



Learn Enjoy Succeed Together

# DINNINGTON FIRST SCHOOL SCIENCE CURRICULUM












## Curriculum Intent

The Science curriculum at Dinnington First School is designed to enable pupils to:


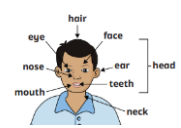










- observe the physical and natural world in a way that promotes curiosity and wonder
- use experimentation to satisfy curiosities and to provide answers to investigations
- develop a wide and varied scientific vocabulary that is used to articulate scientific knowledge and discoveries clearly.

Our Science curriculum is based around the White Rose Science scheme which ensures that the National Curriculum requirements are all met. Each block of Science is planned to promote learning through scientific enquiry. The learning is organised so that children can make links to prior learning as well as links across the curriculum resulting in a deeper and clearer understanding of the key scientific topics covered.






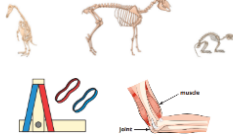
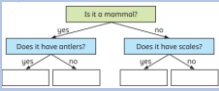




### Topic Title    Concepts    Skills

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
N	<ul style="list-style-type: none"> <li>• Colours around me</li> <li>• Observing and naming objects and their properties in my outdoor environment</li> </ul> 	<ul style="list-style-type: none"> <li>• My body is my own and we are all different</li> <li>• Looking after my body.</li> <li>• A sense a day – intro to senses.</li> </ul> 	<ul style="list-style-type: none"> <li>• Whales and animals that live under the sea</li> <li>• What can we see under the sea.</li> <li>• Describing animals</li> </ul> 	<ul style="list-style-type: none"> <li>• Where does my food come from?</li> <li>• What is on my plate?</li> <li>• What foods do we like or dislike?</li> <li>• Names of common fruit / veg</li> </ul> 	<ul style="list-style-type: none"> <li>• Growing beans and observing and talking about what happens.</li> </ul> 	<ul style="list-style-type: none"> <li>• Spiders, Snails and Caterpillars</li> <li>• Observing bugs in our garden.</li> </ul> 
R	<ul style="list-style-type: none"> <li>• Naming parts of the body and what they are for</li> <li>• Pictograms – eye colour</li> <li>• Senses – sweet and salty</li> <li>• Know that they have a skeleton</li> </ul> 	<ul style="list-style-type: none"> <li>• Intro to animals focusing on variation in colour/size and features</li> </ul>	<ul style="list-style-type: none"> <li>• Intro to habitats – live where my food is.</li> <li>• Hot and cold habitats</li> <li>• Ocean habitat study</li> </ul> 	<ul style="list-style-type: none"> <li>• Naming wider variety of foods and observing similarities and differences.</li> <li>• Comparing using the language heaviest/lightest</li> <li>• Pictogram favourite food</li> </ul> 	<ul style="list-style-type: none"> <li>• Who lives on the farm - farm animals and their young</li> <li>• Planting sunflowers</li> <li>• Observing different plants, naming plants and parts</li> </ul> 	<ul style="list-style-type: none"> <li>• Minibeasts study: Bees, butterflies, ladybirds &amp; Beetles.</li> <li>• Observing minibeasts – similarities / different</li> <li>• Habitats for minibeasts.</li> </ul> 



