



Year 7 Science

Aims:

- *To teach students a love of science through a variety of engaging, creative and motivational lessons*
- *To teach both project based learning and stand-alone science lessons, and provide opportunities for a hands on application of knowledge and skills.*
- *To use big ideas and mastery goals to equip all of the students for the future*
- *To provide students with the ability to connect concepts, ensuring that they can see the world analytically, explain phenomena and make predications*
- *To ensure that all students will gain the appropriate base-level and beyond understanding to access the AQA GCSE science curriculum*

Content:

In year 7 students will have 4 regular science lessons per week. Our curriculum is based on the AQA KS3 syllabus, ensuring that students are taught the skills and knowledge to access the KS4 GCSE science curriculum.

In year 7 the aim is to introduce our students to a range of modules across the following themes of: Forces, Electromagnets, Energy, Waves, Matter, Reactions, Earth, Organisms, Ecosystems and Genes.

These themes are then re-visited in Year 8, where the content will be built upon and developed further. These 10 themes focus on core aspects of the GCSE curriculum enabling a solid base for students to build upon when they reach GCSE level.

Curriculum Map

Year	Term	Curriculum	Assessment
7	Term 1	Students will study a range of Biology, Chemistry and Physics topics, alongside an introduction to science which includes Health and Safety sessions and an introduction to practical work. Topics within term 1 include Cells, Particle Model, Light, Variation, Earth structures and Movement	Formal Exam style assessments, knowledge recall and creative extended learning pieces and retrieval quizzes in lessons.
	Term 2	Students will again study a range of Biology, Physics and Chemistry modules. Work studied in term two includes Acids and Alkalis, Human Reproduction, Interdependence, the Universe and Gravity.	Formal Exam style assessments, knowledge recall and creative extended learning pieces and retrieval quizzes in lessons.
	Term 3	Students this term will primarily focus on chemistry and physics modules including Voltage and Resistance, Current, Sound, Metals and Non-Metals, Speed and Energy Transfer.	Formal Exam style assessments, knowledge recall and creative extended learning pieces and retrieval quizzes in lessons.



Assessment:

Within each topic we will explore student's ability to work scientifically providing opportunities for students to develop skills in analysis, communication, enquiry and problem solving. We will also provide opportunity for students to engage in practical activities to demonstrate their practical skill and apply knowledge acquired.

In order to promote individual progress within the classroom, students will be encouraged to self-assess and test each other through peer assessment to develop their own understanding. Teachers will use a variety of assessment methods to monitor this progress. This will include formative and summative assessment in the form of small topic tests, assessed written work, presentations and practical skills assessment.

Extended Learning:

Extended learning in science draws from both Mode A and Mode B types. Mode A extended learning is where the extended learning focusses on knowledge recall and Mode B is where the students are invited to express themselves creatively in order to succeed at a challenge.

There will also be lots of opportunity for students to engage with science outside of the classroom through the wealth of enhanced curriculum provided at the John Taylor Free School. This includes participating in the STEAM club (Science Technology, Engineering, Arts and Maths) and attending science educational visits.

Connection to the JTFS Approach

Whole School Theme	How does <i>Science</i> support this?
STRIPE	Modules within the year help to address the key driving questions of the STRIPE curriculum and encourage students to use this knowledge to aid their other subjects. An example of this is the driving question 'How do we conquer terrain' where students will study contact forces and earth structure, helping them to create their all terrain vehicle in DT. STRIPE habits are used constantly within science with particular reference to team player during experimental teamwork and the reflective and resilient strand where students are encouraged to reflect and refine their methodology
STEAM	As science is one of the key strands of STEAM, we focus on many opportunities for students to connect their learning to other subjects. We also focus on job opportunities and possibilities that exist for students. Light and sound present good discussions for students who wish to enter the world of performing arts, whereas speed and forces and current provide ideas to students who are interested the world of race cars.
Literacy	Throughout each module, students are encouraged to write like a scientist. This includes learning many new science specific words and using them appropriately within their work. Students are provided with literacy template for writing up correct scientific methodology and are encouraged to self-reflect and peer-reflect for spellings, punctuation and grammar prior to submitting work.
Numeracy	Students are encouraged throughout this module to relate the content that they study to the skills they have learnt in maths. Modules in speed and energy transfer directly correspond to maths skills with students having to re-arrange equations and calculate percentages
SMSC, British Values and Citizenship	Tolerance of views is explored throughout the study of the origins of the universe and difficult decisions within human reproduction.