

# How to support your child in Year 10



**Mr A. Gregory**

**Head of Achievement and Learning - Year 10**



# 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 be of help to your child.



# Year 10 Key Dates

<b><u>Event</u></b>	<b><u>Date</u></b>
Y10 - How to support your child	3rd October
Data Drop/Sheet 1	W/B 21st November
Data Drop/Sheet 2	W/B 19th March
Year 10 Exam Week	W/B 3rd June
Data Drop/Sheet 3	W/B 2nd July
Year 10 - P Band Parents Evening	4th July
Year 10 - Q Band Parents Evening	9th July

# 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. Members of staff will highlight if a task is a STAR Assessment.

The Year 10 exam week at the end of the year is an opportunity for students to be assessed in a more formal way through examinations in each subject. This is useful practice as it replicates what students will face at the end of Year 11.

It also allows staff to get a good indication of performance so far and predict GCSE end grades for each of your child's subjects. This will form **Data Drop 3**.



# School Target Grade (STG)

The school will generate school target grades for all students. This is based on a range of data - mostly using KS2 SAT results and national data models.

**This grade is a target only.** It is something to aim for but there is no reason why it cannot be beaten!

Please don't allow your child to be too disheartened if their target grade is lower than expected as this can often be exceeded through hard work and effort.

If students are not achieving these then subjects will provide support for students to get 'back on track.' through various methods including intervention sessions.





# PRUDHOE COMMUNITY HIGH SCHOOL

Year 11 Grade Update

March 2022

Predicted End Grade Key	
	PEC above subject estimate
	PEC equals subject estimate
	PEC one grade below subject estimate
	PEC more than 1 grade below subject estimate

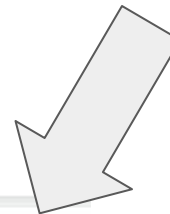
Name:  
 Tutor Group:  
 Attendance: 89.5%  
 Late Marks: 0

Attendance	Description
100%	Excellent
95-99.9%	Very Good
90-94.9%	Good
85-89.9%	Satisfactory

20-94.9%	Unsatisfactory
20%	Persistent Absence

Subject	Subject Estimate	Predicted End Grade 1 - November 19	Predicted End Grade 2 - January 20	Predicted End Grade 3 - April 20	Mock Examination Grade - December 19	Current Attitude Grade	Concerns				
							Attendance	Behaviour	Homework	Organisation	Work Rate
Biology	6	5	4		4	3					
Business Studies	5	5	4		3	3					
Chemistry	6	6	5		5	2					
Engineering Design-	L2 M	L2 D	L2 D			1					
English Language	5	5	5		4	2					
English Literature	5	5	5		4	2					
Ethical Studies						2					
History	6	6	6		5	1					
Mathematics	6	6	6		4	2					
Physical Education Core						2					
Physical Education GCSE	6	6	6		6	1					
Physics	6	5	5		4	2					

Please read this information at the bottom as this often answers a lot of the queries we get around data.



- Subject Estimates are set at the beginning of Year 10 based on prior attainment data. This Grade Update displays Henry's Predicted End of Course Grades at each tracking point across the academic year. The Predicted End of Course Grades are colour coded to illustrate progress against the Subject Estimates.
- The Mock Examination grade is the grade students achieved in their December 2019 mock examination, for students who missed a scheduled examination this is marked with a 'X'.
- The Attitude To Learning Grade, is graded 1 to 5. 1 is the highest attitude grade that a student can achieve and 5 is the lowest.
- Please note that vocational subjects marked with a tilde (~) are graded L1P = Level 1 Pass, L1M = Level 1 Merit, L1D = Level 1 Distinction, L2P = Pass, L2M = Merit, L2D = Distinction and L2D\* = Distinction Star.
- Physical Education Core and Ethical Studies are not graded as they are not examined subjects, however a current attitude grade and any concerns within the subject are tracked.
- Concerns are indicated with a 'Y' in the Behaviour, Homework, Organisation and Work Rate columns.