	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Y1	<p><b>Animals</b> – Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Use observations to group animals in different ways. <b>Seasons</b> – Record seasonal data and comment on any changes seen or felt. <b>Experiment &amp; Investigate</b> – Are all animals the same? Sort using different criteria. Label key features. <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 	<p><b>Human Body</b> – Name and identify the main parts of the body. Know the 5 senses and which parts of the body are associated with them. <b>Seasons</b> – Record seasonal data and comment on any changes seen or felt. <b>Experiment &amp; Investigate</b> – Investigate whether age is related to foot size. Investigate how different senses affect accuracy. Display results graphically or in a table. <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 	<p><b>Seasons &amp; Weather</b> – Record seasonal data and comment on any changes seen or felt. Identify and name different types of weather. Explain how the weather affects living things. Compare the weather in different parts of the UK and consider how this might affect humans and other living things. <b>Sustainability:</b> Create ways to support living things on our school site through winter. <b>Experiment &amp; Investigate</b> Measure rainfall, temperature, cloud coverage. Display results graphically or in a table. <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 	<p><b>Materials</b> Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. <b>Seasons</b> – Record seasonal data and comment on any changes seen or felt. <b>Experiment &amp; Investigate</b> – Investigate some properties of materials to help explore ideas such as freezing, absorbency, transparency. Display results pictorially, graphically or in a table. <b>(Chemistry / Working Scientifically )</b> <b>(Reading Maps &amp; Aerial Photographs / Field Work / Direction)</b></p> 	<p><b>Plants</b>– Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. <b>Sustainability:</b> -Why is it important to care for our planet? – Help create a better local environment for animals &amp; plants to live &amp; thrive. <b>Seasons</b> – Record seasonal data and comment on any changes seen or felt. <b>Experiment &amp; Investigate</b> – Carry out simple plant dissection. Create neat labelled diagrams. Sort and group plants into different groups <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 	<p><b>Where does my food come from?</b> – Children learn about the different parts of plants and which parts we eat as food for example: Roots: Carrots, onions. Stems: Celery, asparagus. Leaves: Lettuce, spinach. Flowers: Broccoli, cauliflower. Fruits: Apples, strawberries. Seeds: Peas, beans Children explore fruits, vegetables, and seeds, identifying them as plant products and learning where they come from. Identify what types of crops are grown by farmers. Sort different plants based on how they are used for food or how they are grown. <b>Seasons</b> – Record seasonal data and comment on any changes seen or felt. <b>Experiment &amp; Investigate</b> – Record the different types of plant foods offered on our school menu. <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 
Y2	<p><b>Animals Needs For Survival</b> – Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food. Know how and why humans need to keep clean &amp; understand in simple terms how germs are passed between people. <b>Experiment &amp; Investigate</b> – Investigate how heart rate changes with exercise. Identify and sort foods into categories. &amp; know which foods contribute to a healthy diet. <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 	<p><b>Materials</b> – Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <b>Experiment &amp; Investigate</b> – Investigate properties of materials and record results in tables, pictorially or graphically. Sort and classify materials. . <b>(Chemistry / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information)</b></p> 	<p><b>Plants: Light &amp; Dark</b> Use observational skills to examine and name a range of plants. Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Describe and identify features of a healthy / unhealthy plant. <b>Experiment &amp; Investigate</b> – Investigate what happens when plants are not given light / water / heat. <b>(Biology / Working Scientifically )</b> <b>(Identify, Classify &amp; Group, Display and present information, Fair Test)</b></p> 	<p><b>Living Things &amp; Habitats</b> – Understand what a habitat is. Identify habitats of familiar plants and animals. Describe and compare Polar, Desert woodland and micro habitats... Understand / create a simple food chain and say what might happen if one element was changed. Identify things that are living, dead or never alive. <b>Experiment &amp; Investigate</b> – Observe and identify living and dead things in our local environment. Identify habitats in our local environment. <b>(Biology / Working Scientifically )</b> <b>(Identify, observe carefully present information,)</b></p> 	<p><b>Habitats &amp; Sustainability</b> – Learn in detail about coastal habitats and how the plants and animals rely upon each other to survive. Create some ocean &amp; coastal food chains. Learn about plastic waste and its impact on animal habitats. Identify how we can reduce our plastic waste. <b>Experiment &amp; Investigate</b> – Investigate plastic waste in and around school. Display information pictorially, graphically or in a table. <b>(Biology / Working Scientifically )</b> <b>(Identify, observe carefully present information,)</b></p> 	<p><b>Growing UP</b> – Identify animals and their offspring. Know which animals lay eggs and which give birth to live offspring. Know the life cycle of humans and compare it to other mammals. Know the life cycles of other living things eg frogs and butterflies. Identify similarities between life cycles of different living things. <b>Experiment &amp; Investigate</b> – Sort and classify animals and their offspring. Observe and identify stages of a life cycle of a frog or butterfly in class. . Identify habitats in our local environment. <b>(Biology / Working Scientifically )</b> <b>(Identify, observe carefully present information,)</b></p> 



