

AAQ Applied Science

An outstanding OCR AAQ Applied Science student combines strong scientific understanding with curiosity about how science applies in real-world contexts. They approach complex concepts with a practical and investigative mindset, breaking problems into logical steps and seeking to understand scientific processes rather than simply memorising facts. Such a student is well organised, works methodically in both written and practical tasks, and reflects on results and errors to improve accuracy and understanding. They communicate scientific ideas clearly using appropriate terminology, demonstrate analytical thinking when interpreting data, and show resilience when experiments or calculations are challenging. Consistently, they look for ways to extend their learning by linking scientific principles to everyday applications and vocational science settings.

Summary of course content

The Applied science AAQ syllabus is split into five units:

Unit no	Unit title	Guided learning hours (GLH)	Assessment method
F180	Fundamentals of science	90	E
F181	Science in society	60	E
F182	Investigating science	90	N
F183	Analytical techniques in chemistry	60	N
F186	Medical physics	60	N

E – Examined unit

These units are assessed through a written examination set and marked by OCR. You will need to apply your knowledge to questions and scenarios.

N – Non-examined assessment (coursework)

These units are assessed through assignments completed during the course. Tasks may include case studies, reports, presentations or practical activities.

Assessment type	Weighting	How it is assessed
Exam (external)	40%	Written exams (OCR-marked)
NEA (coursework)	60%	Supervised assignments (teacher-marked, OCR-moderated)

What you should be doing as an independent learner in your four hours of independent study per week?

Weekly:	- Exam unit: Creation of flash cards to reinforce information from topic area covered that week. - Coursework unit: conduct the research needed for the next mark point.
Fortnightly:	- Exam unit: Review of recent lessons using the PowerPoints on Teams, learning key terminology, producing revision resources such as mind maps and completing relevant questions from the textbook. - Coursework unit: conduct the research needed for the relevant task. Independent Study Folder (ISF): this will be checked fortnightly by your tutor and logged.

Half termly:	• Exam unit revision: Review lesson PowerPoints on Teams and produce revision resources, e.g., flashcards, mind maps, posters, etc. • Complete past exam papers https://www.ocr.org.uk/qualifications/past-paper-finder/ • Coursework unit: complete all improvements once feedback has been given.
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Resources

In addition to those provided for specific tasks by your teacher, resources include:

- OCR AAQ student textbook (ZigZag Education) – a scanned copy of this is available on Teams
- <https://www.ocr.org.uk/qualifications/past-paper-finder/> : to access past exam papers

Independent learning overview

Two hours directed by each of your teachers (subject to change):

For each topic:

- read the relevant pages from the textbook and add to your class notes
- create a set of revision cards for each of the worked examples
- complete all practice and recall questions

Y12	Teacher 1	Teacher 2
07.09.26	Enrolment week	Enrolment week
14.09.26	F180 Exam unit: Biology B1 Cell structure and function: • Ultrastructure & function pg. 2-13 • Cells and membranes pg. 2-3 & 11-13 • Eukaryotic cells - animals pg. 4-8	F180 Exam unit: Biology B4 Biodiversity and Ecosystems • 4.1 Distribution of Organisms pg. 65-69
21.09.26	B1 Cell structure and function: • Ultrastructure & function pg. 2-13 • Eukaryotic cells - plants pg. 4-9 • Prokaryotic cells pg. 10-11	B4 Biodiversity and Ecosystems • 4.2.1 Sampling techniques pg. 70-74
28.09.26	B1 Cell specialisation: • Animals pg. 14-18 • Plants pg. 19-23	B4 Biodiversity and Ecosystems • 4.2.2 Practical 2 – Sampling pg. 75-76
05.10.26	B1 Cell specialisation: • Tissue structure and function pg. 24-27 B1 Microscopy: • Light & electron microscopy pg. 28-32	C1 Atomic structure and the Periodic table • Atomic structure pg. 82 - 86
12.10.26	F180 Exam unit: Physics P1 Electricity: • Circuits: charge and current pg. 162-164 • Potential difference and resistance pg. 164-167	C1 Atomic structure and the Periodic table • Periodic Table pg87 – 88
19.10.26	P1 Electricity: • Power & energy in circuits pg. 167-169 • Series & parallel circuits pg. 170-173	C2 Quantitative chemistry • 2.1.1 The mole and molar mass pg. 89-91 • 2.1.2 Balancing equations and reacting masses pg. 92-96
26.10.26	Half term	
02.11.26	P1 Electricity: • Potential dividers pg. 174-177 • Practical 5: potential divider circuits pg. 178-179	C2 Quantitative chemistry • 2.1.3 Number of moles in aqueous solutions and preparation of a standard solution pg. 97-99 • 2.1.4 Neutralisation pg. 99

