



Year 11 Parent Forum - Science

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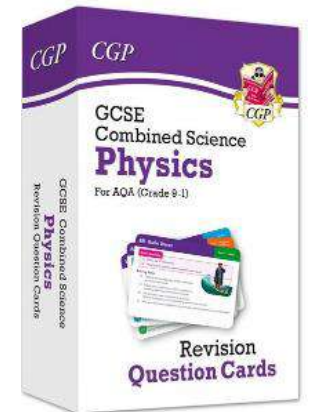
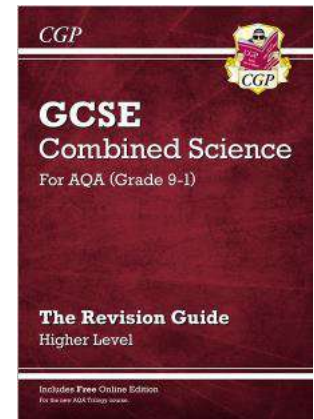
Getting good at Science

- Learn the content – commit regular time slots to revise the content and key words
- Produce flash cards of the key terms and memorise them – help by testing them on these or encourage them to test each other, getting together with friends to make the learning fun
- Self assess their knowledge using self assessment checklists – this will help them identify their key weakness and focus on them more, making their revision more efficient.
- Use the revision guides to make notes/flash cards on the areas they need to work on
- Engage both sides of the brain; don't just make notes but say out loud what is being learnt, or draw a diagram/picture of what you are learning
- Create mind maps to link different areas of science together
- Complete revision mats on whole topic areas (a link to these will be given in the other session)
- Then practice, practice, practice by doing past exam questions (mark and improve them!)
- Then go back to new areas of weakness to revise again!



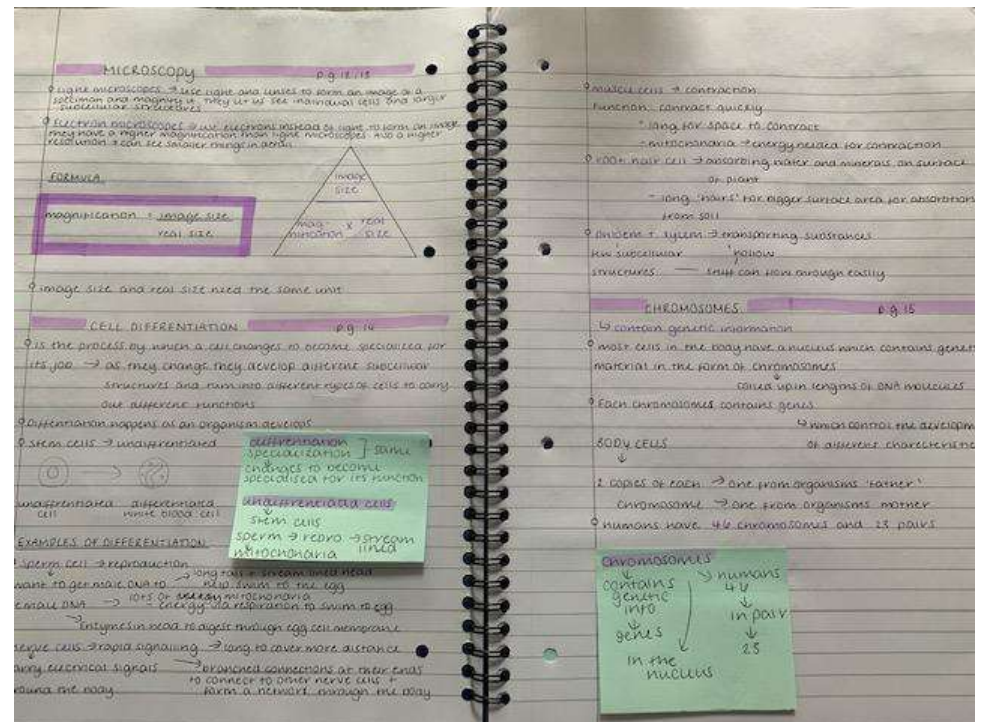
Revision guides

- Use a good revision guide to ensure all topics are covered
- Use flash cards to test and check knowledge – CGP and Collins sell premade ones
- These publishers also sell other useful resources like workbooks, targeting level 7-9
- We sell the CGP guides in school on SCOPAY (Combined £5.60, Separate Science £2.85 per subject)
- <https://www.cgpbooks.co.uk/secondary-books/science>
- <https://collins.co.uk/collections/gcse-science-9-1-aqa>



