



## Year 8 Science Curriculum Map

|                  |  |  |  |  |   |   |
|------------------|--|--|--|--|---|---|
| <b>Overview</b>  | Year 8 students continue to gain more knowledge of individual concepts and apply the understanding of this knowledge to unfamiliar contexts. By connecting smaller ideas to more abstract ideas, students will be better prepared to apply these concepts when approaching an unfamiliar topic. This year's course allows students to work on ways of developing subject content knowledge and the enquiry skills to gain mastery of both. |  |  |  |   |   |
| <b>Year 8</b>    | Autumn 1   | Autumn 2   | Spring 1   | Spring 2   | Summer 1  | Summer 2  |
| <b>Topic</b>     | <b>Enquiry process.</b><br><br><b>Earth 2</b><br>1. Climate<br>2. Earth resources  | <b>Genes 1</b><br>1. Variation<br>2. Human reproduction<br><br><b>Forces 2:</b><br>1. Contact forces<br>2. Pressure  | <b>Organisms 2:</b><br>1. Breathing<br>2. Digestion<br><br><b>Waves 1:</b><br>1. Sound<br>2. Light   | <b>Matter 2 :</b><br>1. Elements<br>2. Periodic table  | <b>Energy 1:</b><br>1. Energy costs<br>2. Energy transfer<br><br><b>Energy 2:</b><br>1. Work<br>2. Heating and cooling  | <b>Ecosystems 2:</b><br>1. Respiration<br>2. Photosynthesis<br><br><b>Revision:</b><br>Year 8 topics<br>End of year test  |
| <b>Knowledge</b> | <b>Enquiry process:</b><br>Using investigations to work in a particular way to carry out fair scientific investigations.<br><br><b>Earth:</b><br>- Investigate the contribution that natural and human chemical processes make to our carbon dioxide emissions<br>- Predict the method used for extracting metal based on its position in the reactivity series  | <b>Genes:</b><br>- Graph data relating to variation and explain how it may lead to the survival of a species<br>- Relate advice to pregnant women to ideas about transfer of substances to the embryo<br><br><b>Forces:</b><br>- Investigate factors that affect the size of frictional or drag forces<br>- Investigate how pressure from your foot onto the ground varies with different footwear | <b>Organisms:</b><br>- Investigate a claim linking height to lung volume<br>- Evaluate how well a model represents key features of the digestive system<br><br><b>Waves:</b><br>- Relate changes in the shape of an oscilloscope trace to changes in pitch and volume<br>- Use ray diagrams to model how light passes through lenses and transparent materials | <b>Matter:</b><br>- Compare the properties of elements with the properties of a compound formed from them<br>- Sort elements using chemical data and relate this to their position in the periodic table | <b>Energy 1:</b><br>- Compare the running costs of fluorescent and filament light bulbs<br>- Explain the energy transfers in a hand-crank torch<br><br><b>Energy 2:</b><br>- Explain how an electric motor raising a weight is doing work<br>- Investigate how to prevent heat loss by conduction, convection and radiation | <b>Ecosystems:</b><br>- Use data from investigating fermentation with yeast to explore respiration<br>- Use lab tests on variegated leaves to show that chlorophyll is essential for photosynthesis |

|                          |  |   |  |  |  |  |
|--------------------------|--|---|--|--|--|--|
| <p><b>Skills</b></p>     | <p>Collect data • Devise questions • Plan variables • Test hypotheses</p> <p><b>Earth:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, collect data, estimate risks, examine consequences, raw theories.</p> | <p><b>Genes:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, critique claims, examine consequences, raw theories, interrogate sources.</p> <p><b>Forces:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, collect data, devise questions, plan variables, test hypothesis.</p> | <p><b>Organisms:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, critique claims, plan variables, test hypothesis, interrogate sources.</p> <p><b>Waves:</b><br/>Analyse patterns, draw conclusions, communicate ideas, construct explanations, devise questions, test hypothesis.</p> | <p><b>Matter:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, estimate risks, review theories.</p> | <p><b>Energy 1:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, communicate ideas, construct explanations, critique claims, justify opinions, examine consequences, interrogate sources.</p> <p><b>Energy 2:</b><br/>Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, collect data, devise questions, plan variables, test hypothesis.</p> | <p><b>Ecosystems:</b><br/>Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, collect data, devise questions, plan variables, test hypothesis, estimate risks, examine consequences.</p> |
| <p><b>Assessment</b></p> |  | <p>December – Test on Earth, Genes and Forces.</p>  |  | <p>End of Spring Term – Test on matter, waves and organisms.</p>   |  | <p>June – Test on all of Year 8 content</p>  |