# Personal Organiser

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

Students have their organisers checked on a Monday. These must be signed by a parent/carer. This is so we know you are seeing homework tasks any additional messages staff may record in there.

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. - particularly if it is a subject specific issue.





# Parents/Carers - How can you support your child?

Talk to your child about school. The signing of the personal organiser is a good opportunity to do this. This sounds very obvious, however, we know how busy life can be.

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

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

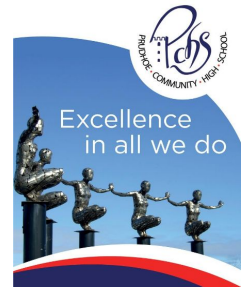
Agree the balance between school and social life - this particularly important throughout your child's GCSE's.



# Is this not the schools job ....

We will provide them with the expertise, knowledge and resources to be successful but we do need students to be ready to study to achieve success themselves.

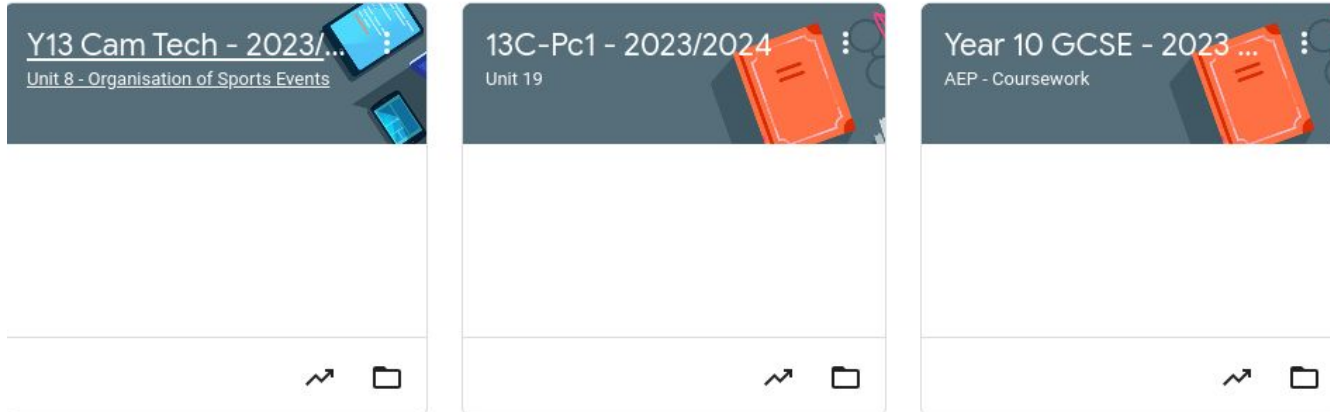
- Students need to be self motivated and take responsibility for their own learning.
- Students need to ask for help if they don't understand.
- Students need to develop their resilience and find strategies to overcome challenging situations.
- Students need to organise themselves.
- Students need to plan and carry out revision.