	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Y3	<p><b>Nutrition &amp; Diet</b> – 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. Identify the 5 food groups and understand how they make up a balanced diet. Begin to understand what effect each food group has on the body.</p> <p><b>Experiment &amp; Investigate</b> – sort and group a range of food items. Compare and contrast different diets including that of Vegetarians, herbivores and carnivores.</p> <p><b>Sustainability:</b> Children should understand simple negative impacts of food waste and should be able to suggest ways they can reduce their food waste in school. Display information pictorially, graphically or in a table.</p> <p><b>(Biology / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information)</p> 	<p><b>Rocks &amp; Fossils</b> – Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p> <p><b>Experiment &amp; Investigate</b> – Use observational skills to identify, group and classify sedimentary, igneous and metamorphic rocks. Test rocks for hardness, brittleness, buoyancy and reactivity. Investigate how rocks are used in our locality.</p> <p><b>(Chemistry / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information)</p> 	<p><b>Light</b> – Recognise that they need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change.</p> <p><b>Experiment &amp; Investigate</b> Group items as light sources / reflective artificial light sources. Investigate how light is reflected by different objects. Investigate how shadows change throughout the day. Investigate how distance from a light source affects a shadow. Display information pictorially, graphically or in a table.</p> <p><b>(Physics / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>Soils &amp; Plants</b> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal..</p> <p>Investigate the properties of different soil types</p> <p><b>Experiment &amp; Investigate</b> Investigate how water is transported through a plant.</p> <p>Investigate and model different methods of seed dispersal. Dissect and label the different parts of a plant. Investigate if the number of seeds in a pot affects the growth of plants.</p> <p>Investigate how different soil types affect growth. Display information pictorially, graphically or in a table</p> <p><b>(Biology / Chemistry / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>Forces &amp; Magnets</b> Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</p> <p>Describe magnets as having two poles</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p><b>Experiment &amp; Investigate</b> Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>Display information pictorially, graphically or in a table</p> <p><b>(Physics / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>Skeletons &amp; Movement</b> – Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Identify, locate and name bones in a variety of animals. Recognise some animals do not have a spine and have an exoskeleton.</p> <p>Learn how the skeleton, joints and muscles work together to allow movement</p> <p><b>Experiment &amp; Investigate</b> Compare and group and sort animals based on their skeletons.</p> <p>Create a model to demonstrate how a muscles contract and relax to control a joint.</p> <p><b>(Biology / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information)</p> 
Y4	<p><b>Living Things – Classification &amp; Food Chains</b> – Recognise that living things can be grouped in a variety of ways. Use the terms vertebrate and invertebrate correctly.</p> <p>Name the parts of a flower in different flowering plants.</p> <p>Investigate the plants and animals within the locality, and how biodiverse these local habitats are.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. Understand how food chains can be affected by changes to habitats.</p> <p><b>Experiment &amp; Investigate</b> Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Dissect and name the parts of a flower.</p> <p><b>(Biology / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>Habitats &amp; Sustainability</b> – Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p><b>Sustainability</b> Identify positive and negative impacts humans have on plant and animal habitats.</p> <p>Understand what deforestation is.</p> <p><b>Experiment &amp; Investigate</b> Use research to identify the impacts humans have on different habitats. Display information pictorially, graphically or in a table</p> <p><b>(Biology / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>Electricity</b> – Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors..</p> <p><b>Experiment &amp; Investigate</b> Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Use a circuit to test to see if a material is a conductor or not.</p> <p>Display information pictorially, graphically or in a table</p> <p><b>(Physics / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>The Digestive System</b> Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Learn about the teeth of a range of animals and link to their diet.</p> <p><b>Experiment &amp; Investigate</b> Use a model of the digestive system to explain what happens to food as it passes through the body.</p> <p>Investigate tooth decay caused by some foods and drink.</p> <p><b>(Physics / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>Sound</b> – Identify how sounds are made, associating some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>Explore the term 'pitch' and understand that it refers to how high or low a sound is.</p> <p>Learn how sound reaches the ear and how the different parts of the ear allow us to hear sounds.</p> <p><b>Experiment &amp; Investigate</b> Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it. Display information pictorially, graphically or in a table</p> <p><b>(Physics / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 	<p><b>States of Matter</b> – Learn that materials and objects can be grouped into solids, liquids and gases. Look at the properties of solids, liquids and gases and relate these to the common uses of materials.</p> <p>Understand that materials can change state and use the terms condensation and evaporation correctly.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature..</p> <p><b>Experiment &amp; Investigate</b> Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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 (°C). Display information pictorially, graphically or in a table</p> <p><b>(Chemistry / Working Scientifically)</b> (Identify, Classify &amp; Group, Display and present information, predict , fair test, variables, )</p> 