How to support your child in Year 10

Mrs Victoria Hall

Head of Year 10

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What is the purpose of tonight?

- Inform you about ways you can support your child in year 10 (and year 11).
- To provide you with clear and practical information about the structure of the year.
- To show that you do not need to be an expert in all of the subjects to help your child.

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Year 10 key dates

The key dates for Year 10 have already been emailed home, but with regards to data drop dates and examinations the following dates are especially important:

Data drop 1: 19th November (STG, ATL, Behaviour Flags, GCSE Ready)

Data drop 2: 18th March (STG, PEG, ATL, Flags)

Y10 Formal assessment windows: 9th June - 20th June

Data drop 3: 1st July (STG, PEG, Exam, ATL, Flags)

Parents evenings: P band - 3rd July, Q band - 8th July

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How will data be generated?

Data drops 1 & 2 will use assessed work in class and homeworks to inform the grade for each subject.

STAR assessments are particularly important for this and require students attention and focus.

The end of year 10 assessment week is an opportunity for students to be assessed in a more formal way. This is useful practice as it mimics what students will face in their Y11 mocks and the end of year 11. Maths and English exams will take place in the Sports Hall

It also allows staff to get a good indication of performance so far and predicted end of course grades.

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School Target Grade (STG) Vs Predicted End Grade

School Target Grades are set at the beginning of Year 10 based on prior attainment data and statistical modelling and are aspirational grades for students to strive for.

Predicted End Grades indicate the grade your child's teacher expects them to achieve at the end of the course based on their progress to date. These will be reported in data drop 2 and 3.

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Year 10 Grade Update 3
July 2024

Name:
Tutor Group: 1
Attendance: 95.11%
Late Marks: 1
Behaviour Points: 359 (360 Positive Points and -1 Negative Points)

Subject	School Target Grade	Predicted End Grade	Year 10 Exam Grade	Current Attitude Grade	Concerns				
					Attendance	Behaviour	Homework	Organisation	Work Rate
Biology	9	9	9	1					
Chemistry	9	9	8	1					
Computer Science	8	9	9	1					
Engineering Design ~	*2	D2	*2	1					
English Language	8	8		1					
English Literature	8	8	8	1					
History	9	9	9	1					
Maths	9	9	8	1					
Physics	9	9	8	1					
Spanish	8	8	7	1					

Information:

- School Target Grades are set at the beginning of Year 10 based on prior attainment data and statistical modelling and are aspirational grades for students to strive for.
- Predicted End Grades indicate the grade your child's teacher expects them to achieve at the end of the course based on their progress to date.
- Academic subjects use the GCSE 9-1 grading scheme.
- Vocational subjects indicated by a ~ and are graded; Pass (P2), Merit (M2), Distinction (D2), Star (*2).
- The Exam Grade is taken from the exams students sat in June.
- Attitude to Learning is graded 1 to 5, where 1 is the highest attitude grade that a student can achieve.
- Specific concerns are indicated by a 'True' in the relevant column.
- Attendance is categorised as per the table to the right.

Attendance Key	
100%-96.9%	Good
95-95.9%	Satisfactory
90-94.9%	Unsatisfactory
90%	Persistent Absence

Personal Organiser

This is a key document to personal success. It connects students, teachers, and parents.

Students will have their organisers checked on a Monday morning. These must be signed by a parent/carer.

Half termly attendance and reviews of our learning behaviours are also recorded in organisers.

Please feel free to communicate with teachers via comments in the P.O.

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What should be recorded in the personal organiser?

Homework set by teachers - the subject, what needs to be done, due date

Time spent reviewing or revising work covered in lesson time over the course of a week or a fortnight.

Time spent revising.

Time spent attending any intervention groups.

Attendance at study groups or the LRC.

Time spent doing sports or hobbies etc…

Comments from teachers or parents/carers.

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Parents/carers - What can you do?

Talk to your child about school. The signing of the personal organiser is a good time to do this.

Ask to look at their school work/homework and read what they have done.

Ask them to teach you a topic to help embed their learning.

Agree the balance between school and social life - and stick to it.

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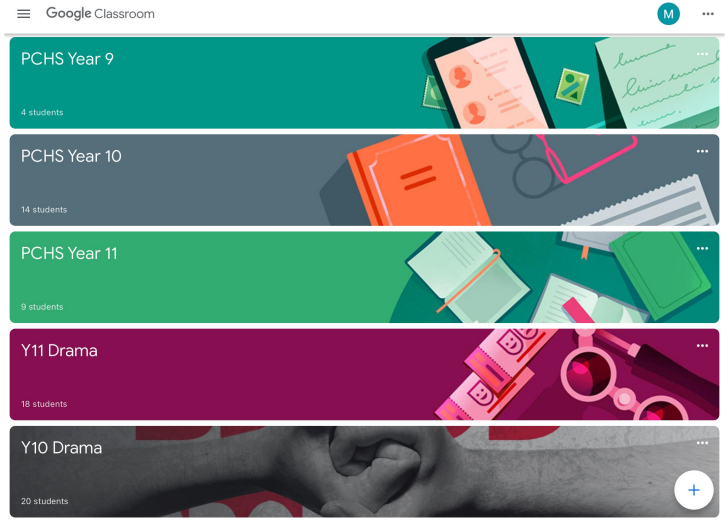
Google classroom

Students have a google classroom page for each subject. Students can be invited by their teachers or log on using the codes you were given when you signed in.