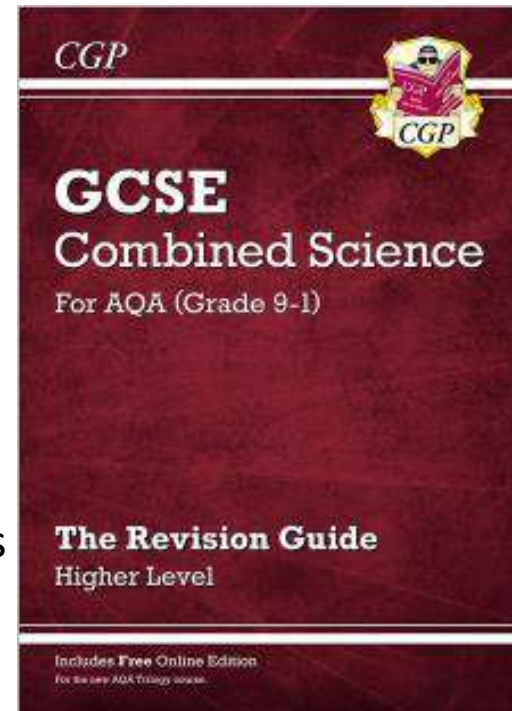
Effective revision

- A lot of students spend hours making notes and making them look pretty!
- This is not necessarily effective or efficient and can be overly time consuming



Revision task

- Take a page of the revision guide
- Read it and write out 10 key science words
- Then close the book and write down as much as you remember about those 10 words
- Check you were correct and either highlight any words you got wrong or add extra points if needed and highlight those too
- Highlighting signifies that more work needs to be done on these
- Flash cards could even be made of these words
- Get together with others and test each other on these key words
- Engage both sides of the brain by saying the words in their context out loud or drawing diagrams/pictures
- Some students benefit from recording their voice and listening back



Learn the command words!

Balance - Students need to balance a chemical equation.

Calculate - Students should use numbers given in the question to work out the answer.

Choose - Select from a range of alternatives.

Compare - This requires the student to describe the similarities and/or differences between things, not just write about one.

Define - Specify the meaning of something.

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

Design - Set out how something will be done.

Determine - Use given data or information to obtain an answer.

Draw - To produce, or add to, a diagram.

Estimate - Assign an approximate value.

Evaluate - Students should use the information supplied, as well as their knowledge and understanding, to consider evidence for and against when making a judgement.

Explain - Students should make something clear, or state the reasons for something happening.

Give - Only a short answer is required, not an explanation or a description.

Identify - Name or otherwise characterise.



Learn the command words!

Justify - Use evidence from the information supplied to support an answer.

Label - Provide appropriate names on a diagram.

Measure - Find an item of data for a given quantity.

Name - Only a short answer is required, not an explanation or a description. Often it can be answered with a single word, phrase or sentence.

Plan - Write a method.

Plot - Mark on a graph using data given.

Predict - Give a plausible outcome.

Show - Provide structured evidence to reach a conclusion.

Sketch - Draw approximately.

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

Use - The answer must be based on the information given in the question. Unless the information given in the question is used, no marks can be given. In some cases students might be asked to use their own knowledge and understanding.

Write - Only a short answer is required, not an explanation or a description.



Subject specific words – create flash cards and test each other!

Accuracy A measurement result is considered accurate if it is judged to be close to the true value.

Calibration Marking a scale on a measuring instrument. This involves establishing the relationship between indications of a measuring instrument and standard or reference quantity values, which must be applied. For example, placing a thermometer in melting ice to see whether it reads zero, in order to check if it has been calibrated correctly. Data Information, either qualitative or quantitative, that has been collected.

Error See also uncertainty.

Measurement error The difference between a measured value and the true value.

Anomalies These are values in a set of results which are judged not to be part of the variation caused by random uncertainty.

Random error These cause readings to be spread about the true value, due to results varying in an unpredictable way from one measurement to the next. Random errors are present when any measurement is made, and cannot be corrected. The effect of random errors can be reduced by making more measurements and calculating a new mean.



Subject specific words – create flash cards and test each other!

Systematic error These cause readings to differ from the true value by a consistent amount each time a measurement is made. Sources of systematic error can include the environment, methods of observation or instruments used. Systematic errors cannot be dealt with by simple repeats. If a systematic error is suspected, the data collection should be repeated using a different technique or a different set of equipment, and the results compared.

Zero error Any indication that a measuring system gives a false reading when the true value of a measured quantity is zero, eg the needle on an ammeter failing to return to zero when no current flows. A zero error may result in a systematic uncertainty

Evidence Data which has been shown to be valid.

Fair test A fair test is one in which only the independent variable has been allowed to affect the dependent variable.

Hypothesis A proposal intended to explain certain facts or observations. Interval The quantity between readings, eg a set of 11 readings equally spaced over a distance of 1 metre would give an interval of 10 centimetres.



Subject specific words – create flash cards and test each other!

- **Precision** Precise measurements are ones in which there is very little spread about the mean value. Precision depends only on the extent of random errors – it gives no indication of how close results are to the true value.
- **Prediction** A prediction is a statement suggesting what will happen in the future, based on observation, experience or a hypothesis.
- **Range** The maximum and minimum values of the independent or dependent variables; important in ensuring that any pattern is detected. For example a range of distances may be quoted as either: 'From 10 cm to 50 cm' or 'From 50 cm to 10 cm'.

Repeatable A measurement is repeatable if the original experimenter repeats the investigation using same method and equipment and obtains the same results. Previously known as reliable.

