

KS3 Curriculum Overview

Science

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Date of last review:



2019-2020

Curriculum Intent including key skills and key concepts

Year 7 and 8 are split into nine topics, covering aspects of Biology, Chemistry, Physics and How Science Works. During year 9 pupils complete their KS3 studies in the Autumn term and start the introductory topics to the GCSE courses. Pupils focus on one practical skill in each topic as well as developing their knowledge. The homework includes a learning task, an activity to complete at home and worksheets to check the pupils understanding. At the end of each topic, pupils will complete an assessment activity to gauge their knowledge retention and progress.

Year 7:

Autumn Term		Spring Term		Sumer Term	
Topic	Skill	Topic	Skill	Topic	Skill
Cells	WS	Photosynthesis + Respiration	R	Reproduction	R
Forces	CE	Energy	SW	Space	SW
Particles	WS	Periodic Table	EE	Acids + Alkalis	PS

Year 8:

Autumn Term		Spring Term		Sumer Term	
Topic	Skill	Topic	Skill	Topic	Skill
Life Support	R	Keeping Healthy	CE	Changing Environments	SW
Forces in Action	SW	Waves	EE	Electricity	PS
Chemical Reactions	WS	Earth Science	WS	Material Science	R

Year 9:

Autumn Term		Spring Term		Sumer Term	
Topic	Skill	Topic			
Genetics	SW	Intro to GCSE Physics – Key concepts			
Magnetism	R	Intro to GCSE Chemistry – Key concepts			
Formula / Equations	WS	Intro to GCSE Biology – Key concepts			

Skills being developed:

WS – writing in science	Describe scientific ideas (using models and analogies – evaluate models and analogies)
SW – science in our world	Discuss scientific and technological advances (pros and cons, effect on different people). Identify different viewpoints on science / scientific ideas. Areas of our lives / jobs that involve science (links between science and industry). Compare and contrast scientific solutions to regional and global problems.
R – results	Drawing tables and graphs of results (qualitative / quantitative). Using scientific language, units / symbols appropriately. Displaying results graphically (including both primary and secondary data). Taking measurements and observations (picking ranges, taking repeats).
CE – conclusions and evaluations	Recognise simple patterns within results and draw simple conclusions. Recognise anomalies within experimental data and deal with them appropriately. Recognise numerical patterns in results (including graphs). Evaluation of methods / results.
EE – explaining evidence	Predict the outcome of investigations using scientific knowledge (hypothesis). Explain conclusions drawn from investigations using scientific ideas and models. Explain how control variables within an investigation could affect results.
PS – practical skills	Draw scientific equipment to outline the apparatus used within an investigation. Write a scientific method. Identifying variables in an experiment (independent, dependent and control – including a discussion of how we control variables within an investigation).

Rationale for KS3 Curriculum

As a department, we have developed a programme of study designed to teach students the scientific method and engage pupils in understanding our world, while developing their observational, mathematical and practical skills.

We follow the National Curriculum in order for pupils to gain the foundation knowledge required to be able to access the GCSE content. Topics have been arranged in an order which promotes progression by allowing students to not only revisit / progress on current knowledge but also repeat key skills across multiple scientific fields.

As a coastal, rural school we have, limited access to STEM based industries and scientific museums / institutes. However, our location does provide fantastic opportunities for environmental and ecological enrichment that could link to the topics covered throughout the KS3 course. Now that we have our core curriculum embedded, we intend to increase the amount of enrichment activities utilising our unique costal environment and available industries.

Relevant Department Interventions and Support and Access Arrangements

Three question starter activities utilised across all KS3 groups allows for the constant review of content covered throughout the year, this will not necessarily be based on the current topic being studied, but instead can be linked to any completed topic.

Regular homework set to get students to develop a routine and structure in order to foster independent learning.

Utilisation of dedicated science teaching assistant.

The department liaise with the Access Arrangement assessor from Y9 in order to inform planning and group arrangements for KS4.

All students follow the course outlined, for each topic there are levelled objectives, class teachers utilise schemes of learning and pupil IEPs to tailor lesson content around achievable objectives for their group, and this includes differentiated assessment tasks where appropriate.

A very small number of students in Y8 & Y9 (currently) are extracted from their science groups and join an intervention group managed by R. Burt in this intervention group they are following an AQA intervention syllabus, which follows our KS3 curriculum content.

Use of 6th form TA support in KS3 intervention lessons.

After school detentions for persistent lack of homework in order to support students struggling to manage their time.

Enrichment Opportunities:
As discussed in our department improvement plan we intend to increase the amount of science enrichment available to students at the academy over the next academic year.

Year 7:

All homework activities include a practical task that can be easily carried out at home, if they can students are encouraged to complete this with family members, take pictures and to discuss their findings with their science teacher.

Initial intentions for 2019-20:

- Exmoor Zoo trip
- Sciencedipity – e.g. Harry Potter night
- Dark skies – star sphere
- Astronomy club
- Science industry fair? Local primaries involved

Year 8:

All homework activities include a practical task that can be easily carried out at home, if they can students are encouraged to complete this with family members, take pictures and to discuss their findings with their science teacher

Initial intentions for 2019-20:

- Exmoor zoo – ranger Jim coming in
- Coombe Martin Wildlife Park? Bring in animals?
- Bristol science museum trip
- Astronomy club
- Braunton Burrows / rock pooling beach trip

Year 9:

All homework activities include a practical task that can be easily carried out at home, if they can students are encouraged to complete this with family members, take pictures and to discuss their findings with their science teacher

Initial intentions for 2019-20:

- Eden project trip
- Sciencedipity – e.g. Biomedical careers event
- University trip (with Mr Cronin)
- Big Bang (with DT)
- Astronomy club
- CREST Award club?

Links to Key Stage 4 and 5

KS3 curriculum is designed to build the foundation knowledge required to be able to access the GCSE science content. All topics appear during the GCSE course in more depth and detail as the KS3 assessment objectives are linked completely within the GCSE.

All KS3 teachers also deliver the GCSE course in a specialist field and can link objectives from the KS3 curriculum to relevant GCSE topics.

All KS3 assessments are designed to expose students to the necessary skills for preparing for, and answering GCSE questions. Students also develop practical skills in preparation for the core practical aspect of the GCSE and A-level courses.

Key scientific terminology is taught throughout KS3 with an aim to improve students scientific vocabulary and it be embedded by the time students are ready for the GCSE.

Attached Documentation

Document	Tick if present
Department Improvement Plan	
Exam Review	
Curriculum and Progression Map for Year 7-13	
Dept Assessment Calendar 7-9	

During the Spring and Summer term of year 9 students are beginning their GCSE course, completing the introductory modules to biology, chemistry and physics. Students are further exposed to GCSE exam questions and examination technique throughout the teaching of these topics, and in the completion of a GCSE style assessment during the year 9 exam week.

Assessment Tasks & Criteria	
Terminal Assessment(s)	
Schemes of Work Year 7-9	