When a student logs in, each class will have a tab and this will have a list of outstanding work on it.



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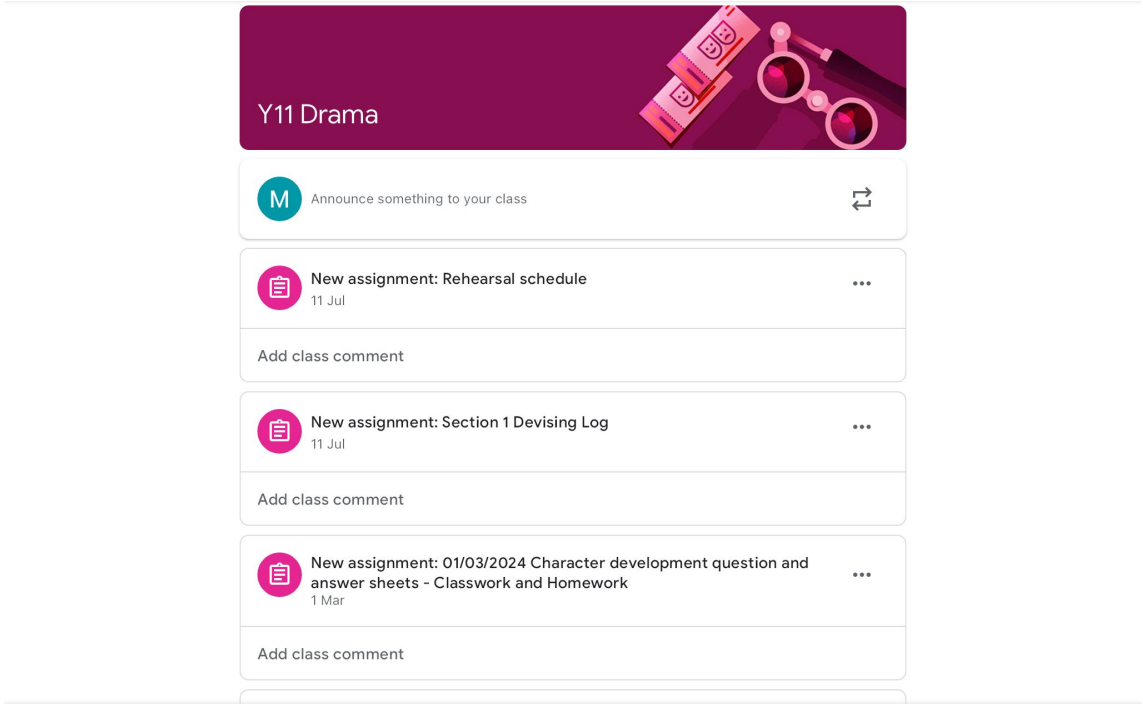
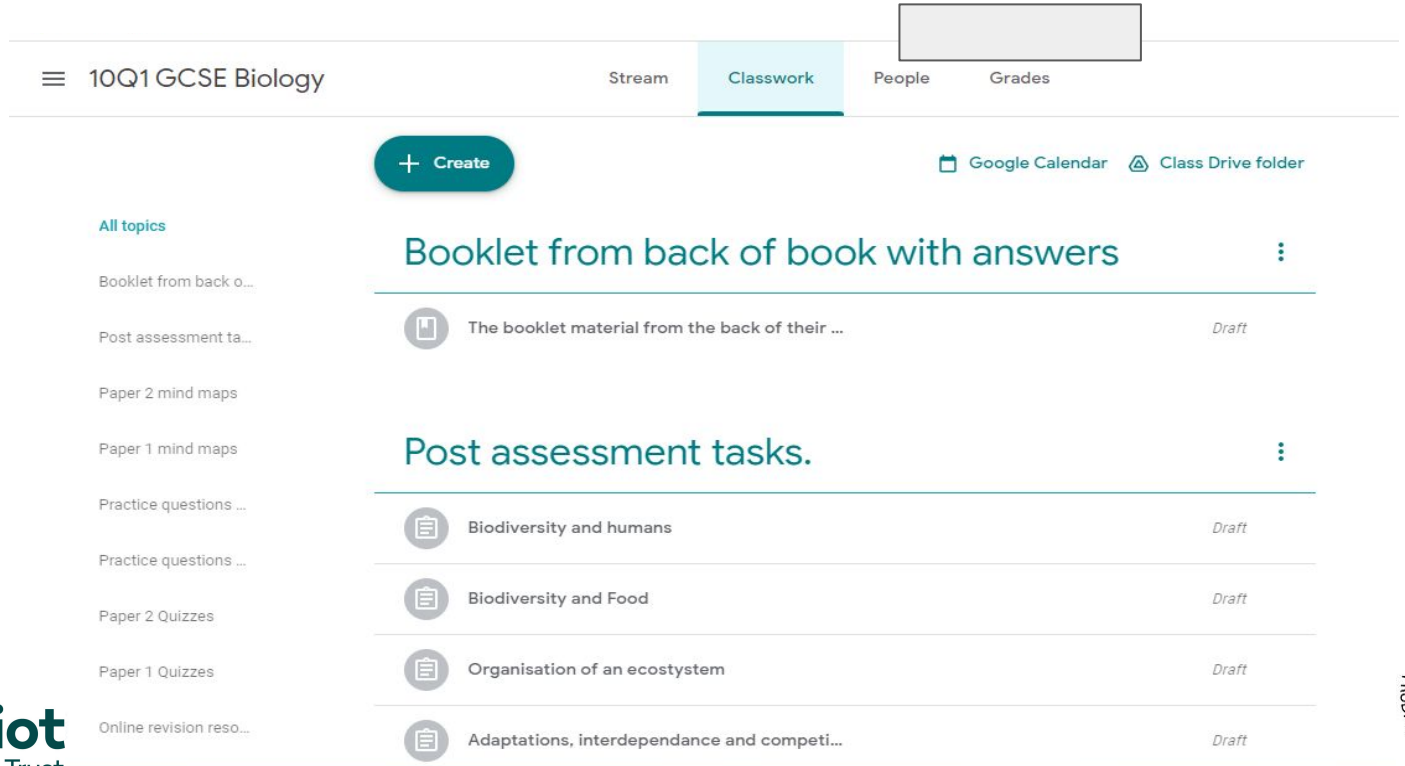
Current work should appear in the stream



