



St Augustine's Catholic Academy

Science Intent

Knowledge in red aimed at Y1, Knowledge in green aimed at Y2, Knowledge in black aimed at both Y1 and Y2.

Year 1/2 Cycle A Topic	Physics Seasonal Changes (Y1) Home / UK
National Curriculum	<ul style="list-style-type: none"> • Observe the changes over the four seasons. • Observe the weather associated with the seasons, how day length varies.
Core Knowledge	<ol style="list-style-type: none"> 1. Know the names of the four seasons. Know the sequence of the four seasons and that they are cyclical. 2. Know the features of the seasons. Know the features of the seasons and how they compare. 3. Know we wear different clothes in different seasons to match the weather. Know and give reasons why some items of clothes are more suited to one season than another. 4. Know how to observe and describe the weather associated with Winter. Know how to record the Winter weather on a simple chart across the week/half term. 5. Know how to observe and describe the weather associated with Spring. Know the weather associated with Spring and compare to Winter. Know the day length changes and compare in two seasons. 6. Know weather can be measured through collecting and recording simple data. Know weather can be measured through collecting and recording simple data to find a pattern across a period of time.
Wider Knowledge	<p>Know the months of the seasons</p> <p>Know that the clocks go forward in spring and back in autumn.</p> <p>Know that days are shorter in winter and longer in summer.</p> <p>Know that it is dangerous to look directly at the sun at any time of year. Know different ways we can protect our eyes from sun damage.</p>
Skills	<ol style="list-style-type: none"> 1. Identify the four seasons using prompts (coat, sun cream, flowers) Identify and order the four seasons, recognising that they are cyclical. 2. Match scientific features to the season (colour of leaves, snow, sun, growth) Describe the features of the seasons, using scientific vocabulary. 3. Sort different clothing types into seasonal suitcases. Give reasons why certain clothes are better suited to different seasons and link this to changing weather types. 4. Through observation, during a local area walk in Winter, draw features associated with Winter. Through observation, during a local area walk in Spring, describe features associated with Spring.



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	<p>5. With support, find information about weather associated with Spring. Use a range of sources to find information about weather associated with Spring.</p> <p>6. Observe and describe the weather changes over five days, e.g. sun, cloud, rain Record pictorially. Observe, record and compare findings of rainfall changes over five days, focusing on volume of water using simple methods of collecting and measuring rainfall.</p>
Diversity Links	<p>Seasons – Know about the climate in other countries around the world.</p> <p>Plants and animals – To know about different plants and animals in various other countries around the world and compare this to our country where we live.</p>
Working Scientifically	<p>(Y1)</p> <ul style="list-style-type: none"> - Ask a few simple questions about the world around us. - Begin to use some different types of enquiry to answer questions. - With support, I can observe changes over time. - With direction, I am beginning to notice patterns. - Begin to perform simple tests. - Begin to discuss my ideas. - Begin to say what happened in an investigation. - Begin to collect simple data. - Begin to record data in a table my teacher has provided. - Begin to communicate my findings in a variety of ways. - Begin to talk about what they have found - Begin to explain how I carried out my enquiry - <p>Ask questions, set up a test, know if a test has been successful, say what has been learned, explain to someone what has been learned from an investigation, draw conclusions from the questions being asked, use measures to help find out more about the investigations undertaken.</p> <p>(Y2)</p> <p>Ask questions. Use equipment to make observations. Know how to set up a fair test. Draw conclusions from fair tests and explain what has been found out. Classify or group things according to a given criteria. Use measures to find out more about the investigation taken.</p>
Vocabulary	<p>Spring, summer, autumn, winter, hot, cold, rain, snow, cloud, weather, fog, ice, extremes, sun, mist</p>

Knowledge in red aimed at Y3, Knowledge in green aimed at Y4, Knowledge in black aimed at both Y3 and Y4.

Year 3/4 Cycle A Topic	<p>Chemistry Rocks (Y3)</p>
National Curriculum	<ul style="list-style-type: none"> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made from rocks and organic matter.



