Mastery:
Introduce:
Analyse
Communicate
Evaluate
Solve

Key Stage 2 Curriculum
Asking questions
Making predictions
Setting up tests
Observing & Measuring
Recording data
Interpreting & communicating results
Evaluating

Sandbach School Science Curriculum:

Year 8 Science Curriculum Sequence

Intent:To build on prior knowledge from Year 7: Students will revisit in greater depth of 10 key topics of forces, electromagnetism, energy, waves, matter, reactions, earth, organisms. In addition they will secure their understanding of the scientific method and begin to use this more independently.

HT1	HT2	HT3	HT4	HT5	HT6
Spain (Blended Project inc respiration) **7J Current electricity**	**7F Acids & Alkalis** **8A food & nutrition** **8E Combustion**	**8I Fluids** **8B plant reproduction**	**8F Periodic table** **8C Breathing & respiration**	**8K Energy transfer** **8D Unicellular organisms** **8H rocks**	**8L Earth & Space** **9A Genetics & evolution**
Why teach Spain project & electricity here? This project provides and introduction to photosynthesis and Respiration and links these topics to agriculture & Geography. The electricity topic provides a link from electricity KS2 to the more complex circuits and electricity in KS4 and KS5.	**Why teach acids & Alkalis, combustion and food & nutrition here?** Acids & Alkalis is an introduction to chemicals reactions. This follows on with combustion later in this term Food and nutrition follows on from cells tissues and organism and links to respiration.	**Why teach Fluids & plant reproduction here?** Teaching these modules here is a link to forces in Y7 and forces and motion in year 9. The plant reproduction allows students to move from animal reproduction in year 7 and hormones in year 10.	**Why teach Periodic table an Breathing & respiration here?** Periodic table links the topics of atoms and elements in year 7 with the Year 9 topics of atoms elements and compounds. The breathing and respiration links to the Spain topic and cells and organisms in year 7	**Why teach energy transfers, unicellular & rocks here?** Energy transfers provides a link between energy in Y7 and the KS4 energy topic in year 9. Unicellular organism provides a bridge between a variety of topics in year 7 and the energy transfers topics in year 9.	**Why teach earth & Space and genetics & evolution here?** Earth and space feeds from Y7 forces and links to the forces and motion topics in year 9. A good group here supports calculations in KS4 and maths. Genetics and evolution links ecosystems in year 7 and Y11 evolution and inheritance topics. A good understanding of this will allow progression to KS5.
National Curriculum Links Pupils will: ▪ Use models to explain the theory of how electricity works. ▪ Measure Electric current, voltage in circuits, have an understanding of series and parallel circuits. ▪ The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops	**National Curriculum Links** Pupils will: ▪ defining acids and alkalis ▪ The pH scale for measuring acidity/alkalinity; and indicators ▪ combustion, thermal decomposition, oxidation and displacement reactions ▪ The human diet: carbohydrates, lipids, proteins, vitamins, minerals, dietary fibre and water ▪ the tissues and organs of the human digestive system	**National Curriculum Links** Pupils will: ▪ pressure in liquids, increasing with depth; upthrust effects, floating and sinking ▪ Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation.	**National Curriculum Links** Pupils will: • Understand the principles underpinning the Mendeleev periodic table • how patterns in reactions can be predicted with reference to the periodic table. • the process of anaerobic respiration in humans and micro-organisms, including fermentation, and a word summary for anaerobic respiration	**National Curriculum Links** Pupils will: ▪ Processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels. ▪ the role of diffusion in the movement of materials in and between cells ▪ the structural adaptations of some unicellular organisms	**National Curriculum Links** Pupils will: ▪ our sun as a star, other stars in our galaxy, other galaxies ▪ the seasons and the Earth's tilt, day length at different times of year, in different hemispheres ▪ Calculations of gravitational force on earth and other celestial bodies. ▪ Variation between organisms, meaning some organisms compete more successfully, which can drive natural selection
Teaching Spain project & electricity here Supports: ▪ Geography land use and climate ▪ All Language schemes at KS4 ▪ Ks4 bioenergetics Y10 ▪ KS4 electricity Y9 ▪ 8k energy	**Teaching acids & Alkalis, combustion and food & nutrition here supports:** • Y9 chemical reactions • Y9 Organisation. • Y10 carbon cycle	**Teaching teach Fluids & plant reproduction here supports:** • Y9 forces and density • Y10 hormones • Y11 genetics • PSHCE relationships	**Teaching Periodic table an Breathing & respiration here supports:** • GCSE PE respiration • Y10 bioenergetics • C2 periodic table Y10 • KS5 Organisms exchange with the environment	**Teaching energy transfers, unicellular & rocks here supports:** Y9 Energy transfers Y10 Immunity Y10 cell and organism Y10 earth and atmospheric Science Physical geography rocks	**Teaching earth & Space and genetics & evolution here supports:** Y9 forces and motion Y11 waves. Y11 inheritance KS5 evolution
Spain project & electricity feed from: ▪ Yr 7 cells and organisms ▪ KS2: Drawing inferences ▪ KS2: Living things and their habitats ▪ Our School in Y7 ▪ Geography land use and climate	**Acids & Alkalis, combustion and food & nutrition feeds from:** ▪ KS2: Understanding range of texts ▪ KS2: Thematic links ▪ Crime and Detection in Y7 ▪ KS3 Cooking & Nutrition	**Fluids & plant reproduction feeds from:** ▪ Y7 particles ▪ Y7 animal reproduction	**Periodic table an Breathing & respiration feed from:** Y7 atoms elements and compounds Y7 mixtures and separation Y8 food and nutrition	**Energy transfers, unicellular & rocks feeds from:** ▪ Y7 energy ▪ Y7 cells and organism ▪ Geography land use in Project	**Earth & Space and genetics & evolution feeds from:** • Year 7 forces • Year 7 reproduction • Year 7 cells and organisms