



CROMPTON HOUSE
CofE SCHOOL



Year 11 Information Evening



Grade 4+ English & Maths

79%

2023




Grade 4+ English & Maths

**66% boys
versus 89%
girls**





- **Countdown to Exams**
- **Revision Notes**
- **Revision Files**
- **Exam Board and Specification**
- **Closing the Gap**
- **Balancing School and Other Activities**



**DATES
FOR YOUR
DIARY**

Mr Raynerd

Assistant Head
KS4

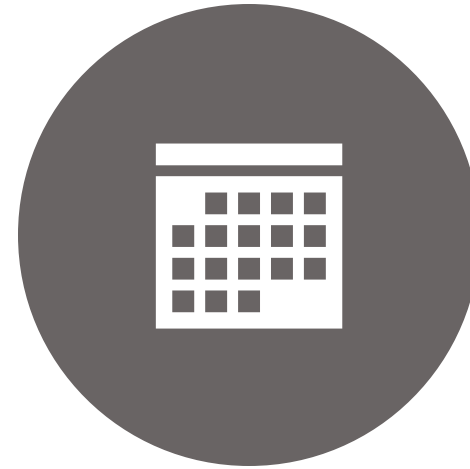
| Year 11 Upcoming Events | |
|----------------------------------|--|
| Year 11 Working Together Evening | 28 th September 2023 |
| Mock Exams – Set 1 | Week 1 16/10/23 - Week 2 30/10/23 |
| Mock Results Day | TBC - November 2023 |
| Parents Evening | 6 th & 12 th December 2023 |
| Work Experience | w.c 18 th December 2023 |
| Revision Day at Norton Grange | 2 nd Feb 2024 |
| Period 6 Revision | February 2024 |
| Mock Set 2 | 2 weeks - w.c. 26 th February 2024 |
| Super Learning Schedule | 15 th May 2024 - During GCSE Exams 2024 |
| GCSE Exams | 15 th May 2024 |
| Valedictory | TBC |
| Prom | Wednesday 26 th June 2024 |



WORK EXPERIENCE



STARTS WEEK COMMENCING
18TH DECEMBER.



DEADLINE FOR APP
COMPLETION 17TH NOVEMBER.



REVISION DAY — NORTON GRANGE HOTEL.

- Provided key revision techniques.
- Provided equipment and resources to use for revision
- GCSE timetable provided

Mindmaps

Post-it Notes

Flash Cards



PERIOD 6 – FEBRUARY

Monday 2:40 – 3:40pm

Additional Hour for all Year 11

Targeted intervention

Compulsory for Y11



SUPER LEARNING SESSIONS

Support Sessions During the exam period – Super Learning Sessions

Students will officially leave school after their final exam. This is to ensure they are best prepared! There will be some study days as well as the super learning sessions.



Y11 INTERVENTIONS

| Subject | Days & Times |
|----------------------------------|--|
| History | Red & Green Tuesday After School |
| Geography | Green Wednesday Lunch |
| Sociology | Red Wednesday After School |
| Sociology | Green Monday Lunch |
| Food | All weeks all days - Before School, Lunch & After School |
| D&T | Red & Green Friday Lunch |
| Biology | Red & Green Friday Lunch |
| English - Grade 9 Language | Reg & Green Thursday Lunch |
| Physics | Red & Green Wednesday Lunch |
| Spanish - Conversation Questions | Red & Green Wednesday After School |
| Sport Studies | Red & Green Thursday Lunch |
| Chemistry - Target 9 | Red & Green Monday Lunch |
| Chemistry | Red & Green Thursday Lunch and After School |
| RS - Aiming for 8-9 | Red Thursday Lunch |
| RS - Aiming for 4 | Red Thursday Lunch |



REVISION RESOURCES

Doddle



GCSEpod



SENECA



SENECA

Kaboodle



New to GCSEPod?

Get started

Need Help?

Forgotten my
login details

Info for Parents / Carers



Username or Email

Password

Login



Sign in with Google



Sign in with Office 365

Your GCSEPod account and external account must have matching email addresses.

PROM & VALEDICTORY

Prom is on Wednesday 26th June 2024

Saddleworth Hotel

Attendance at the prom and valedictory will be dependent on the positive report from all teachers based on behaviour and attitude to learning.



Post 16 Choices:

Scenario 1. You enjoy school, like learning, would like to go to University or get a Higher/Degree Apprenticeship = CHS Sixth Form to do 3 Academic Qualifications.

Scenario 2. You like learning, but perhaps in a more practical style = College – Hopwood Hall, Oldham College etc

Scenario 3. Would prefer to get started in the world of work = Level 3 apprenticeship.



Our Open Evening is on Wednesday 4th October, 4:30-8pm

You can find out more about the courses we offer via our [Course Directory](#), or take a [virtual tour of our facilities](#) led by Natalie and Abdullah, our former Head Students.

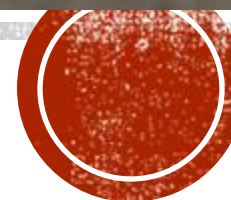


Click here to [apply for your September 2024](#) place!

Applications close at midday on Friday 24th November 2023



REVISION IN ENGLISH



ENGLISH LANGUAGE

Paper 1: Explorations in Creative Reading and Writing

What's assessed

Section A: Reading

- one literature fiction text

Section B: Writing

- descriptive or narrative writing

Assessed

- written exam: 1 hour 45 minutes
- 80 marks
- 50% of GCSE

- Read and understand a text.
- Analyse a writer's use of language.
- Analyse a writer's use of structure.
- Explore a writer's intentions and analyse their methods.
- Use content and organisation in writing.
- Use technical accuracy in writing.



Paper 2: Writers' Viewpoints and Perspectives

What's assessed

Section A: Reading

- one non-fiction text and one literary non-fiction text

Section B: Writing

- writing to present a viewpoint

Assessed

- written exam: 1 hour 45 minutes
- 80 marks
- 50% of GCSE

ENGLISH LANGUAGE

- Read and understand a text.
- Summarise and compare two texts.
- Analyse a writer's use of language.
- Compare writers' viewpoints and analyse their methods.
- Use content and organisation in writing.
- Use technical accuracy in writing.



AUTUMN EXAM

Paper 2: Writers' Viewpoints and Perspectives

What's assessed

Section A: Reading

- one non-fiction text and one literary non-fiction text

Section B: Writing

- writing to present a viewpoint

Assessed

- written exam: 1 hour 45 minutes
- 80 marks
- 50% of GCSE

ENGLISH LANGUAGE

- Read and understand a text.
- Summarise and compare two texts.
- Analyse a writer's use of language.
- Compare writers' viewpoints and analyse their methods.
- Use content and organisation in writing.
- Use technical accuracy in writing.



REVISING FOR ENGLISH LANGUAGE

The best revision for English Language is to practice past papers. All past papers have been allocated to all students on class charts

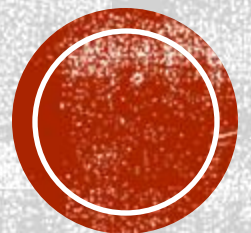
Read high quality fiction and non-fiction.

Students should use the notes and sample answers in their exercise books whilst completing past papers.



| Paper 1 | Paper 2 |
|-------------------|------------------------------|
| Macbeth | An Inspector Calls |
| A Christmas Carol | Power and Conflict poetry |
| | Unseen poetry |

ENGLISH LITERATURE



TEXTS STUDIED

- Shakespeare's 'Macbeth'
 - J.B. Priestley's 'An Inspector Calls'
 - Charles Dicken's 'A Christmas Carol.'
 - The AQA poetry anthology 'Power and Conflict' cluster of poems.
-

Pupils need:

A strong knowledge of the whole text.

An awareness of the contexts in which the texts were created.



REVISING FOR ENGLISH LITERATURE

- The best revision for English Literature is to complete practice past papers. All past papers have been allocated to all students on class charts.
- GCSE Pod has videos focusing on individual texts and skills.
- Students have been given an in-house produced revision booklet for each text studied.
- There is a wide variety of revision books available online. We recommend the ones produced by the publisher CGP



AUTUMN EXAM

- Macbeth
- Power and Conflict poetry



A close-up, slightly blurred photograph of a spiral-bound notebook. The notebook is open, showing several pages with horizontal lines. The spiral binding is visible on the left side. The pages are white with faint, light-colored lines. The background is a soft, out-of-focus grey.

SUPPORT

- After school and Saturday sessions for invited students.
- Holiday sessions for invited students.
- Teams twilight sessions before mock and final exams.





MATHS

CLAIRE BORTHWICK

c.borthwick@cromptonhouse.org

▪ ext 284



SUCCESS IN MATHS

- Maths is a skills-based subject
- Reading through notes is ineffective
- Practise, practise, practise



WHAT DOES THE MATHS EXAM LOOK LIKE?

- Increased content
- Less scaffolding in questions requiring more resilience and independence.
- More problem solving and questions in context.



WHAT DO THE QUESTIONS LOOK LIKE?

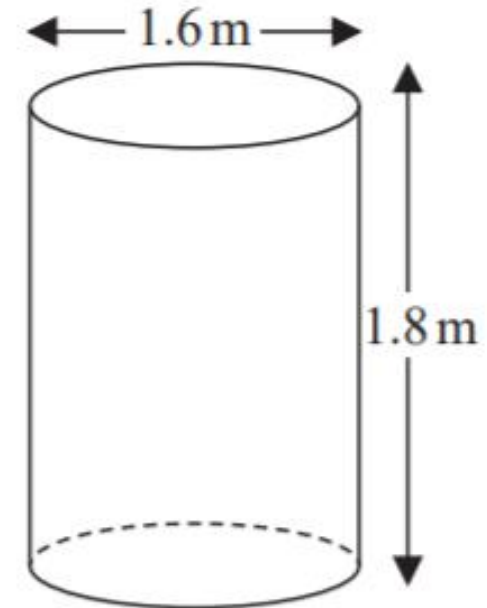
Foundation June 2019, Paper 3

Jeremy has to cover 3 tanks completely with paint.

Each tank is in the shape of a cylinder with a top and a bottom.
The tank has a diameter of 1.6 m and a height of 1.8 m.

Jeremy has 7 tins of paint.
Each tin of paint covers 5 m^2

Has Jeremy got enough paint to cover completely the 3 tanks?
You must show how you get your answer.



(Total for Question 29 is 5 marks)



HOW ARE STUDENTS EXAMINED?