09.11.26	P2 Motion: • Energy stores & transfers pg. 180-182 • Work & energy pg. 183-184 • Kinetic & potential energy pg. 184-186	C2 Quantitative chemistry • 2.1.5 Practical 3 Volumetric analysis pg. 100-104 • 2.1.6 Moles and Volumes of gases pg. 104-105
16.11.26	P2 Motion: • Power & efficiency pg. 187-188 • Force pg. 188-195 • Practical 6: Investigating motion pg. 196-199	C3 Structure and Bonding • 3.1.1 Bonding pg.106-118
23.11.26	P3 Medical physics: • The atom pg. 200-201 • Electromagnetic radiation pg. 202-203 • X-rays pg. 204-206	C3 Structure and Bonding • 3.1.2 Formula of Ions and Compounds pg.119-121 • 3.2 Structures and properties pg. 122-127
30.11.26	P3 Medical physics: • Wave motion pg. 206-209 • Ultrasound pg. 210-211 • Fundamentals of radioactivity pg. 212-214	C3 Structure and Bonding • 3.3 Organic Chemistry pg.128 - 141
07.12.26	P3 Medical physics: • Mathematical analysis of radioactivity pg. 215-217	C4 Rates of reaction and enthalpy changes • 4.1 Rates of reaction pg. 142 - 144 • 4.1.2 Practical – Investigating reaction rates pg. 145-149
14.12.26	P3 Medical physics: • Hazards of radioactivity pg. 217-218 • Uses of radioactivity pg. 219	C4 Rates of reaction and enthalpy changes • 4.2.1 Exothermic and endothermic reactions pg. 150-152 • 4.2.2 Enthalpy change of combustion of alcohols
21.12.26	Christmas holidays	
28.12.26	Christmas holidays	
04.01.27	F180 Exam in January: • Revision – past papers	F180 Exam in January: • Revision – past papers
11.01.27	Coursework unit F186 – Medical physics: • Read the NEA guide for students • Review the 'How to reference' PowerPoint on Teams – make sure you understand it.	Coursework Unit F182 – Investigating Science • Read the NEA guide for students • Review the 'How to reference' PowerPoint on Teams – make sure you understand it.
18.01.27	Task 1: • P1, P2 and M1 – Research ionising and non-ionising diagnosis techniques pg. 3-30	Task 1 – • P1, P2, M1, D1 – Use research to create an appropriate research question
25.01.27	Task 1: • P1, P2 and M1 – Research ionising and non-ionising diagnosis techniques pg. 3-30	Task 1 • P1, P2, M1, D1 – Use research to create an appropriate research question
01.02.27	Work experience	
08.02.27	Review all work completed so far and fill in any gaps	Review all work completed so far and fill in any gaps
15.02.27	Half term	
22.02.27	Task 1: • P3, M2 and D1 – Research planning for diagnosis and how to create a diagnosis plan pg. 51-53	Task 1 • P1, P2, M1, D1 – Use research to create an appropriate research question, explain the scientific principles behind the Investigation

