



SUBJECT: Science

YEAR: 9

HEAD OF DEPARTMENT: Mr Griffiths

GROUPING POLICY: Terms 1-4 mixed ability, Terms 5-6 set into the most appropriate grouping for their chosen GCSE route.

COURSE CONTENT

Curriculum Intent

We follow a Key Stage Three curriculum lasting two years and four terms. The rationale behind this is that it allows us enough time to teach for mastery of the key topics that underpin further study in Science. The topics are organised such that the most fundamental ideas (particles, cells, energy, forces, etc) are taught first in Year 7, followed by the development of these ideas. We have organised the topics into a logical progression based on both educational research in Science education, and our experience of how students at Rednock learn best. By the time students reach Year 9, the topics are overlapping with some of the GCSE content, and this gives us a good starting point to begin the GCSE course at the very end of Year 9.

Our Key Stage Three course is bespoke to our students, and written by us, but has grown out of the AQA KS3 scheme of work. We have organised the learning around the big ideas of Science, and students then progress these ideas to GCSE and beyond. Our curriculum is structured in such a way that during KS3 we build up students' scientific skills, their knowledge of science, scientists and scientific careers in the wider world, their literacy and their numeracy skills related to Science.

What will my child learn?

In Key Stage 3 students follow an 'in-house' scheme of work built around the big ideas of Science. This breaks the curriculum down into 10 'big ideas', each of which is subdivided into smaller topics. Students will study the majority of the topics in Years 7 and 8. In Year 9 they will tackle a small number of the most difficult topics before beginning their GCSE course in Term 4.

Forces	Speed	Magnets and electromagnets	Contact forces	Pressure
	Gravity			
Electricity	Voltage and current			
Energy	Energy and fuels	Energy transfer and work	Heating and cooling	
Waves	Sound	Light		
Matter	Particle model and separating	Periodic table	Elements	
Reactions	Metals and non-metals	Chemical energy	Acids and alkalis	
Earth	Climate, resources and structure	Universe		
Organisms	Cells	Movement	Microorganisms and disease	Respiration
	Organisms	Breathing	Digestion	Photosynthesis
Ecosystems	Interdependence			
Genes	Variation	Plant reproduction	Human reproduction	Inheritance and evolution



Term	Big Idea	Topics	What do students study?
1	Reactions	Acids and alkalis (temporarily in 9 due to Covid)	We will develop our chemistry skills further by studying acids and alkalis and their reactions. We will learn to write symbol equations for reactions.
	Forces	Contact forces	Naming, drawing and measuring the different contact forces. Understanding how forces affect motion.
2	Organisms	Digestion	The structure and function of the digestive system, and how it works as an organ system. We will lay the ground-work for study of enzymes at GCSE.
	Forces	Pressure	A more complex forces topic in which students understand and calculate pressure in solids, liquids and gases.
	Matter	Periodic table	We will build on previous work to begin to understand how they are organised into groups in the periodic table and the characteristics of these groups.
3	Organisms	Respiration	We will build on the work students have done on cells and organ systems to learn about respiration - a key life process that happens inside cells.
	Famelab academy		Students are trained in how to give presentations, they then research and give a presentation on a topic of their choice.
4	Matter	Elements	We will look at the formulae of different elements and compounds and what these mean. We will then study some more types of reaction in preparation for GCSE.
	Organisms	Photosynthesis	We will build on the work students have done on cells and organ systems to learn about photosynthesis- a key life process that happens inside plant cells.

In Term 3, students will take part in the 'Famelab Academy' competition as part of Cheltenham Science Festival. This involves them researching and then giving a 3 minute presentation on a scientific topic that interests them and is an excellent way of building communication skills.

From Term 5, students will begin their GCSE courses. They will study Biology, Chemistry and Physics modules in rotation.

What will homework look like?

Your child will be set homework weekly. This may consist of a project or research task, learning key words or spellings, questions to practise the material covered in class or revision for a test.

What enrichment opportunities are available?

Famelab Academy competition in Term 3.



ASSESSMENT

How will my child's work be assessed?

In line with school policy, students will receive detailed feedback on their work twice per term. One piece of feedback per term will be formative and focus on skills development, and the second piece will be a summative test on the content taught that term. In term 6 the termly test will be replaced by an end of year exam, for which students will be required larger amounts of content. All of the assessed pieces of work and feedback are stored in folders kept in school.

In addition, students will receive regular feedback from self-marking, peer assessment, verbal feedback and automated online assessment. All assessment data will be used along with behaviour and attitude to learning profiles to determine an appropriate set for Year 10.

ADDITIONAL INFORMATION

How can I support my child in this subject?

- Be positive about learning Science when speaking to your child, whatever your personal experience of Science was.
- Discuss what your child is learning in Science with them; get them to explain everyday phenomena to you.
- Draw their attention to and discuss scientific advances that are reported in the news.
- Your child should receive homework weekly – please insist that this is completed to a good standard. If you are able to, help your child to complete their homework. If they get stuck, encourage them to contact their teacher, who will be happy to help.
- Look through your child's Science book with them. Ask them to show you work that they are proud of.
- Encourage and help them to learn key words and facts.
- Encourage them to access the resources available to them on the school website.

How can I support my child with exams?

The Department publishes revision lists for all tests, which will be given to students via SatchelOne and also available via the school website. Encourage your child to look through these lists carefully. The list includes key words and facts which will be tested in a 'recall' section of their test. Help them to make revision cards containing these words and facts, and then go through the cards with them and test them on what they have learnt. The later sections of each test will require students to apply their knowledge; at this point, get them to look in their book at the kinds of problems and questions they have been doing in class and, if possible, to have another go at them.