- Exam Board - Pearson Edexcel
- Two tiers of entry

Foundation 5-1

Higher 9-4

- Three exam papers (1 hour 30 mins each):

Paper 1 Non Calculator

Paper 2 Calculator

Paper 3 Calculator



RESOURCES TO HELP YOU PRACTISE

- Maths Genie: Free online support with all past papers, mark schemes, solutions and videos to help

<https://www.mathsgenie.co.uk/>

- Corbettmaths

<https://corbettmaths.com/>

- Pixi Maths

<https://www.piximaths.co.uk/the-revision-zone>

- DrFrost

<https://www.dr frostmaths.com/index.php>

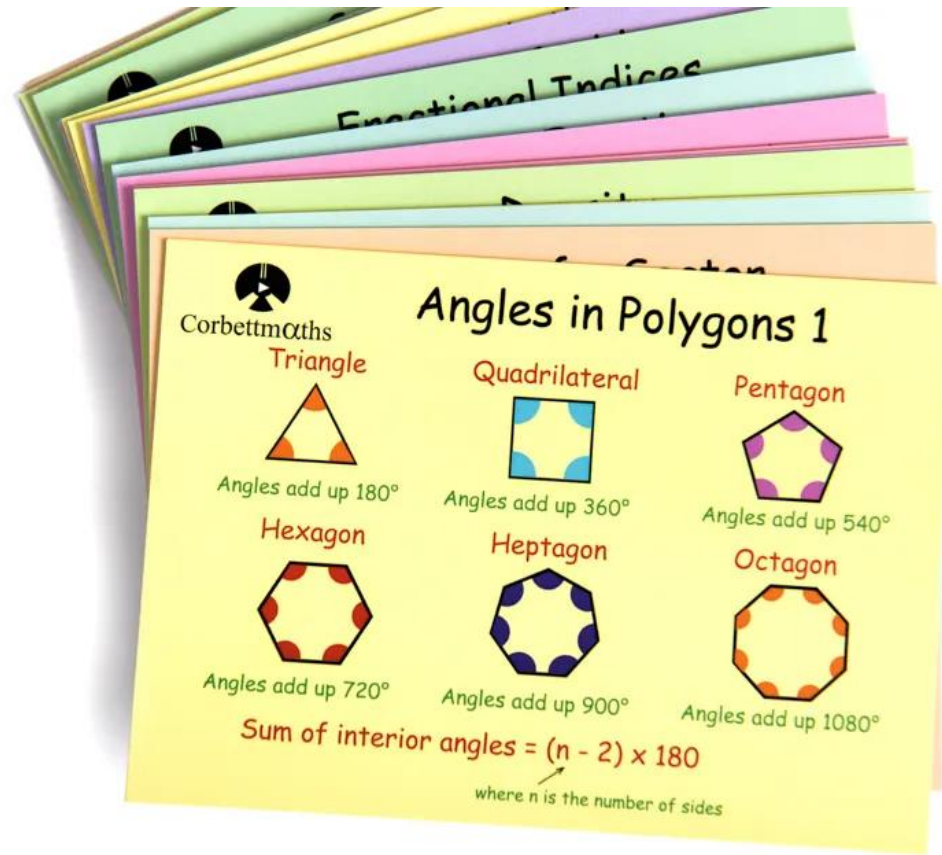
- SPARX Homework platform



MATHS GENIE



CORBETT MATHS FLASH CARDS



SPARX

Compulsory
2 new

XP Boost
2 new

Target
2 new

Sparx
Practice

Independent
Learning

This is your personalised Compulsory homework. You need to answer every question correctly to complete it.

▶ Homework due Tuesday 27th September 11pm

New

▶ Homework due Tuesday 20th September 11pm

Late

0%





Back to Homework

Find topics

My activity

Choose to practice any topic from the Sparx library at any difficulty level.

Search for topics:

Your curriculum:

GCSE

Default level:

Level 5

Select a topic:

Number

Algebra

Ratio and Proportion

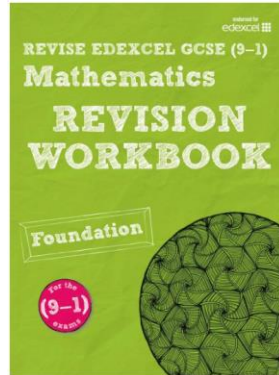
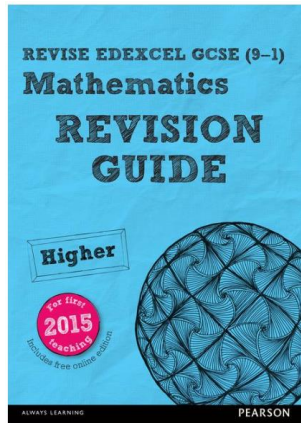
Geometry

Probability

Statistics



REVISION GUIDES AND WORKBOOKS



GEOMETRY & MEASURES Had a look Nearly there Nailed it!

Trigonometry 2

You can use the trigonometric ratios to find the length of a missing side in a right-angled triangle. You need to know the length of another side and the size of one of the acute angles.

Worked example

Calculate the length of side a . (3 marks)

Worked example

Label the sides of the triangle relative to the 40° angle. Side b is the adjacent side, side a is the opposite side and side c is the hypotenuse. You know the length of side b and the angle 40° . You can solve the equation to find the length of a .

Angle of elevation and depression

Some trigonometry questions will involve angles of elevation and depression.

The angle of depression or the angle of elevation are always equal.

Angles of elevation and depression are always equal. In this diagram, $\angle x$ is equal to $\angle y$ because they are alternate angles.

Now try this

Work out the length of side a in each of these triangles. Give your answers correct to 2 decimal places.

PROBABILITY & STATISTICS Had a look Nearly there Nailed it!

Problem-solving practice 1

Almost half of the questions in your Foundation GCSE exam will require you to **problem-solve, reason, interpret or communicate** mathematically. If you come across a tricky or unfamiliar question in your exam you can try some of these strategies.

- Sketch a diagram to see what is going on.
- Try the problem with simpler or easier numbers.
- Plan your strategy before you start.
- Write down any formulae you might be able to use.
- Use x or n to represent an unknown value.

1 The table shows information about the numbers of Year 7 pupils absent from Kaleb's school last week.

| Day | Boys | Girls |
|-----------|------|-------|
| Monday | 2 | 12 |
| Tuesday | 0 | 2 |
| Wednesday | 0 | 11 |
| Thursday | 4 | 10 |
| Friday | 10 | 0 |

Draw a suitable diagram or chart. (4 marks)

2 All ten have a number written on it.

| | | | |
|---|---|---|---|
| 7 | 9 | 3 | 2 |
|---|---|---|---|

The mean of the five numbers is 6. One of the numbers is hidden. Work out the hidden number. (2 marks)

TOP TIP You could try some different values for the hidden number and work out the mean each time. But you can save time by using the rule in the top tip. There are five numbers and the mean is 6, so the sum of the numbers must be $5 \times 6 = 30$.

TOP TIP \bar{x} = mean, n = number of ... , Σ = sum of ...



Had a go Nearly there Nailed it! ALGEBRA

Quadratic equations

1 Solve

(a) $x^2 - 3x = 0$

$x = \dots$ or $x = \dots$ (2 marks)

2 Find the values of x that make each factor equal to 0. The two factors in each case are solutions to $x^2 - 1 = 0$.

(i) $x^2 + 3x = 0$ (2 marks)

(ii) $x^2 - 7x = 0$ (2 marks)

3 Solve

(a) $x^2 + 6x + 8 = 0$

$x = -2$ or $x = \dots$ (2 marks)

(i) $x^2 - 7x + 12 = 0$ (2 marks)

(ii) $x^2 + 9x + 20 = 0$ (2 marks)

(d) $x^2 + 8x + 7 = 0$ (2 marks)

(e) $x^2 - 2x - 24 = 0$ (2 marks)

(f) $x^2 - 11x + 28 = 0$ (2 marks)

(g) $x^2 - 49 = 0$ (2 marks)

(h) $x^2 - 12x + 36 = 0$ (2 marks)

(i) $x^2 - 9 = 0$ (2 marks)

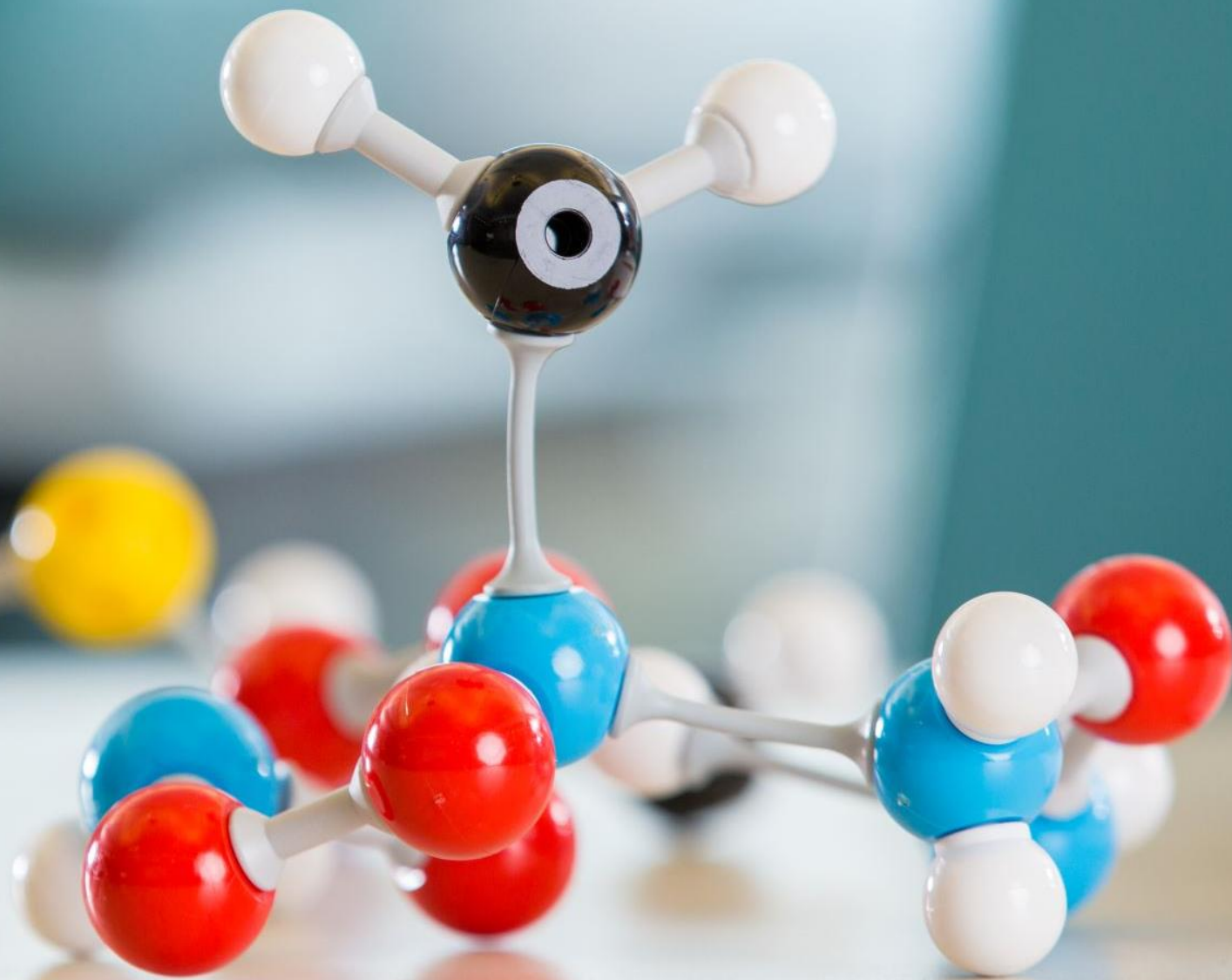
4 The sum of the squares of two consecutive numbers is 221. Find the two positive numbers. (2 marks)

Order online:
Pearson publications are recommended.



