

Overview Document 2026/2027

Curriculum Area: Science

Year Group: 8 (ACE)

Personnel Responsible: PPR

Quality Assured by: SKO

Cycle	Topic/Unit Title – Big Question	Content Coverage	Skill development and links to other areas of this subject's curriculum
1	What is the most important factor in an ecosystem? How are elements in the periodic table different from one another? How is heat transferred?	Biology Adaptations; Habitats; Ecosystems; Evolution; Extinction. Chemistry Metals and non-metals; Periodic Table; Group 1 Metals; Rusting. Physics Conduction; Insulation and Methods of Insulation.	Biology content builds on knowledge from Year 7 Cycle 4 and provides students with knowledge needed for Year 8 Cycle 3 and Year 11 Cycle 2. SMSC skills (human impact on habitats). Students will learn the foundation knowledge needed for all future Chemistry learning in Year 8, as well as other years. Scientific enquiry skills developed through rusting investigation. SMSC link to materials in everyday life. Knowledge from Year 7 Cycle 1 of particle model applied to develop an understanding of how heat is transferred through different materials. Enquiry skills developed through conduction practical and insulation practical. Knowledge of variables from Year 7 applied to insulation practical. SMSC skills developed when looking at home insulation. Numeracy skills developed through practical work (use of thermometer and calculating temperature changes).
2	What happens when I breathe? What happens in a chemical reaction? What do forces do?	Biology Organs systems; Lungs; Breathing; Smoking. Chemistry Elements; Compounds; Chemical Reactions (reversible and irreversible) Physics Forces; Friction; Air Resistance; Gravity; Speed.	Builds on knowledge from Year 7 Cycle 2 (organ systems and health). Links to knowledge in Year 10 Cycle 2. SMSC skills developed when looking at impact of smoking on health. Links to Year 8 Cycle 1, Year 9 Cycle 2 and future GCSE Chemistry. KS2 links to reversible changes. SMSC links to everyday chemical changes (wider understanding of the world). Students will apply knowledge from Year 7 Cycle 1 (forces) to development an understanding of each force. Links to Year 10 Cycle 4. Students will develop scientific enquiry skills when investigation how different forces affect objects motions (helicopter practical and ramp practical).
3	How do plants create food? What will Earth be like in the future? How do magnets interact?	Biology Photosynthesis Chemistry Global Warming; Combustion; Acid Rain; Fire Safety. Physics Magnets; Electromagnets; Magnetic Fields.	Builds on knowledge from Year 7 Cycle 1 (plant systems). Students to understand that plants need sunlight to produce food. Students will apply knowledge to investigate (scientific enquiry skills) how light affects the rate of photosynthesis. Links to Year 10 Cycle 2 and Year 11 Cycle 2. Links to Year 8 Cycle 1 (impact on habitats). SMSC awareness of how humans are affecting global warming. Combustion builds on knowledge of chemical reactions from Year 8 Cycle 2. Students to build on knowledge of forces (Year 8 Cycle 2) to understand how magnets work. Scientific enquiry skills developed through electromagnet practical. Numeracy skills developed.
4	What happens when we eat? How is energy transferred in a reaction? How can we use energy transfers?	Biology Digestion; Health; Disease. Chemistry Exothermic and Endothermic reactions. Physics Energy; Renewable Energy; Non-renewable Energy; Joule Island.	Links to Year 7 Cycle 2 and Year 8 Cycle 2 (organ systems). SMSC awareness of diet and its impact on health. Students will build on knowledge gained in Cycle 2 (chemical reactions) to understand that some reactions release/take in energy. Enquiry skills developed through the use of practical work to aid theory. Numeracy skills developed through measuring energy changes and recording results (thermometer and scales). Students to begin to develop an understanding of what energy is and how this is useful to humans (electricity). SMSC awareness of different energy resources (links to Year 8 Cycle 1 and 3-human impact on ecosystems and habitats).