Science - Year 10

Key Contact: Mrs Sinclair- j.sinclair@applemore.hants.sch.uk
Mr Brown – c.brown@applemore.hants.sch.uk
Mr Mitchell – d.mitchell@applemore.hants.sch.uk
Ms Parvin – l.parvin@applemore.hants.sch.uk

Subject Content
Students will study either the AQA Trilogy combined science course which will award 2 GCSE grades, or the AQA separate sciences for Biology Chemistry and Physics which awards 3 GCSE grades. This year will be most important in terms of content as we aim to finish the syllabus before Easter in year 11 to allow time for revision technique. Students will sit a full paper 1 mock in the summer term to check their progress moving into year 11. There are checklists of content and revision sessions to help the students prepare for this

Autumn	Spring	Summer
Infection and response	bioenergetics	Nerves and hormones
Chemical changes	Electrolysis and Temperature changes	Rate of reaction
Electricity	Density and radioactivity	Waves

Assessment
Homework Once a week from a retrieval booklet that will be checked during lesson
Assessment: Students will complete an end of topic test for which they will be given notice and revision time. Summer GCSE mock paper

Useful Study Support Resources
• BBC KS4 AQA Trilogy or Science Bitesize has many useful activities
• Hub – there are the homework booklets/links to revision sites and revision resources

Anything else relevant / subject specific
Science is an exciting practical subject that students enjoy studying. Students are encouraged to take an interest in Science outside of school and appreciate that Science is all around us at all time. Many students visit zoos, wildlife sanctuaries and museums in their spare time, others choose to watch programmes such as 'Bang Goes the Theory' and Science documentaries that interest them or take an interest in new scientific discoveries that are reported in the media. Science club and ecoschools are available to students – more information to be given in tutor times.

Year 10 expectations:

Application

• 1 hour of homework a week
• Respond to all feedback given by teacher

Organisation

• Bring all equipment to Science lessons, including your pen pencil ruler and **calculator**
• Ask your teacher if you need additional help or have missed a lesson and need to catch up

Independence

• Students should complete homework independently where possible, but feel free to support when help is required
• Students are encouraged to develop the skills required to work independently and to seek help in working out answers using the '4B's: '*brain* (can they work out an answer on their own?) *book* (could they look up the answer in their exercise/ textbook/ internet?), *buddy* (could they work out the answer by talking to a friend?), *boss* (ask a teacher).

Improving grades

Students will be able to regularly access feedback to work that will tell them how to improve their grade. As a general overview, to achieve each grade, students are required to be able to do the following:

	Grade 2/3	Grade 4/5	Grade 6/7	Grade 8/9
AO1 **Demonstrating knowledge**	Remember **some basic facts**. Use a **few** key words. Realise simple or obvious effects of science on society.	Remember a **wide range** of **basic** facts. Use a **few** key words for **any topic** studied. Understand scientific discoveries have risks and benefits.	Remember key facts about **most areas of Science.** They **usually** use appropriate terminology in answers (key words and phrases) They can see the relationships between scientific advances, their ethical implications and the benefits and risks associated with them.	Remember key and detailed facts of **any area within Science**. They **always** use appropriate terminology in answers (key words and phrases) They can explain the relationships between scientific advances, their ethical implications and the benefits and risks associated with them.
AO2 **Applying knowledge**	They **can occasionally** apply knowledge effectively in a **range** of contexts. They can **occasionally** use theories to make **simple** explanations of events. They can **occasionally** use data to support evidence. They can **usually use** equations in calculations.	They **usually** apply knowledge effectively in a **range** of contexts. They can **usually** use theories to make **simple** explanations of events. They can **sometimes** use data to support evidence. They can **consistently use** and **sometimes rearrange** equations in calculations.	They **usually** apply knowledge effectively in a **wide range** of contexts. They can **usually** use theories to make **detailed** explanations of events. They can **usually** use data to support evidence. They can **usually rearrange** equations in calculations.	They **always** apply knowledge effectively in a **wide range** of contexts. They can **always** use theories to make **detailed** explanations of events. They **always** make effective use of data to support evidence. They can **consistently rearrange** equations in calculations.
AO3 **Analyse & Evaluate**	They evaluate **basic** information to develop **simple** arguments and explanations. They **usually** draw conclusions consistent with the available evidence**.**	They evaluate information to develop arguments and explanations. They **consistently** draw conclusions consistent with the available evidence**.**	They evaluate information **systematically** to develop arguments and explanations. They **usually** draw **detailed, evidence-based** conclusions**.**	They evaluate information **from a wide range of sources systematically** to develop arguments and explanations. They **consistently** draw **detailed, evidence-based** conclusions**.**

