

Steps to success

*Overview of the science
GCSE*



**KING CHARLES I
SCHOOL**

PART OF THE FOUR STONES



GCSE Science

Course leader: Mr R Hancock

Exam Board: AQA

2-year GCSE Curriculum

Courses: GCSE Combined science trilogy and triple
(separate) science

Key dates

September 2026

- Year 11 assessments in biology, chemistry and physics
- Year 11 revision after school in Q6: Wednesday 3.15-4pm

October 2026

- Students provided with topic lists for mock exams.

November 2026: Mock examinations (paper 1)

- Wednesday 25th November: Biology combined and triple AM
- Tuesday 1st December: Chemistry combined and triple AM
- Thursday 3rd December: Physics combined and triple AM

Key dates

January 2027

- Parents evening
- Students provided with Question Level Analysis from mock

February 2027

- Revision programme begins in lessons

March 2027

- Students sit second mock examinations (paper 2)
- Tier entries confirmed

Key dates

May and June 2027

- Tuesday 11th May - Biology triple and combined science paper 1 AM
- Monday 17th May - Chemistry triple and combined science paper 1 AM
- Tuesday 25th May - Physics triple and combined science paper 1 PM

- Thursday 10th June - Biology triple and combined science paper 2 AM
- Tuesday 15th June - Chemistry triple and combined paper 2 AM
- Friday 18th June - Physics triple and combined paper 2 AM

How is it examined?

Combined science

- Six exam papers each worth 70 marks (2 Bio, 2 Chem, 2 Phys).
- Students end up with two combined science grades.
- Marks put together out of 420.
- Grades for higher tier up to 99.
- Grades for foundation tier up to 55.

Triple (separate) science

- Six exam papers each worth 100 marks (2 Bio, 2 Chem, 2 Phys).
- Separate GCSE for Biology, Chemistry and Physics.
- Separate GCSEs out of 200.
- Grades for higher tier up to a 9.
- Grades for foundation tier up to a 5.

Topics

Paper 1

4 Biology subject content

- 4.1 Cell biology
- 4.2 Organisation
- 4.3 Infection and response
- 4.4 Bioenergetics

5 Chemistry subject content

- 5.1 Atomic structure and the periodic table
- 5.2 Bonding, structure, and the properties of matter
- 5.3 Quantitative chemistry
- 5.4 Chemical changes
- 5.5 Energy changes

6 Physics subject content

- 6.1 Energy
- 6.2 Electricity
- 6.3 Particle model of matter
- 6.4 Atomic structure

Paper 2

4 Biology subject content

- 4.5 Homeostasis and response
- 4.6 Inheritance, variation and evolution
- 4.7 Ecology

5 Chemistry subject content

- 5.6 The rate and extent of chemical change
- 5.7 Organic chemistry
- 5.8 Chemical analysis
- 5.9 Chemistry of the atmosphere
- 5.10 Using resources

6 Physics subject content

- 6.5 Waves
- 6.6 Magnetism and electromagnetism
- 6.7 Space physics (physics only)

Equipment required

- Scientific calculator for all examinations.
- Black pen, pencil, ruler (important for graph work).
- Protractor and pair of compasses recommended.

Tiering in science

- Triple science: higher 9-3 and foundation 5-1.
- Combined science: higher 99-43 and foundation 55-11.
- Tiers will be chosen to maximise chances of success and based on performance across the year.