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Core Knowledge	<p>1. Know the three types of rock and how to group them based on their appearance. Know that what makes rocks different is how they were formed.</p> <p>2. Know how to group different types of rocks based on physical properties. E.g. hard, soft, permeable & impermeable rocks. Know what different rocks are used and give reasons for their use based on their properties.</p> <p>3. Know that the Earth is made up of different layers of rocks and soils. Know that the Earth is made up of different layers, describe and classify them.</p> <p>4. Know how to plan and carry out an investigation on different soils. Know how to identify types of soils. Know the properties of types of soils.</p> <p>5. Know what a fossil is. Know how a fossil is formed when living things are trapped within rock.</p>
Wider Knowledge	<p>Know the formation of igneous, sedimentary and metamorphic rocks (videos)</p>
Skills	<p>1. Match descriptions to rocks to identify their names. Match descriptions to rocks to identify their name and how they were formed.</p> <p>2. Group different types of rocks based on given criteria. Observe and compare rocks, categorising them, justifying choices.</p> <p>2. Plan, carry out and evaluate an experiment to compare the permeability of rocks. Make a simple prediction Make a simple prediction and give reasons why.</p> <p>3. Identify the different layers of soils. Explain how soil is formed.</p> <p>4. Identify the different layers that the Earth is made up of different layers of rocks and soils. Know that the Earth is made up of different layers and describe them.</p> <p>5. Describe in simple terms how fossils are formed. Explain the fossilisation process, comparing fossils to the animals they belong to.</p>
Scientific enquiry	<p>(Y3) Ask questions. Observe. Use research. Carry out tests to investigate a question. Set up a fair test with different variables. Explain to a partner why a test is fair. Measure carefully to add to scientific learning. Use equipment with more than one scales. Gather and record information using a chart, a matrix or a tally chart. Group information according to common factors. Use bar charts and other statistical tables to record findings. Know how to use a key to help understand information presented in a chart. Be confident to stand in front of others and explain what has been found out. Present findings using written explanations and include diagrams where needed. Make sense of findings and draw conclusions which help them to understand more about scientific information. Amend predictions according to findings.</p>



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	<p>Be prepared to change ideas as a result of what has been found out during a scientific enquiry.</p> <p>(Y4)</p> <p>Ask questions.</p> <p>Use research to find out.</p> <p>Carry out tests to see.</p> <p>Set up a fair test.</p> <p>Explain to others why a test that has been set up is a fair one.</p> <p>Measure carefully.</p> <p>Gather and record information using a chart, matrix or tally chart.</p> <p>Group information according to common factors.</p> <p>Use bar charts and other statistical tables.</p> <p>Present findings using written explanations and diagrams.</p> <p>Write up findings using a planning, doing and evaluating process.</p> <p>Make sense of findings and draw conclusions.</p> <p>When making predictions there are plausible reasons as to why they have done so.</p> <p>Able to amend predictions according to findings.</p> <p>Prepared to change ideas as a result of what has been found out during a scientific enquiry.</p>
Diversity Links	Rocks and soils – Look at Kusala Rajendran – an Asian female Scientist who studies earthquakes and their patterns.
Vocabulary	Fossil, soil, organic matter, topsoil, subsoil, base rock, cast fossils, trace fossils, permeable and impermeable. Hard, soft, slate, granite, chalk, marble, sandstone properties.

Knowledge in red aimed at Y5, Knowledge in green aimed at Y6, Knowledge in black aimed at both Y5 and Y6.

Chemistry Changes of materials (Y5)	
Y5/6 Cycle A Topic	
National Curriculum	<ul style="list-style-type: none"> • Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.
Core Knowledge	<ol style="list-style-type: none"> 1. Know that some materials dissolve in a liquid to form a solution. Know that solutions have a saturation point. 2. Know that some dissolved substances can be recovered and this is a reversible change. Know methods of how to recover a dissolved substance from a solution. 3. Know that some materials are mixed and can be separated. Know how mixtures might be separated through filtering and sieving.