	They can **recognise** anomalous results and spot some causes of error in experimental procedures.	They can spot **some** causes of error and uncertainty in data or experimental procedures.	They can **usually** spot causes of error and uncertainty in data or experimental procedures.	They can **consistently** spot causes of error and uncertainty in data or experimental procedures.

Extended resource List

Autumn	Spring	Summer
Infection and response	bioenergetics	Nerves and hormones
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Biology Infection and response

B5 Communicable disease

B6 Treating and preventing disease

B7 Non communicable disease

Infection and response - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize

Infection and response - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize

The whole of INFECTION AND RESPONSE. AQA 9-1 GCSE Biology or combined science for paper 1 - YouTube

Biology bioenergetics

B8 photosynthesis

B9 respiration

Bioenergetics - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize

Bioenergetics - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize

Bioenergetics Revision - GCSE Biology/Combined Science - YouTube

Biology Nerves and hormones

B10 nerves

B11 hormones

B12 (separate only) kidney

Homeostasis and response - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize

Homeostasis and response - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize

GCSE Biology - Homeostasis #54 - YouTube

Chemistry Chemical changes

C5 Chemical changes

Chemical changes - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize
Chemical changes - GCSE Chemistry (Single Science) Revision - AQA - BBC Bitesize
AQA GCSE 9-1 C5 - CHEMICAL CHANGES WHOLE TOPIC - YouTube

Chemistry Electrolysis and Temperature changes

C6 electrolysis

C7 exo and endothermic reactions

Energy changes - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize
Energy changes - GCSE Chemistry (Single Science) Revision - AQA - BBC Bitesize
AQA GCSE Chemistry / Combined Science Unit 5 - Energy Changes - Recall Questions - YouTube

Chemistry Rate of reaction

C8 rate of reaction

The rate and extent of chemical change - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize
The rate and extent of chemical change - GCSE Chemistry (Single Science) Revision - AQA - BBC Bitesize
GCSE Chemistry - Rates of Reaction #46 - YouTube

Physics Electricity

P4 circuits

P5 mains electricity

Electricity - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize
Electricity - GCSE Physics (Single Science) Revision - AQA - BBC Bitesize
All of AQA Electricity Explained - GCSE 9-1 Physics REVISION - YouTube

Physics Density and radioactivity

P6 particles

P7 radioactivity

Particle model of matter - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize
Atomic structure - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize
Particle model of matter - GCSE Physics (Single Science) Revision - AQA - BBC Bitesize
Atomic structure - GCSE Physics (Single Science) Revision - AQA - BBC Bitesize
The Whole of AQA - PARTICLE MODEL OF MATTER. GCSE Physics Combined Science Revision. Topic 3 for P1 - YouTube
All of AQA GCSE Physics P4 - Atomic Structure and Radiation - Summaries - YouTube

Physics Waves

P12 Wave properties

P13 Electromagnetic spectrum

P14 (separate only) light

Waves - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize

Waves - GCSE Physics (Single Science) Revision - AQA - BBC Bitesize
The Whole of AQA-WAVES. GCSE 9-1 Physics or Combined Science Revision Topic 6 for P2. - YouTube