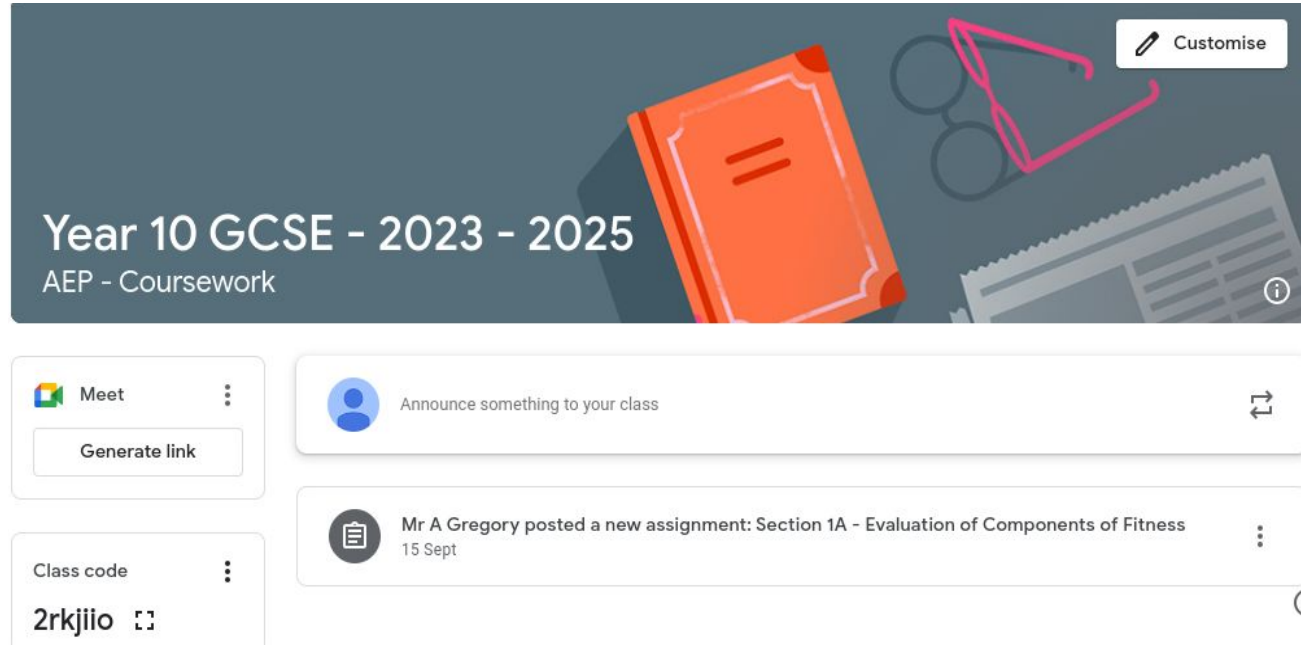
# Google Classroom

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.

Lesson powerpoints, homework tasks and revision materials are uploaded for students on google classroom.



Current work or any tasks will appear in the stream once you open the classroom ...



The screenshot displays a Google Classroom interface. At the top is a dark blue header banner with the text "Year 10 GCSE - 2023 - 2025" and "AEP - Coursework". To the right of the text are illustrations of an orange book, pink-rimmed glasses, and a newspaper. A "Customise" button with a pencil icon is in the top right corner of the banner. Below the banner, on the left, is a "Meet" section with a "Generate link" button and a "Class code" section showing "2rkjiio". On the right is a stream of activities. The first activity is an announcement: "Announce something to your class" with a blue profile icon and a refresh icon. The second activity is an assignment: "Mr A Gregory posted a new assignment: Section 1A - Evaluation of Components of Fitness" dated "15 Sept", with a document icon and a three-dot menu icon.

Year 10 GCSE - 2023 - 2025  
AEP - Coursework

Customise

Meet

Generate link

Class code

2rkjiio

Announce something to your class

Mr A Gregory posted a new assignment: Section 1A - Evaluation of Components of Fitness  
15 Sept

# Students - What do we expect of them?

Excellence in all we do.... Be the best version of yourself.

We are not asking every student to get Grade 9's (brilliant if they do) we are asking them to do their personal best - something they are all capable of doing.

Be engaged and on task in their lessons. If you are finding something hard to understand - talk to your teacher.

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

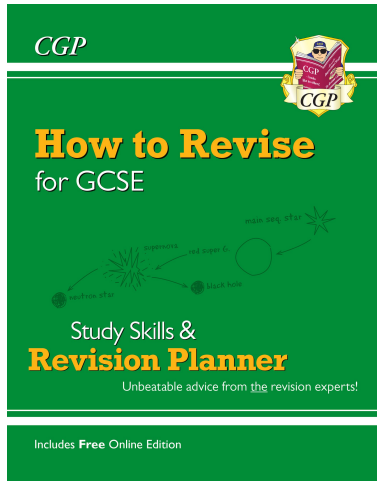
Ignore what your friends say they are doing/not doing.



