



## Year 8 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 8 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 8 the aim is to re-explore and develop a range of modules that students have been introduced to in Year 7 across the following themes of: Forces, Electromagnets, Energy, Waves, Matter, Reactions, Earth, Organisms, Ecosystems and Genes.

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                                                                                                              |
|------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 8    | Term 1 | Students will study a range of Biology, Chemistry and Physics topics. Topics within term 1 include Elements, Pressure, Climate and Digestion                               | 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, Forces, The Periodic Table and Breathing | 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 Biology and Physics modules including Light, Inheritance, Metals and Non-Metals and Plant Reproduction                          | 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 a range of both knowledge recall and creativity-based tasks. 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 Science 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 'Does Money make you rich?' where students will study light, elements and energy costs relating the content to answering the question. 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. The modules in term two feature modules that directly correlate to work in healthcare such as digestion, and breathing. We focus on the opportunities that working in this profession can have including becoming a doctor, pharmacist, dentist, nurse or research scientist                                                                                          |
| 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 contact forces encourage students to utilise equations and modules in pressure encourage students to convert figures and perform complex calculations                                                                                                                                                                                                                                                                                              |
| SMSC, British Values and Citizenship | Mutual respect is considered though the modules of inheritance and evolution where people will have different experiences and backgrounds                                                                                                                                                                                                                                                                                                                                                                                                                                                   |