Year 11 Science Parent Forum

Subject Leader-Mrs Venables

'Ports of call'

Mrs Venables	Subject Leader	All queries Combined Science Triple Biology
Mr Burden	Leader of Physics	Triple Physics
Mr Agor	Leader of Chemistry	Triple Chemistry

Year 11 Progress Leader: Mrs Turner

Year 10 Progress Leader: Mr Udkah

COMMITMENT ● RESPECT ● EXCELLENCE ● SELF-BELIEF ● STRENGTH

Exam board

Which exam board are we using?

AQA

**This is for both Triple and Combined.
Combined are following AQA Trilogy.**

How many exams will my child sit?

- 6 written exams for Science- 2 for Biology, 2 for Chemistry and 2 for Physics.

- For Combined Science - each paper will be1 hour 15 minutes long and there are 70 marks available on each paper.

- For Triple Science - each paper will be1 hour 45 minutes long and there are100 marks available on each paper.

Foundation or Higher Tier entries

Which tier is my child going to sit?

Final decision will be made after the Year 11 PPEs.

H – Triple – Higher
I – Combined – Higher
J – Combined – Foundation
K – Combined – Foundation
L – Combined - Foundation

Key Dates

- 10th October 2024 - **Year 11 Progress Evening**

- Week beginning 23rd and 30th September 2024 - **Summative Assessments**

- Week beginning13th **and** 19th January 2025 – **PPE window**

- 20th March 2025 – **Year 11 Progress Evening**

- GCSE examination dates should be released early Autumn, we'll communicate them as soon as we know them.

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GCSE Combined Science grades

- Combined Science double weighted.
- Cumulative score across all 6 papers gives 2 grades.
- For 'point scores' students will get an average.

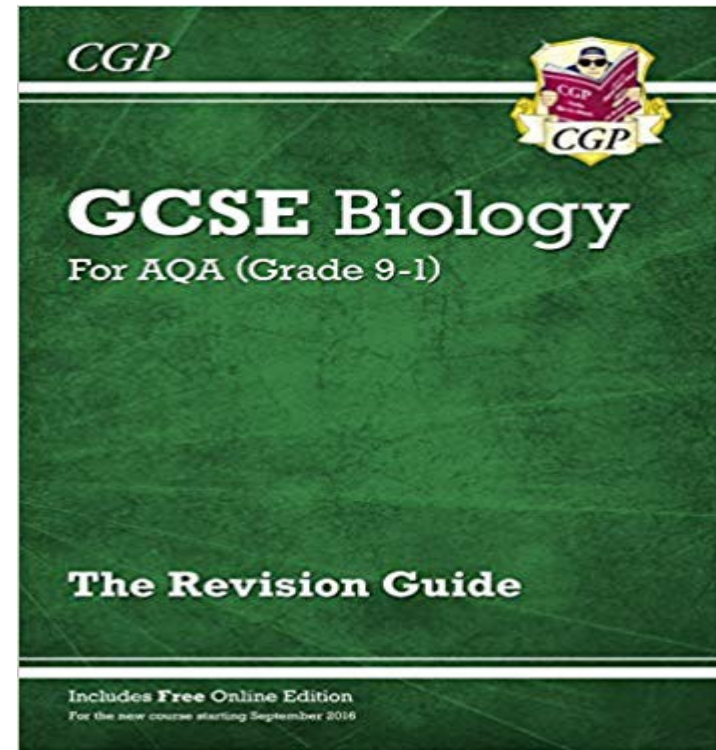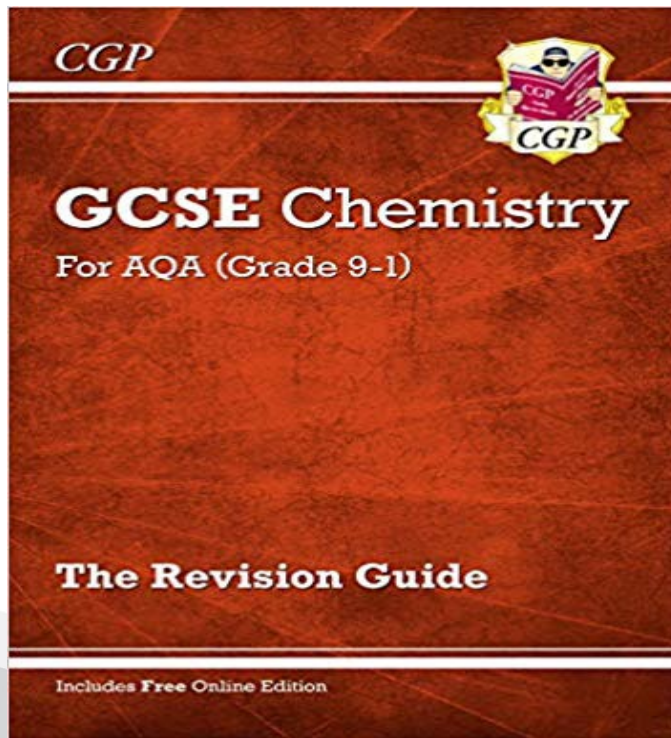|	
99	55
89	45
88	44
78	43
77	33
76	32
66	22
65	21
55	11