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	<p>4. Know how to plan an investigation to demonstrate that dissolving, mixing and changes of state can be reversible changes.</p> <p>5. Know that some changes are irreversible, give examples. Know that some changes are irreversible, give examples and explain why it is a reversible or irreversible change.</p> <p>6. Know that some changes result in the formation of new materials, Know that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</p>
Wider Knowledge	<p>Know some examples of reversible and irreversible changes.</p> <p>Know that some materials dissolve in liquid to form solutions.</p> <p>Know how solids, liquids and gases mixtures might be separated, including through filtering, sieving and evaporating.</p>
Skills	<p>1. Dissolve materials in a liquid to form a solution. Record a solutions saturation point. <i>Dissolve sand, sugar, rice, flour, salt in water.</i></p> <p>2. Use the correct equipment to recover a dissolved substance from a solution (EVAPORATION). Predict how to recover a dissolved substance from a solution, based on scientific knowledge. Predict how to recover a dissolved substance from a solution, and explain why.</p> <p>3. Separate mixtures using provided scientific equipment. Choose from a range range of scientific equipment to separate mixtures.</p> <p>4. Identify the methods used to reverse the changes of dissolving (evaporation), mixing (magnets or sieving) and changes of state (melting or cooling). Identify the methods used and explain why using scientific vocabulary.</p> <p>5. Describe changes which are irreversible. Describe which changes are irreversible and explain why it is a reversible or irreversible change.</p>

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<p>Skills</p> <p>Working scientifically</p>	<p>(Y5)</p> <p>Set up an investigation where it is appropriate.</p> <p>Set up a fair test where needed.</p> <p>Set up an enquiry based investigation.</p> <p>Know that the variables are in a given enquiry and can isolate each one when investigating.</p> <p>Use all measurements as set out in Y5 mathematics, including capacity and mass.</p> <p>Use other scientific instruments as needed.</p> <p>Record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs, bar charts and line graphs.</p> <p>Make predictions based on information gleaned from investigations.</p> <p>Create new investigations which take account of what has been learned previously.</p> <p>Present information related to scientific enquiries in a range of ways including using IT.</p> <p>Use diagrams, as and when necessary to support writing.</p> <p>Evaluate when explain findings from scientific enquiry.</p> <p>Clear about what has been found out from recent enquiry and relate to this to other enquiries, where appropriate.</p> <p>Able to give an example of something focused on when supporting a scientific theory.</p> <p>Keep an on-going record of new scientific words that they have come across for the first time.</p> <p>Able to relate casual relationships when for example studying life-cycles.</p> <p>Frequently carry out research when investigating a scientific Principle or theory.</p> <p>(Y6)</p> <p>Set up an investigation where it is appropriate.</p> <p>Set up a fair test where needed.</p> <p>Set up an enquiry based investigation.</p> <p>Know that the variables are in a given enquiry and can isolate each one when investigating.</p> <p>Use all measurements as set out in Y6 mathematics, including capacity and mass.</p> <p>Use other scientific instruments as needed.</p> <p>Record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs, bar charts and line graph's.</p> <p>Make predictions based on information gleaned from investigations.</p> <p>Create new investigations which take account of what has been learned previously.</p> <p>Present information related to scientific enquiries in a range of ways including using IT.</p> <p>Use diagrams, as and when necessary to support writing.</p> <p>Evaluate when explain findings from scientific enquiry.</p> <p>Clear about what has been found out from recent enquiry and relate to this to other enquiries, where appropriate.</p> <p>Able to give an example of something focused on when supporting a scientific theory.</p> <p>Keep an on-going record of new scientific words that they have come across for the first time.</p> <p>Able to relate casual relationships when for example studying life-cycles.</p> <p>Frequently carry out research when investigating a scientific Principle or theory.</p>
<p>Diversity Links</p>	



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Vocabulary	Solubility, conductivity, transparency, thermal, evaporation, dissolve, filtering, melting, separate, reversible reaction, irreversible, liquid, solution, substance, gases, sieving, evaporating.
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