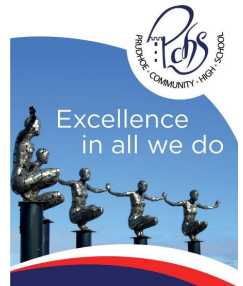
# Revision Guides

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

[www.cgpbbooks.co.uk](http://www.cgpbbooks.co.uk)



We highly recommend revision materials from this website to help support your child.

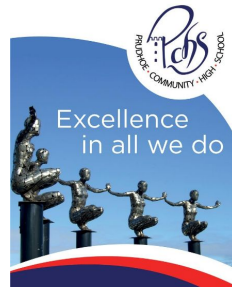


# Wider Development: Health and Relaxation

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.

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



# **Core Subjects Information**

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

Maths - Mrs Dillerstone (Subject leader) - Mrs Howells

English - Mr Hamilton (Subject leader)

Science - Miss Neale (Subject leader) - Mrs Warkman



# Maths

**Mrs K A Dillerstone**  
**Subject Leader of**  
**Mathematics**



# GCSE Maths

Two Tiers

Higher Tier  
Foundation Tier

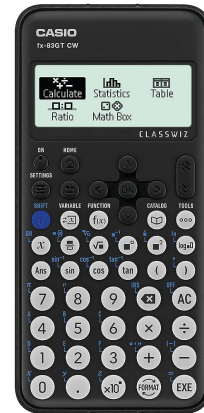
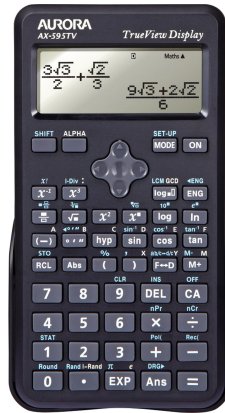
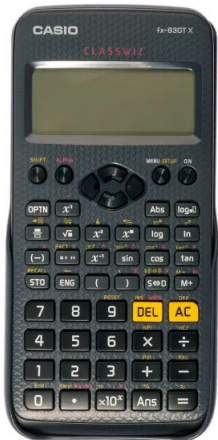
AQA 8300



# GCSE Maths

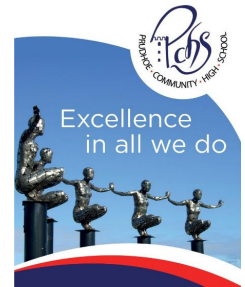
Both tiers are examined with calculators for two thirds of the exams.

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




# 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.



# GCSE Maths

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

**Demonstrate** 



**Fluency**

**Compound Interest:**


- 1) £1000 invested over 8 years at a rate of 4% per annum
- 2) £1000 invested over 4 years at a rate of 4% per annum
- 3) £1000 depreciating over 4 years at a rate of 4% per annum
- 4) £1000 depreciating over 4 years at a rate of 9% per annum
- 5) £1000 invested over 7 years at a rate of 9% per annum
- 6) £1000 depreciating over 7 years at a rate of 3.5% per annum
- 7) £1000 invested over 4 years at a rate of 3.5% per annum
- 8) £1000 depreciating over 18 months at a rate of 3.5% per annum

**Application**

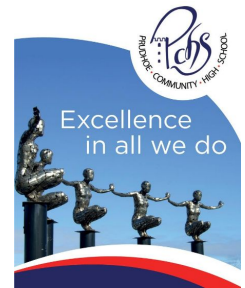
You have £5,000. Rank these banks from best to worst for investing your money.  
(Assuming you do not withdraw or deposit any money)

 NatWest	 LLOYDS BANK	 Nationwide
• 3.99%	• 3.6%	• 3.3%
• Compound	• Compound	• Compound
• 3 years	• 4 years	• 5 years

**Reasoning**

Which deal is better if I am buying a car with finance over 4 years? 

