



Honywood
School

Guided Choices 2020

GCSE Triple Science

What are the options?

AQA 9-1 GCSE Combined Science: Trilogy

- Two GCSE's
- Covers content from Biology, Physics and Chemistry
- For example, 3/2 in Combined Science

AQA 9-1 GCSE Triple Science

- Three separate GCSE's in Biology, Chemistry and Physics
- For example, grade 4 in Biology, grade 5 in Chemistry and grade 6 in Physics

Learners will also have the option to take the higher or foundation paper

Why choose triple science?

Want to study science in the future

- More content to prepare them for an A level

I enjoy science!

- More science on their timetable
- Topics such as Space are only taught in Triple
- Option of Foundation

I'm good at science

- They will get an extra science GCSE

Colchester sixth form

Minimum Entry Criteria

Standard College entry requirements (as detailed on page 12 of the Prospectus) and a minimum of:

Grade 6	GCSE Mathematics AND
Grade 5	GCSE English Language or English Literature AND
Grade 6	Both 1st and 2nd grade GCSE Combined Science OR (if triple science is taken)
Grade 6	GCSE Biology

Topics for GCSE Triple Science

Biology	Chemistry	Physics
B1- Cell Biology	C1- Atomic structure and the periodic table	P1- Forces
B2- Organisation	C2- Bonding, structure, and the properties of matter	P2- Energy
B3- Infection and response	C3- Quantitative chemistry	P3- Waves
B4- Bioenergetics	C4- Chemical changes	P4- Electricity
B5- Homeostasis and response	C5- Energy changes	P5- Magnetism and electromagnetism
B6- Inheritance, variation and evolution	C6- The rate and extent of chemical change	P6- Particle model of matter
B7- Ecology	C7- Organic chemistry	P7- Atomic structure
	C8- Chemical analysis	P8- Space Physics
	C9- Chemistry of the atmosphere	
	C10- Using resources	

Extra content - examples

Biology

- Cloning
- Growth of bacteria
- The brain and the eye

Chemistry

- Titrations
- Nano chemistry
- Haber process

Physics

- Static electricity
- Generator effect
- Space Physics

See the AQA specifications for more detail

How much time do they have?

GCSE Combined Science: Trilogy

- 8 sessions a fortnight

GCSE Triple Science

- 12 sessions a fortnight

The exams

Two papers per subject, each worth 50% of the GCSE

- Two biology
- Two chemistry
- Two physics

Each paper is 1 hour 45 minutes

Includes a range of questions; multiple choice, structured, closed, short answer and open response

A student put some potassium bromide solution in a test tube.

She added a few drops of chlorine solution and observed the result.

She repeated the process using different potassium halide salts and different halogens.

Table 2 shows the student's results.

Table 2

Solution of halogen	Potassium chloride solution	Potassium bromide solution	Potassium iodide solution
Chlorine		Orange colour forms	Brown colour forms
Bromine	No reaction		Brown colour forms
Iodine	No reaction	No reaction	

3 Give the order of reactivity of the halogens from the results in **Table 2**.

Explain how you used the results to show this order of reactivity.

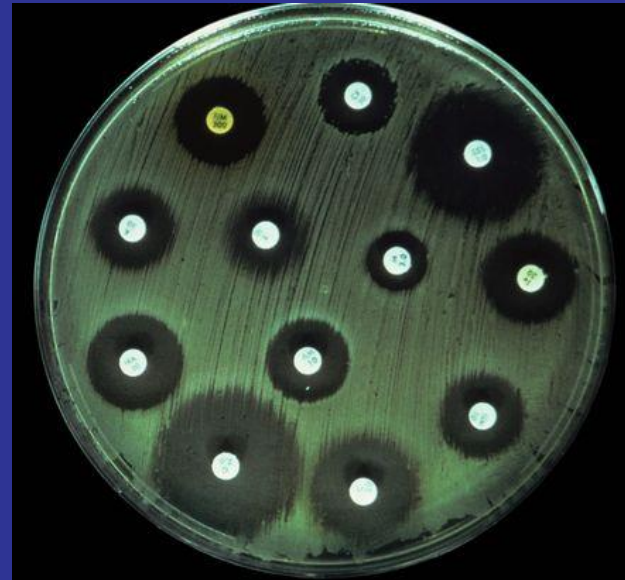
[2 marks]