SCIENCE

GCSE



GCSE
CHEMISTRY
(8462)

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

Version 1.1 04 October 2019



GCSE
PHYSICS
(8463)

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

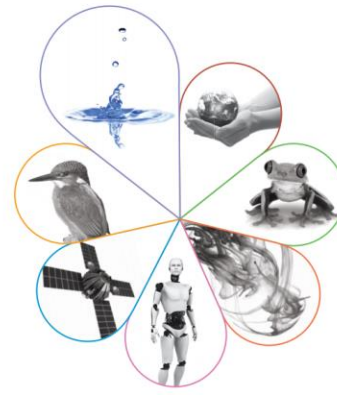
Version 1.1 30 September 2019



GCSE
COMBINED
SCIENCE:
TRILOGY
(8464)

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

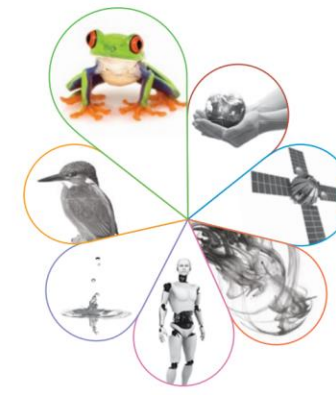
Version 1.1 04 October 2019



GCSE
BIOLOGY
(8461)

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

Version 1.0 21 April 2016



- Students do at least 8 practical activities (16 for combined science) covering specific apparatus and techniques.
- Exam questions about practical work make up at least 15% of the total marks for the qualification.
- As with all reformed GCSEs, the content is more challenging than previous GCSEs graded A* to G.



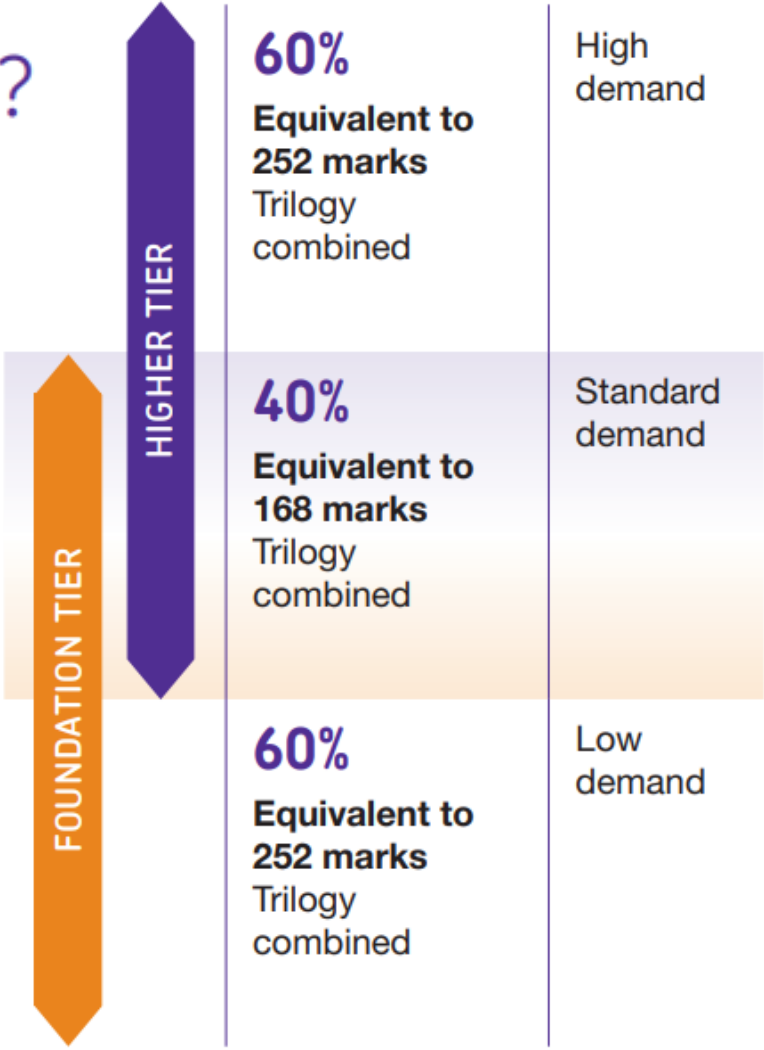
**Each single science will be worth one GCSE grade.
Combined science will be an award worth 2 GCSEs.**

- Students taking separate science GCSEs will get a grade from 9 to 1 for each subject, with 9 being the highest grade.
- Students studying combined science will receive an award worth two GCSEs, consisting of two equal or adjacent grades from 9 to 1 (9-9, 9-8, 8-8, 8-7, 7-7...to 1-1).
- If the numbers are different, the highest number will always be reported on the left.



The level of demand of the questions in each tier will determine the suitability for each individual.

Foundation or Higher – what's best?



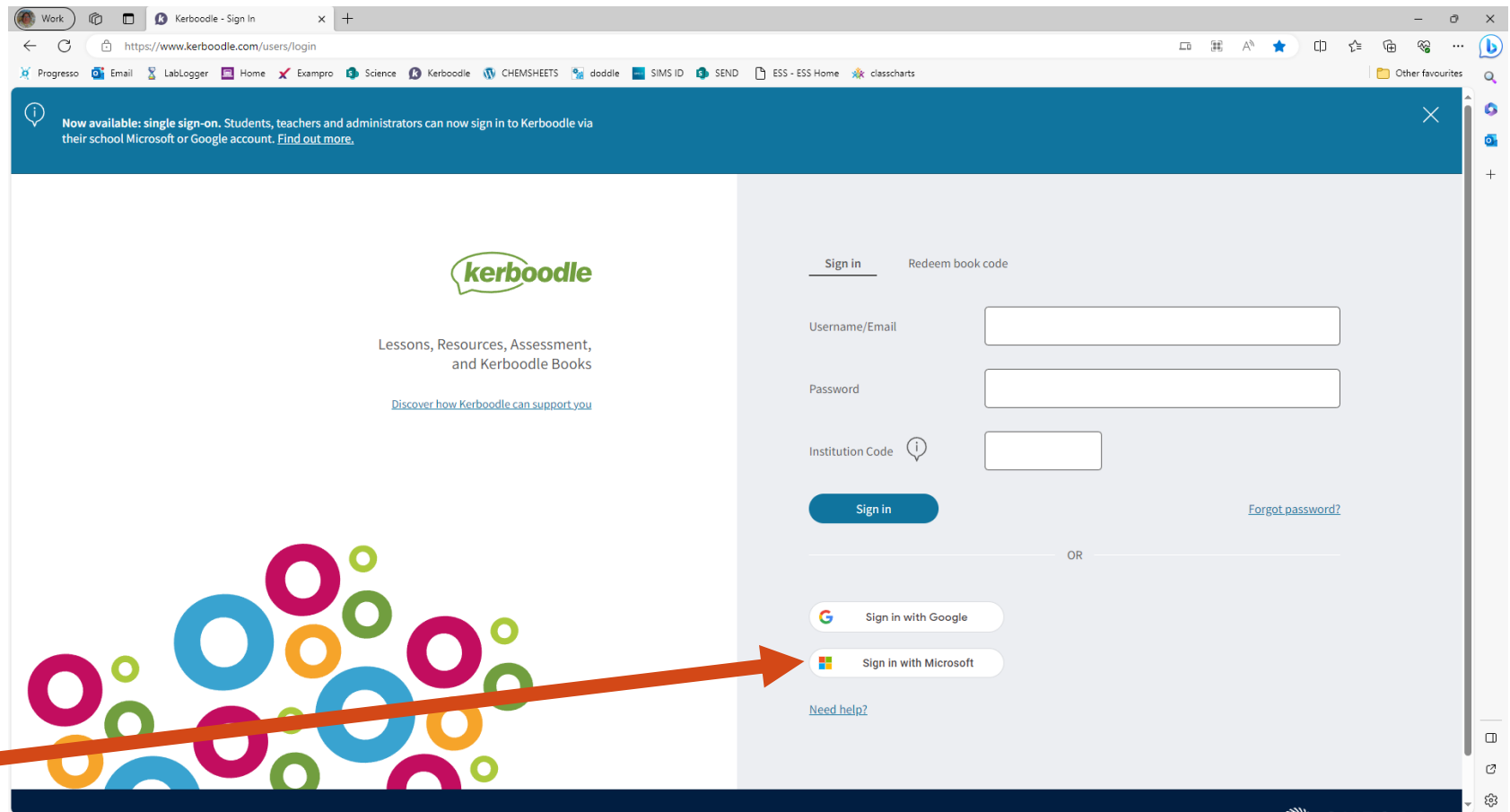
30% of the marks are common between tiers.
These are standard demand.

There are no low demand questions on the Higher tier.



Accessing Kerboodle

Got to website <https://www.kerboodle.com/users/login>



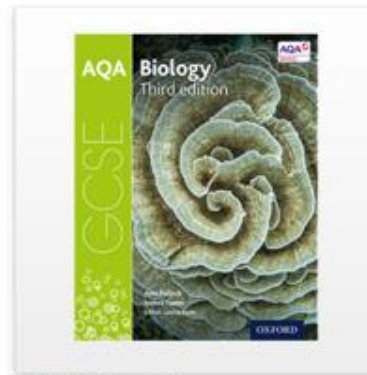
Click on sign in with Microsoft



AQA GCSE Sciences (9-1)



AQA GCSE Sciences (9-1)

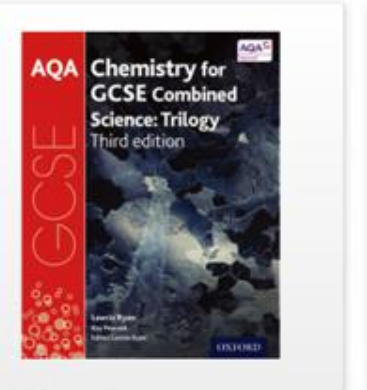


AQA GCSE Sciences (9-1)

AQA GCSE Sciences

9-1

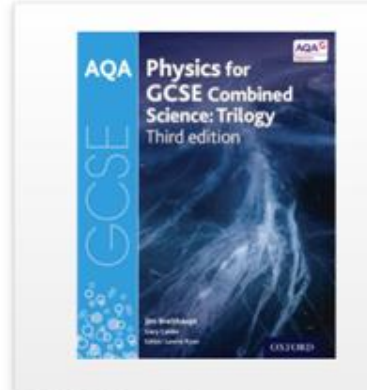
AQA GCSE Sciences (9-1)



GCSE Sciences (9-1)



AQA GCSE Sciences (9-1)



AQA GCSE Sciences (9-1)



DIGITAL BOOK

Online versions of the Student Books for display and annotation



B 1 Cell structure and transport

1.1 The world of the microscope

Learning objectives

After this topic, you should know:

- how microscopy techniques have developed over time
- the differences in magnification and resolution between a light microscope and an electron microscope
- how to calculate the magnification, real size, and image size of a specimen.



Figure 1 A light microscope

Living things are all made up of cells, but most cells are so small you can only see them using a microscope. It is important to grasp the units used for such tiny specimens before you start to look at them.

Using units

1 kilometre (km) = 1000 metres (m)
1 m = 100 centimetres (cm)
1 cm = 10 millimetres (mm)
1 mm = 1000 micrometres (μm)
1 μm = 1000 nanometres (nm) – so a nanometre is 0.000 000 001 metres (or written in standard form as 1×10^{-9} m).

The first light microscopes were developed in the mid-17th century. Their development has continued ever since and they are still widely used to look at cells. Light microscopes use a beam of light to form an image of an object and the best can magnify around 2000 times ($\times 2000$), although school microscopes usually only magnify several hundred times. They are relatively cheap, can be used almost anywhere, and can magnify live specimens (Figures 1 and 2).

The invention of the electron microscope in the 1930s allowed biologists to see and understand more about the subcellular structures inside cells. These instruments use a beam of electrons to form an image and can magnify objects up to around 2 000 000 times. Transmission electron microscopes give 2D images with very high magnification and resolution. Scanning electron microscopes give dramatic 3D images but lower magnifications (Figure 3). Electron microscopes are large, very expensive, and have to be kept in special temperature, pressure, and humidity-controlled rooms.

