



Filey Junior School

Widening Horizons and Reaching Our Potential. Respecting the World and Each Other.
A Happy, Healthy and Positive Learning Community

Curriculum Pillars Science		
Question and Plan	Predict and Investigate	Observe and Conclude

Curriculum Themes Science <u>Risk assessment</u>			
Animals including humans	Light	Forces	Rocks
Plants, Living Things and their Habitats	Forces and Magnets	Earth and Space	States of Matter
Evolution	Sound	Electricity	Properties and Changes of Materials

Pillar Progression			
Question and Plan			
Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Ask broad questions relating to a particular area study. Set up a test to compare two things. Set up a fair test and explain why it is fair. 	<ul style="list-style-type: none"> Ask more focussed questions relating to a particular area of study Plan a simple enquiry to explore a given scientific question. 	<ul style="list-style-type: none"> Use previous knowledge and experience to ask relevant scientific questions. Plan different types of scientific enquiry with given variables. 	<ul style="list-style-type: none"> Ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to answer these questions;

	<ul style="list-style-type: none"> Choose own instruments and equipment to set up own investigation. Identify differences, similarities and changes related to an enquiry. 	<ul style="list-style-type: none"> Plan how to control given variables. 	<p>extending their previous knowledge and understanding</p> <ul style="list-style-type: none"> Plan different types of scientific enquiry, choosing own variables Plan how to control chosen (own) variables in an enquiry.
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Predict and Investigate

Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Use what is already known to make simple predictions. Carry out simple investigations that have been prepared for them with an identified variable. to answer a specific question. 	<ul style="list-style-type: none"> Make a prediction with a reason. Make careful and accurate observations, including the use of standard units. Precisely and accurately measure using a range of equipment (given). 	<ul style="list-style-type: none"> Plan and carry out different types of scientific enquiry with given variables Control given variables in an enquiry. Measure accurately and precisely using a range of equipment. 	<ul style="list-style-type: none"> Plan and carry out different types of scientific enquiry choosing own variables Make plausible predictions based on previous knowledge and experience and justify their reasons. Control chosen (own) variables in an enquiry. Measure accurately and precisely using a range of equipment (own chosen).

Observe and Conclude

Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Make careful and accurate observations, including the use of standard units. Complete diagrams, keys, 	<ul style="list-style-type: none"> Gather, record, classify and present data in different ways to answer scientific questions. 	<ul style="list-style-type: none"> Record data and results using scientific diagrams and labels, classification keys, tables, bar and line graphs 	<ul style="list-style-type: none"> Record data and results using (Year 5 plus) scatter graphs (selecting the most appropriate).

<p>bar charts and tables; using given scientific language.</p> <ul style="list-style-type: none"> Use findings to report in different ways, including oral and written explanations and presentations Identify differences, similarities and changes related to and enquiry 	<ul style="list-style-type: none"> Use observations and knowledge to answer scientific questions. Create my own diagrams, keys, bar charts and tables; showing knowledge of my scientific language. Use findings to report in different ways, including oral and written explanations, presentation. Draw conclusions and suggest improvements Identify differences, similarities and changes related to an enquiry. 	<p>(suggested by the teacher)</p> <ul style="list-style-type: none"> Use the outcome of test results to generate new questions / lines of enquiry (for future). Report findings from enquiries in a range of ways (given/ modelled) Explain conclusion from an enquiry using scientific language; reflecting on prediction. 	<ul style="list-style-type: none"> Use the outcome of test results to make predictions and set up a further comparative fair test Report findings from enquiries in a range of ways (choosing own layout) Explain a conclusion from an enquiry linked to my scientific knowledge, experience and understandings. Explain causal relationships in an enquiry Relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.
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Theme Progression