Reproducible A measurement is reproducible if the investigation is repeated by another person, or by using different equipment or techniques, and the same results are obtained. Previously known as reliable.

Resolution This is the smallest change in the quantity being measured (input) of a measuring instrument that gives a perceptible change in the reading.



Subject specific words – create flash cards and test each other!

- **Sketch graph** A line graph, not necessarily on a grid, that shows the general shape of the relationship between two variables. It will not have any points plotted and although the axes should be labelled they may not be scaled.
- **True value** This is the value that would be obtained in an ideal measurement.
- **Uncertainty** The interval within which the true value can be expected to lie. Whenever a measurement is made, there will always be some uncertainty or doubt about the result obtained. Uncertainty can be expressed in terms of spread of values obtained. For example, a length of 56 cm \pm 2 cm would mean the true value could be anywhere between 54 cm and 58 cm.

Validity Suitability of the investigative procedure to answer the question being asked. For example, an investigation to find out if the rate of a chemical reaction depended upon the concentration of one of the reactants would not be a valid procedure if the temperature of the reactants was not controlled.

Valid conclusion A conclusion supported by valid data, obtained from an appropriate experimental design and based on sound reasoning.

Variables These are physical, chemical or biological quantities or characteristics.



Subject specific words – create flash cards and test each other!

- **Categoric** Categoric variables have values that are labels, eg names of plants or types of material.
- **Continuous** Continuous variables can have values (called a quantity) that can be given a magnitude either by counting (as in the case of the number of shrimp) or by measurement (eg light intensity, flow rate etc). Previously known as discrete variable.
- **Control** Control variable is one which may, in addition to the independent variable, affect the outcome of the investigation and therefore has to be kept constant or at least monitored.

Dependent Dependent variable is the variable of which the value is measured for each and every change in the independent variable.

Independent Independent variable is the variable for which values are changed or selected by the investigator.



Equations to memorise! These will not be given in the exam

Equation number	Word equation	Symbol equation
1	weight = mass × gravitational field strength (g)	$W = m g$
2	work done = force × distance (along the line of action of the force)	$W = F s$
3	force applied to a spring = spring constant × extension	$F = k e$
4	moment of a force = force × distance (normal to direction of force)	$M = F d$
5	pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
6	distance travelled = speed × time	$s = v t$
7	acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
8	resultant force = mass × acceleration	$F = m a$
9 HT	momentum = mass × velocity	$p = m v$
10	kinetic energy = $0.5 \times \text{mass} \times (\text{speed})^2$	$E_k = \frac{1}{2} m v^2$
11	gravitational potential energy = mass × gravitational field strength (g) × height	$E_p = m g h$
12	power = $\frac{\text{energy transferred}}{\text{time}}$	$P = \frac{E}{t}$
13	power = $\frac{\text{work done}}{\text{time}}$	$P = \frac{W}{t}$
14	efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
15	efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	

16	wave speed = frequency × wavelength	$v = f \lambda$
17	charge flow = current × time	$Q = I t$
18	potential difference = current × resistance	$V = I R$
19	power = potential difference × current	$P = V I$
20	power = (current) ² × resistance	$P = I^2 R$
21	energy transferred = power × time	$E = P t$
22	energy transferred = charge flow × potential difference	$E = Q V$
23	density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

A sheet of these and the subject specific words has been printed for you



Other support in school

- All students get Science intervention during guidance once a week
- Thursday after school focussed revision sessions on certain topics. All are welcome to attend but some students have been specifically invited and their attendance will be monitored
- Easter revision session by invitation only

Date	Topic	Teacher	
		Higher Tier	Foundation Tier
07/11/2019	Energy	Mr Shooter	Mr Morris
14/11/2019	Cell Transport	Mrs Hutchinson	Miss Horne
21/11/2019	Periodic Table & Atomic Structure	Mrs Stevens	Mr Buttinger
28/12/2019	Electricity	Mr Langford	Mr Shooter
05/12/2019	Digestion (Enzyme Focus)	Mr Maurice-Smith	Mrs Bawa
12/12/2019	Atmosphere	Miss Akbar	Mrs Stevens
19/12/2020	Investigating Antibiotics	Miss Horne	Mrs Hutchinson
CHRISTMAS			
09/01/2020	Rates & Equilibrium	Mr Buttinger	Miss Akbar
16/01/2020	Particle Model	Mr Morris	Mr Langford
23/01/2020	Immunity & Vaccination	Mrs Bawa	Mr Maurice-Smith
30/01/2020	Organic Chemistry	Mrs Stevens	Mr Buttinger
06/02/2020	Atomic Structure	Mr Shooter	Mr Morris
13/02/2020	Photosynthesis (Uses of glucose & limiting factors)	Mrs Hutchinson	Miss Horne
HALF TERM			
27/02/2020	Bonding & Properties	Miss Akbar	Mrs Stevens
05/03/2020	Respiration (Aerobic & Anaerobic)	Mr Maurice-Smith	Mrs Bawa
12/03/2020	Quantitative Chemistry	Mr Buttinger	Miss Akbar
19/03/2020	Waves	Mr Langford	Mr Shooter
26/03/2020	Chemical Changes	Mrs Stevens	Mr Buttinger
02/04/2020	Homeostasis (Glucose Regulation)	Miss Horne	Mrs Hutchinson
EASTER			
23/04/2020	Electrolysis	Miss Akbar	Mrs Stevens
30/04/2020	Magnetism & Electromagnetism	Mr Morris	Mr Langford
07/05/2020	Hormones (Plant & Animal)	Mrs Bawa	Mr Maurice-Smith