Calculating magnification

You can calculate the magnification you are using with a light microscope very simply. You multiply the magnification of the eyepiece lens by the magnification of the objective lens. So if your eyepiece lens is $\times 4$ and your objective lens is $\times 10$, your overall magnification is:

$$4 \times 10 = \times 40$$

When you label drawings made using a microscope, make it clear that the magnification you give is the magnification at which you looked at the specimen (eg., as viewed at $\times 40$).

Calculating the size of an object

You will want to calculate the size of objects under the microscope. There is a simple formula for this, based on the magnification triangle.

As long as you know or can measure two of the factors, you can find the third.



$$\text{magnification} = \frac{\text{size of image}}{\text{size of real object}}$$

For example, if you know you are working at magnification $\times 40$, and the image of the cell you are looking at measures 1 mm, you can work out the actual diameter of the cell:

$$\text{size of real object} = \frac{\text{size of image}}{\text{magnification}}$$

so

$$= \frac{1}{40} \text{ mm} = 0.025 \text{ mm or } 25 \mu\text{m}$$

Your cell has a diameter of **25 μm** .

Magnifying and resolving power

Microscopes are useful because they magnify things, making them look bigger. The height of an average person magnified by one of the best light microscopes would look about 3.5 km, and by an electron microscope about 3500 km. There is, however, a minimum distance between two objects when you can see them clearly as two separate things. If they are closer together than this, they appear as one object. Resolution is the ability to distinguish between two separate points and it is the **resolving power** of a microscope that affects how much detail it can show. A light microscope has a resolving power of about 200 nm, a scanning electron microscope of about 10 nm and a transmission electron microscope of about 0.2 nm – that is approximately the distance apart of two atoms in a solid substance!

- 1 State one advantage and one disadvantage of using:
a a light microscope [2 marks] b an electron microscope [2 marks]
- 2 a A student measured the diameter of a human capillary on a micrograph. The image measures 5 mm and the student knows the magnification is $\times 1000$. How many micrometres is the diameter of the capillary? [3 marks]
b A student is told the image of the cell has a diameter of 800 μm . The actual cell has a diameter of 20 μm . At what magnification has the cell been observed? [2 marks]
- 3 Evaluate the use of an electron microscope and a light microscope, giving one example where each type of microscope might be used. [6 marks]



Figure 2 Onion cells dividing as seen through a light microscope – magnification $\times 570$

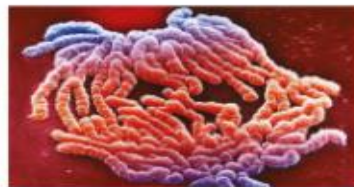


Figure 3 Chromosomes during cell division seen with a scanning electron microscope – magnification $\times 4500$

Synoptic links

You can learn more about writing very small or very large numbers in standard form in Maths skills MS1b. For more information on cell division look at Chapter B2.

Study tip

Make sure you can work out the magnification, the size of a cell, or the size of the image depending on the information you are given.

Key points

- Light microscopes magnify up to about $\times 2000$, and have a resolving power of about 200 nm.
- Electron microscopes magnify up to about $\times 2\,000\,000$, and have a resolving power of around 0.2 nm.
- magnification = $\frac{\text{size of image}}{\text{size of real object}}$



Notebook



4

5



You can make revision notes and they will be here next time you open the text book.

Cell structure and transport

1 The world of the micro

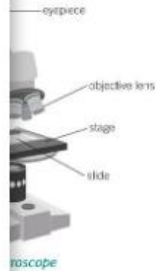
Objectives

You should know:
 • techniques have time
 • in magnification and
 • use a light microscope
 • microscope
 • the magnification,
 • size of a specimen.

Living things are all made up of cells, but most are too small to see with the naked eye. You can only see them using a microscope. It is important to use such tiny specimens before you start to look at them.

Using units

- 1 kilometre (km) = 1000 metres (m)
- 1 m = 100 centimetres (cm)
- 1 cm = 10 millimetres (mm)
- 1 mm = 1000 micrometres (µm)
- 1 µm = 1000 nanometres (nm) – so a nanometre is 0.000 000 001 metres (or written in standard form as 1×10^{-9} m).



The first light microscope was developed in the 17th century. Their development was used to look at cells and to form an image of an object, although school microscopes can magnify live specimens (Fig. 1.1).

The invention of the electron microscope allowed biologists to see inside cells. These microscopes can magnify structures up to 100 000 times. Scanning electron microscopes are expensive, and have a low resolution. Scanning electron microscopes are large, very expensive, and have a low resolution.

Calculating magnification

You can calculate magnification very simply. You can work out the magnification of the objective lens is $4 \times 10 = \times 40$.

When you label the magnification of the specimen (eg

Dr O'Brien said that this is important and

- Undo
- Redo
- Cursor
- Pen
- Highlighter
- Eraser
- Sticky Note
- Spotlight
- Save
- Clear All
- Hide

Calculating the size of an object

You will want to calculate the size of objects under the microscope. There is a simple formula for this, based on the magnification triangle.



As long as you know or can measure two of the factors, you can find the third.

$$\text{magnification} = \frac{\text{size of image}}{\text{size of real object}}$$

For example, if you know you are working at magnification $\times 40$, and the image of the cell you are looking at measures 1 mm, you can work out the actual diameter of the cell:

$$\begin{aligned} \text{size of real object} &= \frac{\text{size of image}}{\text{magnification}} \\ &= \frac{1 \text{ mm}}{40} = 0.025 \text{ mm or } 25 \mu\text{m} \end{aligned}$$

Your cell has a diameter of 25 µm.

Magnifying and resolving power

Microscopes are useful because they magnify things, making them look bigger. The height of an average person magnified by one of the best light microscopes would look about 3.5 km, and by an electron microscope about 3500 km. There is, however, a minimum distance between two objects when you can see them clearly as two separate things. If they are closer together than this, they appear as one object. Resolution is the ability to distinguish between two separate points and it is the **resolving power** of a microscope that affects how much detail it can show. A light microscope has a resolving power of about 200 nm, a scanning electron microscope of about 10 nm and a transmission electron microscope of about 0.2 nm – that is approximately the distance apart of two atoms in a solid substance!

- State one advantage and one disadvantage of using:
 - a light microscope. [2 marks]
 - an electron microscope. [2 marks]
- A student measured the diameter of a human capillary on a micrograph. The image measures 5 mm and the student knows the magnification is $\times 1000$. How many micrometres is the diameter of the capillary? [3 marks]
 - a student is told the image of the cell has a diameter of 800 µm. The actual cell has a diameter of 20 µm. At what magnification has the cell been observed? [2 marks]
- Evaluate the use of an electron microscope and a light microscope, giving one example where each type of microscope might be used. [6 marks]

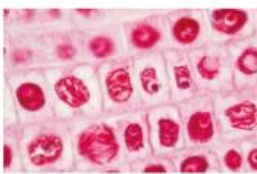


Figure 2 Onion cells dividing as seen through a light microscope – magnification $\times 570$

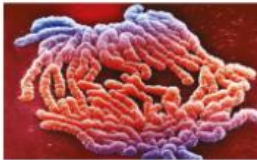


Figure 3 Chromosomes during cell division seen with a scanning electron microscope – magnification $\times 4500$

Synoptic links

You can learn more about writing very small or very large numbers in standard form in Maths skills MS1b. For more information on cell division look at Chapter B2.

Study tip

Make sure you can work out the magnification, the size of a cell, or the size of the image depending on the information you are given.

Key points

- Light microscopes magnify up to about $\times 2000$, and have a resolving power of about 200 nm.
- Electron microscopes magnify up to about $\times 2\,000\,000$, and have a resolving power of around 0.2 nm.
- magnification = $\frac{\text{size of image}}{\text{size of real object}}$

B I ...

- the differences in magnification and resolution between a light microscope and an electron microscope
- how to calculate the magnification, real size, and image size of a specimen.

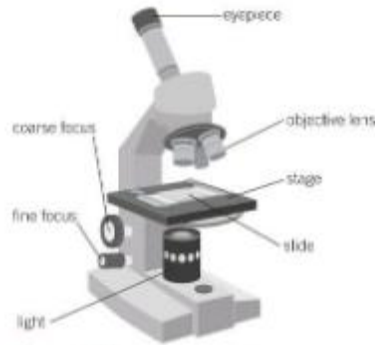


Figure 1 A light microscope

Using units

1 kilometre (km) = 1000 metres (m)
 1 m = 100 centimetres (cm)
 1 cm = 10 millimetres (mm)
 1 mm = 1000 micrometres (μm)
 1 μm = 1000 nanometres (nm) – so a nanometre is 0.000 000 001 metres (or written in standard form as 1×10^{-9} m).

The first light microscopes were developed in the mid-17th century. Their development has continued ever since and they are still widely used to look at cells. Light microscopes use a beam of light to form an image of an object and the best can magnify around 2000 times ($\times 2000$), although school microscopes usually only magnify several hundred times. They are relatively cheap, can be used almost anywhere, and can magnify live specimens (Figures 1 and 2).

The invention of the electron microscope in the 1930s allowed biologists to see and understand more about the subcellular structures inside cells. These instruments use a beam of electrons to form an image and can magnify objects up to around 2 000 000 times. Transmission electron microscopes give 2D images with very high magnification and resolution. Scanning electron microscopes give dramatic 3D images but lower magnifications (Figure 3). Electron microscopes are large, very expensive, and have to be kept in special temperature, pressure, and humidity-controlled rooms.

Calculating magnification

You can calculate the magnification you are using with a light microscope very simply. You multiply the magnification of the eyepiece lens by the magnification of the objective lens. So if your eyepiece lens is $\times 4$ and your objective lens is $\times 10$, your overall magnification is:

$$4 \times 10 = \times 40$$

When you label drawings made using a microscope, make it clear that the magnification you give is the magnification at which you looked at the specimen (eg., as viewed at $\times 40$).

For example, if you were you are working at magnification $\times 40$ and the image of the cell you are looking at measures 1 mm, you can work out the actual diameter of the cell:

$$\text{size of real object} = \frac{\text{size of image}}{\text{magnification}}$$

so

$$= \frac{1}{40} \text{ mm} = 0.025 \text{ mm or } 25 \mu\text{m}$$

Your cell has a diameter of **25 μm** .

Magnifying and resolving power

Microscopes are useful because they magnify things, making them look bigger. The height of an average person magnified by one of the best light microscopes would look about 3.5 km, and by an electron microscope about 3500 km. There is, however, a minimum distance between two objects when you can see them clearly as two separate things. If they are closer together than this, they appear as one object. Resolution is the ability to distinguish between two separate points and it is the **resolving power** of a microscope that affects how much detail it can show. A light microscope has a resolving power of about 200 nm, a scanning electron microscope of about 10 nm and a transmission electron microscope of about 0.2 nm – that is approximately the distance apart of two atoms in a solid substance!

- State one advantage and one disadvantage of using:
 - a light microscope [2 marks]
 - an electron microscope [2 marks]
- A student measured the diameter of a human capillary on a micrograph. The image measures 5 mm and the student knows the magnification is $\times 1000$. How many micrometres is the diameter of the capillary? [3 marks]
 - A student is told the image of the cell has a diameter of 800 μm . The actual cell has a diameter of 20 μm . At what magnification has the cell been observed? [2 marks]
- Evaluate the use of an electron microscope and a light microscope, giving one example where each type of microscope might be used. [6 marks]



Figure 3 Chromosome seen with a scanning electron microscope

Synoptic

You can learn very small or standard form. For more info look at Chapter 1.