Old grades	New grades
A*	9
	8
A	7
B	6
C	5 STRONG PASS
	4 STANDARD PASS
D	3
E	2
F	1
G	1
U	U

Revision (Homework)



Tassomai

Built on scientific research into the most effective ways to learn. Tassomai uses a technique known as retrieval practice. It involves frequent “low-stakes testing” with immediate feedback, and it's proven to be the most effective way to embed and retain knowledge.

www.tassomai.com

Revision (Homework)



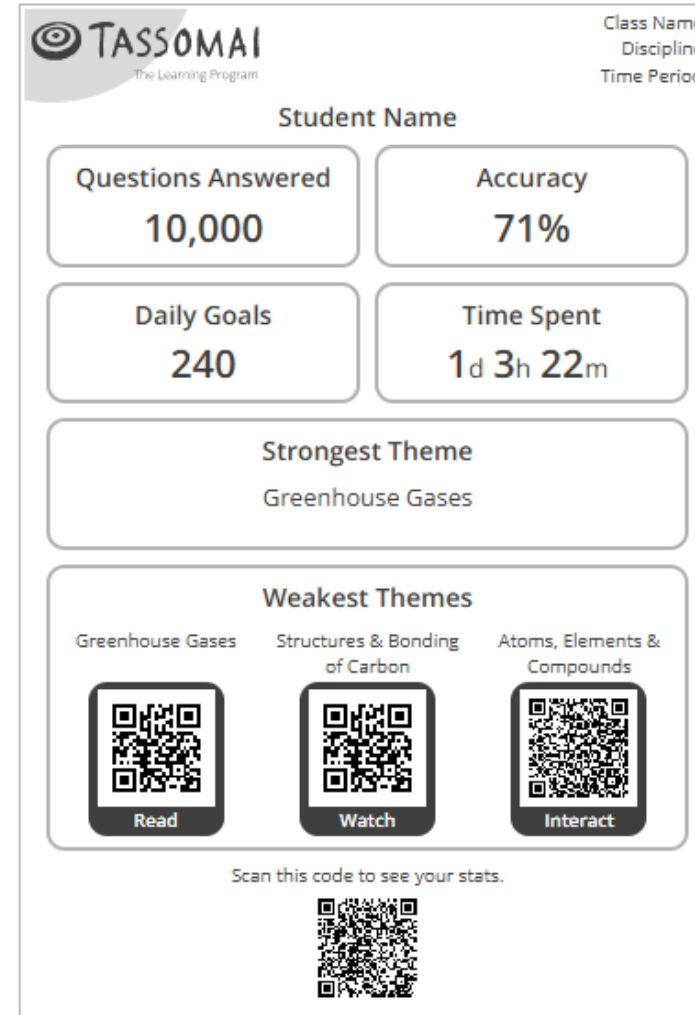
Tassomai

- Quizzing provides instant feedback for students.
- Algorithm built in to ensure weaker areas are focused on.
- Learning tree allows students to identify problem areas.
- Individual printable reports

