

## Science at Menston Primary School

Our children love science and we are very proud to be working towards the Primary Science Quality Mark this year. This award aims to celebrate the school's commitment to excellent science provision. In order to reflect its importance in all of our lives, science is a core subject in the National Curriculum. At MPS, science is one of the key drivers for many of our topics as part of our 'Learning Challenge Curriculum'. This means that over the course of the year, all of our children enjoy science-based cross-curricular topics, ensuring that science is at the centre of our children's learning.



### Principles of Science at MPS

<b>C</b>	<b>REATIVE</b> <i>We do science our own way!</i>
<b>R</b>	<b>EAL LIFE</b> <i>We link science with real life, not just science lessons.</i>
<b>E</b>	<b>XPERIMENTS</b> <i>We do lots of experiments so we are learning by working scientifically.</i>
<b>A</b>	<b>LL AROUND US</b> <i>Science doesn't just happen in the classroom.</i>
<b>T</b>	<b>EAMWORK</b> <i>There are plenty of opportunities for collaboration.</i>
<b>I</b>	<b>DEAS</b> <i>Everyone's ideas and questions are valued.</i>
<b>V</b>	<b>OCABULARY</b> <i>There is lots of discussion using scientific vocabulary.</i>
<b>E</b>	<b>NTHUSIASTIC</b> <i>We love science!</i>



Wherever possible, we link science learning with other curriculum areas such as maths, DT and computing, as well as making the most of our wonderful school grounds by giving children a rich outdoor scientific and environmental education.

At MPS, science is a practical, hands-on subject. Through an enquiry-based approach, we allow the children to experience the excitement of making discoveries of their own. Children develop their investigative skills as they practise the scientific method of designing and carrying out experiments. Working scientifically is at the heart of our curriculum, allowing us to research in different ways, just as professional scientists do!

We believe that every child deserves to experience the fascination of science and therefore we ensure that our lessons are adapted to meet the needs of all our pupils. As a result, we aim to ensure that all children leave MPS with an understanding of the importance of science in their futures.

We hold an annual Science Week in which we focus on inspiring children about different areas of science, particularly linking our school science with the wider world. As part of this, we organise a series of events including a science meet-and-greet session where children can speak to adults about how science is relevant in their lives.

Miss S Hodkinson (Science leader)



Children love exploring and finding out new things.





We regularly make use of our wonderful school grounds.



We also explore science in environments beyond our school.



We understand how science is relevant for our futures.