How can we help year 11 students prepare & revise for GCSE?
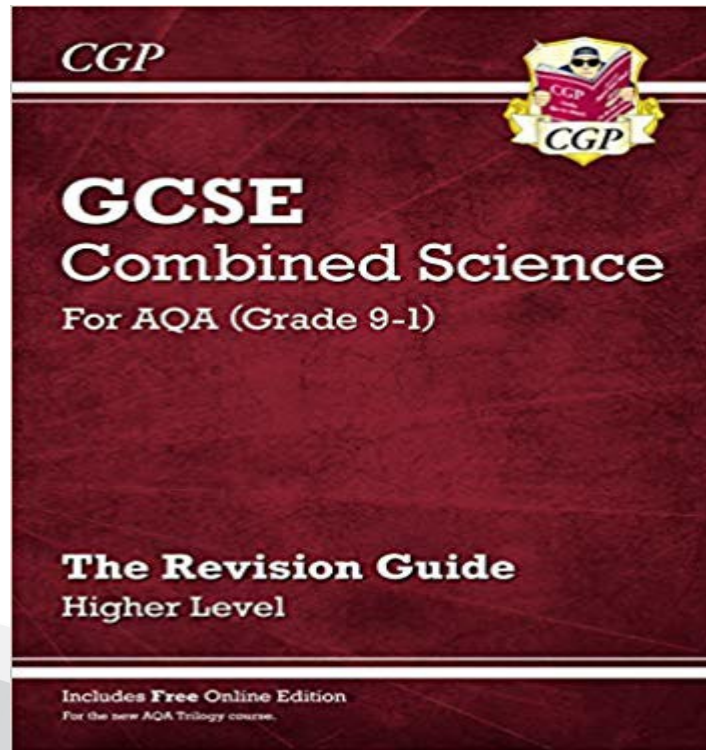
Science revision guides

Science revision guides
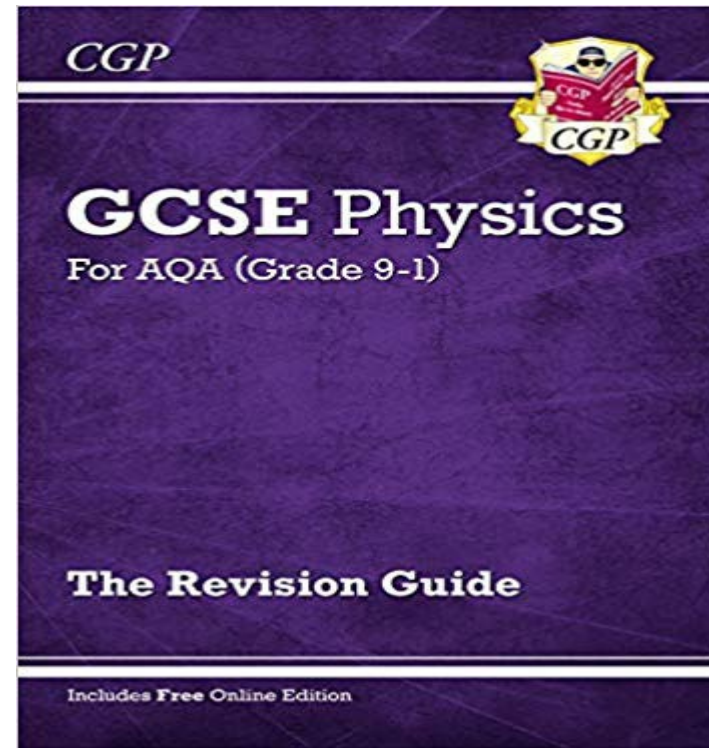
Useful websites – Free Science Lessons