Clicking on classwork allows you to use the topics tab to navigate work that has been set.



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Students - What do we expect of them?

Excellence in all we do…. To be the best version of themselves.

Be engaged and on task in their lessons. If they find something hard to understand - talk to their teacher.

Make good use of revision guides and resources on google classroom.

Face the challenges head on.

Ignore what their friends say they are doing/not doing.

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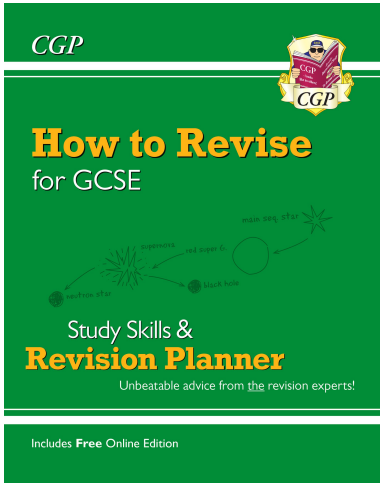
Revision Guides

CGP – How to Revise for GCSE Study skills and Revision Planner

www.cgpbooks.co.uk



Wider development, health and relaxation

Employers, colleges and universities are interested in more than just grades. Students need to continue with their extra-curricular activities.

We want our students to be healthy and happy, as well as, successful so everyone needs time to relax.

Often the busiest students are the most efficient, it is just a question of good organisation and getting the balance right.

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And on that note, encourage them to speak to us!

We are extremely conscious that GCSEs are a difficult time for students, with increased levels of stress, anxiety, and generally feeling overwhelmed.

We aim to promote an open culture, and consistently encourage students to speak to their form tutor, their pastoral link Sharron Cooke, myself, or another trusted member of staff.

If they are struggling in a particular area, or struggling in general, we want to be there to support them.

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Core Subjects Information

You will now be given some further information on your child's Core subjects.

Maths - Mrs Dillerstone (Subject leader)

English - Miss Turnbull (Assistant Subject leader)

Science - Miss Neale (Subject leader)

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Maths

Mrs K A Dillerstone
Subject Leader of Mathematics

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GCSE Maths

Two Tiers

Higher Tier
Foundation Tier

AQA 8300

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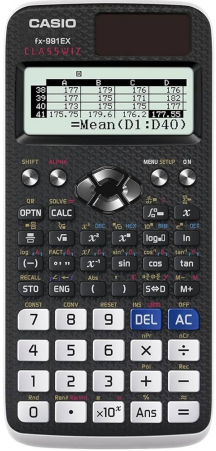
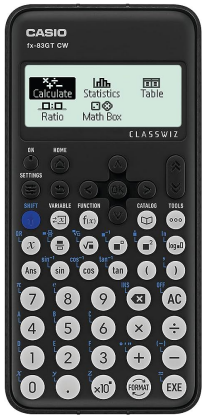
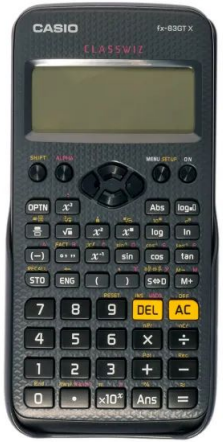
GCSE Maths

Both tiers are examined with calculators for two thirds of the exams.