<b>FOR SALE</b>	<b>FOR SALE</b>
£6000 Simple Interest, 8%	£6000 Compound interest, 7.5%



# GCSE Maths

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

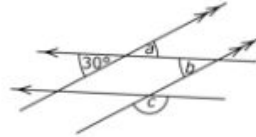
Make it Stick



Have a go at these questions:

## Angles

Calculate the angles  $a$ ,  $b$  and  $c$



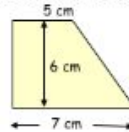
## Averages

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:  $12x - 6xy$



# [www.mathswatchvle.com](http://www.mathswatchvle.com)

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

- Mon 2nd Oct - Mathswatch homework 2 – due Fri 6th Oct
- Mon 16th Oct - Mathswatch homework 3 – due Fri 20th Oct
- Mon 6th Nov - Mathswatch homework 4 – due Fri 10th Nov
- Mon 20th Nov – Mathswatch homework 5 – due Fri 24th Nov
- Mon 4th Dec – Mathswatch higher hwk 1 – due Fri 8th Dec



## Yeargroup Silver Award for the Week



Week	Marks
18/09/2022	11
05/06/2022	113
28/11/2021	24
17/10/2021	79

This Year

Close

### Leaderboards



### Your Awards







### Homework 1



#### Unit 3 - Fractions



$$\frac{3}{4} + \frac{2}{5} = \qquad \frac{2}{9} \times \frac{3}{7} =$$

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

James earns £1200 a month.  
 He spends  $\frac{2}{5}$  on rent.  
 He spends  $\frac{1}{4}$  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)  $5 \times 3 + 2 \times 6 =$
- b)  $19 \times 2 + 5^2 =$
- c)  $7 \times (8 \div 4)^2$

A DVD costs £6.79 each.

Work out the cost of 5 DVDs.

£.....  
(2)

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

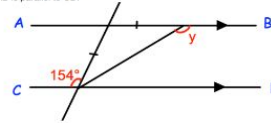
Due date: \_\_\_\_\_

#### Retrieval Question 2



##### Angles

AB is parallel to CD.



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

.....°  
(4)

#### Independent Learning



Signed Teacher: \_\_\_\_\_



# Top Tip 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!!!



# English

## Mr. N. A. Hamilton



# English

Students prepare for **two** qualifications:

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

Exam Board **Edexcel**



# GCSE English Language/Literature

- No tier of entry
- No early entry.
- Assessed entirely by terminal exams in the summer of 2024.
- No coursework
- Every student sits the same exam
- Grading system 9-1



# GCSE English Literature

Examination texts are studied during year 10 and 11 working towards two written exams in the summer of 2025.



# English Literature exams

## **Paper 1: Shakespeare and Post-1914 Literature**

**1 hour 45 minutes, closed text (worth 50%)**

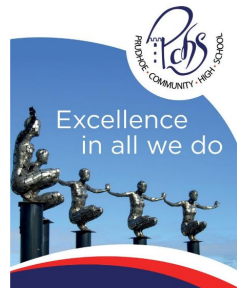
- Section A: Shakespeare: Part A on an extract, Part B linking to the whole text (Macbeth) (worth 25%).
- Section B: Post-1914 Literature: choose one question out of two; on setting, character or theme (An Inspector Calls) (worth 25%).



# 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%).





# GCSE English Language

## Paper 1: Fiction and Imaginative Writing

**1 hour 45 minutes (worth 40%)**

- Section A: Short / long questions on unseen 19<sup>th</sup> Century fiction (1 hour) (worth 15%).
- Section B: Two images provided as stimulus for Imaginative Writing (45 minutes) (worth 25%).