01.03.27	Task 1: P4 – Research how to create a risk assessment for the diagnosis plan pg. 54-55	Task 2 P3, P4, P5, M2, M3, D2 – Produce a plan for the full investigation which includes a method for a preliminary investigation, use research to complete a risk assessment for the investigation
08.03.27	Task 2: P5, P6 and M3 – Research ionising and non-ionising therapy techniques pg. 31-50	Task 2 P3, P4, P5, M2, M3, D2 – Produce a plan for the full investigation which includes a method for a preliminary investigation, use research to complete a risk assessment for the investigation
15.03.27	Task 2: P5, P6 and M3 – Research ionising and non-ionising therapy techniques pg. 31-50	Task 2 P3, P4, P5, M2, M3, D2 – Produce a plan for the full investigation which includes a method for a preliminary investigation, use research to complete a risk assessment for the investigation
22.03.27	Task 2: P7, M4 and D2 – Research planning for therapy and how to create a therapy plan pg. 51-53	Task 2 P3, P4, P5, M2, M3, D2 – Produce a plan for the full investigation which includes a method for a preliminary investigation, use research to complete a risk assessment for the investigation
29.03.27	Easter holidays	
05.04.27	Easter holidays	
12.04.27	Task 2: P7, M4 and D2 – Research planning for therapy and how to create a therapy plan pg. 51-53	Task 2 P3, P4, P5, M2, M3, D2 – Produce a plan for the full investigation which includes a method for a preliminary investigation, use research to complete a risk assessment for the investigation
19.04.27	Task 2: P4 – Research how to create a risk assessment for the therapy plan pg. 54-55	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
26.04.27	Task 3: P9, P10, M5 and D3 – Research how to create and deliver a presentation pg. 56-57	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
03.05.27	Task 3: P9, P10, M5 and D3 – Research how to create and deliver a presentation pg. 56-57	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
10.05.27	Task 3: - P9, P10, M5 and D3 – Prepare to answer questions on your presentation. - Complete thorough research on your chosen presentation topic so that you can answer questions from the audience pg. 57	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
17.05.27	Task 3: P9, P10, M5 and D3 – Prepare to answer questions on your presentation.	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient

	Complete thorough research on your chosen presentation topic so that you can answer questions from the audience pg. 57	to answer the investigation question, record the data
24.05.27	Task 3: Create a questionnaire for your presentation so that you can gather the feedback that you will need for task 4 pg. 57	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
31.05.27	Half term	
07.06.27	Task 3: P9, P10, M5 and D3 – Practice delivering your presentation to friends before you have to deliver it to the class.	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
14.06.27	Task 3: P9, P10, M5 and D3 – Practice delivering your presentation to friends before you have to deliver it to the class.	Task 3 P6, P7, P8, M4 – Complete the Investigation, collect valid data sufficient to answer the investigation question, record the data
21.06.27	Task 4: P12 – Summarise the feedback that you received from the class pg. 57	Task 4 Pass 9, 10 and 11 – Use mathematical skills to process data and construct graphs to display data
28.06.27	Task 4: M6, D4 and D5 – Make a list of the strengths and weaknesses of your presentation and the improvements you could make.	Task 4 Pass 9, 10 and 11 – Use mathematical skills to process data and construct graphs to display data
05.07.27	Task 4: M6, D4 and D5 – Make a list of the strengths and weaknesses of your presentation and the improvements you could make.	Task 4 Pass 9, 10 and 11 – Use mathematical skills to process data and construct graphs to display data
12.07.27	Act on feedback and complete all improvements to F186	Act on feedback and complete all improvements to F182
19.07.27	Act on feedback and complete all improvements to F186	Act on feedback and complete all improvements to F182