This means that students benefit significantly from using their own calculator regularly in lessons.







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GCSE Maths

PCHS maths curriculum aims to ensure that all students become fluent in the fundamentals of mathematics, through varied and frequent practice and using increasingly complex problems. Students should develop conceptual understanding and the ability to recall and use mathematical facts and knowledge in a broad range of areas, in particular cross – curricula links and real-world situations. We aim for our students to be able to reason mathematically using mathematical language and apply mathematics to solve problems by breaking problems down into smaller steps. Students should be able to use calculators efficiently.

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GCSE Maths

PCHS maths curriculum aims to ensure that all students become fluent in the fundamentals of mathematics, through varied and frequent practice

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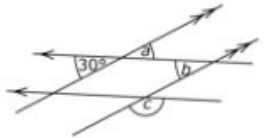
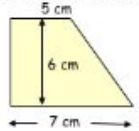
GCSE Maths

How do we increase your child's ability to recall and use mathematical facts and knowledge in a broad range of areas?

Make it Stick

Have a go at these questions:

Angles Calculate the angles a,b and c 	**Averages** Calculate the mean, mode and median of: 1, 4, 3, 8, 2, 1, 2, 9, 3
Area Calculate the area of the trapezium 	**Algebra** **Factorise:** 12x - 6xy

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www.mathswatchvle.com

Homework - Every fortnight Year 10 are set an electronic homework on mathswatch. The dates until Christmas are as follows:

Mathswatch homework 2 – due Fri 4th Oct

Mathswatch homework 3 – due Fri 18th Oct

Mathswatch homework 4 – due Fri 8th Nov

Mathswatch homework 5 – due Fri 22nd Nov

Mathswatch higher hwk 1 – due Fri 6th Dec

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Homework 1

Due date: _____

Unit 3 - Fractions

$\frac{3}{4} + \frac{2}{5} =$

$\frac{2}{9} \times \frac{3}{7} =$

$\frac{7}{8} - \frac{3}{7} =$

$\frac{3}{4} \div \frac{7}{8} =$

James earns £1200 a month.
He spends ⅔ on rent.
He spends ⅛ of the leftover money on food.
How much money does he have left at the end of the month?

Retrieval Questions 1

BIDMAS & Decimals

Work out:

a) 5 x 3 + 2 x 6 =

b) 19 x 2 + 5^2 =

c) 7 x $(8 \div 4)^2$

A DVD costs £6.79 each.

Work out the cost of 5 DVDs.

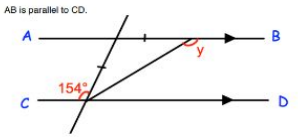
£.....

(2)

Remember your **key facts page** or **MathsWatch** to help

Retrieval Question 2

Angles



Work out the size of angle y.
Give reasons for your answer.

.....°

(4)

Independent Learning

Signed Teacher: _____

Top Tips for Maths

- **Be positive about maths – it is a key qualification for all students**
- **Encourage them to begin working independently - corbett maths has lots of useful (and free) videos and worksheets**
- **Ask your young people to challenge themselves to improve things that they currently find hard.**
- **Don't be discouraged – we all make mistakes but over time these will reduce and confidence will improve.**
- **Practice, Practice, Practice!!!**

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English

Miss L E Turnbull

Assistant Subject Leader

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English

Students prepare for **two** qualifications:

- **GCSE English Language**
- **GCSE English Literature**

Exam Board **Edexcel**

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GCSE English Language/Literature

- No tier of entry
- No early entry.
- Assessed entirely by terminal exams in the summer of 2026.
- No coursework
- Every student sits the same exam
- Grading system 9-1

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GCSE English Literature

Examination texts are studied during year 10 and 11 working towards two written exams in the summer of 2026.

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English Literature exams

Paper 1: Shakespeare and Post-1914 Literature
1 hour 45 minutes, closed text (worth 50%)

– Section A: Shakespeare: Part A on an extract, Part B linking to the whole text (Macbeth) (worth 25%).

– Section B: Post-1914 Literature: choose one question out of two; on setting, character or theme (An Inspector Calls) (worth 25%).

