Overall Curriculum Aim:

Develop a love of science and intellectual curiosity whilst embedding the knowledge and skills required to be successful at GCSE and beyond.

Scheme for Learning

Curriculum Area – Science

Overview – Year 8 Science 2021-22

Personnel Responsible – Mrs. R. Cooper
Quality Assured by – Mr. J. Anderson (AVP)

Exam Board/Qualification at KS4 – AQA Trilogy/Separate

Assessment Cycle	Topic/Unit Title – *Big Questions*	Rationale/Skill Development	Link to Other Curriculum Areas
1	The Periodic Table, Evolution and Heat Transfer. BIG Questions: C: How are the elements in the Periodic Table different from one another? B: How and why have different species evolved over time? P: How is heat transferred?	Students will develop an understanding of the Periodic Table and the varying physical and chemical properties of different elements and apply this knowledge to their placement on the Periodic Table. Students will develop their knowledge of the particle model gained in Year 7 and apply it to heat transfers. Lastly, students will develop an understanding of evolution; explain why it happens; suggest evidence for evolution and analyse data to support the theory of evolution (development of scientific thinking). Students will develop their practical skills through a number of investigations.	Atoms and Elements (Y7 Cycle 1, Y9 Cycle 2) Particle Model (Y7 Cycle 1) Types of Energy (Y7 Cycle1, Y9 Cycle 1) Cells (Y7 Cycle 1) Ecosystems (Y7 Cycle 4, Y10 Cycle 4) Evolution (Y10 Cycle 4) Links to AO1, AO2 and AO3.
2	Breathing, Forces, Respiration. BIG Questions: P: What do forces do? C: How is energy transferred in a reaction? B: What happens when I breathe?	Students will develop an understanding of different forces and apply this knowledge to explain an objects motion. Students will be able to analyse distance-time graphs to calculate speed. Students will further their knowledge gained in Year 7 (organ systems and cells) and explore the respiratory system. Students will identify key components of this system and will link this knowledge to the dangers of smoking. Lastly, students will develop and understanding of respiration, why it is important and how it is used in industry.	Cells (Y7 Cycle 1, Y9 Cycle 1) Gravity (Y7 Cycle 1, Y10 Cycle 1) Organisation (Y7 Cycle 1, Y10 Cycle 2) Hooke's Law (Y10 Cycle 1) Motion (Y10 Cycle 2) Links to AO1, AO2 and AO3.
3	Magnetism, Photosynthesis, Climate Change. BIG Questions: P: How do magnets interact? C: What will Earth be like in the future? B: How do plants create food?	Students will develop their knowledge from primary school and Year 7 on magnets and the law of attraction. Students will then apply this knowledge to understand where our electricity comes from. Students will develop their analysis skills by analysing and evaluating data that suggests different causes of climate change. Students will then use these skills to justify their beliefs. Students will then develop knowledge on the carbon cycle and key processes within it, such as photosynthesis. Students will develop their practical and analytical skills by investigating different factors that affect photosynthesis.	Energy (Y7 Cycle 2, Y9 Cycle 1) Power Stations (Y7 Cycle 2) Plant Cells (Y7 Cycle 1, Y9 Cycle 1) Photosynthesis (Y10 Cycle 2) Climate change (Y10 Cycle 4) Carbon Cycle (Y10 Cycle 4) Links to AO1, AO2 and AO3.
4	Moments, Chemical Reactions, Digestion. P: How does physics explain our daily lives? C: How is energy transferred in a reaction? B: What happens when we eat?	Students will develop their knowledge on forces from Cycle 2 to explain moments and work done. Students to develop their numeracy skills by using formulae to calculate work done and moments. Students will learn how to rearrange formulae. Students will apply knowledge gained from previous cycles on chemical reactions to new knowledge in this cycle: endothermic and exothermic reactions. Students will develop knowledge on the process of digestion and nutrients. Students practical skills will be developed through numerous opportunities this cycle (food tests, endothermic reactions and exothermic reactions).	Forces (Y7 Cycle 2, Y10 Cycle 1) Organisation (Y7 Cycle 1) Digestion (Y9 Cycle 3) Respiration (Y8 Cycle 2, Y10 Cycle 2) Energy Profiles (Y10 Cycle 2) Links to AO1, AO2 and AO3.