Study tip

Make sure you magnification size of the information you are looking at.



Key points

- Light microscopes have a magnification of about $\times 2000$ and a resolving power of about 200 nm.
- Electron microscopes have a magnification of up to about $\times 2\,000\,000$ and a resolving power of about 0.2 nm.
- Magnification is the ratio of the size of the image to the size of the real object.
- Resolution is the ability to distinguish between two separate points.
- The resolving power of a microscope affects how much detail it can show.
- A light microscope has a resolving power of about 200 nm, a scanning electron microscope of about 10 nm and a transmission electron microscope of about 0.2 nm – that is approximately the distance apart of two atoms in a solid substance!



B1 Retrieval questions

What are two types of eukaryotic cell?

B *I* U x^2 x_2 |  

Enter text here

[Click to reveal answer](#)





In this worksheet, you will answer a selection of questions about photosynthesis. Each question features a different command word.

1 Name the structure in plant cells where chlorophyll is found.
_____ (1 mark)

2 Explain the function of chlorophyll.

_____ (2 marks)

3 A student wants to study the effect of carbon dioxide concentration on the rate of photosynthesis.
They are provided with a selection of equipment including:

| | |
|----------------------|------------------------------------|
| • beaker | • iodine solution |
| • conical flask | • sodium hydrogen carbonate powder |
| • measuring syringe | • pond weed |
| • measuring cylinder | • dandelion plant |
| • boiling tube | • lamp |
| • funnel | • thermometer |
| • Bunsen burner | • balance |
| • water bath | • metre ruler |

Not all of the equipment is needed for the investigation.
Choose which equipment would be useful for this investigation.

_____ (5 marks)

4 Give a reason for each piece of equipment you chose.

_____ (5 marks)

Primrose Kitten Video 1: Five common mistakes in Chemistry

Press play to watch the video.



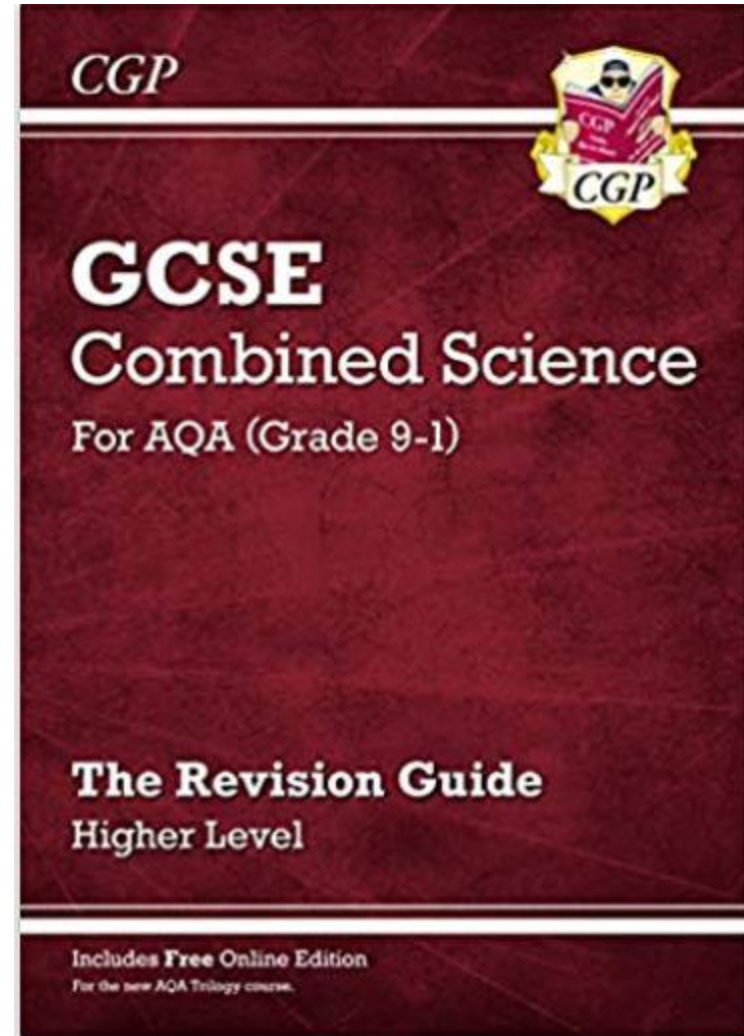
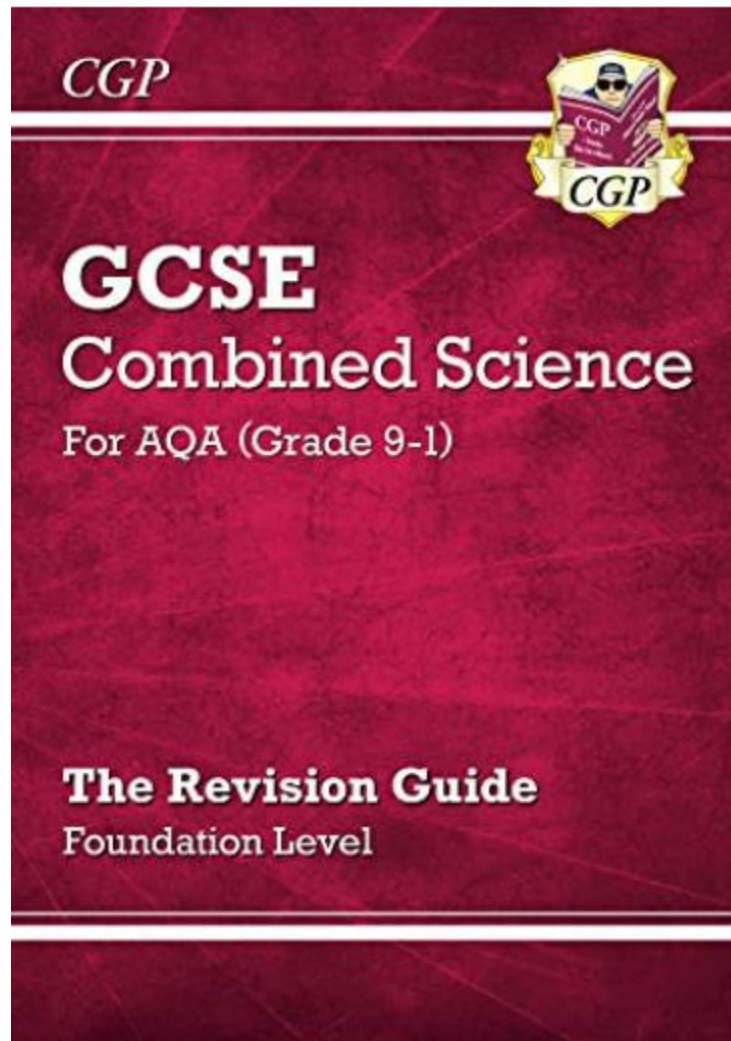
Reset

Acknowledgements
© Oxford University Press 2018

< Back

2 of 2





Use your revision guide too



CGP



GCSE Biology

For AQA (Grade 9-1)

The Revision Guide

CGP



GCSE Chemistry

For AQA (Grade 9-1)

The Revision Guide

CGP



GCSE Physics

For AQA (Grade 9-1)

The Revision Guide



Learn 2x faster for free with Seneca

Join **2,400,000** students using Seneca as the funnest way to boost their KS2, KS3, GCSE & A Level grades. And it's free!

[Students, start here](#)

[Teachers, start here](#)

[Parents, start here](#)



Good evening, Elizabeth!

Share topic ↗



New

Cell Differentiation

1 / 3

Cell differentiation is the process where a cell develops new sub-cellular structures (structures inside a cell) to let it perform a specific function. When this happens, the cell becomes specialised.



Embryos

- Cell differentiation happens during an organism's development.
- Organisms start as one cell.
- These cells divide to form embryos that differentiate (specialise) to produce cells that can perform all of the body's functions.



Specialised Cells Examples

The heart

Pathogen

Photosynthesis

The Brain
Carbon Dioxide + Water → Glucose + Oxygen
 $C_6H_{12}O_6 + 6O_2$

Extinction

Global Warming

Global temperature is a balance between the amount of energy it gets from the sun and the energy that it radiates back out into space. The atmosphere naturally acts in all directions, but greenhouse gases trap some of the energy that would otherwise be radiated back out to space. This effect is called the greenhouse effect. Global warming is a sharp increase in the average temperature of the Earth's atmosphere and oceans due to an increase in the concentration of greenhouse gases in the atmosphere.



🏠 / [Find past papers and mark schemes](#)

Find past papers and mark schemes

Here you can find past papers and mark schemes to help you prepare for exams.

Select a subject to start your search.

Subject

Science ▼

Qualification

GCSE ▼

Specification

Combined Science: Trilogy (8464) ▼



Please write clearly in block capitals.

Centre number

Candidate number

Surname _____

Forename(s) _____

Candidate signature _____

GCSE COMBINED SCIENCE: TRILOGY

H

Higher Tier
Biology Paper 1H

Tuesday 14 May 2019 Afternoon Time allowed: 1 hour 15 minutes

Materials

For this paper you must have:

- a ruler
- a scientific calculator.

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- In all calculations, show clearly how you work out your answer.

Information

- The maximum mark for this paper is 70.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.
- You are reminded of the need for good English and clear presentation in your answers.

| For Examiner's Use | |
|--------------------|------|
| Question | Mark |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| TOTAL | |



JUN198464B1H01

8464/B/1H

8464/B/1H

GCSE COMBINED SCIENCE: TRILOGY 8464/B/1H

Biology Paper 1H

Mark scheme

June 2019

Version: 1.0 Final



19668464B1H/MS





SUCCESSFUL LEARNING

Outstanding learning for outstanding futures

IT IS ALL ABOUT OUR LEARNING PARTNERSHIP!!!!...