Tassomai- individual printable reports

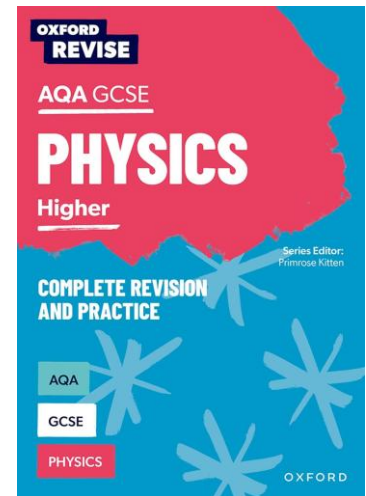
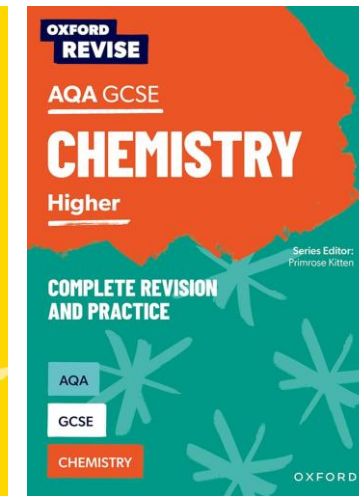
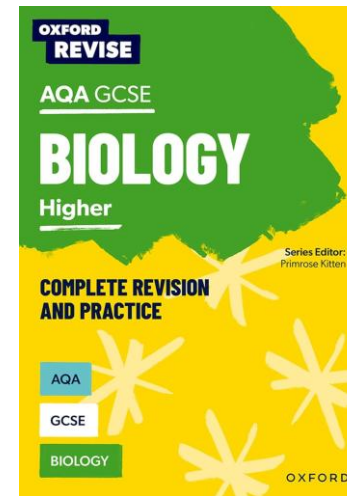
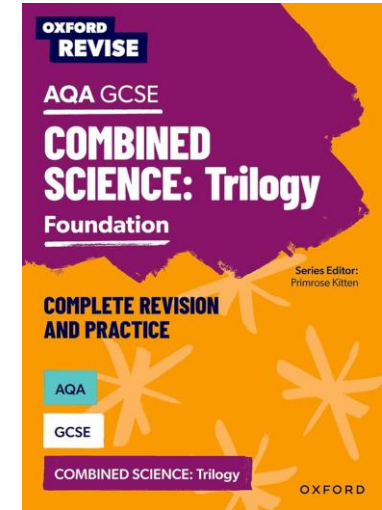
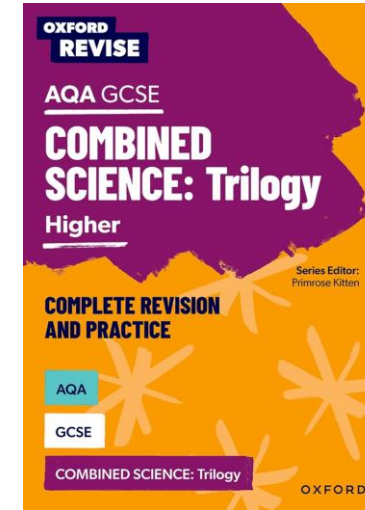


- Allows for an A5 report for each student showing their areas of strength and areas of development.
- QR codes link to bbc bitesize and short videos explaining topics further.



Revision guides

- Each student will be issued a revision guide before the mock exams.
- This has a knowledge organiser for each topic, retrieval practice quizzes and past paper questions.
- It also includes key words, tips for exam questions, required practicals and key maths skills for the exams.



Essential revision Materials

- **AQA website-** specification and past papers ([Science | Subjects | AQA](#))
- **Tassomai-** homework quizzing (www.tassomai.com)
- **BBC bitesize-** interactive revision and quizzes ([GCSE Science - BBC Bitesize](#))
- **Free science lessons-** Short topic focused video tutorials ([Freesciencelessons – YouTube](#))
- **Physics and maths tutor-** Past examination papers and revision materials ([Physics & Maths Tutor](#))

Top tips for science

- **Know the course topics inside out**
 - The AQA specification and the revision guide tells you everything that could be examined.
 - Download the specification and tick off the topics as you revise them.



Top tips for science

- **Know the required practicals. For each one make sure you can:**
 - Recall the method and variables
 - Explain how to improve accuracy.
 - Describe patterns or errors that could occur.

10.2.1 Required practical activity 1

Use a light microscope to observe, draw and label a selection of plant and animal cells. A magnification scale must be included.

Apparatus and techniques

In doing this practical students should cover these parts of the Apparatus and Techniques requirements.

Biology AT 1 – use appropriate apparatus to record length and area.

Biology AT 7 – use a microscope to make observations of biological specimens and produce labelled scientific drawings.

Key opportunities for skills development

In doing this practical there are key opportunities for students to develop the following skills.

MS 1d, 3a – use estimations to judge the relative size or area of sub-cellular structures.

10.2.2 Required practical activity 2

Investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue.

Apparatus and techniques

In doing this practical students should cover these parts of the apparatus and techniques requirements.

