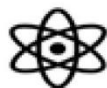


QEGS  
Science department

.. awakening curiosity



# YEAR 11

## WRAP-AROUND LEARNING FOR SUCCESS 2022-23



## Year 11 Wrap-around Learning for Success: how does this work?

Successful learning at KS4 involved a team effort involving the student, their teacher(s), and their parent(s)/carer(s). Our wrap-around program is designed to involve all three parties working together towards a common goal of success for our students / your children.

With this yearly booklet, we aim to provide you on the home-front with the background details of what we will be teaching in our subject over each term, the approximate timings of any assessments, topic areas which would be included on such assessments and the provision of relevant revision resources that can be readily accessed free of charge from home at any time.

This format flows from Year 7-10 and into this current Year 11 to see them ready to succeed and be confident going into their ultimate GCSE Science external examinations this coming summer. See Appendix 1: Science Learning Journey.

## Countdown Steps to Success in Science:

### Step 1: The Student:

(a) positive attitude to learning & behaviour for learning

I always have the correct equipment

I will keep on working until I fully understand a concept

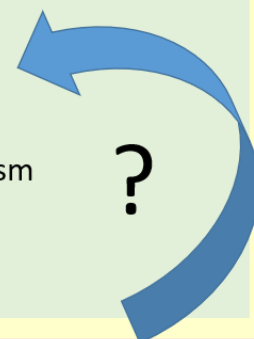
I listen well to and follow all instructions

I listen to and act upon feedback so I can improve next time

I am always keen to get started on tasks and complete work with enthusiasm

I regularly answer questions and make verbal contributions to discussions

I work very effectively in pairs and groups to share ideas and finish tasks.



I don't learn from my mistakes - I make no effort to answer questions or contribute verbally to discussions - I often don't listen to or talk over the contributions of others. -

I misuse time working in pairs or groups to discuss unrelated matters - I cause distractions which stop me and others from working well - I give up on tasks too easily

(b) Equipment & Green pen/Red pen evidence:

All students should come equipped to learn and so maximise their learning time in the classroom. For all science lessons, the following basic kit is required: blue/black pen for writing notes (and a spare), red pen for self-assessment and improvement of work, pencil for drawings, ruler, scientific calculator, sharpener, and eraser.

With this, teacher feedback will be given in green pen and students are expected to show red-pen action in their books where they have self-assessed their work or improved upon it based on teacher feedback during a lesson.

(c) Laboratory Safety: safety is paramount in all practical's undertaken with students. A copy of the lab rules for students is attached in Appendix 2.

(d) Year 11 Homework: Science homework will be given regularly and would include a variety of types from consolidation tasks to reinforce what has been learnt in lessons, completing online quizzes and tests, acting on feedback to correct/improve work already completed, completing work started in lessons, learning of spellings, literacy and numeracy tasks, past paper question sets, research tasks to poster making.

**Go4Schools(G4S):** This is the main site by which all homework tasks will be assigned, and details given as to when and how the homework should be submitted. For guidance re access to this, see Appendix 3.

(e) TEAMS App: This will be used as and when required as an additional means of communication to students, Each Year 11 class and their teacher(s) will have their own TEAM on the TEAMS app. Students will be trained or updated in the use of TEAMS in the first term of each academic year. For guidance re access to this, see Appendix 3.

(f) Absence from a science lesson: students will be given a topic check-in sheet at the start of each new topic area that will be at the front of their books, and these will also be posted onto their class TEAM site. See Appendix 4 for an example. Students should use the relevant check-in sheet to identify where they are in their learning from their last attended lesson and access the free learning / revision sites below (Oak Academy/BBC Bitesize/Kerboodle...) to complete the required learning at home. If students are unsure of where they are at in the learning order, they should email their teacher who will direct them to the appropriate section on the check-in sheet.

**Year 11 Interactive Self-Assessed Revision Resources available for free for use at home:**

1. BBC Bitesize KS4 Combined or Single Science websites:
  - a. BBC Bitesize Combined Science: <https://www.bbc.co.uk/bitesize/examspecs/z8r997h>
  - b. BBC Bitesize (Chemistry): <https://www.bbc.co.uk/bitesize/examspecs/z8xtmnb>
  - c. BBC Bitesize (Physics): <https://www.bbc.co.uk/bitesize/examspecs/zsc9rdm>
  - d. BBC Bitesize (Biology): <https://www.bbc.co.uk/bitesize/examspecs/zpgcbk7>

2. Kerboodle (this provides free on-line access to the GCSE Science textbook and associated resources)

Access via: <https://www.kerboodle.com/users/login>

Username: This is usually your initial and surname e.g., John Smith is jsmith

Password: should be the same as the username (until you change it yourself if you choose to do this).