Mock exams feedback

Yr 10 Exam - BIOLOGY (H)		AO	Your Score	Marks Available	Silly Mistake	Need to Revise	Find page in CGP/ other
Question							
1.1	Recall the function of the nucleus	AO1	1	1			
1.2	Recall examples of cells with no nucleus	AO1	1	1			
1.3	RP: Draw and label a simple cell diagram	AO1	1	2			
1.4	Recall and compare structures in plant and animal cells	AO1	1	1			
1.5	RP: Calculate magnification	AO2	2	3			
1.6	Recall advantages of electron microscopes	AO1	1	2			
2.1	Recall pathogen causing malaria	AO1	1	1			
2.2	Suggest evidence which supports a given hypothesis	AO3	1	1			
2.3	Suggest why a hypothesis may not be valid	AO3	1	1			
2.4	Use trends in data to make predictions	AO2	1	1			
2.5	Suggest reasons for reduction in deaths from disease	AO2	1	1			
2.6	Describe how the body protects itself from pathogens	AO1	0	6			
3.1	Recall the word equation for photosynthesis	AO1	0	2			
3.2	RP: Identify the independent variable	AO2	1	1			
3.3	RP: Suggest how a method could be improved	AO3	0	2			
3.4	RP: Calculate rate of photosynthesis	AO2	1	1			
3.5	RP: Plot a graph	AO2	0	4			
3.6	RP: Read data from a graph	AO2	0	1			
3.7	Recall effect of factors on rate of photosynthesis in graphical form	AO2	1	1			

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Online learning

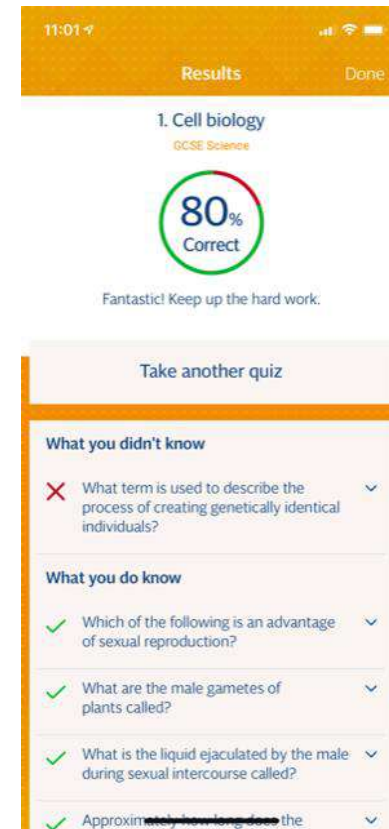
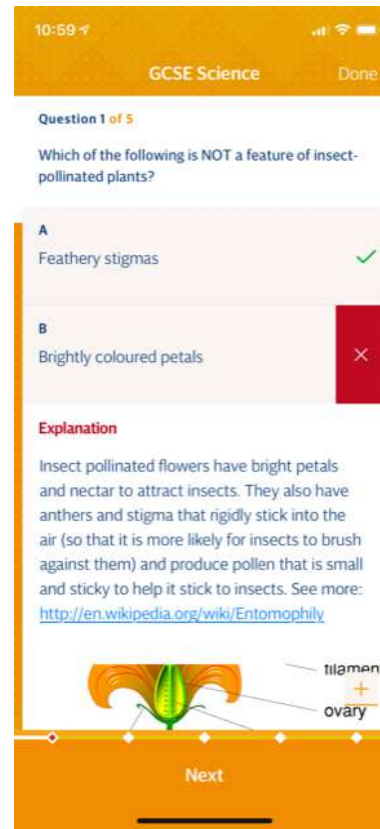


- Kerboodle (school bought resource: online text book and lots of resources; the other session will show you more on this)
- Seneca (free online interactive text book with questions to check learning along the way)
- You tube clips (particularly TED-Ed, FuseSchool and Amoeba sisters)
- CGP revision guides come with an online edition for PC or tablet
- AQA – syllabus, past papers and mark schemes



Useful apps

- Gojimo – multiple choice quizzes
- Quizlet – create your own flash cards or search from a bank of pre-prepared ones
- BBC bitesize revision – flashcards and revision tailored to you



Gojimo



Exam dates

- Biology Paper 1 12th May 2020 pm
- Biology Paper 2 1st June 2020 pm

- Chemistry Paper 1 14th May 2020 am
- Chemistry Paper 2 10th June 2020 am

- Physics Paper 1 20th May 2020 pm
- Physics Paper 2 12th June 2020 am

Students will need calculators, pens, pencils and rulers for all of the exams.