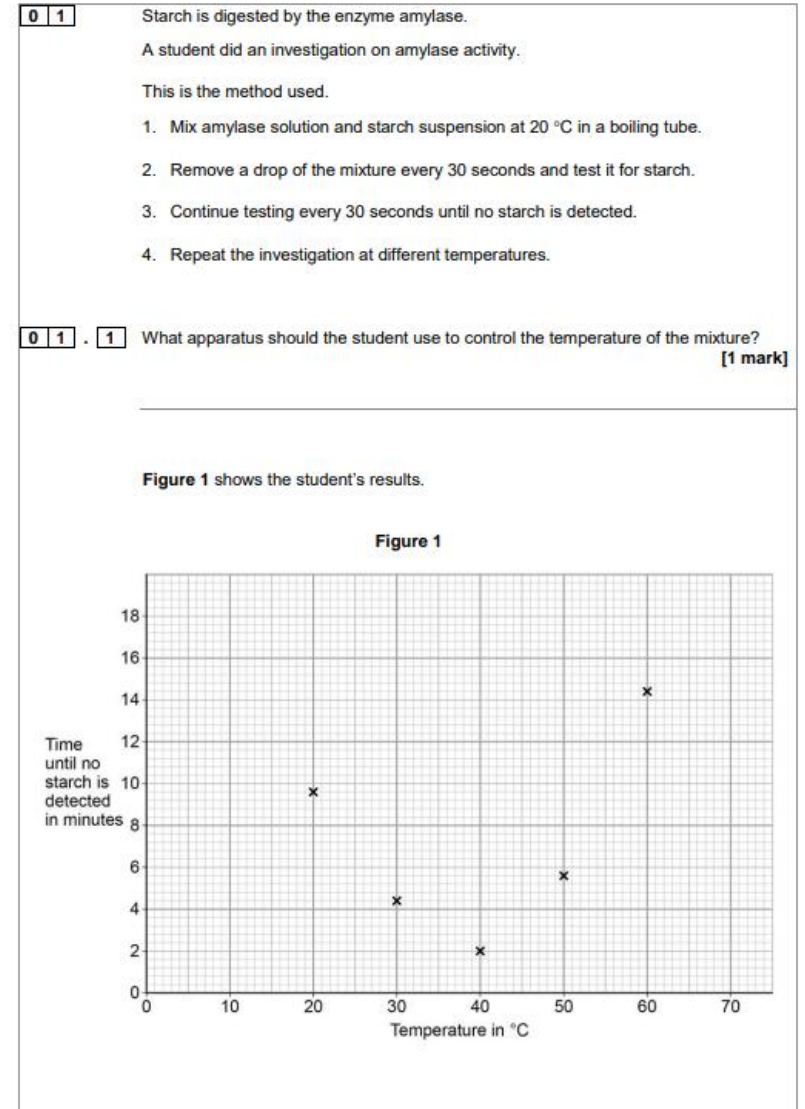
Biology AT 1 – use appropriate apparatus to record mass and time.

Biology AT 3 – use appropriate apparatus and techniques to observe and measure the process of osmosis.

Biology AT 5 – measure the rate of osmosis by water uptake.

Top tips for science

- **Practice data and graph questions**
- Many marks come from interpreting data, graphs or experiments.
- Practice describing trends or anomalies and conclusions.
- Ensure to be aware of the difference between 'describe' and 'explain'



Top tips for science

- **Practice rearranging equations.**
- There are some equations you need to memorise in Biology and Chemistry.
- In Physics you are given the equation sheet, but you still need to be able to apply them to a question.
- Ensure you are aware of units.
Flashcards can be a useful method of remembering them.

(d) The helium in the balloon has a mass of 0.00254 kg.

The balloon has a volume of 0.0141 m³.

Calculate the density of helium. Choose the correct unit from the box.

m^3 / kg	kg / m^3	kg m^3
--------------------------	--------------------------	-----------------

.....

.....

.....

.....

Density = ... Unit

(3)

Top tips for science

- **Use past papers effectively**
 - Use AQA past papers and mark schemes (AQA and physics and maths tutor).
 - Don't just mark the answer- read why you lost marks.
 - Examiners reports are useful to see common mistakes.



Please write clearly in block capitals.