STUDENT

MENTORING

TALKING / DODDLE

HIGH QUALITY COMMUNICATION

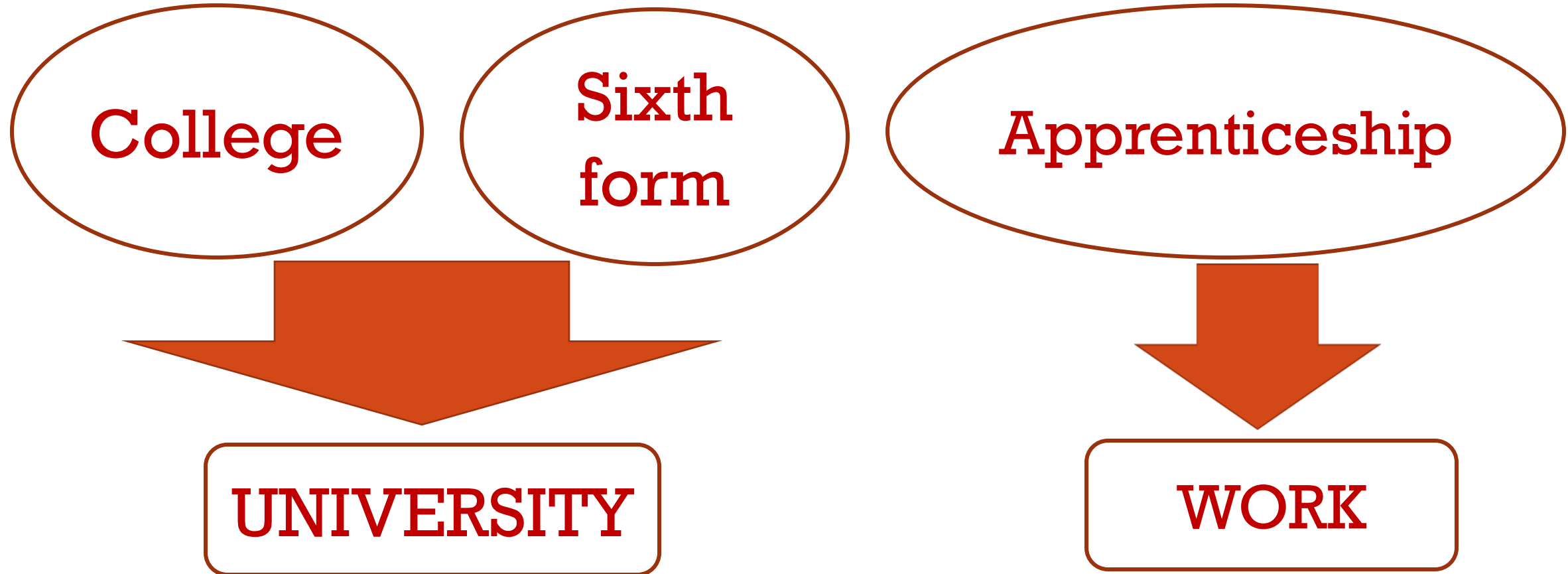
TEACHERS

FAMILY
(PARENTS/ CARERS)

EMAILS / PHONE /REPORTS/ PARENTS EVENINGS



“THE WORLD IS THEIR OYSTER”





Organisation e.g. having a file for each subject ready for revision notes and past questions?



What exam boards and specifications your daughter / son is following for different subjects?



What is their minimum expected target grade and what is their working at grade?



What needs to be done in particular subjects in order to close the gap between their working at grade and target grade?



Are weekends and evenings balanced between school work and other activities?

**ARE YOU (BOTH
YOU & YOUR
CHILD) AWARE
OF?**



SUPPORT / INTERVENTION

Mentoring by form tutors.

Personal Learning Checklists

- to identify areas for improvement leading to small group
or even 1 to 1 support from staff (where necessary).

After school / lunch time revision.

Catch up clubs.

Easter Revision

Small Group Mentoring

Maths and English extra support

Study Skills assemblies

Home Learning Area (Study zone)

Study skills day

Careers advice

Grade Boosters

**How we
support
your child**



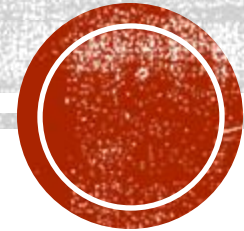


CHS Revision Timetable

| Time | Monday | Tuesday | Wednesday | Thursday | Friday | Time | Saturday | Sunday |
|------|--------|---------|-----------|----------|--------|------|----------|--------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

REVISION TIMETABLE

All students will be completing a revision schedule during their study skills day in January 2024.



The background of the slide is a close-up photograph of a calendar page. The calendar is partially obscured by a semi-transparent dark grey overlay. The visible parts of the calendar show a grid of dates with numbers in various colors (red, green, blue).

HOW TO REVISE EFFECTIVELY

RETRIEVAL PRACTICE

- Also known as the testing effect
- **Strategy which requires students to generate an answer to a question.**
- Most effective revision strategies

9 Ways to use retrieval practice

by @inner_drive | www.innerdrive.co.uk



SPACING



- **Learning a little information regularly**
- **10% to 30% difference in final test results**
- **Forget previously learnt information**
- **More likely to be transferred to their long-term memory.**



A GOOD LEARNING PARTNER

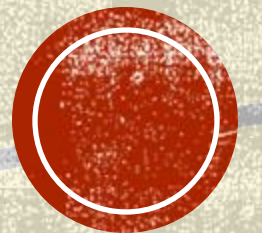


- Choose a study partner for the right reasons
- **If the person next to you is working hard, it is likely that you will follow and increase your work ethic**
- If students are able to work together they are more likely to experiment with different techniques and learn faster from positive and negative feedback.





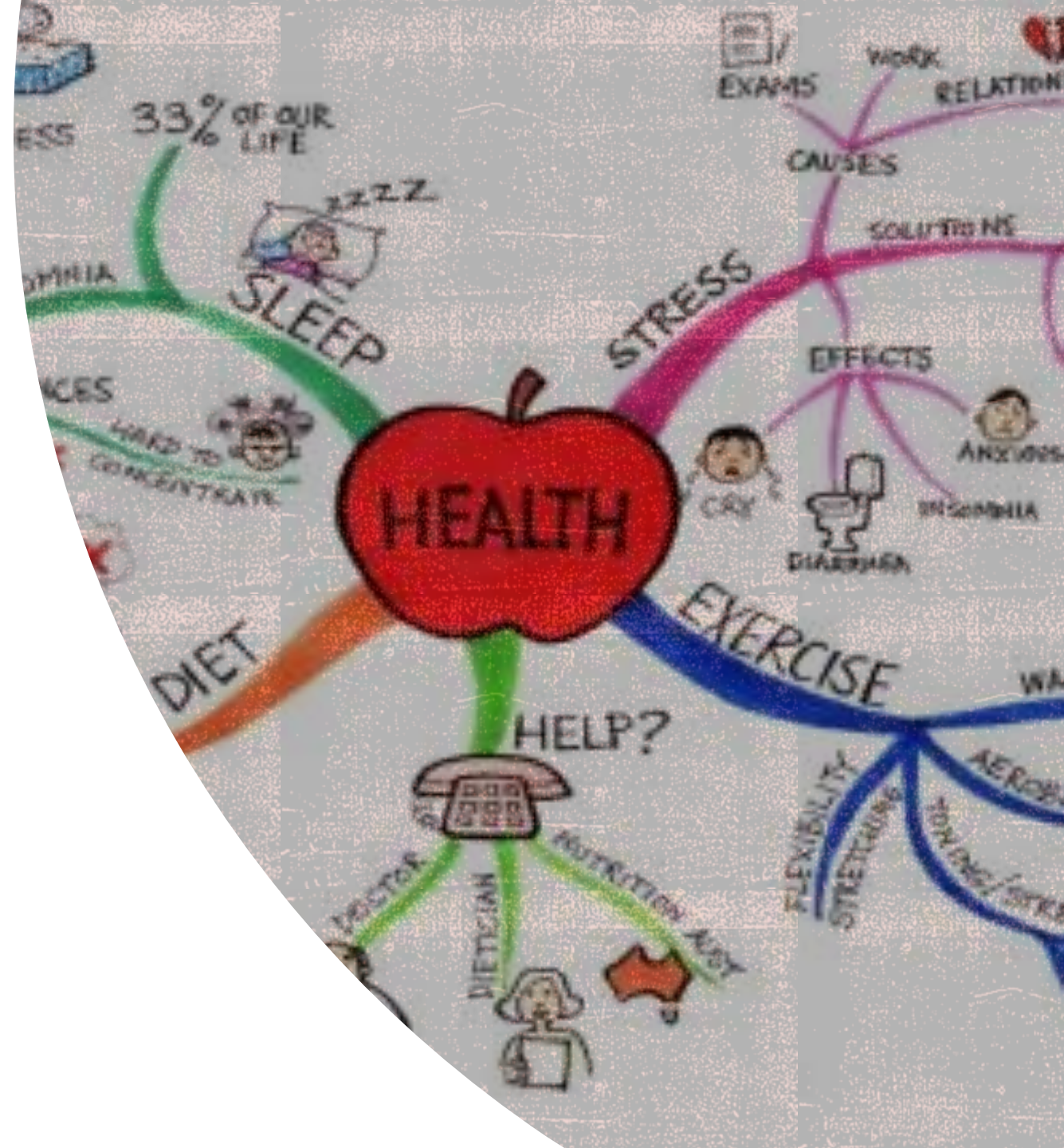
REVISION IDEAS



Outstanding learning for outstanding futures

MIND MAPS

- Start with a central theme and organise the information from it, grouped into subtopics. Label the branches with the relationships.
- To summarise a whole topic after revising it in detail. Only put in the key words, everything else should come to mind when you read it.





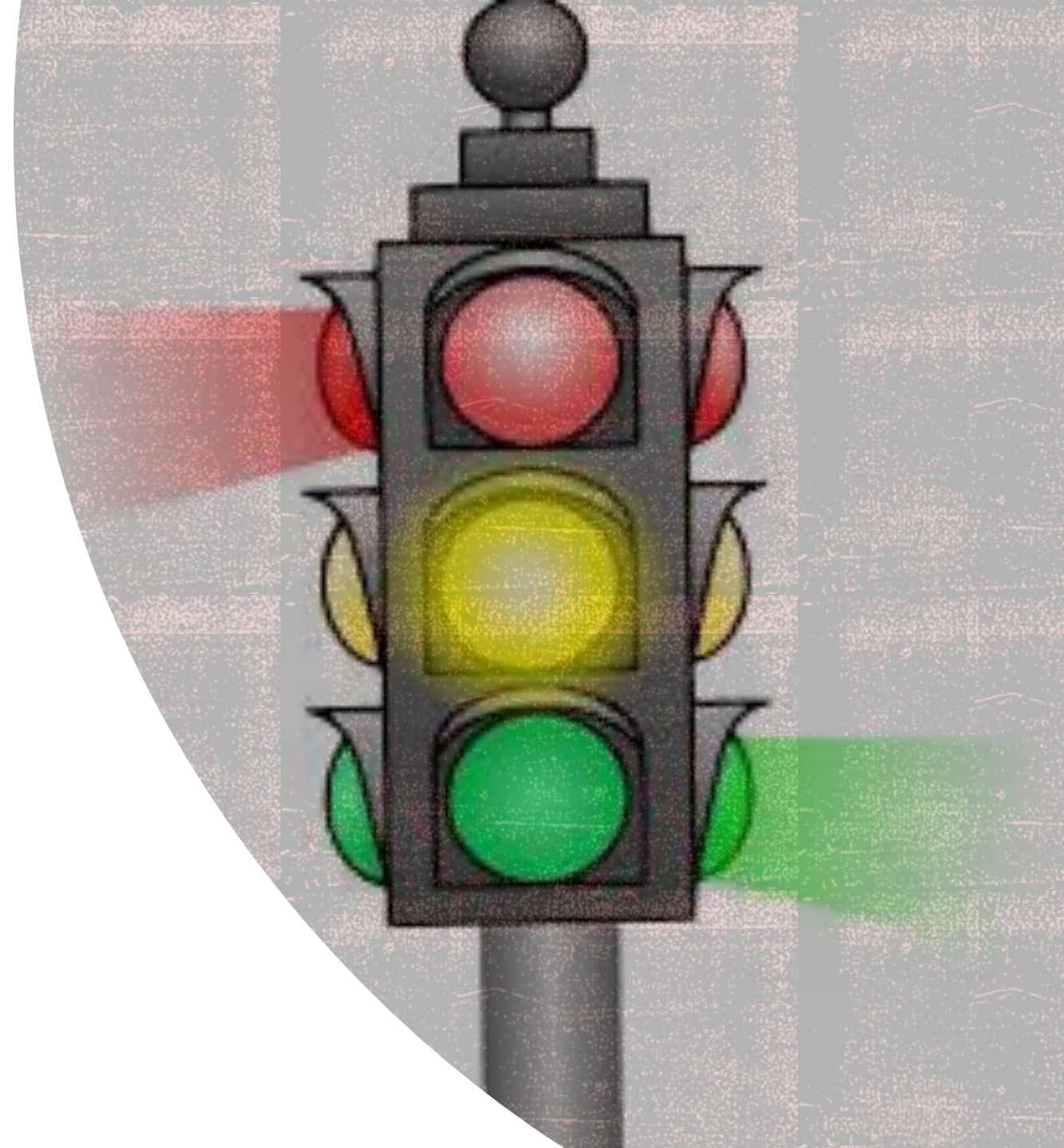
READ-COVER-RECALL-CHECK

- Read the information you want to remember. Cover it up, write out what you remember. Check to see how much you forgot.
- **Use it to test yourself on;** Spellings, Lists, A sequence of simple events



PAST EXAM QUESTIONS AND ANALYSIS

- Complete some past exam questions. Mark your answers. Fill in the answers you missed. Go through the paper and colour code each topic (Red-need to revise, Amber-Need to go over a few bits again, Green-I've got it)
- **Use it to** test your ability to; recall the information you have revised, to answer the question asked, not just write down everything you know, to follow the **command words** in an exam.