For the Chemistry exams they will be given a periodic table.

For the Physics exams they will be given an equations sheet but they are required to know many equations themselves.

Combined Science papers are all 1hr 15mins; Separate Science papers are all 1hr 45mins



Your time to have a try!



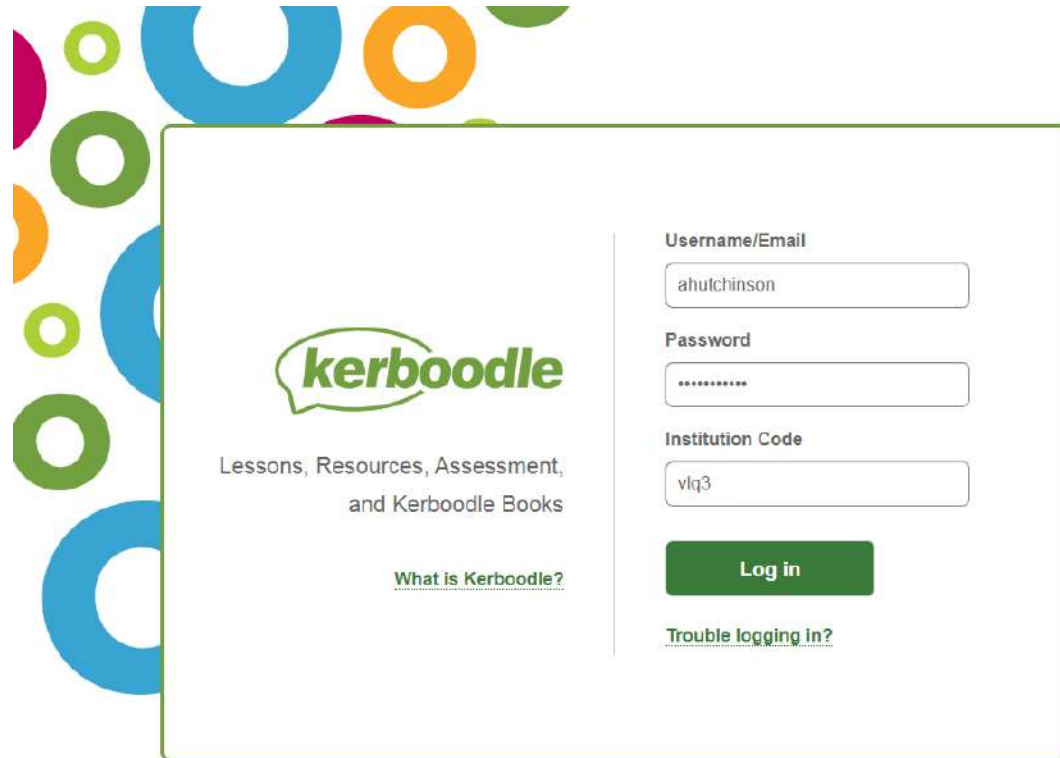
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Login

- Login for Joe Bloggs
 - Username: jbloggs
 - Password: jbloggs
 - Code: vlq3
-
- Students will be asked to change their password on first login



kerboodle

Lessons, Resources, Assessment,
and Kerboodle Books

[What is Kerboodle?](#)

Username/Email
ahulchinson

Password

Institution Code
vlq3

Log in


[Trouble logging in?](#)





Select the course

The screenshot shows the Kerboodle website interface. At the top, there is a navigation bar with 'My Home' and 'My Courses' links, and the 'kerboodle' logo. Below the navigation bar is a green and white logo. The main content area is divided into two sections: 'Administrator' and 'Students'. The 'Administrator' section shows a green checkmark icon and the text 'Your school's Administrator is Lisa Roberts. Contact them by email about adding students to your Kerboodle school.' The 'Students' section shows a green checkmark icon and the text 'There are 1929 students in yo'. Below these sections is a 'Your Favourites' section with two course cards. The first card is for 'AQA GCSE Sciences (9-1)' with a green star icon. The second card is for 'Science GCSE for AQA 2014' with a green star icon. Below the 'Your Favourites' section is an 'All Courses' section with three course cards. The first card is for 'AQA A Level Sciences' with a star icon and a tooltip that says 'Click the star to add a course to "Your Favourites"'. The second card is for 'AQA A Level Spanish' with a star icon. The third card is for 'Spanish A Level for AC' with a star icon.



My Home My Courses kerboodle






 Administrator
Your school's Administrator is Lisa Roberts. [Contact them by email](#) about adding students to your Kerboodle school.