# Menston Primary Science Curriculum

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
<b>Year 1</b>	<p><b>Percy the Park Keeper – what materials should Percy use to build a shelter?</b></p> <ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made.</li> <li>Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</li> <li>Describe the simple physical properties of a variety of everyday materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <p><b>What happens in Percy's park during the four seasons?</b></p> <ul style="list-style-type: none"> <li>Observe changes across the four seasons.</li> <li>Observe and describe weather associated with the seasons and how day length varies.</li> </ul>	<p><b>Why is Plop afraid of the dark?</b></p> <ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made.</li> <li>Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</li> <li>Describe the simple physical properties of a variety of everyday materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<p><b>Why are humans not like tigers?</b></p> <ul style="list-style-type: none"> <li>Identify and name a variety of common animals including birds, fish, amphibians, reptiles, 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>		<p><b>What birds and plants would Little Red Riding Hood find in the park?</b></p> <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> <li>Identify and name a variety of common animals that are birds,</li> </ul>		
<b>Working scientifically embedded throughout the year.</b>							
<b>Year 2</b>	<p><b>Why would a dinosaur not make a good pet?</b></p> <ul style="list-style-type: none"> <li>Explore and compare the difference 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 micro habitats</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> </ul>	<p><b>What is our school made of?</b></p> <ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials including woods, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>How can we grow our salad?</b></p> <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> </ul>	<p><b>How will 5 a day help me be healthy?</b></p> <ul style="list-style-type: none"> <li>Notice that animals including humans, have off spring 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 foods and hygiene.</li> </ul>			
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<p><b>Year 3</b></p>	<p><b>How can Usain Bolt move so quickly?</b></p> <ul style="list-style-type: none"> <li>• A topic which investigates the importance of nutrition for health. Children will learn:</li> <li>• The importance of a nutritious, balanced diet.</li> <li>• How nutrients water and oxygen are transported within the body.</li> <li>• How to describe the skeletal and muscular system of a human and its purpose.</li> </ul>	<p>Linked to our work on the Stone Age shelters.</p> <ul style="list-style-type: none"> <li>• Use observation and knowledge to answer scientific questions. Make a prediction with a reason. Draw conclusions and suggest improvements.</li> </ul>	<p><b>What do rocks tell us about the way the earth was formed?</b></p> <ul style="list-style-type: none"> <li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>• Describe in simple terms how fossils are formed.</li> <li>• Recognise that soils are made from rocks and organic matter.</li> </ul>	<p><b>How far can you throw your shadow?</b></p> <ul style="list-style-type: none"> <li>• To describe what dark is.</li> <li>• How light is needed in order to see.</li> <li>• Explain that light is reflected from a surface.</li> <li>• Explore and demonstrate how a shadow is formed.</li> <li>• Exploring shadow size.</li> <li>• Explain the danger of direct sunlight and how to stay protected.</li> </ul>	<p><b>How did the blossom become an apple?</b></p> <ul style="list-style-type: none"> <li>• To identify and describe the functions of different parts of flowering plants and trees.</li> <li>• What plants need in order to grow and survive.</li> <li>• To Investigate how water is transported within plants.</li> <li>• To explore the importance of flowers in the life cycle of a plant.</li> </ul>	<p><b>Are you attractive enough?</b></p> <ul style="list-style-type: none"> <li>• To explore and describe how objects move on different surfaces.</li> <li>• How some forces require contact and some do not.</li> <li>• How magnets can attract or repel and give a reason.</li> <li>• Describe how magnets work.</li> <li>• Predict whether objects will be magnetic and test this out.</li> </ul>
<p><b>Working scientifically embedded throughout the year.</b></p>						
<p><b>Year 4</b></p>	<p><b>What happens to the food we eat?</b></p> <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>	<p><b>Why the sound that our favourite pop group make is enjoyed by so many?</b></p> <ul style="list-style-type: none"> <li>• Identify how sounds are made, associating some of them with something vibrating.</li> <li>• Find patterns between the pitch of a sound and features of the object that produced it.</li> <li>• Find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> </ul> <p><b>How could we cope without electricity for one day?</b></p> <ul style="list-style-type: none"> <li>• Identify common appliances which run electricity.</li> <li>• Construct a simple series electrical circuit, identifying and naming its basic parts.</li> <li>• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple circuit.</li> <li>• Recognise some good common conductors and insulators.</li> </ul>	<p>Properties of Materials linked to The Iron Man and the 'Why is Leeds such a cool place to live?' topic.</p>	<p><b>How would we survive without water?</b></p> <ul style="list-style-type: none"> <li>• Compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>• Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.</li> <li>• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<p><b>Which wild animals and plants thrive in your locality?</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of living things (plants and animals) in the local and wider environment, using classification keys to assign them to groups.</li> <li>• Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<p><b>The major organs of the body - linked to The Ancient Egyptians.</b></p> <ul style="list-style-type: none"> <li>• Covered through the process of mummification.</li> </ul>
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<b>Year 5</b>	<p><b>Are we alone in the universe?</b></p> <ul style="list-style-type: none"> <li>• What can we see in the night sky?</li> <li>• Why is there life on Earth?</li> <li>• Would you want to be on a one-way mission to Mars?</li> <li>• What are craters and why are they on the surface of planets?</li> <li>• The relationship between the Sun, Earth and moon.</li> </ul> <p><b>Can you feel the force?</b></p> <ul style="list-style-type: none"> <li>• Study of forces: gravity, air resistance, water resistance and friction.</li> <li>• How force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.</li> </ul>	<p><b>Whitby beach science:</b></p> <ul style="list-style-type: none"> <li>• Understand how mixtures might be separated, through filtering, sieving and evaporating.</li> <li>• Demonstrate that dissolving, mixing and changes of state are reversible changes.</li> </ul>	<p><b>Could you be the next CSI investigator?</b></p> <ul style="list-style-type: none"> <li>• Compare and group materials.</li> <li>• Perform experiments to investigate properties of materials.</li> <li>• Demonstrate some irreversible changes where new materials are formed.</li> </ul>	<p><b>Do all plants and animals start life as an egg?</b></p> <ul style="list-style-type: none"> <li>• Life cycles of plants and animals</li> <li>• Birth, growth, development, and reproduction</li> </ul>
<p><b>Working scientifically embedded throughout the year.</b></p>				
<b>Year 6</b>	<p><b>Could dragons really exist?</b></p> <ul style="list-style-type: none"> <li>• How will you create your own classification system that will take account of all plants and animals within your school grounds?</li> <li>• How will you classify a group of children, animals and plants you have selected from a chosen environment?</li> <li>• What are the special attributes that some animals and plants have to help them survive?</li> <li>• What does the phrase 'only the strong survive' actually mean?</li> <li>• What are micro-organisms and how would you classify them?</li> </ul>	<p><b>Could you be the next gadget designer?</b></p> <ul style="list-style-type: none"> <li>• Can you create a circuit with: switch; buzzer; motor?</li> <li>• What do you understand about cells and volts and how they impact on how electrical products work?</li> <li>• Can you design a gadget using an electric circuit with a part that needs to be sequenced?</li> </ul>	<p><b>What would a journey through your body look like?</b></p> <ul style="list-style-type: none"> <li>• What is pulse and why do we have one?</li> <li>• Why can the heart be described as the most important pump we have?</li> <li>• What happens to the oxygen we breathe?</li> <li>• Why could we describe blood as the body's river system?</li> </ul>	<p><b>How do things change?</b></p> <ul style="list-style-type: none"> <li>• Could we possibly have evolved from apes, monkeys or other primates?</li> <li>• What do fossils tell us about 'how things have changed'?</li> <li>• Who was Charles Darwin and why is he still a controversial figure?</li> <li>• Why do you not usually look exactly like your mum or dad?</li> <li>• Can you find out how animals who: live in the cold; around the equator; under the ground; and, in trees: are specifically adapted to live and survive there?</li> <li>• How is the human skeleton suited to our life style?</li> <li>• Can you create a group dance that requires you to use different balances, giving consideration to your skeletal position?</li> </ul> <p><b>How could you light up your life?</b></p> <ul style="list-style-type: none"> <li>• How do you know that light travels faster than sound?</li> <li>• How can you set up an experiment to show that light travels in straight lines?</li> <li>• How do your eyes work?</li> <li>• Can you design a spy gadget using mirrors to see around blind corners?</li> </ul>
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