Institution code: pry3

3. The name is a little misleading as it covers ALL the sciences:

[www.mathsandphysicstutor.com](http://www.mathsandphysicstutor.com)

4. Also <https://examqa.com>

5. Great short revision videos on topics and required practical's:

<https://www.freesciencelessons.co.uk/videos>

6. Useful longer revision videos for both Trilogy and Triple science topics:

<https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4>

7. Try the online resources at <http://www.my-gcsescience.com> AND /OR

[www.kayscience.com](http://www.kayscience.com)

(g) Science orientated extra-curricular clubs: These will be confirmed at the start of each new school year and may include STEM Club, Roller-Coaster Club, Astronomy Club, Gardening Club. Students should watch out for the notices during form time and for advertisement posters around the school.

#### **(h) Revision tips for GCSE Science:**

- \*Don't just read your notes or revision guide! You must do something active; whether making mind maps for each unit or topic area, summarizing your notes into bullet points or writing/typing quizzes to test yourself - this will help to remember key facts.
- \*Decorate your room walls – make big copies of keywords or diagrams which you find difficult to remember. Post them up around the room you use a lot so that you will see the details often OR have post-it notes with 1 fact on them dotted around your house!
- \*Mind maps: fit an entire topic onto one page. Make links between different areas, different topics. Do distinct parts in assorted colours if it helps.
- \*Don't forget the required practical's; learn the definitions of key scientific terms used, create a brief outline of the methods, key equipment used and how the practical could be improved.
- \*Focus on the maths element – as the examiners have increased the maths mark weighting. It is all about applying your core maths skills to the question, such as changing units, percentage change, standard form, calculating means, modes, medians etc.
- \*Make sure you have learnt the equations for physics, including units and symbols, and practice changing the subject of the formula.
- \*Use the revision guides from CPG by summarizing the notes and then completing the revision exercises. This will allow you to check your understanding and practice applying the knowledge to unfamiliar situations. You can buy the exam practice workbooks (well worth the money), which have specific questions as well as mixed questions.
- \*Answer specimen exam papers (you can download them from the AQA website) – practice your exam technique by sitting past papers under timed conditions. There are mark schemes here too; why not try marking your own work first and then ask a friend or your teacher to check it.
- \*After every topic make revision card or flash cards to key definitions or principles.
- \*Use the revision resources and quizzes on the free revision sites listed earlier to go over work from lessons, revise a topic, or to check your understanding.
- \*Seek out answers (from internet, your older siblings/parents, or teachers) if you do not understand something – when you understand something, you will be more likely to remember it.

## **Year 11 Science Recommended Home Revision Guidebooks: See Appendix 5**

Foundation: CPG GCSE AQA Combined Science Revision Guide Foundation Level.

Product code: SAFR46

ISBN: 9781782945604

<https://www.cgpbooks.co.uk/secondary-books/gcse/science/combined-science/safr46-new-gcse-combined-science-aqa?c=56371187>

Higher: CPG GCSE AQA Combined Science Revision Guide Higher Level.

Product code: SAHR46

ISBN: 9781782945588

<https://www.cgpbooks.co.uk/secondary-books/gcse/science/combined-science/sahr46-new-gcse-combined-science-aqa>

Triple Science (Individual) Guides:

Chemistry: CPG GCSE AQA Chemistry Revision Guide Higher Level.

Product code: CAR46

ISBN: 9781782945574

<https://www.cgpbooks.co.uk/secondary-books/gcse/science/chemistry/car46-new-gcse-chemistry-aqa-revision-guide?c=61197298>

Biology: CPG GCSE AQA Biology Revision Guide Higher Level.

Product code: BAR46

ISBN: 9781782945567

<https://www.cgpbooks.co.uk/secondary-books/gcse/science/biology/bar46-new-gcse-biology-aqa-revision-guide?c=53490309>

Physics: CPG GCSE AQA Physics Revision Guide Higher Level.

Product code: PAR48      ISBN: 9781782945581

<https://www.cgpbooks.co.uk/secondary-books/gcse/science/physics/par48-new-gcse-physics-aqa-revision-guide?c=359223>

## Step 2: The Science Team

**Welcome to QEGS Science** – we look forward to sharing our knowledge with your child and helping him or her to succeed in their learning of this wondrous diverse subject.



