

## What are the aims and intentions of this curriculum?

The Year 7 Curriculum Intent is developed to inspire and challenge our students at Rosedale College of all abilities and aspirations. The content is presented in such a manner that forms the foundation on which our students will garner their knowledge throughout Key Stage 3. This is taught in the order that allows our students to have a strong background. This comprises practicals- separation techniques and movement of substances, chemical reactions-acids and alkalis, making salts and chemical reactions of metals, etc. This topic lends to and is all linked to areas of the content where it would be most appropriate to teach students to embed skills and knowledge.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	<p>Introduction to Science Skills. A precursor to practical activity</p> <p><u>Chemistry</u></p> <p style="text-align: center;"><b>Matter</b></p> <ul style="list-style-type: none"> <li>• Particle model</li> <li>• Separating Mixtures</li> </ul>	<p>At the start of each major section our Alliance created learning objectives from the Mastery Goals (as shown in our SOW). The Learning objectives are listed under the headings of Knowledge, Application and Extension.</p>	<p>Each objectives include important skills that need to be practiced for our Students to become fluent; specific facts that they need to remember, and the important concepts and scientific terms.</p>	<ul style="list-style-type: none"> <li>- The know questions</li> <li>- Apply questions</li> <li>- Extended questions</li> <li>- Enquiry questions</li> </ul>
Autumn 2	<p><u>Chemistry</u></p> <p style="text-align: center;"><b>Reactions</b></p> <ul style="list-style-type: none"> <li>• Metals and non-metals</li> <li>• Acids and alkalis</li> </ul> <p style="text-align: center;"><b>Earth</b></p> <ul style="list-style-type: none"> <li>• Earth Structure</li> <li>• Universe</li> </ul>	<p>Students will learn:</p> <ul style="list-style-type: none"> <li>- About the relative reactivity of metals and reactivity series</li> <li>- That the pH scale can be used to describe acidic, neutral and alkaline solutions</li> <li>- About the processes in the rock cycle and how they convert rock from one type to another.</li> </ul>	<p>Students are able to:</p> <ul style="list-style-type: none"> <li>- Carry out practical activities with great accuracy.</li> <li>- Deduce a word equation to describe chemical reactions.</li> <li>- Use data and observations from virtual experiments to determine the pH of solution and explain what they show.</li> <li>- Identify the causes of weathering and erosion and describe how they occur.</li> <li>- Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year.</li> </ul>	<p>Enquiry:</p> <ul style="list-style-type: none"> <li>- Making a reactivity series</li> <li>- Which is the best indigestion remedy?</li> <li>- Modelling stages in the rock cycle</li> </ul> <p>The Big Idea End of Chapter Assessment</p>

<b>Spring 1</b>	<u>Biology</u> <b>Organisms</b> <ul style="list-style-type: none"> <li>• Movement</li> <li>• Cells</li> </ul> <b>Ecosystem</b> <ul style="list-style-type: none"> <li>• Interdependence</li> <li>• Plant reproduction</li> </ul>	Students will learn: <ul style="list-style-type: none"> <li>- That the human skeleton supports and protects us, allows us to move and makes our blood cells.</li> <li>- That multi-cellular organisms are arranged into cells, tissues, organs and organ systems.</li> <li>- That organisms in a food web depend on each other, so a change in one population leads to changes in others.</li> <li>- That plants reproduce sexually to produce seeds, which are formed following fertilization in the ovary.</li> </ul>	Students are able to: <ul style="list-style-type: none"> <li>- Explain how parts of the skeleton relate to the way it works.</li> <li>- Use features of cells to suggest what kind of tissue or organism they come from.</li> <li>- Describe how the number of predators and prey changes over time.</li> <li>- Describe parts of the flower and explain their function.</li> </ul>	<ul style="list-style-type: none"> <li>- Key facts</li> <li>- Worked examples</li> <li>- Extended questions</li> </ul>
<b>Spring 2</b>	<u>Biology</u> <b>Genes</b> <ul style="list-style-type: none"> <li>• Variation</li> <li>• Human reproduction</li> </ul> <u>Physics</u> <b>Forces</b> <ul style="list-style-type: none"> <li>• Speed</li> <li>• Gravity</li> </ul>	Students will learn: <ul style="list-style-type: none"> <li>- That there is variation between individuals of the same species.</li> <li>- That the menstrual cycle prepares the female for pregnancy and stops if the egg is fertilized by a sperm.</li> <li>- About the effect of a resultant force on the motion of an object.</li> <li>- That every object exerts a gravitational force of attraction on every other object.</li> </ul>	Students are able to: <ul style="list-style-type: none"> <li>- Explain whether characteristics are inherited, environmental or both.</li> <li>- Explain why some substances are passed from the mother to the foetus.</li> <li>- Sketch distance-time graphs showing the changing speed of an object and label the changes in motion shown on the graph.</li> <li>- How to calculate the weight of an object using the formula: <math>\text{weight (N)} = \text{mass (kg)} \times \text{gravitational field strength}</math>.</li> </ul>	<ul style="list-style-type: none"> <li>- The left-hand rule (calculation)</li> <li>- Gluestick (graph)</li> <li>- The Big Idea End of Chapter Assessment</li> </ul>
<b>Summer 1</b>	<u>Physics</u> <b>Electromagnetism</b> <ul style="list-style-type: none"> <li>• Voltage</li> <li>• Resistance</li> </ul> <b>Energy</b> <ul style="list-style-type: none"> <li>• Energy costs</li> <li>• Energy Transfers</li> </ul>	Students will learn: <ul style="list-style-type: none"> <li>- That voltage is an electrical push from the battery, or the amount of energy per unit of charge transferred through the electrical pathway.</li> <li>- That components with resistance reduce the current flowing and shift energy to the surroundings.</li> <li>- Some examples of renewable and non-renewable energy resources.</li> <li>- How the energy of an object depends on its speed, temperature, height or whether it is stretched or compressed.</li> </ul>	Students are able to: <ul style="list-style-type: none"> <li>- Draw a circuit diagram to show how voltage can be measured in a simple circuit.</li> <li>- Use the ratio of voltage across a component to current through it to determine the resistance.</li> <li>- Represent the energy transfers from a renewable or non-renewable resource to an electrical device in the home.</li> <li>- Calculate the useful energy and the amount dissipated, given values of input and output energy.</li> </ul>	<ul style="list-style-type: none"> <li>- Extended questions</li> <li>- Enquiry questions</li> <li>- The left-hand rule (calculation)</li> </ul>

## Summer 2

### Physics

#### **Waves**

- Sound
- Light

#### Students will learn:

- That higher-pitched sounds have a greater frequency (and therefore a shorter wavelength).
- The definitions of the terms incident ray, reflected ray, normal line, angle of reflection, angle of incidence, refraction, absorption, scattering, transparent, translucent, opaque, convex lens, concave lens and retina.

#### Students are able to:

- Describe the amplitude and frequency of a wave from a diagram or oscilloscope picture.
- Draw ray diagrams to show how light reflects off mirrors, forms images and refracts.

#### Enquiry:

- Heliographs

The Big Idea End of Chapter Assessment