# 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%).



# English Language



Distinction  
● ● ● ● ○

Merit  
● ● ● ○

Pass  
● ●

Spoken language performance will be reported as a separate result

# The spoken language assessment

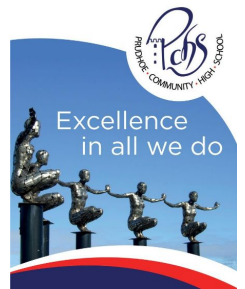
Students will prepare a presentation on a poem of their choice from the 'conflict' section of the poetry anthology they have studied.

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



# How can you help your child prepare?

- The best preparation for English Literature is to know the set texts as well as possible.
- There is no such thing as “no homework” in English. They will receive a weekly ‘Educake’ homework - this is an online platform which they will have a username and password for.
- 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 with your child is great revision too.



# 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.



# 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 19<sup>th</sup> 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](#)





# 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 gateway system



# Science

Miss S Neale

[s.neale@pchs.cheviotlt.co.uk](mailto:s.neale@pchs.cheviotlt.co.uk)



# GCSE Sciences

**Exam Board AQA**

**All students are taking the separate GCSE  
science courses**

**Biology, Chemistry and Physics**



# Biology

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

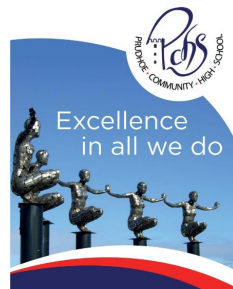
Studied in year 9



# 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



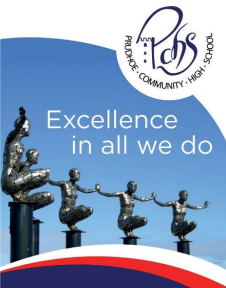
# Physics

- 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

<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 = $0.5 \times \text{mass} \times (\text{speed})^2$	$E_k = \frac{1}{2} m v^2$
elastic potential energy = $0.5 \times \text{spring constant} \times (\text{extension})^2$	$E_e = \frac{1}{2} k e^2$
gravitational potential energy = mass $\times$ gravitational field strength $\times$ height	$E_p = m g h$
change in thermal energy = mass $\times$ specific heat capacity $\times$ 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 $\times$ time	$Q = I t$
potential difference = current $\times$ resistance	$V = I R$
power = potential difference $\times$ current	$P = V I$
power = (current) <sup>2</sup> $\times$ resistance	$P = I^2 R$
energy transferred = power $\times$ time	$E = P t$
energy transferred = charge flow $\times$ potential difference	$E = Q V$
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

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



**Unit 1: Energy**

<b>Equations to Learn</b>	
kinetic energy = $\frac{1}{2} \times \text{mass} \times \text{speed}^2$	$E_K = \frac{1}{2}mv^2$
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 = $\frac{\text{useful power output}}{\text{total power input}}$	
<b>Equations given in the exam</b>	
elastic potential energy = $0.5 \times \text{spring constant} \times (\text{extension})^2$	$E_e = \frac{1}{2}ke^2$
change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = mc\Delta\theta$

**Unit 2: Electricity**

<b>Equations to Learn</b>	
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) <sup>2</sup> × resistance	$P = I^2 R$
energy transferred = power × time	$E = P t$
energy transferred = charge flow × potential difference	$E = Q V$

\* Higher tier only

^ Separate Physics only

**Unit 3: Particle Model of Matter**

<b>Equations to Learn</b>	
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$
<b>Equations given in the exam</b>	
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	$pV = \text{constant}$

**Unit 6: Waves**

<b>Equations to Learn</b>	
wave speed = frequency × wavelength	$v = f \lambda$
<b>Equations given in the exam</b>	
time period = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
^ magnification = $\frac{\text{image height}}{\text{object height}}$	$M = \frac{h_{\text{image}}}{h_{\text{object}}}$

**Unit 7: Magnetism and Electromagnetism**

<b>Equations given in the exam</b>	
* 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 × current in secondary	$V_P I_P = V_S I_S$