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English Literature exams

Paper 2: 19th Century Novel and Poetry since 1789
2 hours 15 minutes, closed text (50%)

– Section A: 19th Century novel, Part A on an extract, Part B on the full text (A Christmas Carol) (worth 25%).

– Section B: Poetry since 1789: one named poem from a cluster in the anthology (Conflict) that will be printed – students compare it to another (unprinted) of their choice. Students also compare two thematically linked unseen contemporary poems (worth 25%).

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GCSE English Language

Paper 1: Fiction and Imaginative Writing

1 hour 45 minutes (worth 40%)

– Section A: Short / long questions on unseen 19th Century fiction (1 hour) (worth 15%).

– Section B: Two images provided as stimulus for Imaginative Writing (45 minutes) (worth 25%).

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GCSE English Language

Paper 2: Non-fiction, Literary Non-fiction and Transactional Writing - 2 hours 5 minutes (worth 60%).

– Section A: short answers on two non-fiction texts, followed by a longer response question which is a comparison of writers' use of language (1 hour 15 minutes) (worth 35%)

– Section B: two options of writing tasks linked to themes of reading materials – letters, job applications, articles etc. (45 minutes) (worth 25%).

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English Language

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The spoken language assessment

Students will prepare a presentation on a poem of their choice from the ‘conflict’ section of the poetry anthology they have studied.

This is effective revision and preparation for their Paper 2 English Literature exam question on the conflict poetry.

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Educake

There is no such thing as “no homework” in English. They will receive a weekly ‘Educake’ homework - this is an online platform which they can sign into through their school email - they no longer need a username and password like they did in Year 9.

The weekly homeworks are quizzes set on relevant work we are currently working on in class or revision of texts and topics we have already studied. It may also be used to test students’ ability to use skills like spelling, punctuation and grammar.

Students have approximately a week to complete the quiz before the next is set - they can see the deadline. They receive instant feedback.

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How can you help your child prepare?

- The best preparation for English Literature is to know the set texts as well as possible.
- Re-reading the set texts and revising what they know about them can always be done.
- Researching the texts further or making use of study guides and workbooks on the set texts is all valuable revision.
- If, as a parent, you have read the texts, discussing them with your child is great revision too.

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Other resources

Youtube is a great resource for revision. There are a lot of presentations on the set texts for English literature - some by teachers. There are also a lot of film clips and documentaries or excerpts from documentary films on the set texts. This can be a good way for students to revise too.

There are **film** versions of Macbeth, A Christmas Carol and An Inspector Calls available commercially and many are on Youtube too.

Other resources

Students should also have joined their class' English **Google Classroom** which will be filled with lots of really useful resources to help them revise and strengthen their knowledge of texts, but also to prepare them in terms of exam technique.

We will also put lessons from our schemes of work that students have already completed in case they feel they need to revisit this or fill any gaps in their knowledge, perhaps due to absence.

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Three Top Tips for English

1. Specimen papers, mark schemes and other resources are available on the Edexcel website:
GCSE English Language
GCSE English Literature

2. Encourage your son/daughter to read and discuss non-fiction texts e.g. newspapers, leaflets, letters and magazines. The internet is also awash with older 19th Century fiction and non-fiction texts because most are out of copyright.

3. BBC Bitesize for Edexcel English - structured interactive resources and activities for GCSE English Literature:
Bitesize Edexcel GCSE English Literature
And GCSE English Language:
Bitesize Edexcel GCSE English Language

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Revision Guides

- English Literature – specific text guides are commercially available to buy.
- English Language revision guides and workbooks are also available to buy commercially - we will sell Edexcel's own version of these for a reduced price (£3.50 each) through the school's MCAS system.

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Science

Miss S Neale

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GCSE Sciences

Exam Board AQA

All students are taking the separate GCSE science courses

Biology, Chemistry and Physics

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Biology

- Cell biology
- Organisation
- Infection and response
- Bioenergetics
- Homeostasis and response
- Inheritance
- Variation
- Evolution
- Ecology

Studied in year 9

Chemistry

- Atomic structure and the periodic table
- Bonding, structure, and the properties of matter
- Quantitative chemistry
- Chemical changes
- The rate and extent of chemical change
- Chemistry of the atmosphere
- Organic chemistry
- Chemical analysis
- Energy changes
- Using resources

Studied in year 9

Physics

- Forces
- Energy
- Waves
- Electricity
- Magnetism
- Electromagnetism
- Particle model of matter
- Atomic structure
- Space physics

Studied in year 9

Physics

- Forces
- Energy
- Waves
- Electricity
- Magnetism
- Electromagnetism
- Particle model of matter
- Atomic structure
- Space physics

All students must learn the required equations, know how to rearrange them and use them. Equations are in the personal organiser on pages 140-141

https://filestore.aqa.org.uk/resources/physics/AQA-8463-ES-INS.PDF

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

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**	$\boldsymbol{V_p I_p = V_s I_s}$