DESCRIBE OR EXPLAIN A PROCESS/SCENARIO TO SOMEONE ELSE.

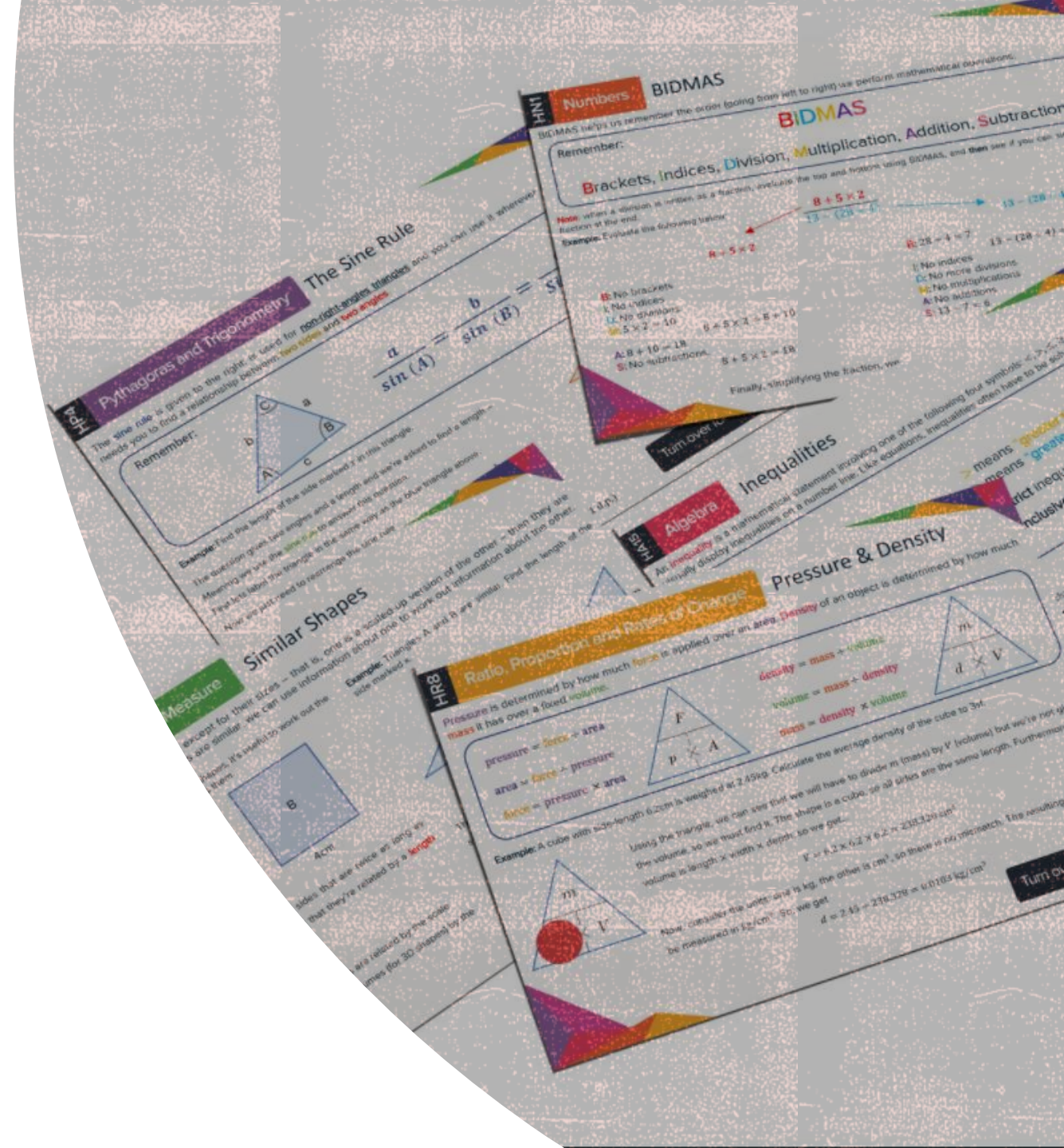


- **Describe or explain a process/scenario to someone who does not know it or a classmate.**
- They can ask questions to fill in any gaps you missed and if they are also revising it may help them understand the work better.
- **Use it when;** Explaining a series of events or a process that has some detail



FLASH CARDS

- For key information and facts. You can carry them around with you and test yourself anywhere.
- **Use it to remind and test yourself on;** Spellings Lists, A sequence of simple events, maths formulae
- You can also create excellent flash cards on – line and on your phone using Quizlet. This also has an app.





HOW NOT TO REVISE

CRAMMING



THE NIGHT IS STILL YOUNG..

Should not be relied upon

Cramming can make students feel stressed



RE-READING

- **84% of students re-read their notes when revising, whilst 55% claimed this was their number one strategy.**
- **When students employ this strategy they simply skim read the text.**
- **Information is neither considered nor processed, and does not become embedded in the long term memory.**

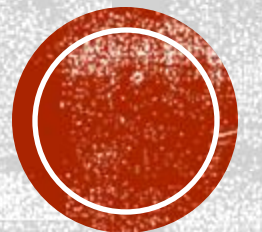


DISTRACTIONS

- Multi-tasking is a myth.
- **Having a mobile phone out whilst revising causes a decrease in concentration and a reduction of 20% in performance.**
- A quiet environment is preferable and leads to an exam performance that is 60% better than those who revise whilst listening to music with lyrics.



HOW CAN PARENTS HELP THEIR CHILD PREPARE FOR EXAMS?



HOW CAN PARENTS HELP?

- ✓ Ensure they are using Class Charts to access home learning.
- ✓ Support them with their home learning.
- ✓ Check their planner.
- ✓ Encourage them to attend revision sessions.
- ✓ Look out for parent mail messages telling you about forthcoming tests - encourage them to revise
- ✓ Check their book/folder for teacher feedback, sign the feedback, and talk to your child about the work they are doing
- ✓ Contact class teacher with any concerns (e-mail is best)
- ✓ Have a revision timetable.
- ✓ Organise a storage area / draw /shelf for books & files -



MINIMISE DISTRACTIONS

- **Ensure that they are revising without any distractions present.**
- **Keep mobile phones further than arms length**
- **Worth the long term gain.**



HELP WITH REVISION

- **Using retrieval practice**
- Test your child on flashcards
- Create multiple choice or essay questions based on the subject material.
- Print off and collate relevant past paper questions for your child to attempt.



SUPPORT YOUR CHILD TO ACHIEVE

- **High parental expectations lead to higher academic achievement.**
- **Realistic**
- **Accompanied with social support**



4 Ways to Help Your Child Get Better Grades

by @Inner_Drive
www.innerdrive.co.uk

- 1 High Academic Expectations**
Parental expectations have a major impact on grades. This includes attitudes towards school, teachers and the value of education.
- 2 Regular Communication**
If you talk about school issues early they are less likely to become major issues later.
- 3 Good Reading Habits**
This can be developed by reading with your child as part of a night-time routine. Choose books that capture their attention and imagination.
- 4 Homework Rules**
Have clear rules to deal with how your child divides their time between homework and socialising.

Source: Castro et al (2015) Parental involvement on student academic achievement: A meta-analysis





HELP THEM COPE WITH SETBACKS

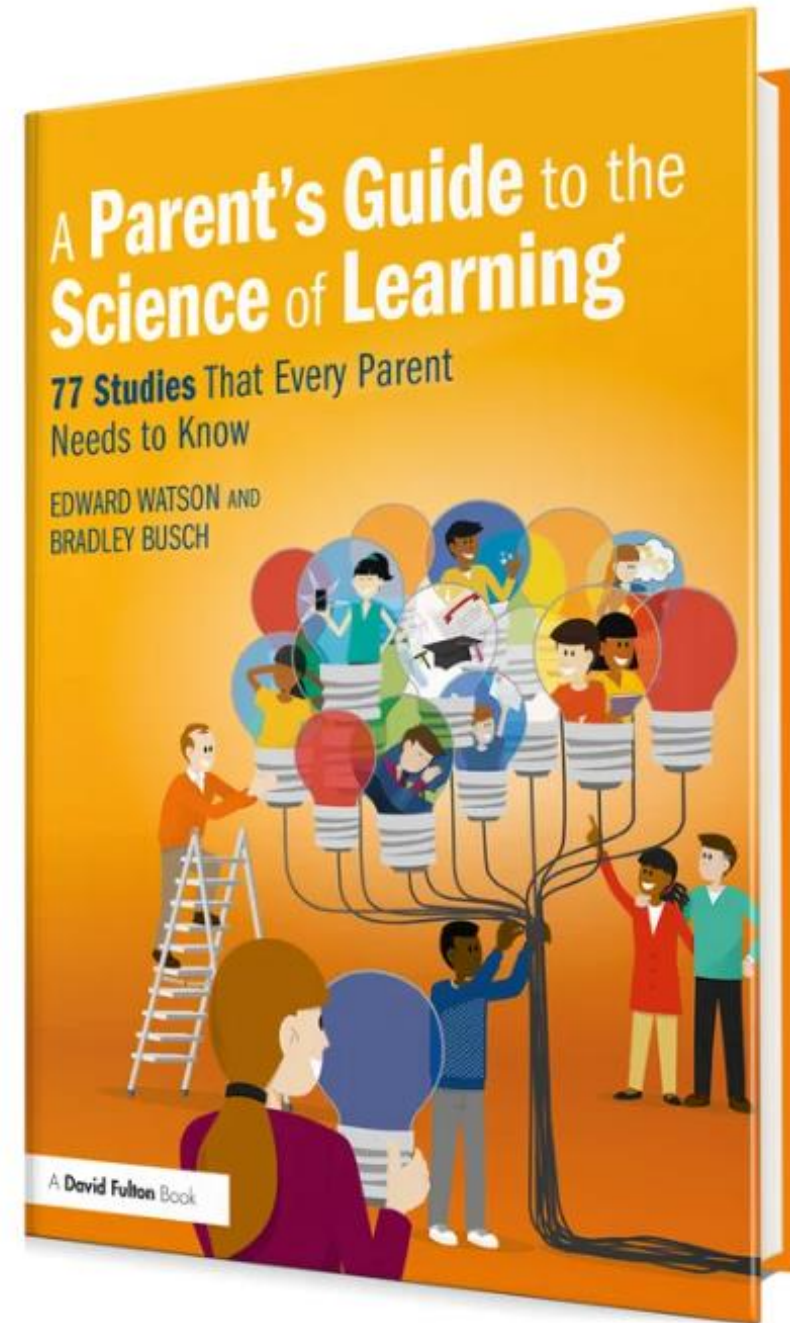
- Highly stressful time
- Some exams may not go as well as the student would have hoped.
- Parent's reaction can be key
- **An opportunity for learning rather than a judgment on their ability**
- Growth mindset

“How many hours of revision is enough?”

