Raising Achievement Evening: Science

AQA GCSE Sciences:

Combined Science (Trilogy)
Biology, Chemistry, Physics

What do students need for Revision?

We recommend CGP

All the revision timetables are linked to CGP revision guides and kerboodle textbooks.

Exam Board (AQA) materials -all free and open access

Our booklets of exam papers, kerboodle textbooks and lots of other materials to support their in-class (revision 40h in class for combined and 60h for Triple between their last mock exam (P2) and the real thing!)

Y11 Revision schedule Foundation Tier

These have been produced for each assessment point throughout Y10 and Y11. Students are aware of them and familiar with them.

What examinations are taken in Science?

Combined Science Trilogy (***Double award GCSE***)

Biology paper 1 and paper 2
Chemistry paper 1 and paper 2
Physics Paper 1 and paper 2
(each paper is 1h 15 mins)

What examinations are taken in Science?

Triple Science or single sciences - 3 GCSE's

Biology paper 1 and paper 2
Chemistry paper 1 and paper 2
Physics Paper 1 and paper 2
(Each paper is 1h 45 mins)

Combined Science (Trilogy)

http://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464

Biology

http://www.aqa.org.uk/subjects/science/gcse/biology-8461

Chemistry

http://www.aqa.org.uk/subjects/science/gcse/chemistry-8462

Physics

http://www.aqa.org.uk/subjects/science/gcse/physics-8463

In general

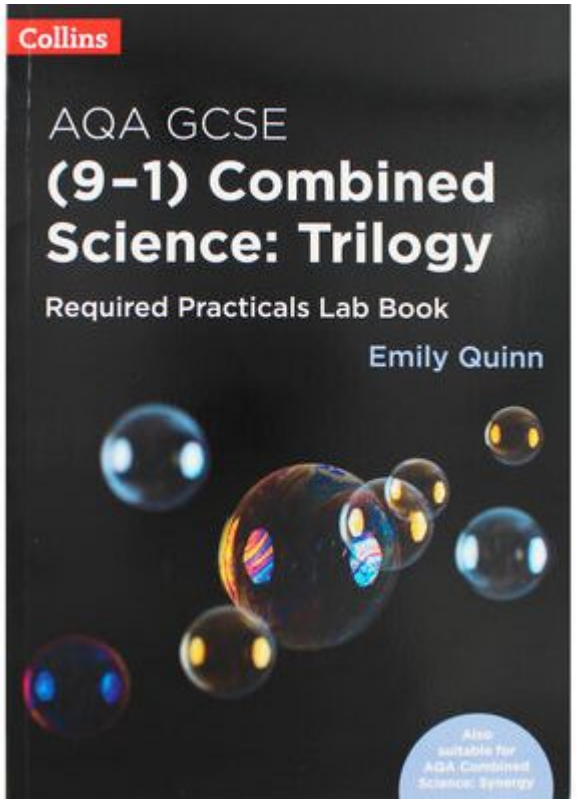
Describing practical work correctly exam board guidance:

http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-SUBJECT-VOCAB.PDF

Command Words in papers exam board guidance:

https://www.aqa.org.uk/resources/science/gcse/teach/command-words

Required Practical books



AQA

The Periodic Table of Elements

1	2											3	4	5	6	7	0
							1 H hydrogen 1										4 He helium 2
7 Li lithium 3	9 Be beryllium 4		Key: relative atomic mass, atomic symbol, name, atomic (proton) number									11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[98] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
[223] Fr francium 87	[226] Ra radium 88	[227] Ac* actinium 89	[261] Rf rutherfordium 104	[262] Db dubnium 105	[266] Sg seaborgium 106	[264] Bh bohrium 107	[277] Hs hassium 108	[268] Mt meitnerium 109	[271] Ds darmstadtium 110	[272] Rg roentgenium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flerovium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[294] Ts tennessine 117	[294] Og oganesson 118

* The Lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted.

Relative atomic masses for **Cu** and **Cl** have not been rounded to the nearest whole number.

This should always be used when attempting chemistry questions.

There is an equation sheet for the physics papers.

