



Sandbach School Science Curriculum:

Introduce:

- Analyse
- Communicate
- Evaluate
- Solve

Key Stage 2 Curriculum

- Asking questions
- Making predictions
- Setting up tests
- Observing & Measuring
- Recording data
- Interpreting & communicating results
- Evaluating

Year 7 Science Curriculum Sequence

Intent: To build on prior knowledge from KS2: Students will develop an awe and wonder of science through the study of 10 key topics of forces, electromagnetism, energy, waves, matter, reactions, earth, organisms. In addition they will begin to develop an understanding of the scientific method.

	<u>HT2</u>	<u>HT3</u>	<u>HT4</u>	<u>HT5</u>	<u>HT6</u>
Our School (Blended Project) 7A Cells and Organisms	7E Mixtures & Separation 7B Reproduction 7F Acids & Alkalis	7J Current electricity 7C Muscles & Bones 7G Particle model	7D Ecosystems 7K Forces	7L Sound & light 7H Atoms, element & compounds	8A Food & Nutrition 7I Energy review
Why Our School & 7A? This initial cross-curricular scheme supports the transition between KS2 and KS3, creating a sense of academic familiarity which encourages students to engage with Science at KS3. 7A has a clear link between organisms in KS2 and further modules in KS3/4	Why These modules? By teaching an introduction to Cells, mixtures and separation and reproduction we will provide a basis for Cells. Mixtures introduces ideas of SOM and separating different substances. Reproduction	Why These modules? Particles & electricity are key topics throughout KS4/ 5 gaining a foundation early on allows progress through the further curriculum. M&B allows links to be made from real life sports to Science.	Why These modules? Ecosystems & forces are Key topics throughout the KS3, 4 & 5 curriculum. Ecosystems allow students to demonstrate an understanding of interdependence in Science and Geography A good foundation in these topics allows students to access complex topics later in the curriculum.	Why These modules? Sound & light builds on the energy topic at the beginning of Y7. It is also a foundation for Waves in KS4. A, E & Care fundamentals for chemistry and introduce the language of chemical equations	Why These modules? Food and nutrition links to Cells & ecosystems earlier in Y7. It also supports Y9 enzymes and KS5 digestion. 7L energy review here allows the energy topic from the project to be revisited by a science specialist.
National Curriculum Links Pupils will: <ul style="list-style-type: none"> use appropriate techniques, apparatus, and materials during practical work, paying attention to health and safety. fuels and energy resources the properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure changes of state in terms of the particle model. Cell structure of animals and plants Microscope use and preparation of samples 	National Curriculum Links Pupils will: <ul style="list-style-type: none"> Understand reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems. simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography Define acids and alkalis Use the pH scale for measuring acidity/alkalinity; and indicators 	National Curriculum Links Pupils will: <ul style="list-style-type: none"> Understand electric current, in circuits, series and parallel circuits, and current as flow of charge. Describe the structure and functions of the human skeleton, inc biomechanics, antagonistic pairs and measurement of force. changes of state in terms of the particle model energy changes on changes of state 	National Curriculum Links Pupils will: <ul style="list-style-type: none"> forces as pushes or pulls, arising from the interaction between 2 objects using force arrows in diagrams, adding forces in 1 dimension, balanced and unbalanced forces ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience Explain How organisms affect, and are affected by, their environment, including the accumulation of toxic materials. 	National Curriculum Links Pupils will: <ul style="list-style-type: none"> Explain sound needs a medium to travel, the speed of sound in air, in water, in solids Explain that sound produced by vibrations of objects, in loudspeakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal Describe simple (Dalton) atomic model Explain Differences between atoms, elements and compounds Use Chemical symbols and formulae for elements and compounds 	National Curriculum Links Pupils will: <ul style="list-style-type: none"> Explain the content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed Explain the tissues and organs of the human digestive system & how the digestive system digests food (enzymes simply as biological catalysts) energy as a quantity that can be quantified and calculated; the total energy has the same value before and after a change Energy transfers in heating, falling objects and machines.
Teaching Our School & 7A here supports: <ul style="list-style-type: none"> Engagement in Science 7G particles in HT4 8K energy transfer Alternative technologies in technology Global warming in Geography Cells and Hormones in Year 10 	Teaching cells, mixtures and reproduction supports: <ul style="list-style-type: none"> Engagement in Science Plant reproduction in Y8 Chemical analysis KS4 PHSCE -Relationships and sex education 	Teaching 7F Acids & Alkalis, 7J Current electricity, 7C Muscles & Bones supports <ul style="list-style-type: none"> Engagement in Science Y8 metals & their uses Y9 reactivity Y9 electrical circuits D&T – electrical systems PE –Gcse biomechanics 	Teaching Ecosystems and forces supports: <ul style="list-style-type: none"> Y9 plant Growth Y9 energy transfer Y9 molecules & matter Y10 forces Pe Biomechanics D&T – Technology of forces KS3 maths number & algebra 	Teaching sound & light & atoms elements & compounds here supports: <ul style="list-style-type: none"> Y8 food & nutrition Y8 periodic table Y8 metals & uses KS5 - waves 	Teaching food & nutrition and energy s here supports <ul style="list-style-type: none"> Y10 Waves Y9 enzymes KS5 enzymes D&T – food technology PE – nutrition
Our School & 7A feeds from: <ul style="list-style-type: none"> KS2: Everyday materials KS2: Electricity KS2 – livings things and their habitats 	Cells, mixtures & reproduction feeds from: <ul style="list-style-type: none"> KS2 – livings things and their habitats KS2 - Uses of everyday materials KS2 formation of new material 	Particle model, Current electricity, Muscles & Bones feeds from: <ul style="list-style-type: none"> Blended project (particles) KS2 simple circuits 	Particle model, Forces feeds from <ul style="list-style-type: none"> KS2 states of matter KS2 forces KS2--classifying organisms KS2 skeletons & Muscles 	Ecosystems, Atoms, element & compounds feeds from: <ul style="list-style-type: none"> KS2 making sounds 7G particles 	Openings & Endings feeds from: <ul style="list-style-type: none"> Blended project (energy) KS2: Creative writing skills My Sister Lives on the Mantelpiece in Y7 Crime & Detection in Y7