Useful websites – Malmesbury Education

Useful websites – Cognito

COMMITMENT ● RESPECT ● EXCELLENCE ● SELF-BELIEF ● STRENGTH

Revision Centre

Combined Science Homework

Two types of homework, one of each per fortnight.
Class teacher homework
Learning homework

Supporting your child with Learning Homeworks

This is where you can really help your child prepare and revise for their GCSE:
- Get them to make flash cards on them.
- Test them verbally on these Qs.
- Get them to write out the answers and check answers.

P6 Intervention

Science – Thursdays.

Sessions to begin shortly – this will be communicated home.

Students will be invited to sessions that they should attend.

Triple Science

Students in sets 11SH & 11NH

These students will take 3 separate GCSEs, Biology, Chemistry & Physics

Triple Science

For each subject:

- 2 papers of 1 hour 45 minutes
- each paper is 100 marks
- Different topics in Paper 1 & 2
- The three grades are totally independent

Triple Science

Classes have a specialist teacher for each of the three subjects.

4 hrs Biology

3 hrs Chemistry

3 hrs Physics

Triple Science

AQA
Realising potential

GCSE
PHYSICS
(8463)

Specification
For teaching from September 2016 onwards
For exams in 2018 onwards

Version 1.1 30 September 2019

AQA GCSE Physics – Equations & Formulae (specification 8463 & 8464)

Unit 1: Energy

Equations to Learn

kinetic energy = $\frac{1}{2}$ × mass × speed^2	$E_K = \frac{1}{2}mv^2$
GPE = mass × gravitational field strength × height	$E_P = mgh$
power = $\dfrac{\text{work done}}{\text{time taken}} = \dfrac{\text{energy transferred}}{\text{time taken}}$	$P = \dfrac{W}{t} = \dfrac{E}{t}$
efficiency = $\dfrac{\text{useful energy output}}{\text{total energy input}}$ efficiency = $\dfrac{\text{useful power output}}{\text{total power input}}$	

Equations given in the exam

elastic potential energy = 0.5 × spring constant x (extension)^2	$E_e = \frac{1}{2}ke^2$
change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = mc\Delta\theta$

Unit 2: Electricity

Equations to Learn

charge flow = current × time	$Q = I\,t$
potential difference = current × resistance	$V = I\,R$
total resistance = resistance of component 1 + resistance of component 2	$R_T = R_1 + R_2$
power = current × potential difference	$P = I\,V$
power = (current)^2 × resistance	$P = I^2 R$
energy transferred = power × time	$E = Pt$
energy transferred = charge flow × potential difference	$E = QV$

Unit 3: Particle Model of Matter

Equations to Learn

density = $\dfrac{\text{mass}}{\text{volume}}$	$\rho = \dfrac{m}{V}$

Equations given in the exam

change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = mc\Delta\theta$
thermal energy for a change in state = mass × specific latent heat	$E = mL$
^ for a gas: pressure × volume = constant	$pV = constant$