<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<p>Animals including Humans:</p> <ul style="list-style-type: none"> Identify the required nutritional needs of animals (focus on humans). Identify which animals have skeletons and muscles and why. 	<p>Animals including Humans:</p> <ul style="list-style-type: none"> Describe the digestive system in humans. Identify human and animal teeth (and function). Construct food chains 	<p>Animals including Humans:</p> <ul style="list-style-type: none"> Describe the changes as humans develop to old age. 	<p>Animals including Humans:</p> <ul style="list-style-type: none"> Human circulatory system - including the functions of the heart, blood vessels and blood. Impact of diet, exercise and drugs on the human body. Describe how nutrients and water are transported within animals (and humans).
<p>Rocks:</p> <ul style="list-style-type: none"> Compare and group rocks. 	<p>States of Matter:</p> <ul style="list-style-type: none"> Compare and group solid, 	<p>Properties and changes of materials:</p>	<p>Evolution:</p> <ul style="list-style-type: none"> Living things have changed -

<ul style="list-style-type: none"> Describe how fossils are formed. Recognise the rock cycle. Recognise that soils are made from rocks and organic matter 	<p>liquids and gases.</p> <ul style="list-style-type: none"> Explore the effect of heating and cooling on different materials. Evaporation and condensation in the water cycle. 	<ul style="list-style-type: none"> Compare and group materials based on their properties. Know some materials will dissolve Explain how to separate mixtures. Reversible and irreversible changes. 	<p>fossils provide historical information of changes.</p> <ul style="list-style-type: none"> Living things produce offspring of the same kin (Explore: How does this vary?) How plants and animals adapt to suit their environment.
<p>Forces and magnets:</p> <ul style="list-style-type: none"> Observe how magnets attract or repel each other and attract some materials and not others (comparing and sorting). Notice that some forces need contact between 2 objectives, but magnetic forces can act at a distance. Describe magnets as having 2 poles, predicting whether 2 magnets will attract or repel each other and why. Compare how things move on different surfaces and how that can be affected. 	<p>Electricity:</p> <ul style="list-style-type: none"> Construct and name simple circuits. Explore switches, conductors and insulators. 	<p>Earth and Space:</p> <ul style="list-style-type: none"> Describe the movement of the Earth in our solar system. Describe the movement of the Moon in relation to Earth. Explain day and night using the Earth's rotation. 	<p>Light:</p> <ul style="list-style-type: none"> Explain how light travels. Explain how we see objects. Explain why shadows have the same shape as the objects that cast them
<p>Plants, Living Things and their Habitats:</p> <ul style="list-style-type: none"> Describe the functions and parts of a flowering plant (including flowering trees). Explore the requirements for plant life and growth (and how they vary from plant to plant). Explore the life cycle of flowering plants (including pollination) Investigate the way in which water is transported within plants. Seed formation and seed dispersal. 	<p>Plants, Living Things and their Habitats:</p> <ul style="list-style-type: none"> Group living things in a variety of ways. Use classification keys. Recognise how environments change and the impact this can have. 	<p>Plants, Living Things and their Habitats:</p> <ul style="list-style-type: none"> Describe the differences in life cycles of a mammal, amphibian, insect and a bird. Describe the life processes and reproduction in plants and animals. 	<p>Plants, Living Things and their Habitats:</p> <ul style="list-style-type: none"> Classify living things (including microorganisms, plants and animals) Give reasons for classifying plants and animals based on specific characteristics.
<p>Light:</p> <ul style="list-style-type: none"> Understand why we need light, where it comes from and how to 	<p>Sound:</p> <ul style="list-style-type: none"> Identify how sounds are made through vibrations. 	<p>Forces:</p> <ul style="list-style-type: none"> Unsupported objects fall to Earth as a result of gravity. 	<p>Electricity:</p> <ul style="list-style-type: none"> Explain how the brightness of a bulb or loudness of a buzzer

<p>protect your eyes.</p> <ul style="list-style-type: none">● Notice light is reflected from surfaces.● Investigate how patterns are formed and how to change the size of a shadow.	<ul style="list-style-type: none">● Find patterns between pitch volume and the vibrations produced.● Understand how sound travels and how that changes over distance.	<ul style="list-style-type: none">● Identify the effects of air resistance, water resistance and friction.● Explore how levers, pulleys and gears can have an impact on the force needed to move an object.	<p>is affected by the voltage and cells in the circuit.</p> <ul style="list-style-type: none">● Compare variations of circuits.● Represent more complex circuits using diagrams and symbols.
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