

### Year 7 Science Long Term Plan

| Term  | Biology Intent                                | Biology Content  | Chemistry Intent  | Chemistry Content  | Physics Intent   | Physics Content   | Method of assessment  |
|-------|---|--|---|--|--|---|---|
| 1 & 2 | The cell is the unit of living organisms.     | There are similarities and differences between plant cells, animal cells and unicellular organisms; the function of the human skeleton. This feeds forward to work on genetic information. | Students study the particle model for the three states of matter.             | The names of the processes to change state. This then moves on to mixtures and how they differ from pure chemicals and the separation techniques that can be used to change mixtures. This feeds forward to work on elements and compounds.  | Students study the motion of objects and how this can be represented graphically.      | Students analyse a range of forces acting on objects, including the concept of pairs of forces, contact forces and non-contact forces. They then go on to measure frictional forces. This feeds forward to work on contact forces.  | <ul style="list-style-type: none"> <li>Extended examination question for each discipline.</li> <li>End of unit test for each discipline.</li> </ul> |
| 3 & 4 | Students study the content of a healthy diet, | How food is digested using their knowledge of cells and organs and the effects of recreational drugs. This feeds forward to work on respiration.   | Students study and use the particle model to describe elements and compounds. | Students understand that the smallest particles of elements are actually atoms and learn the basic Dalton model for an atom. Students understand how elements exhibit patterns and trends in their properties, and how the Periodic Table represents these patterns and trends visually. This develops into how to name compounds and interpret formulas. Students learn how to observe chemical reactions and | Students enhance their understanding of forces by further studying their applications; | Students look at the turning effects of forces and the tools designed to use this effect: levers and other simple machines. They consider energy transfers and conservation of energy, then pressure on a surface and in gases and liquids. All these concepts are brought together at the end of the term in a discussion of hydraulic machines. This feeds forward to work on energy. | <ul style="list-style-type: none"> <li>Extended examination question for each discipline.</li> <li>End of unit test for each discipline.</li> </ul> |

|       |   |   |   |   |   |   |   |
|-------|---|---|---|---|---|---|---|
|       |   |   |   | describe them in word equations. This feeds forward to work on the reactivity series.   |   |   |   |
| 5 & 6 | Students study how genetic information is passed from parent to offspring | How evolution is driven by natural selection. This builds on from students work on cells and why cells are different from each other. This feeds forward to work on reproduction. | Students study and recap on the structure of the Periodic Table and investigate the reactivity of metals and the acidity of different oxides. | They then discover the difference between chemical and physical change, in terms of particle arrangements and look at the characteristics of exothermic, endothermic, combustion, oxidation and reduction reactions. This feeds forward to work on acids and bases. | Students study the nature and effects of static electricity followed by current, voltage and resistance in circuits and, finally, magnetism and electromagnetism. | The essential points to cover are: charges and charging by friction, electrostatic effects, current in circuits and at junctions, voltage and energy, resistance, simple magnetism and magnetic fields and, finally, electromagnets and their applications which builds on the prior learning about forces. This feeds forward to work on energy. | <ul style="list-style-type: none"> <li>• Extended examination question for each discipline.</li> <li>• End of unit test for each discipline.</li> </ul> |