Centre number Candidate number

Surname

Forename(s)

Candidate signature

GCSE COMBINED SCIENCE: TRILOGY

H

Higher Tier
Chemistry Paper 1H

Thursday 16 May 2019 Morning Time allowed: 1 hour 15 minutes

Materials

For this paper you must have:

- a ruler
- a scientific calculator
- the periodic table (enclosed).

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- In all calculations, show clearly how you work out your answer.

Information

- The maximum mark for this paper is 70.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.
- You are reminded of the need for good English and clear presentation in your answers.

For Examiner's Use	
Question	Mark
1	
2	
3	
4	
5	
6	
TOTAL	

Top tips for science

- **Don't ignore the six-mark long answer questions**
 - Use the PEEL structure (Point, Evidence/example, Explain, Link to question).
 - Practice writing clear and logical explanations.
 - Use past papers to practice.

0 2 6

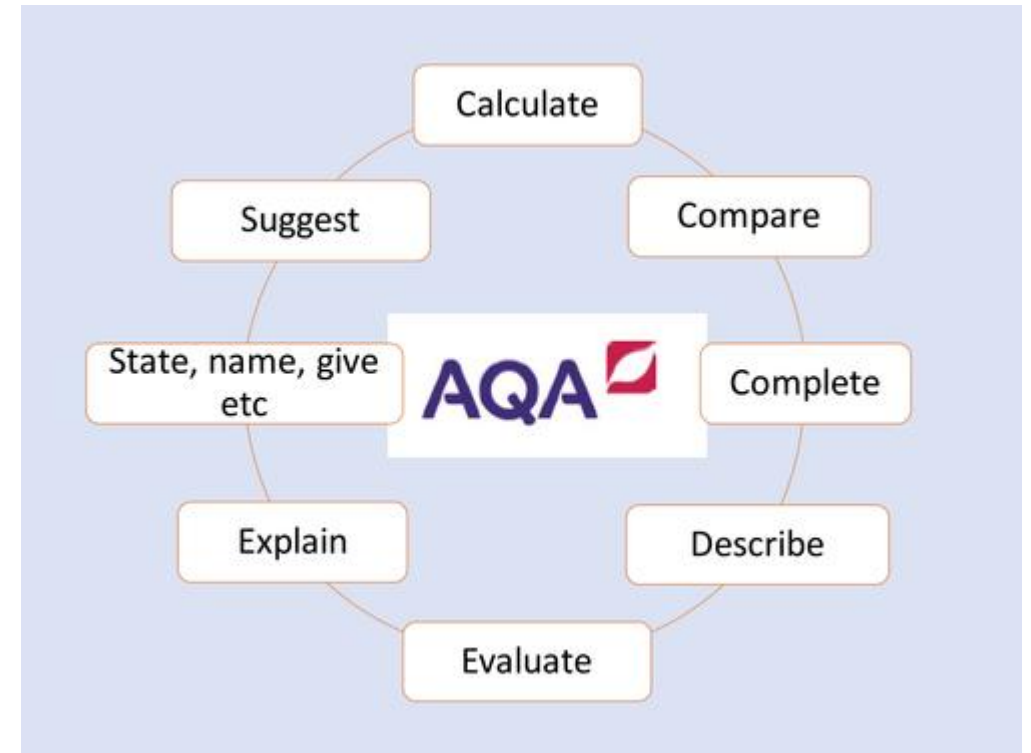
Describe a method to investigate how the temperature changes when different masses of ammonium nitrate are dissolved in water.

You do **not** need to write about safety precautions.

[6 marks]

Top tips for science

- **Learn command words**
 - *'Describe'* - what you see.
 - *'Explain'* - why it happens
 - *'Compare'* - similarities and differences
 - *'Evaluate'* - pros and cons and conclusion.



Misreading command words can lose vital marks.

Contact details

Mr R Hancock (Head of science)

rhancock@kingcharles1.worcs.sch.uk