



Science progression document

Cheadle Catholic Junior School

Lower Key Stage 2 National Curriculum Expectation	Upper Key Stage 2 National Curriculum Expectation
<ul style="list-style-type: none">• Enable pupils to broaden their scientific view of the world around them.• Explore, talk about, test and developing ideas about relationships between living things and familiar environments.• They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information.• They should draw simple conclusions and use some scientific language.	<ul style="list-style-type: none">• Enable pupils to develop a deeper understanding of a wide range of scientific ideas.• Explore and talk about their ideas; asking their own questions.• At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.• They should also begin to recognise that scientific ideas change and develop over time.• They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.

	<ul style="list-style-type: none"> • Pupils should draw conclusions based on their data and observations. • Use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.
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Lower Key Stage 2: Working Scientifically	Upper key Stage 2: Working Scientifically
<p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • 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. 	<p>During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • 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 a degree of trust in results, in

- 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.
- Identifying differences, similarities or changes related to simple scientific ideas and processes.
- Using straightforward scientific evidence to answer questions or to support their findings.

oral and written forms such as displays and other presentation.

- Identifying scientific evidence that has been used to support or refute ideas or arguments.

CCJS Science overview

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
3	Rocks, Fossils and Soils	Animals including humans	Forces and magnets		Light and shadows	Plants
4	Living Things and Their Habitats	Animals Including Humans	States of Matter		Electricity	Sound
5	Earth and space, including forces		Properties of materials		Animals including humans - Life cycles, changes and reproduction	
6	Evolution and inheritance		Healthy bodies		Classification of living things and their habitats	

Animals including Humans			
Year 3	Year 4	Year 5	Year 6
<p>Pupils should be taught to: 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 that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Pupils should be taught to: Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Pupils should be taught to: Describe the changes as humans develop to old age.</p>	<p>Pupils should be taught to: Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans.</p>
Living Things and their Habitats			
Year 3	Year 4	Year 5	Year 6
<p>N/A</p>	<p>Pupils should be taught to: Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in</p>	<p>Pupils should be taught to: Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of</p>	<p>Pupils should be taught to: Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including</p>

	their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things.	reproduction in some plants and animals.	microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.
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Materials		
Year 3	Year 4	Year 5
Magnets Pupils should be taught to: compare how things move on different surfaces notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic	States of matter Pupils should be taught to: compare and group materials together, according to whether they are solids, liquids or gases 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) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Properties and changes of Materials Pupils should be taught to: compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes.

<p>materials Describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>		
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Light	
Year 3	Year 4
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Recognise that they need light in order to see things and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by solid objects. • Find patterns in the way that the size of shadows changes. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Electricity	
Year 4	Year 5
<ul style="list-style-type: none"> • 	

Forces	
Year 3	Year 5
<ul style="list-style-type: none"> • Compare how things move on different surfaces. • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • 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. • Describe magnets as having 2 poles. • Predict whether 2 magnets will attract or repel each other, depending on which poles are facing. 	<ul style="list-style-type: none"> • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. • Recognise that some mechanisms including levers, pulleys and g • ears allow a smaller force to have a greater effect.

Questioning and enquiry planning			
Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Ask some relevant questions and use different types of scientific enquiries to answer them. 	<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiries to answer them. 	<ul style="list-style-type: none"> • Begin to plan different types of scientific enquiries to answer questions, including recognising 	<ul style="list-style-type: none"> • Plan different types of scientific enquiries to answer questions, including recognising and controlling

<ul style="list-style-type: none"> • Begin to explore everyday phenomena and the relationships between living things and familiar environments. • Begin to develop their ideas about functions, relationships and interactions. • Raise their own questions about the world around them. • Begin to make some decisions about which types of enquiry will be the best way of answering questions. 	<ul style="list-style-type: none"> • Explore everyday phenomena and the relationships between living things and familiar environments. • Begin to develop their ideas about functions, relationships and interactions. • Raise their own questions about the world around them. Make some decisions about which types of enquiry will be the best way of answering questions. 	<p>and controlling variables where necessary.</p> <ul style="list-style-type: none"> • Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. • Begin to recognise some more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. • Recognise scientific ideas change and develop over time. • Select the most appropriate ways to answer science questions using 	<p>variables where necessary.</p> <ul style="list-style-type: none"> • Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. • Recognise more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. • Recognise scientific ideas change and develop over time. • Select the most appropriate ways to answer science questions using different types of scientific enquiry.
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