

The brain sends messages around our bodies through our nervous system.

The skeletal system support and protects our bodies.

The muscular system enables us to move our bodies.

### Suggested Assessment Tasks

**Knowledge Organiser:** Blank out sections of the knowledge organiser for children to fill in. For example, leave a keyword but blank out the definition and vice versa.

**Multiple Choice Quiz:** Children complete the MCQ and mark their own immediately afterwards to provide instant feedback.

#### Independent writing (option A):

Our body contains many different systems. Choose one to describe. (Include a labelled diagram)

Children can be provided with structured strips to scaffold their writing. (**Working scientifically** - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions)

#### Practical Task (option B):

Children draw outline of a body and write about all of the systems they've learned about. Children can label the human bodies with muscles, nerves, bones and parts of the digestive system. (**Working scientifically** - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables)

### Suggested Resources

Knowledge organiser, MCQ, structure strips.

KEY VOCABULARY

voluntary

involuntary

joint

spinal cord

reflex

oesophagus

something **we choose to do**

something we cannot choose to do; it **happens without us thinking**

the place **where two bones come together**, connected by tissue called ligaments

the **bundle of nerves** that run down the spine connecting almost all of our body to our brain

an action that is performed by our body **without us thinking about it**, e.g., moving our hand away from a thorn when we've pricked our finger on it

a long **muscular tube** that connects our mouth to our stomach

triceps straighten the arm  
biceps bend the arm  
thigh muscles help to move your legs  
calf

muscular system

brain  
spinal cord  
nerves

nervous system

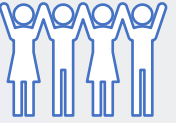
mouth  
oesophagus  
liver  
stomach  
small intestine  
large intestine  
rectum

digestive system

skull  
cranium  
backbone  
spinal column  
sternum  
ribcage  
radius  
ulna  
thighbone  
femur  
kneecap  
patella  
fibula  
tibia  
toe bones  
finger bones  
hipbone  
pelvis  
shoulder blades  
scapula  
rib  
humerus

skeletal system

# Inclusion



**1.Explicit instruction** - step-by-step modelling of what we want children to do, chunking the content and introducing new material in small steps

**2.Cognitive and metacognitive strategies** – opportunity to recall information to transfer it to our long-term memory

**3.Scaffolding** – pre-teaching, visual, verbal, written

Visual scaffolds may support a pupil to know what equipment they need, the steps they need to take, what their work should look like, an aid to access teaching and learning

Verbal scaffolds may involve re-teaching a tricky concept to a group of pupils, or using questioning to identify and address any misconceptions

Written scaffolds will be provided for a pupil to support them with an independent written task. It could be notes made on a whiteboard during a discussion, a word bank, a sentence starter, a writing frame, it could even be the child's own previous work used to support their recall.

Scaffolds provide temporary assistance to pupils so they can successfully complete tasks that they cannot yet do independently. We use scaffolds flexibly, evaluate their effectiveness and gradually remove them once they are no longer needed.

**4.Flexible grouping** - peer tutoring, Kagan grouping, flexible grouping

**5.Assistive technology** – to support delivery and recording of work

**Rosenshine's Principles of instruction:**

- Begin a lesson with a short review of previous learning
- Present new material in small steps with pupil practice
- Ask questions and check responses
- Provide models
- Guide pupil practice, provide scaffolding and support
- Encourage independent practice and check pupil understanding

All children receive a high quality and ambitious education

All learners have access to the same academic opportunities by offering a stimulating and ambitious curriculum, adjusted to the needs of pupils with SEND, so that they are able to reach their full potential

It is vital that our children are equipped with the tools needed to become independent learners

Our curriculum will ensure that all pupils gain a greater understanding of how they learn and the skills of resilience, collaboration, participation, investigation, thinking, creativity, motivation and reflection

We provide an accessible learning environment which is tailored to the individual needs of all pupils

Pupils are supported by adults following a cycle of assess, plan, do, review, making necessary adjustments to the curriculum to meet the needs of all pupils

All learners are respected and acknowledged for their personal contribution