 Students
There are 1929 students in yo

Your Favourites

All Courses

Click the star to add a course to "Your Favourites"

- Students can click on the stars to make their course a favourite



Main menu: Use the lesson or resource tab

My Home My Courses

kerboodle

Amanda Hutchinson Notifications 39 Help Log out

AQA GCSE Sciences (9-1)
First examination 2018

LESSONS
Ready-to-go lesson presentations, with linked resources and teacher notes

RESOURCES
A collection of resources for use in the classroom or at home
NEW CONTENT

ASSESSMENT
A bank of assessment materials to test knowledge and understanding
NEW CONTENT

MARKBOOK
View work and results, track progress and more

DIGITAL BOOK
Online versions of the Student Books for display and annotation

USER MANAGEMENT
Create and organise teaching groups for this course, and invite more teachers to Kerboodle

Keep updated  

Welcome to AQA GCSE Sciences (9-1) Kerboodle

AQA GCSE Sciences (9-1) Kerboodle contains a bank of resources and assessments to support the latest AQA GCSE Biology, Chemistry, Physics, Combined Science: Trilogy, Combined Science: Synergy and Entry Level Certificate specifications for first examination in 2018.

Your subscriptions

Product	Subscribed
GCSE Science for AQA	

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Select the chapter area then choose a resource

The screenshot shows the Kerboodle website interface for AQA GCSE Sciences (9-1) First examination 2018. The navigation menu includes HOME, LESSONS, RESOURCES, ASSESSMENT, MARKBOOK, DIGITAL BOOK, and USER MANA. The left sidebar shows a tree view of resources, with 'B6 Preventing and treating disease' selected. The main content area displays a list of resources, including 'Introduction to AQA Activate for KS3 free sample', 'B17 Retrieval questions', 'C6 Retrieval questions', and 'C9 Retrieval questions'. Two blue arrows point from the title to the 'B6 Preventing and treating disease' menu item and the 'C6 Retrieval questions' resource entry.

My Home My Courses **kerboodle** Amanda Hutchinson Notifications 39 Help

AQA GCSE Sciences (9-1)
First examination 2018

HOME LESSONS RESOURCES ASSESSMENT MARKBOOK DIGITAL BOOK USER MANA

RESOURCES

+ CREATE UPLOAD

OXFORD Revise

Five Year Progression

- Five Year Schemes of Work

AQA Activate 1 free sample: Forces – Part 1

Revision Guide and Workbook samples

- AQA GCSE Revision Guides
- AQA GCSE Workbooks

Biology

- B1 Cell structure and transport
- B2 Cell division
- B3 Organisation and the digestive system
- B4 Organising animals and plants
- B5 Communicable diseases
- B6 Preventing and treating disease

Search resources... SEARCH Enter results

Page Range

Displaying 1 - 20 of 10645 in total

1 2 3 4 5 6 7 ... 532 533 20 results per page Hide descriptions

PREVIEW EDIT COPY SHARE CONTENT MORE

<input type="checkbox"/>	TITLE	TYPE	VISIBLE TO STUDENTS	SOURCE
<input type="checkbox"/>	<input type="checkbox"/> <input type="star"/> <input type="document"/> Introduction to AQA Activate for KS3 free sample Welcome to your AQA Activate for KS3 free sample for Forces – Part 1.	Introduction		Oxford
<input type="checkbox"/>	<input type="checkbox"/> <input type="star"/> <input type="document"/> B17 Retrieval questions NEW Retrieval questions for B17 Adaptation, from Oxford Revise AQA GCSE Combined Science Higher.	Oxford Revise: Retrieval questions	<input checked="" type="checkbox"/>	Oxford
<input type="checkbox"/>	<input type="checkbox"/> <input type="star"/> <input type="document"/> C6 Retrieval questions NEW Retrieval questions for C6 Reactions of metals, from Oxford Revise AQA GCSE Combined Science Higher.	Oxford Revise: Retrieval questions	<input checked="" type="checkbox"/>	Oxford
<input type="checkbox"/>	<input type="checkbox"/> <input type="star"/> <input type="document"/> C9 Retrieval questions NEW	Oxford Revise: Retrieval	<input checked="" type="checkbox"/>	Oxford

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Once you have selected a lesson you can link to the online text book

AQA GCSE Sciences (9-1) First examination 2018

HOME LESSONS RESOURCES ASSESSMENT MARKBOOK DIGITAL BOOK USER MANAGEMENT

RESOURCES

Search resources SEARCH Filter results

AQA GCSE Biology Student Book

Displaying 15 of 15 in total

20 results per page Hide descriptions

PREVIEW EDIT COPY SHARE CONTENT MORE

	TITLE	TYPE	VISIBLE TO STUDENTS	SOURCE
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> B1.2 Go further teacher: Close up on cell membranes Teacher notes for B1.2 Go further: Close up on cell membranes, including answers for the questions.	Teacher go further sheet (Word)		Oxford
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> B1.2 Go further teacher: Close up on cell membranes Teacher notes for B1.2 Go further: Close up on cell membranes, including answers for the questions.	Teacher go further sheet (PDF)		Oxford
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> B1.2 Go further: Close up on cell membranes Go Further activity where students understand the structure, components and function of the cell membrane. This activity takes students beyond the GCSE specification	Student go further sheet (Word)	<input checked="" type="checkbox"/>	Oxford



B1.2 Animal and plant cells

Learning objectives

After this topic, you should know:

- the main parts of animal cells
- the similarities and differences between plant and animal cells

Synoptic link

You will find out more about classifying the living world in Chapter B16.

