

# Year 10 Science Curriculum

2018-2019



Curriculum Content	Assessment	What homework will they have?	I'm not an expert, so how can I help?
<p><b>What will my child be studying?</b></p> <p>Either:</p> <p>AQA Separate Science Biology (8461) Chemistry (8462) Physics (8463)</p> <p>Or</p> <p>AQA Combined Science (8464)</p>	<p>Throughout the course students will take short tests at the end of each topic to diagnose their understanding of the topic. Further support and testing will be offered to any student not achieving well on these assessments.</p> <p>Each half term students will also take a longer progress test in each subject which will be graded using the 1-9 scale. Following each test students are given feedback on their performance and have an opportunity to reflect upon what they can do to improve in their next assessment.</p> <p>GCSE Science students will sit formal external examinations in May 2017.</p>	<p>Homework will be set regularly during the year to help students extend their understanding of topics studied in lessons. Homework may take different forms from answering exam questions, carrying out research, drawing graphs, preparing for progress tests to making models. Often students are given a choice of presentation format allowing personal preferences or talents to be developed.</p> <p>Homework may be marked by a teacher or self or peer assessed in lessons.</p>	<p>You can support your child's progress in science in a number of ways – most readily by asking them about what they have been learning and having them explain the concepts to you. Further development at home could be in the form of watching scientific TV programs together, visiting a museum or nature reserve and by discussing science stories in the news.</p>

## Content covered:

### Biology:-

Topic 5 - Homeostasis, Nervous system, reflex actions, the endocrine system, controlling blood glucose, diabetes, the kidneys, female reproductive hormones and the menstrual cycle, contraceptives, plant hormones.

Topic 6 - DNA and genes, meiosis, asexual and sexual reproduction, genetics - inheriting dominant and recessive alleles, genetic disorders, Gregor Mendel.

Topic 7 - Variation, Theory of evolution, natural selection, fossil evidence, antimicrobial resistance, selective breeding, genetic engineering, extinction.

### Chemistry:-

Topic 4 - Metal oxides, Reactivity series, Extracting metals, REDOX reactions, metals, acids and salts, electrolysis.

Topic 5 - Endothermic and exothermic reactions, energy changes of reactions, fuel cells.

Topic 6 - Measuring rates, calculating rates, collision theory, catalysts, reversible reactions, equilibrium.

Topic 7 - Crude oil, hydrocarbons and alkanes, fractional distillation, cracking and alkenes, alcohols, carboxylic acids, polymerisation, amino acids.

### Physics:-

Topic 4 - Atomic structure, Radioactive decay, background radiation, radioactive half-life, uses of radiation, nuclear fission and fusion.

Topic 5 - Forces, Speed, acceleration, velocity-time graphs, motion calculations, force and motion, moments, pressure in liquids and gases.

Topic 6 - Transverse and longitudinal waves, wave speed, reflection and refraction of waves, ultrasound, seismic waves, electromagnetic spectrum.

**Literacy and numeracy:**

In science lessons and homework we regularly set tasks which support student's development of literacy and numeracy skills. We particularly focus on the correct use of scientific terminology (including the correct spelling of keywords) and the ability of students to use and manipulate numbers when collecting and analysing scientific data.

**What can I do to help my child?**

Encourage your child to regularly re-read their class notes. Ongoing revision is essential as the science curriculum does not spiral - we do not revisit the same topics again at a higher level, once the topic is finished students do not see that topic again until their final exams. We include some questions from previous topics in our Progress Tests to try to keep the knowledge fresh as Year 9, 10 and 11 go by.

**Additional resources and details of core texts used:**

Any revision guide that is specific to the AQA 9-1 course is relevant but please check whether your child's course is Separate or Combined science. Harper Collins revision guides are available through ParentPay where we can buy them for you direct from the publishers.

**Teaching group arrangements:**

All groups are set according to ability. We review these arrangements during the year and make necessary adjustments. Most teaching groups have three science teachers one for each subject area.

**Where can I get more advice?**

Dr V Larner (Curriculum Leader) – [vlarner@stratfordschool.co.uk](mailto:vlarner@stratfordschool.co.uk). Please include the name of your child's teacher so the message can be forwarded appropriately.