- No set number of hours
- **Both quality and quantity.**
- Students need to experiment to see what works for them.
- Taking short breaks
- Exercise



FURTHER READING



AVERAGE POINT SCORE (APS)

The average point score is simply the average grade in reformed GCSEs. If a student took 10 GCSEs and received grade 8 in five of them and grade 7 in the other five, their average would be 7.5.

APS provides a standardized way to assess and compare academic achievements, making it an important metric for various educational and career opportunities. It's a tangible representation of a student's hard work and dedication throughout their GCSE studies. Understanding and striving to achieve a high APS can open doors to future educational and career aspirations.



Crompton House CE School

Year 11 Mocks October 2023



Student Information Booklet



Revision Strategies



Three common revision techniques that are **LEAST** effective in helping you revise are:
• highlighting texts
• re-reading/summarising



Whilst these methods may **feel** like you are revising, there are **many** better methods to help you revise.

Flashcards

Simply create with questions on side and answers on the other side. You can colour code for specific topics and quiz yourself or others.

Post-its can be also useful for key words and timelines.

Key Terms

Create for key words and terms.



Causation
causes of events or progress



Judgements Create an agree or disagree argument against a quote



Narrative Create to show a narrative of events in order



Using Flashcards

Using the Leitner Method, using the video below <https://www.bbc.com/education/50840781>

You can also create excellent flashcards online or on your phone using Quizlet which also had an app.



Retrieval Practice

Testing what you know is a powerful tool in revision, the effort to remember something really strengthens your memory.

Apps such as **Memrise** and **Quizlet** allow you to use or create your own quizzes based on topics.

Create them, test yourself or get someone to test you. (It works!)

Types

There are a number of types you can create:

- Multiple Choice Questions
- True or False
- Short Explanation Questions
- Odd One Out
- If this is the answer then what is the question



Spaced

Test on old and new topics mixed up

Knowledge Organisers

Use to create 'best know' quizzes for a topic.

Factors/Causes/Consequences

To identify 2-3 factors, causes of an event/person e.g. The rising against Toxtig

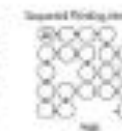
Examples

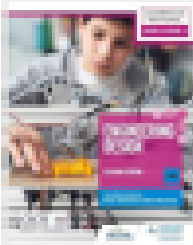

'Give two examples of...'

Transform It

Graphic organisers are a great way of 'transforming' your notes/information into visual revision topics.

They can be used to create lists, show a narrative, identify the causes/consequences and importance of something.



| | | | |
|--|--|------------------------------|--|
| Subject | Design & Technology: OCR Cambridge Nationals in Engineering Design | | |
| Exam Board | AQA | Link to specification | Yes – see OCR website https://www.ocr.org.uk/qualifications/cambridge-nationals/engineering-design-level-1-1-2-award-certificate-1881-1841/ |
| Revision Resources | <p>Students notes, Visit: https://technologystudent.com/mobileapps/how_mobile_apps_VERSION2.pdf This is a mobile version for Technology student revision app. Knowledge Map: https://technologystudent.com/equip_fish/ksoced1.html</p> <p>Other Revision Materials are: These can be purchased from Amazon.</p> <div style="display: flex; justify-content: space-around;">   </div> | | |
| Topics to be examined | | | |
| LO1: Understand the design cycle and the relationship between design briefs and design specifications | | | |
| LO2: Understand the requirements of design specifications for the development of a new product. | | | |
| LO3: Know about the wider influences on the design of new products | | | |
| PERSONALISED LEARNING CHECKLIST For Engineering Design | | | |

| | | | |
|---|---|--|--|
| Subject | GCSE Business Studies | | |
| Exam Board | Edexcel | | |
| Link to specification | http://www.ocr.org.uk/qualifications/cambridge-nationals/engineering-design-level-1-1-2-award-certificate-1881-1841/ | | |
| Revision Resources | Revision Guide BBC Bitesize https://www.bbc.com/bitesize/subjects/gpwr12 Seneca https://www.senecalearning.com/ Revision World https://revisionworld.com/gcse-revision/business-studies Quizlet https://quizlet.com/eng-uk Gcse Pod https://members.gcpod.com/login Business Ed - Activities by Topic Your Theme 1 file has all the organisers in for the unit. | | |
| Topics to be examined | Topic Links | | |
| 1.1 Enterprise and Entrepreneurship | Enterprise and entrepreneurship - GCSE Business Revision - Edexcel - BBC Bitesize | | |
| 1.2 Spotting a business opportunity | Spotting a business opportunity - GCSE Business Revision - Edexcel - BBC Bitesize | | |
| 1.3 Putting a business idea into practice | Putting a business idea into practice - GCSE Business Revision - Edexcel - BBC Bitesize | | |
| 1.4 Making the business effective | Making the business effective - GCSE Business Revision - Edexcel - BBC Bitesize | | |
| 1.5 Understanding external influences on business | Understanding external influences on business - GCSE Business Revision - Edexcel - BBC Bitesize | | |

| PERSONALISED LEARNING CHECKLIST | | | |
|---------------------------------------|-------------------------------------|-----|---|
| PLC statements | Topic | RAG | Links |
| 1.1.1 The Dynamic Nature of Business | 1.1 Enterprise and Entrepreneurship | | The dynamic nature of business - The dynamic nature of business - Edexcel - GCSE Business Revision - Edexcel - BBC Bitesize |
| 1.1.2 Risk and Reward | 1.1 Enterprise and Entrepreneurship | | Risk - The dynamic nature of business - Edexcel - GCSE Business Revision - Edexcel - BBC Bitesize |
| 1.1.3 The role of business enterprise | 1.1 Enterprise and Entrepreneurship | | Including goods and services - The role of business - Edexcel - GCSE Business Revision - Edexcel - BBC Bitesize |
| 1.2.1 Customer Needs | 1.2 Spotting a business opportunity | | Identifying customer needs - Customer needs - Edexcel - GCSE Business Revision - Edexcel - BBC Bitesize |
| 1.2.2 Market Research | 1.2 Spotting a business opportunity | | The business of research - Market research - Edexcel - GCSE Business Revision - Edexcel - BBC Bitesize |
| 1.2.3 Market Segmentation | 1.2 Spotting a business opportunity | | Identifying market segments - Market segmentation - Edexcel - GCSE Business Revision - Edexcel - BBC Bitesize |

Young People's Mental Health & Wellbeing

THE CHURCH OF ENGLAND
Diocese of Manchester

CHURCH FOR A DIFFERENT WORLD

Information & Support

Information

YoungMinds - Information covering a range of mental health issues for young people and a parent support helpline.

www.youngminds.org.uk

Mind - Information, advice and campaigning to promote good mental health for everyone.

www.mind.org.uk

Rethink Mental Illness - National mental health charity. www.rethink.org

AnxietyUK - Information and advice for those living with anxiety. www.anxietyuk.org.uk

Time to Change - An anti-stigma campaign to challenge mental health discrimination www.time-to-change.org.uk

MindEd - Free online learning on children and young people's mental health. www.minded.org.uk

Heads Together - A campaign to end stigma around mental health and wellbeing. www.headstogether.org.uk

NHS Moodzone - Information and advice covering a range of common mental health issues. www.nhs.uk

Anna Freud: Schools in Mind - a network for school staff sharing practical, academic and clinical expertise regarding the wellbeing and mental health issues that affect schools. www.annafreud.org

Amy Sixsmith

Diocesan Mental Wellbeing Youth Worker
amysixsmith@manchester.anglican.org

Support for Young People

Youth Wellbeing Directory - Information about free local and national wellbeing services.

<https://www.annafreud.org/on-my-mind/youth-wellbeing>

Samaritans - Confidential emotional support available 24 hours a day via telephone, text and email. **116 123** / www.samaritans.org

Childline - Help and advice for parents, children and young people via phone and web chat. **0800 1111** / www.childline.org.uk

Kooth - Online counselling and emotional wellbeing platform for children and young people. www.kooth.com

Beat Eating Disorders - Practical guidance and support for people affected by eating disorders. www.beateatingdisorders.org.uk

SelfHarmUK - Providing support and information for young people impacted by self-harm. www.selfharm.co.uk

Papyrus - Confidential help and advice for the prevention of young suicide. **0800 068 41 41** / www.papyrus-uk.org

YoungMinds Crisis Messenger - Free, 24/7 crisis text support for young people. **Text YM to 85258**

Apps



Where to find help?

Useful contacts, websites & apps for support with your emotional wellbeing



samaritans.org

Free listening helpline and email
116 123 / jo@samaritans.org



papyrus-uk.org

Confidential suicide prevention support
0800 068 41 41 / **Text 07786209697** / pay@papyrus-uk.org



childline.org.uk

A free, confidential helpline
0800 1111 (free 24hr)



selfharm.co.uk

Support for young people impacted by self-harm



youngminds.co.uk

Information and support for mental health
Crisis Messenger: **Text YM to 85258** (24/7)



b-eat.co.uk

Information, help and support for anyone affected by eating disorders
Youth Helpline: **0845 634 7670**




kooth.com

Online counselling and support for emotional wellbeing



Keep it in perspective



 Let your trusted friends and family know if you are struggling

so they can be there to support you, encourage you and offer a listening ear. You don't have to go through this alone. Keeping it all in will only make things worse in the long run, so don't be afraid to open up.



Ask for help. Think about all the practical support you need

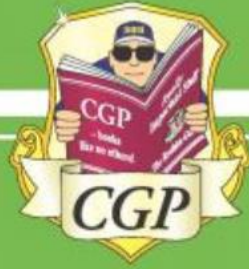
and be honest with yourself about it. You are allowed to ask for help. Talk through your concerns with your teacher/tutor who can let you know what support your school, college or uni can offer you. They will have spoken to lots of students before who are going through similar things.



Try finding a study group, or start your own

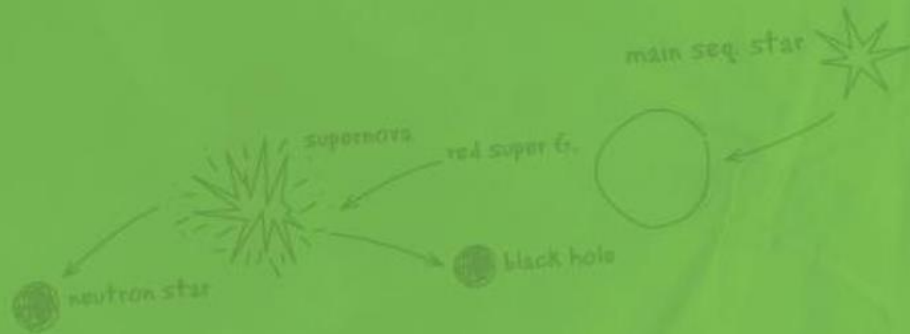
Working through problems with other students can be a nice way to keep your social life going and boost your morale.

CGP



How to Revise

for GCSE



Study Skills & Revision Planner

Unbeatable advice from the revision experts!

Includes **Free** Online Edition

This book is available tonight
for all parents for £2.50



ANY QUESTIONS?