Unit 6: Waves

Equations to Learn

wave speed = frequency × wavelength	$v = f\,\lambda$

Equations given in the exam

time period = $\dfrac{1}{\text{frequency}}$	$T = \dfrac{1}{f}$
^ magnification = $\dfrac{\text{image height}}{\text{object height}}$	$M = \dfrac{h_{image}}{h_{object}}$

Unit 7: Magnetism and Electromagnetism

Equations given in the exam

* Force = magnetic flux density × current × length of conductor in magnetic field	$F = BIl$
* $\dfrac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \dfrac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$	$\dfrac{V_P}{V_S} = \dfrac{N_P}{N_S}$
* ^ p.d across primary × current in primary = p.d. across secondary x current in secondary	$V_P I_P = V_S I_S$

Unit 5: Forces

Equations to Learn

weight = mass × gravitational field strength	$W = m\,g$
work done = force × distance (moved along the line of action of the force)	$W = Fs$
force = spring constant × extension	$F = ke$
moment of a force = force × distance (perpendicular to the direction of the force)	$M = Fd$
pressure = $\dfrac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \dfrac{F}{A}$
distance travelled = speed × time	$s = vt$
acceleration = $\dfrac{\text{change in velocity}}{\text{time taken}}$	$a = \dfrac{\Delta v}{t}$
= $\dfrac{\text{final velocity-initial velocity}}{\text{time taken}}$	$= \dfrac{v - u}{t}$
resultant force = mass × acceleration	$F = ma$
* momentum = mass × velocity	$p = mv$

Equations given in the exam

* ^ Pressure = height of column × density of liquid × gravitational field strength	$p = h\,\rho\,g$
^ (final velocity)^2 – (initial velocity)^2 = 2 × acceleration × distance	$v^2 - u^2 = 2as$
* ^ Force = $\dfrac{\text{change in momentum}}{\text{time taken}}$	$F = \dfrac{m\,\Delta v}{t}$

Unit 4: Atomic Structure & Unit 8: Space

There are no equations in these sections of the course

* Higher tier only

^ Separate Physics only

Triple Science

2 Specification at a glance

This qualification is linear. Linear means that students will sit all their exams at the end of the course.

2.1 Subject content

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Triple Science

2.2 Assessments

Paper 1:

What's assessed

Topics 1-4: Energy; Electricity; Particle model of matter; and Atomic structure.

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50% of GCSE

Questions

- Multiple choice, structured, closed short answer and open response.

Paper 2:

What's assessed

Topics 5-8: Forces; Waves; Magnetism and electromagnetism; and Space physics.

Questions in paper 2 may draw on an understanding of energy changes and transfers due to heating, mechanical and electrical work and the concept of energy conservation from Energy (page 17) and Electricity (page 23).

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50% of GCSE

Questions

- Multiple choice, structured, closed short answer and open response.

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4.1.1 Energy changes in a system, and the ways energy is stored before and after such changes

4.1.1.1 Energy stores and systems

Content	Key opportunities for skills development
A system is an object or group of objects. There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example: • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. Throughout this section on Energy students should be able to calculate the changes in energy involved when a system is changed by: • heating • work done by forces • work done when a current flows	The link between work done (energy transfer) and current flow in a circuit is covered in Energy transfers (page 29). WS 4.5

Triple Science

Students need to know:

- Scientific content
- Required practicals
- How to use data
- Formulas (mainly physics)
- Equations (mainly chemistry)

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Scientific content:
A lot of learning, simple recall, knowing definitions and applications

Flashcards, mind maps, revision books

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Required practicals:

Understanding what is the purpose of a practical and how it is carried out.

Class practicals, online videos, single page summary sheets

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Using data:

Questions give data in a table or graph, interpreting information, calculations using the data.

Past papers, revision books, online videos

Triple Science

Physics formulas and Chemistry equations:

Old fashioned learning of facts.

21 physics formulas

Know the units, conversions & rearranging formulas

Formula sheets, blind testing, past paper questions

Thank you for your time

You are more than welcome to ask any questions.

Please feel free to make additional enquiries via email to:
enquiries@belfairsacademy.org.uk

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