Y13	Teacher 1	Teacher 2
07.09.26	Enrolment week	Enrolment week
14.09.26	F181 Exam unit: Science in society Topic area 1- What scientists do: The skills of scientists pg. 226-227	F183 Analytical techniques in Chemistry Task 1- Plan the Investigations P1, P2, P3 – Identify appropriate tests, identify appropriate apparatus, use research to complete a risk assessment
21.09.26	Topic area 1- What scientists do: The scientific method pg. 228-230	Task 1- Plan the Investigations P1, P2, P3 – Identify appropriate tests, identify appropriate apparatus, use research to complete a risk assessment
28.09.26	Topic area 1- What scientists do: The scientific community pg. 232-237	Task 1- Plan the Investigations P1, P2, P3 – Identify appropriate tests, identify appropriate apparatus, use research to complete a risk assessment
05.10.26	Topic area 1- What scientists do: The role of scientists pg. 238-239	Task 1- Plan the Investigations P1, P2, P3 – Identify appropriate tests, identify appropriate apparatus, use research to complete a risk assessment
12.10.26	Topic area 2- Handling scientific data: Types of scientific data pg. 240-241	Task 2 – Identify an unknown Organic compound P4, P5, M1, M2, D1 – Conduct a planned experiment to identify an unknown Organic compound
19.10.26	Topic area 2- Handling scientific data: Collecting scientific data pg. 242-247	Task 2 – Identify an unknown Organic compound P4, P5, M1, M2, D1 – Conduct a planned experiment to identify an unknown Organic compound
26.10.26	Half term	
02.11.26	Topic area 2- Handling scientific data: Storage & presentation of scientific data pg. 248-254	Task 2 – Identify an unknown Organic compound P4, P5, M1, M2, D1 – Conduct a planned experiment to identify an unknown Organic compound
09.11.26	Topic area 2- Handling scientific data: Interpreting data pg. 255-256	Task 3 – Discover the unknown Inorganic compound - P6, P7, M3, M4, D2 - Conduct a planned investigation to determine the identity of the unknown inorganic compound. - Conduct a gravimetric analysis of the sample.
16.11.26	Topic area 3- Scientific developments: - Hypothesis, theory & law pg. 257-260 - Using new technologies pg. 261-266	Task 3 – Discover the unknown Inorganic compound P6, P7, M3, M4, D2 - Conduct a planned investigation to determine the identity of the unknown inorganic compound. Conduct a gravimetric analysis of the sample.
23.11.26	Topic area 3- Scientific developments: Implications & limitations pg. 267-272	Task 3 – Discover the unknown Inorganic compound P6, P7, M3, M4, D2 - Conduct a planned investigation to determine the identity of the unknown inorganic compound. Conduct a gravimetric analysis of the sample.
30.11.26	Topic area 4- Communicating science: Methods of communication pg. 273-277	Task 3 – Discover the unknown Inorganic compound

		P6, P7, M3, M4, D2 - Conduct a planned investigation to determine the identity of the unknown inorganic compound. Conduct a gravimetric analysis of the sample.
07.12.26	Topic area 4- Communicating science: Plagiarism pg. 278-279	Task 4 – Determine the concentration of a solution P8, P9, P10, M5, D3 - Determine the concentration of the solution you have been provided with
14.12.26	Topic area 4- Communicating science: - Using science to inform decisions pg. 280-284 - Problems communicating science pg. 284-286	Task 4 – Determine the concentration of a solution P8, P9, P10, M5, D3 - Determine the concentration of the solution you have been provided with
21.12.26	Christmas holidays	
28.12.26	Christmas holidays	
04.01.27	F181 Exam in January: Revision – past papers	Task 4 – Determine the concentration of a solution P8, P9, P10, M5, D3 - Determine the concentration of the solution you have been provided with
11.01.27	F181 Exam in January: Revision – past papers	Task 4 – Determine the concentration of a solution P8, P9, P10, M5, D3 - Determine the concentration of the solution you have been provided with
18.01.27	Review all work completed so far and fill in any gaps	Review all work completed so far and fill in any gaps
25.01.27		
01.02.27	Work experience	
08.02.27		
15.02.27	Half term	
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