**Unit 5: Forces**

<b>Equations to Learn</b>	
weight = mass × gravitational field strength	$W = m g$
work done = force × distance (moved along the line of action of the force)	$W = F s$
force = spring constant × extension	$F = k e$
moment of a force = force × distance (perpendicular to the direction of the force)	$M = F d$
pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
distance travelled = speed × time	$s = v t$
acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
= $\frac{\text{final velocity} - \text{initial velocity}}{\text{time taken}}$	$= \frac{v - u}{t}$
resultant force = mass × acceleration	$F = m a$
* momentum = mass × velocity	$p = m v$
<b>Equations given in the exam</b>	
* ^ Pressure = height of column × density of liquid × gravitational field strength	$p = h \rho g$
^ (final velocity) <sup>2</sup> – (initial velocity) <sup>2</sup> = 2 × acceleration × distance	$v^2 - u^2 = 2 a s$
* ^ 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.



# Science Practical Work

There is no coursework or controlled assessment in the science GCSE courses. Practical work will be undertaken to help students make sense of the theory. Students are required to complete a number of AQA set practicals for each subject on which questions can be asked in the examinations.



# Homework Guidelines

Students will be set regular homework activities through google classroom

## 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



# Four Top Websites for Science

- ★ <https://www.aqa.org.uk/subjects/science/gcse>
- ★ [www.bbc.co.uk/bitesize/levels/z98jmp3](http://www.bbc.co.uk/bitesize/levels/z98jmp3)
- ★ <https://www.freesciencelessons.co.uk/>
- ★ <https://www.youtube.com/c/Cognitoedu>

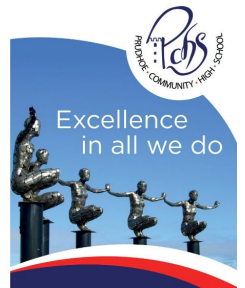


# Biology, Chemistry and Physics

## 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.



# Google Classrooms for Science

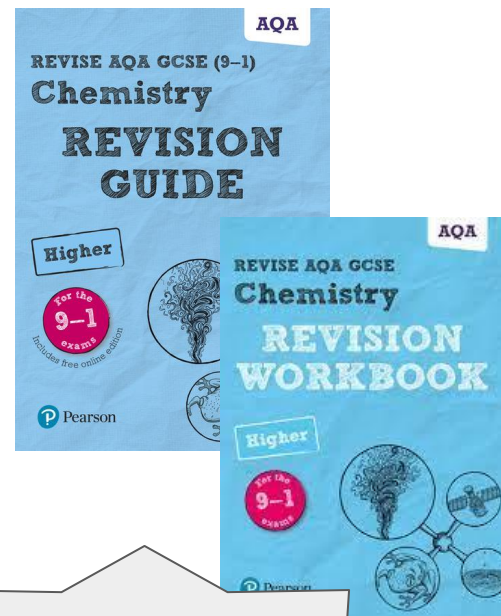
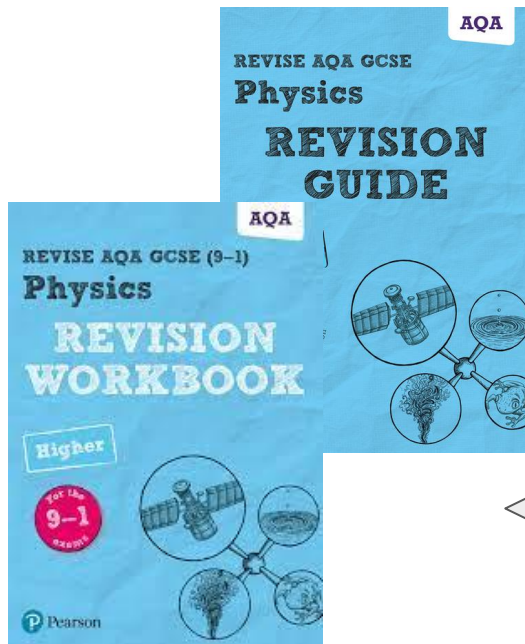
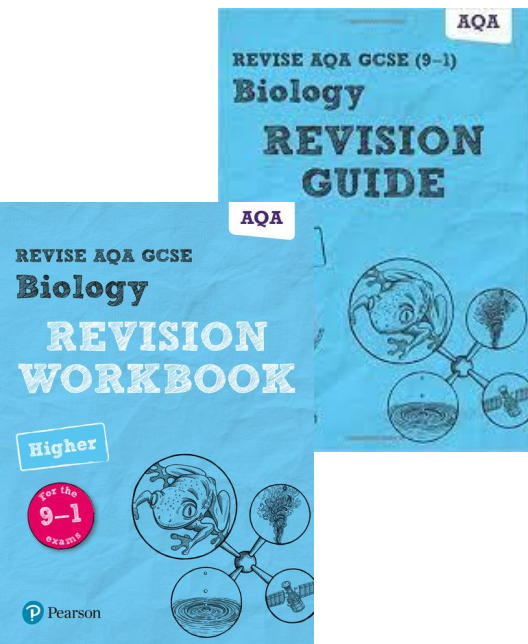
All students are members of google classrooms for each subject. The classrooms contain