AQA

Physics Equations Sheet
GCSE Physics (8463)
FOR USE IN JUNE 2023 ONLY

HT = Higher Tier only equations

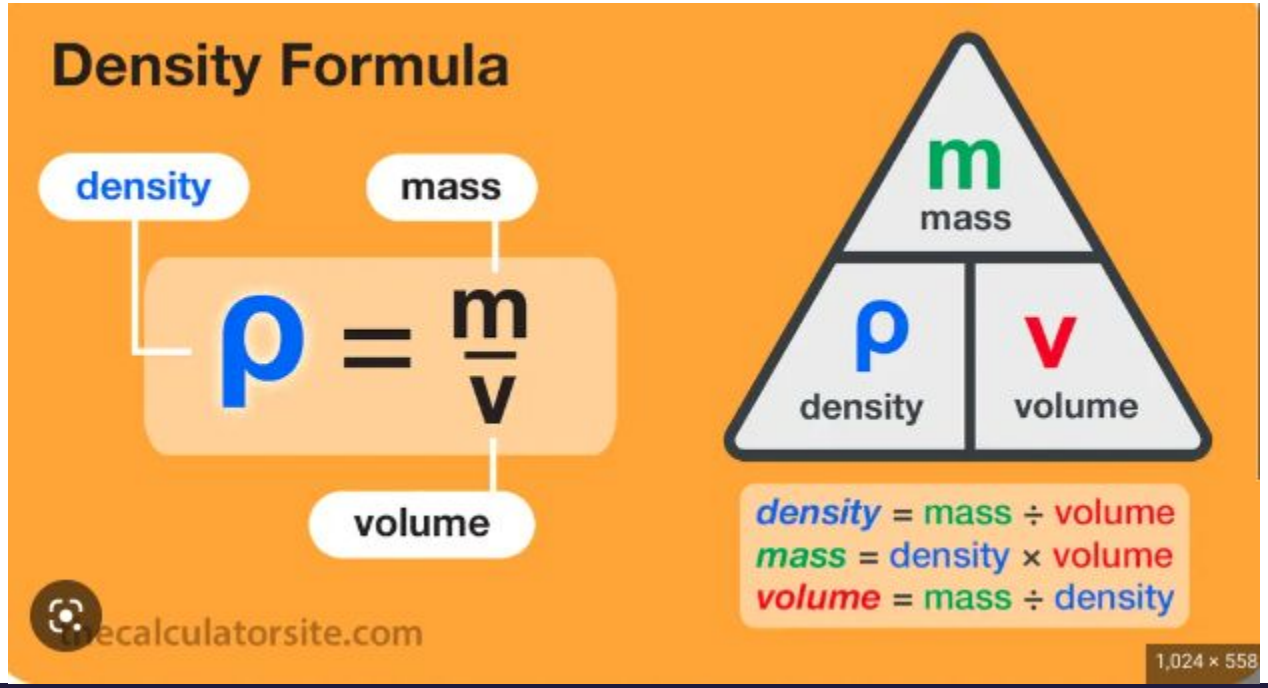
kinetic energy = 0.5 × mass × (speed)^2	$E_k = \frac{1}{2} m v^2$
elastic potential energy = 0.5 × spring constant × (extension)^2	$E_e = \frac{1}{2} k e^2$
gravitational potential energy = mass × gravitational field strength × height	$E_p = m g h$
change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = m c \Delta\theta$
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 = $\frac{\text{useful power output}}{\text{total power input}}$	
charge flow = current × time	$Q = I t$
potential difference = current × resistance	$V = I R$
power = potential difference × current	$P = V I$
power = (current)^2 × resistance	$P = I^2 R$
energy transferred = power × time	$E = P t$
energy transferred = charge flow × potential difference	$E = Q V$
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

	thermal energy for a change of state = mass × specific latent heat	$E = m L$
	For gases: pressure × volume = constant	$p V = \text{constant}$
	weight = mass × gravitational field strength	$W = m g$
	work done = force × distance (along the line of action of the force)	$W = F s$
	force = spring constant × extension	$F = k e$
	moment of a force = force × distance (normal to direction of force)	$M = F d$
	pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
HT	**pressure due to a column of liquid = height of column × density of liquid × gravitational field strength**	$\boldsymbol{p = h \rho g}$
	distance travelled = speed × time	$s = v t$
	acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
	(final velocity)^2 – (initial velocity)^2 = 2 × acceleration × distance	$v^2 - u^2 = 2 a s$
	resultant force = mass × acceleration	$F = m a$
HT	**momentum = mass × velocity**	$\boldsymbol{p = m v}$
HT	**force = $\frac{\text{change in momentum}}{\text{time taken}}$**	$\boldsymbol{F = \frac{m \Delta v}{\Delta t}}$
	period = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
	wave speed = frequency × wavelength	$v = f \lambda$
	magnification = $\frac{\text{image height}}{\text{object height}}$	
HT	**force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density × current × length**	$\boldsymbol{F = B I l}$
HT	**$\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$**	$\boldsymbol{\frac{V_p}{V_s} = \frac{n_p}{n_s}}$
HT	**potential difference across primary coil × current in primary coil = potential difference across secondary coil × current in secondary coil**	$\boldsymbol{V_p I_p = V_s I_s}$

ASHLYNS SCHOOL

Physics equations

Only Higher tier students need to rearrange the equations. Check with your child which method they prefer.



Hints and tips

Revision needs to be interactive. Copying out notes or reading sections of revision guides doesn't guarantee you have thought about the work. Neither does watching endless videos!

Could they write some questions with answers that someone else could ask them?

Could they explain to you what they think are the key ideas?

Have they tried some exam questions on this topic?

Hints and tips

Once they are feeling a little more confident they could write a short paragraph (6 mark answer) summarising what they have learnt. This might be on a specific topic or a required practical.

They can bring this into school for their teacher to look at.

Use the command word booklet so they know what they are being asked for in each question.

Hints and tips

Describe

Students may be asked to recall some facts, events or process in an accurate way.

Plan

Write a method.

Suggest

This term is used in questions where students need to apply their knowledge and understanding to a new situation.

Encourage students to show their working out in calculations.

What's available for Science?

Revision materials for **every** topic

Revision timetables, resources including papers and mark schemes, keywords to learn. Kerboodle textbook answers. Look at GC.

Take away message

All students should have review sheets from their B1, C1 and P1 mocks. These show the areas they need to focus on for these exams. They will also be taking a mock B2, C2 and P2. They should start revising for these.

If you have any queries contact their teacher or me.