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 = $\frac{\text{work done}}{\text{time taken}} = \frac{\text{energy transferred}}{\text{time taken}}$	$P = \frac{W}{t} = \frac{E}{t}$
efficiency = $\frac{\text{useful energy output}}{\text{total energy input}}$ efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	
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	$P = I^2R$
energy transferred = power × time	$E = Pt$
energy transferred = charge flow × potential difference	$E = QV$

* Higher tier only

^ Separate Physics only

Unit 3: Particle Model of Matter

Equations to Learn	
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$
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 = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
^ magnification = $\frac{\text{image height}}{\text{object height}}$	$M = \frac{h_{image}}{h_{object}}$

Unit 7: Magnetism and Electromagnetism

Equations given in the exam	
* Force = magnetic flux density × current × length of conductor in magnetic field	$F = BIl$
* $\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$	$\frac{V_P}{V_S} = \frac{N_P}{N_S}$
* ^ 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 = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
distance travelled = speed × time	$s = vt$
acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$ $= \frac{\text{final velocity-initial velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$ $= \frac{v-u}{t}$
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 = $\frac{\text{change in momentum}}{\text{time taken}}$	$F = \frac{m\,\Delta v}{t}$

Unit 4: Atomic Structure & Unit 8: Space

There are no equations in these sections of the course

Biology, Chemistry and Physics

ASSESSMENT

Two written exams per subject: 1 hour 45 minutes each

Foundation and Higher Tier

100 marks

QUESTIONS

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

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Biology, Chemistry and Physics

ASSESSMENT

To help prepare students for GCSE exams in the summer of year 11 at the end of each topic they will carry out an assessment using past paper questions.

Encourage them to prepare thoroughly for these making revision cards/maps from their class notes, revision websites and the specification.

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Homework Guidelines

Students will be set regular homework activities through google classroom and educake

Independent Learning

- Encourage them to work through the work covered so far making revision resources i.e. Mind Maps, Flash Cards
- Encourage them to be practicing past paper questions - and using mark schemes to improve answers

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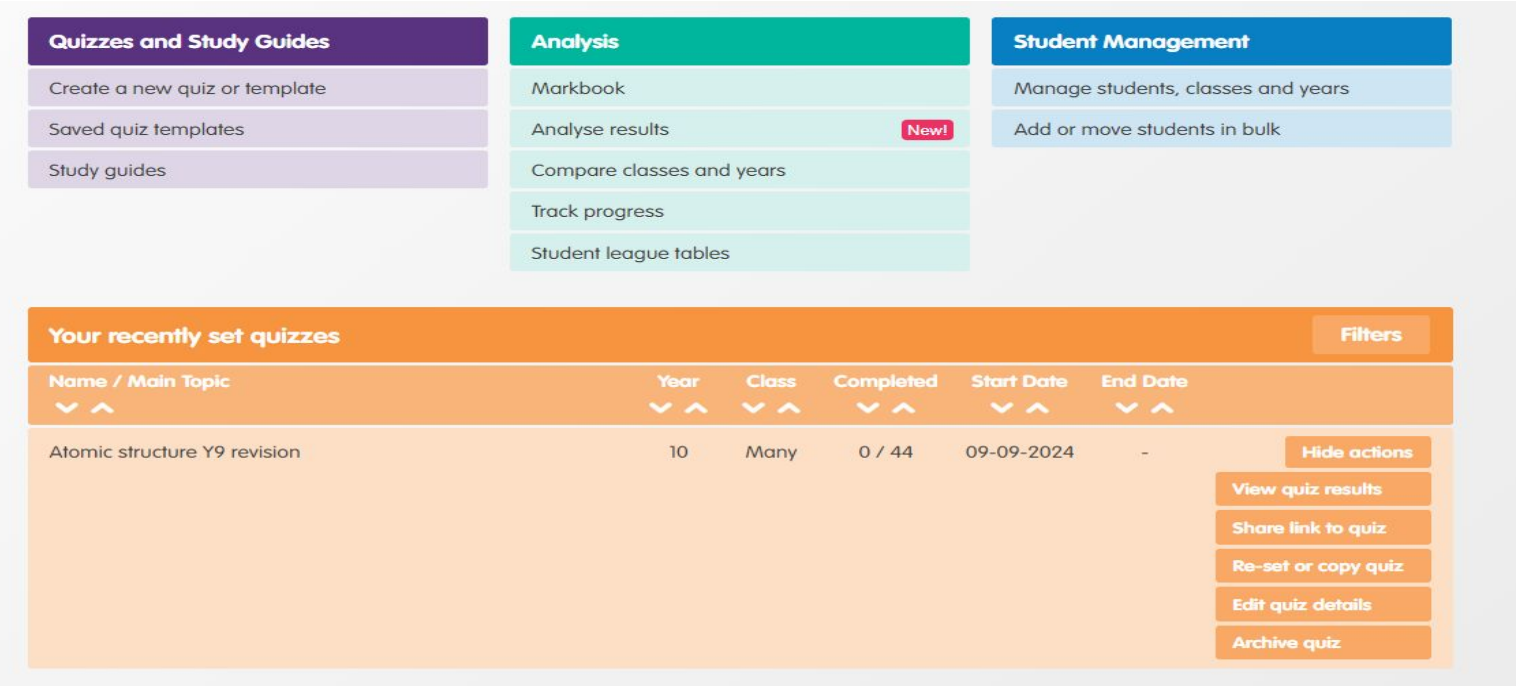
Homework Guidelines