Go further

The ultrastructure of a cell – the details you can see under an electron microscope – includes structures such as the cytoskeleton, the Golgi apparatus, and the rough and smooth endoplasmic reticulum. They support and move the cell, modify and package proteins and lipids, and produce the chemicals that control the way your body works.

Study tip

Learn the parts of the cells shown on these diagrams, and their functions.

Synoptic link

For more information on photosynthesis, look at Topic B8.1.

The cells that make up your body are typical animal cells. All cells have some features in common; you can see these features clearly in animal cells.

Animal cells – structure and function

The structure and functions of the parts that make up a cell have been made clear by the electron microscope (Figure 1). You will learn more about how their structure relates to their functions as you study more about specific organ systems during your GCSE Biology course. An average animal cell is around 10–30 µm long (so it would take 100 000–300 000 cells to line up along the length of a metre ruler). Human beings are an exception: human cells are just like most other animal cells, and you will see exactly the same structures inside them.

- The **nucleus** – controls all the activities of the cell and is surrounded by the nuclear membrane. It contains the genes on the chromosomes that carry the instructions for making the proteins needed to build new cells or new organisms. The average diameter is around 10 µm.
- The **cytoplasm** – a liquid gel in which the organelles are suspended and where most of the chemical reactions needed for life take place.
- The **cell membrane** – controls the passage of substances such as glucose and mineral ions into the cell. It also controls the movement of substances such as urea or hormones out of the cell.
- The **mitochondria** – structures in the cytoplasm where aerobic respiration takes place, releasing energy for the cell. They are very small – 1–2 µm in length and only 0.2–0.7 µm in diameter.
- The **ribosomes** – where protein synthesis takes place, making all the proteins needed in the cell.



Figure 1 Diagrams of cells are much easier to understand than the real thing seen under a microscope. This picture shows a simple animal cheek cell magnified $\times 350$ times under a light microscope. This is the way a model animal cell is drawn to show the main features common to most living cells.

Plant cells – structure and function

Plants are very different organisms from animals. They make their own food by photosynthesis. They do not move their whole bodies about from one place to another. Plant cells are often much bigger than animal cells – they range from 10 to 100 µm in length.

Plant cells have all the features of a typical animal cell, but they also contain features that are needed for their very different functions (Figures 2 and 3). **Algae** are simple aquatic organisms. They also make their own food by photosynthesis and have many similar features to plant cells. For centuries they were classified as plants, but now they are classified as part of a different kingdom – the protists.



Figure 2 Algae cells contain a nucleus and chloroplasts so that they can photosynthesise.

All plant and algal cells have a **cell wall** made of **cellulose** that strengthens the cell and gives it support.

Many (but not all) plant cells also have these other features:

- **Chloroplasts** are found in all the green parts of a plant. They are green because they contain the green substance **chlorophyll**. Chlorophyll absorbs light so the plant can make food by photosynthesis. Each chloroplast is around 3–5 µm long. Root cells do not have chloroplasts because they are underground and do not photosynthesise.
- A **permanent vacuole** is a space in the cytoplasm filled with cell sap. This is important for keeping the cell rigid to support the plant.

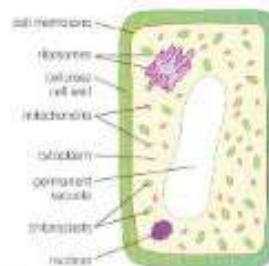


Figure 3 A plant cell has many features in common with an animal cell, as well as other features that are unique to plants.

- 1 Name the main structures you would expect to find in a human cell. (5 marks)
- 2 Name the three extra features that may be found in plant cells but not animal cells. (3 marks)
- 3 Describe the main functions of these three extra structures. (3 marks)
- 4 Suggest why the nucleus and the mitochondria are so important in all cells. (4 marks)
- 5 Chloroplasts are found in many plant cells but not all of them. Suggest two types of plant cells that are unlikely to have chloroplasts and in each case explain why they have none. (4 marks)

Looking at cells

Set up a microscope and observe, draw, and label examples of animal cells (e.g. cheek cells, Figure 1), algal cells (e.g. Figure 2) and plant cells (e.g. from onions or *Eelgrass*). In plant cells you should see the cell wall, the cytoplasm, and sometimes a vacuole. You will see chloroplasts in the *Eelgrass*, but not in the onion cells because they do not photosynthesise. Always show a scale magnification on your drawings.

Safety: if preparing your own cheek cells, please follow safety procedures.



Figure 4 Some of the common features of plant cells show up well under the light microscope. Here, the features are magnified $\times 400$.

Study tip

Remember that not all plant cells have chloroplasts.

Do not confuse chloroplasts and chlorophyll.

Key points

- Animal cell features common to all cells – a nucleus, cytoplasm, cell membrane, mitochondria, and ribosomes.
- Plant and algal cells contain all the structures seen in animal cells as well as a cellulose cell wall.
- Many plant cells also contain chloroplasts and a permanent vacuole filled with sap.