Required practicals

There is no coursework. Instead, at least 15% of overall marks in the exam will cover practical work

- 21 practicals GCSE Combined Science: Trilogy
- 28 practicals GCSE Triple Science

Required practicals



Maths in science

Minimum percentage of marks for maths across the qualification:

- Biology 10%
- Chemistry 20%
- Physics 30%

Level of demand of mathematical assessment on each paper:

- Foundation Tier – at least the level of Key Stage 3 Maths
- Higher Tier – at least Foundation Tier GCSE Maths

Physics equations

Learners will need to learn 23 equations as these won't be given to them in the exam

Word equation	Symbol equation
weight = mass \times gravitational field strength (g)	$W = m g$
work done = force \times distance (along the line of action of the force)	$W = F s$
force applied to a spring = spring constant \times extension	$F = k e$
moment of a force = force \times distance (normal to direction of force)	$M = F d$
pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
distance travelled = speed \times time	$s = v t$
acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
resultant force = mass \times acceleration	$F = m a$
momentum = mass \times velocity	$p = m v$
kinetic energy = $0.5 \times \text{mass} \times (\text{speed})^2$	$E_k = \frac{1}{2} m v^2$
gravitational potential energy = mass \times gravitational field strength (g) \times height	$E_p = m g h$
power = $\frac{\text{energy transferred}}{\text{time}}$	$P = \frac{E}{t}$
power = $\frac{\text{work done}}{\text{time}}$	$P = \frac{W}{t}$
efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	

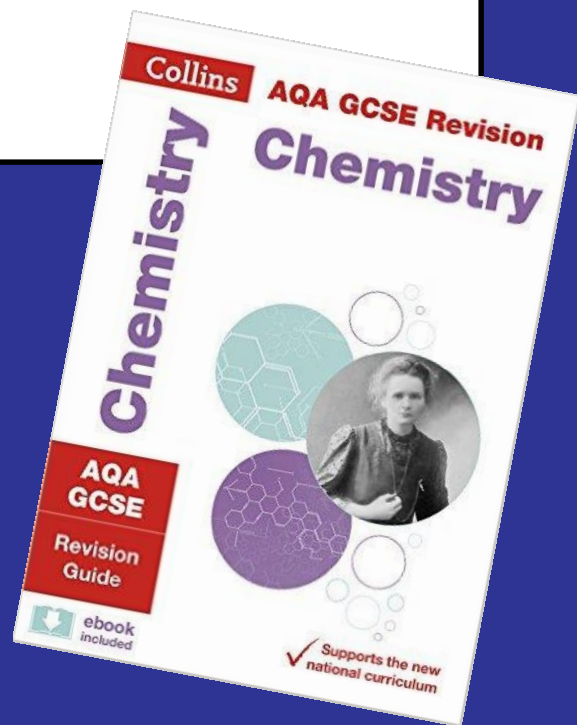
Word equation	Symbol equation
wave speed = frequency \times wavelength	$v = f \lambda$
charge flow = current \times time	$Q = I t$
potential difference = current \times resistance	$V = I R$
power = potential difference \times current	$P = V I$
power = (current) ² \times resistance	$P = I^2 R$
energy transferred = power \times time	$E = P t$
energy transferred = charge flow \times potential difference	$E = Q V$
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

How do we monitor progress?

- End of unit test (24)
- Mocks at the end of C9, C10 and at the start of C11 which are graded

Supporting our learners

- Revision guides available from the school
- Supporting your youngster in 2 - 3 hours of science IS per week
- Revision after school



GCSE Triple Science

- All examinations to take place at the end of Cohort 11
- No option of taking exam early or retaking the exams
- Starting in C9 rather than C10 means we have an extra year to prepare learners for exams at the end of their studies



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Thank you for listening

Questions?