EDUCAKE



Four Top Websites for Science

- https://www.aqa.org.uk/subjects/science/gcse
- www.bbc.co.uk/bitesize/levels/z98jmp3
- https://www.freesciencelessons.co.uk/
- https://www.youtube.com/c/Cognitoedu

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Google Classrooms for Science

All students are members of google classrooms for each subject. The classrooms contain

- Revision maps
- Links to websites
- Links to videos
- Recorded lessons
- Quizzes and much more!

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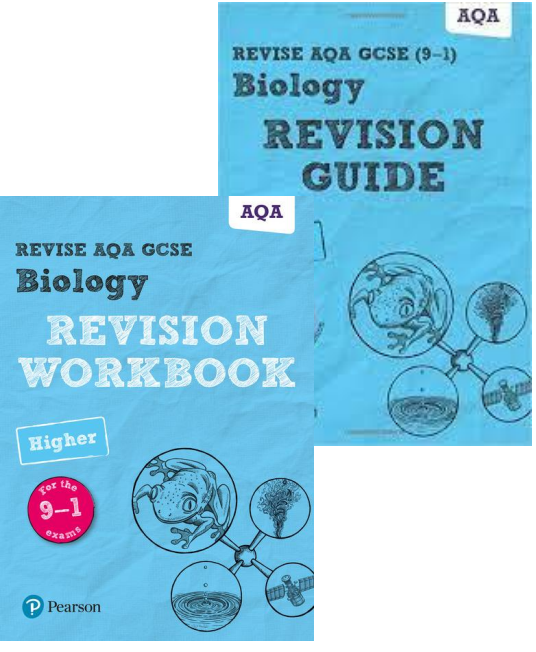
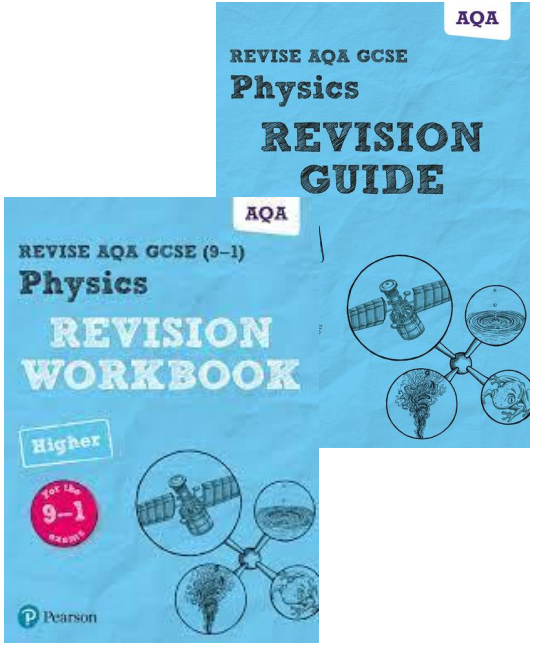
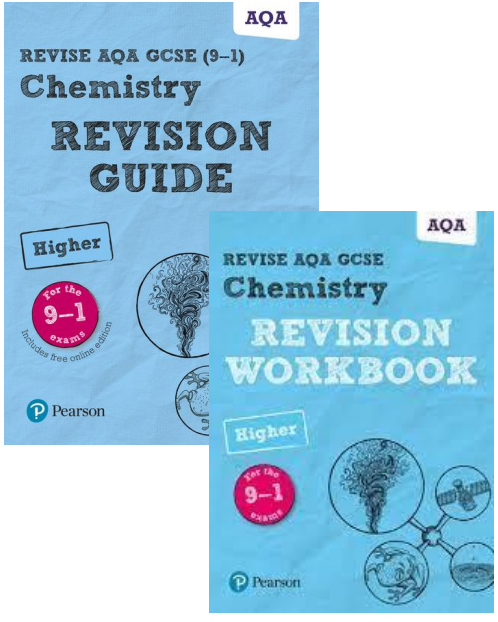
Science Revision Guides / Workbooks

Available through MCAS



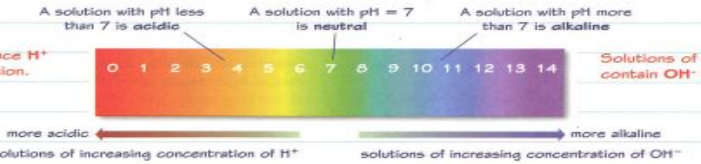




Paper 1 Had a look ☐ Nearly there ☐ Nailed it! ☐

The pH scale

The pH scale, from 0 to 14, is a measure of how acidic or how alkaline a solution is.