Resources to use

- Retrieval questions (allow students to check their knowledge and then mark their answer using a mark scheme)
- Podcasts – each chapter has a foundation and higher version; a good summary of the chapter and good for auditory learners
- Self assessment checklists – allow students to identify areas that need more revision
- Check point follow ups – good tasks and activities to help them revise each topic (these are in 3 different levels; aiming for level 4, 6 and 8)
- My maths links to help students practice the maths skills they need for Science (login; un:arnoldhill; pw: hexagon)
- Students can join teaching groups and then be assigned checkpoint quizzes by myself or their science teacher (Year 11 Revision; code 11AHA to join)



Resources to use

B1 Checkpoint quiz: Cell structure and transport

14 Where in the body are you most likely to find cells containing lots of mitochondria?

- alveoli
- kidney
- hair x i
- blood capillari

Incorrect. The correct answer is kidney. The kidney tubules are involved with reabsorption of glucose by active transport. Energy is required for this process and is released by respiration that takes place in the mitochondria. The only living part of the hair is the hair follicles at the scalp, which will contain a small amount of mitochondria. See B1.9, *Active transport* in your Student Book 1.



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June 2018

- [Insert \(Foundation; Higher\): equations sheet June 2018 \(266.7 KB\)](#)
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- [Mark scheme \(Foundation\): Paper 1 Biology June 2018 \(238.8 KB\)](#)
- [Mark scheme \(Foundation\): Paper 1 Chemistry June 2018 \(226.1 KB\)](#)
- [Mark scheme \(Foundation\): Paper 1 Physics June 2018 \(214.0 KB\)](#)
- [Mark scheme \(Foundation\): Paper 2 Biology June 2018 \(174.1 KB\)](#)
- [Mark scheme \(Foundation\): Paper 2 Chemistry June 2018 \(243.3 KB\)](#)
- [Mark scheme \(Foundation\): Paper 2 Physics June 2018 \(195.2 KB\)](#)
- [Mark scheme \(Higher\): Paper 1 Biology June 2018 \(253.4 KB\)](#)
- [Mark scheme \(Higher\): Paper 1 Chemistry June 2018 \(266.3 KB\)](#)
- [Mark scheme \(Higher\): Paper 1 Physics June 2018 \(212.5 KB\)](#)
- [Mark scheme \(Higher\): Paper 2 Biology June 2018 \(209.2 KB\)](#)
- [Mark scheme \(Higher\): Paper 2 Chemistry June 2018 \(217.8 KB\)](#)

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The screenshot shows the AQA website interface. At the top, there are several browser tabs open, including 'Kerboodle - AQA GCSE Science', 'Creating teaching groups within...', 'MyMaths Lesson - Standard form', 'AHA Biology Nov19 mock QLA', and 'AQA | Find past papers and mark schemes'. The address bar shows 'aqa.org.uk/find-past-papers-and-mark-schemes'. The website header includes the AQA logo with the tagline 'Realising potential', a search bar, and navigation tabs for 'Subjects', 'Qualifications', 'Professional development', and 'Exams administration'. The 'Qualifications' section is active, displaying a grid of qualification categories: 'GCSEs, AS and A-levels', 'Other qualifications', and 'All qualifications >'. Below this, there is an 'exampro' section with the text 'Search past paper question banks and easily create custom material for teaching, homework and assessment.' and a 'June 2018' section listing various past papers and mark schemes with their respective file sizes. The URL 'https://www.aqa.org.uk/qualifications' is visible at the bottom left of the page.

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Revision from the syllabus



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Home / Subjects / Science / GCSE / Combined Science: Trilogy (8464)

GCSE Combined Science: Trilogy

Teaching from: September 2016

Exams from: June 2018

Specification code: 8464

QAN code: 601/8758/X

Combined Science: Trilogy is part of our science suite, developed with teachers to inspire and challenge students of all abilities and aspirations. (See also GCSE Combined Science: Synergy)

Trilogy is a double award and worth two GCSEs. It is assessed by six, 1 hour and 15 minute exams.

The clear, two-column format lists what students need to know and be able to do, with key opportunities for skills development signposted throughout. Further sections outline the requirements for the skills in working scientifically, maths and practical assessment.

You'll find all the content of Combined Science: Trilogy, including the 21 required practicals, in the separate sciences. This means that this specification is fully co-teachable with the separate GCSE sciences.

[Specification >](#)

[Specification at a glance >](#)

[Past papers and mark schemes >](#)



[Download specification](#)

Thinking of teaching GCSE Science with us?

[Yes, tell me more](#)

Talk to us

The customer support team.
8am–5pm Monday to Friday
Tel: 01483 477756
Email: gcsescience@aqa.org.uk

Related specifications

- > GCSE Biology (8461)
Teaching from September 2016
- > GCSE Chemistry (8462)
Teaching from September 2016
- > GCSE Physics (8463)
Teaching from September 2016
- > GCSE Combined Science: Synergy (8465)

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Google drive resources

- <https://drive.google.com/drive/folders/1KLz3fQm2vOOkEajSwLhIpyJco6Ov4wAi?usp=sharing>
- Specimen papers here
- Revision mats and answers
- I will add more resources as the year goes on

- Any more questions, please ask!