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



# Science Revision Guides / Workbooks

Available through the school gateway

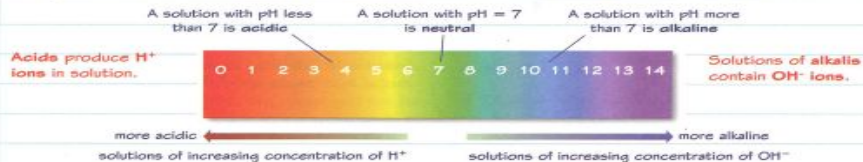


£17.94



## 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)



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



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.

## 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)
- (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)

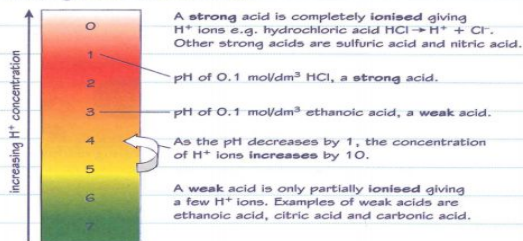


- 3 A is a solution of  $2.0 \text{ mol/dm}^3$  ethanoic acid and B is a solution of  $0.5 \text{ mol/dm}^3$  nitric acid.
- (a) Which acid, A or B, is a weak acid? ..... (1 mark)
- (b) Which acid, A or B, is more concentrated? Explain your answer. (2 marks)
- (c) Which acid, A or B, has a lower pH? Explain your answer.

Nitric acid is fully ionised into hydrogen ions in aqueous solution, as it is a ..... (2 marks)



### Strong and weak acids



### Now try this



- (a) Explain why a  $1 \text{ mol/dm}^3$  solution of citric acid has a higher pH value than a  $1 \text{ mol/dm}^3$  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)

# Science Support in School

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



# Science

Miss S Neale



# Who to contact:

Head of Achievement and Learning - Mr. A. Gregory

[a.gregory@pchs.cheviotlt.co.uk](mailto:a.gregory@pchs.cheviotlt.co.uk)

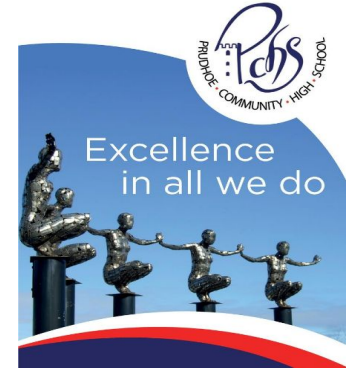
All other enquiries

[enquiries@pchs.cheviotlt.co.uk](mailto:enquiries@pchs.cheviotlt.co.uk)

Your email will be forwarded to the most appropriate person.



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.