Practical skills Measuring pH

1. Drops of **universal indicator** can be added to a solution. The colour in the mixture can be compared with the chart above and the pH read off.
2. A pH **probe** can be placed in the solution.

All acids release H^+ ions and all alkaline solutions contain OH^- ions, so the ionic equation for neutralisation of an acid and an alkali is always $H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$

Revise the difference between dilute and concentrated acids on page 34.

Worked example

(a) Write the balanced equation, including state symbols, for the reaction between potassium hydroxide solution and dilute nitric acid. **(3 marks)**

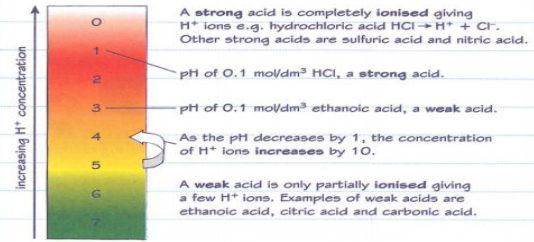
$KOH(aq) + HNO_3(aq) \rightarrow KNO_3(aq) + H_2O(l)$

(b) Write the ionic equation for the reaction. **(1 mark)**

$H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$

In the ionic equation, the ions that do not change are left out. In this reaction, the potassium ions and the nitrate ions remain in the solution and are left out of the ionic equation.

Strong and weak acids



A **strong** acid is completely **ionised** giving H^+ ions e.g. hydrochloric acid $HCl \rightarrow H^+ + Cl^-$. Other strong acids are sulfuric acid and nitric acid.

pH of 0.1 mol/dm³ HCl, a **strong** acid.

pH of 0.1 mol/dm³ ethanoic acid, a **weak** acid.

As the pH decreases by 1, the concentration of H^+ ions **increases** by 10.

A **weak** acid is only partially **ionised** giving a few H^+ ions. Examples of weak acids are ethanoic acid, citric acid and carbonic acid.

Now try this

(a) Explain why a 1 mol/dm³ solution of citric acid has a higher pH value than a 1 mol/dm³ solution of nitric acid. **(4 marks)**

In your answer think about the concentration of H^+ ions in the acid solutions.

(b) A solution has a pH of 4.3. What is the pH of a solution with a concentration of H^+ ions that is 10 times higher? **(1 mark)**

Paper 1 Had a go ☐ Nearly there ☐ Nailed it! ☐

The pH scale

1 The pH scale is used to measure acid and alkaline properties. The table shows the pH of five solutions.

Solution	A	B	C	D	E
pH	2	6	7	10	13

(a) Which of these solutions contain excess H^+ ions? ..... **(1 mark)**

(b) Which solution contains the greatest concentration of OH^- ions? ..... **(1 mark)**

(c) How would the pH change if pure water were added to solution C? ..... **(1 mark)**

Guided

(d) Describe how a student could test the pH of an unknown solution.

The student could add some universal indicator and .....

..... **(2 marks)**

2 Sulfuric acid is a strong acid which neutralises potassium hydroxide.

(a) Write a balanced chemical equation for this reaction.

..... **(2 marks)**

(b) What is meant by a strong acid? Give your answer in terms of ionisation.

..... **(2 marks)**

(c) Write the ionic equation for a neutralisation reaction. Include state symbols.

..... **(2 marks)**

(d) Solution X has a pH of 4.1. Suggest the pH of solution Y, which has a hydrogen ion concentration ten times lower than that of solution X.

..... **(1 mark)**

3 A is a solution of 2.0 mol/dm³ ethanoic acid and B is a solution of 0.5 mol/dm³ nitric acid.

(a) Which acid, A or B, is a weak acid? ..... **(1 mark)**

(b) Which acid, A or B, is more concentrated? Explain your answer.

..... **(2 marks)**

Guided

(c) Which acid, A or B, has a lower pH? Explain your answer.

Nitric acid is fully ionised into hydrogen ions in aqueous solution, as it is a

..... **(2 marks)**

Science Support in School

All science staff will support students who have questions they want answering - encourage them to come and see us!

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Who to contact:

enquiries@pchs.cheviotlt.co.uk

Your email will be forwarded to the most appropriate person.

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Thank you for attending tonight.

If you have any questions please speak to one of us before you leave or alternatively email us using the contact information on the previous slide.

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