RME = Rob Meecham  
**Head of Department**  
[meecham@qegs.email](mailto:meecham@qegs.email)



EHl = Emma Hindes  
**Deputy Head of Department**  
[hindes@qegs.email](mailto:hindes@qegs.email)



RSA = Robin Sangster  
**Science Teacher**  
[sangster@qegs.email](mailto:sangster@qegs.email)



MWA = Michelle Ward  
**Science Teacher**  
[ward@qegs.email](mailto:ward@qegs.email)



JCA = Jane Challinor  
**Science Teacher**  
[challinor@qegs.email](mailto:challinor@qegs.email)



ASM = Antony Smith  
**Science Teacher**  
[smitha@qegs.email](mailto:smitha@qegs.email)



CKE = Caren Keeling  
**Science Teacher**  
[kelingc@qegs.email](mailto:kelingc@qegs.email)



KWJ = Katie Watson-Jones  
**Science Teacher**  
[Watson-Jones@qegs.email](mailto:Watson-Jones@qegs.email)



CAS = Caroline Aston  
**Science Teacher**  
[aston@qegs.email](mailto:aston@qegs.email)



SWR = Sarah Wright  
**Science Teacher**  
[wright@qegs.email](mailto:wright@qegs.email)



SRG = Sara Rogers  
**Science Teacher**  
[rogersS@qegs.email](mailto:rogersS@qegs.email)



JAB = Jonathan Abraham  
**Science Teacher**  
[abraham@qegs.email](mailto:abraham@qegs.email)



KEN = Kate English  
**Science Teacher**  
[english@qegs.email](mailto:english@qegs.email)

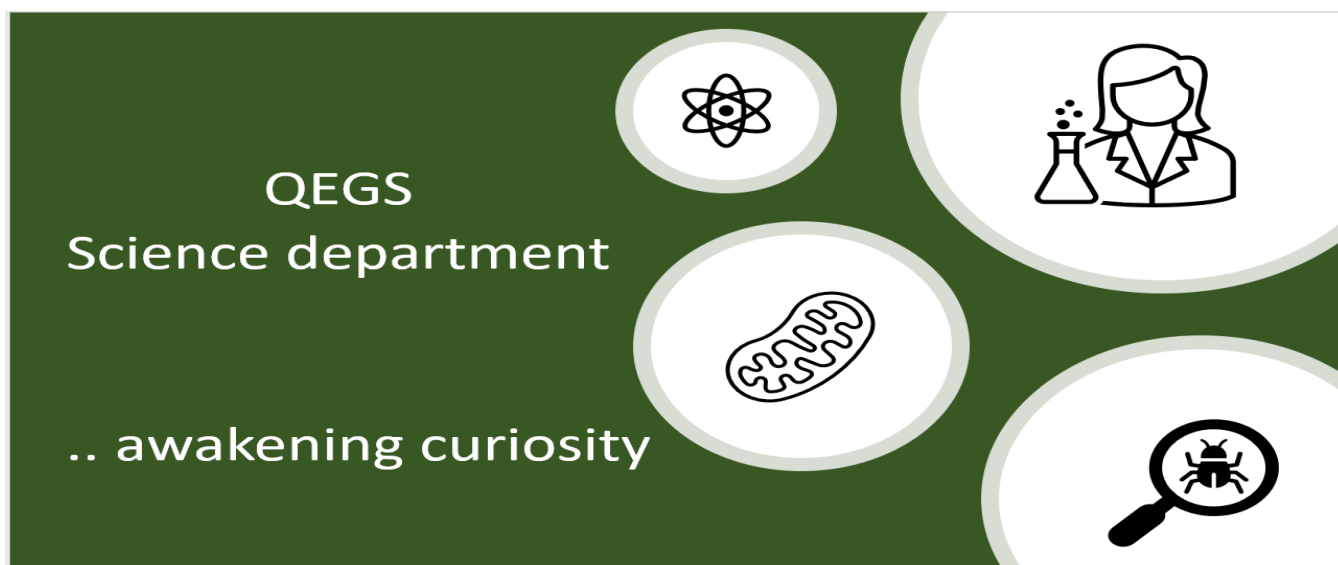


RHA = Becca Brewell  
**Senior Science Technician**  
[brewell@qegs.email](mailto:brewell@qegs.email)



GHN = Gillian Harrison  
**Science Technician**  
[Harrison@qegs.email](mailto:Harrison@qegs.email)

## Why study science at school?



Science helps you to build up research, problem solving, organization and analytical skills as well as helping you build your teamwork and communication skills, which are great for project management. Science also helps you to challenge ideas and shows you how to work things out through logic and step-by-step reasoning. Within Science, there are three subjects, each of which has its own unique skill set.

Biology is a key subject for lots of STEM careers, particularly in healthcare, medicine and jobs involving plants and animals. This includes: nursing, dentistry, forensic science, psychology, physiotherapy, botany, environmental science, zoology, geology, oceanography, pharmaceuticals, energy industry, science writing, genetics, anthropology, civil engineering, geography, and teaching.

Chemistry will help you get ahead in most STEM (science, technology, engineering, and maths) careers such as: medicine, environmental science, engineering, toxicology, developing consumer products, metallurgy (studying how metals behave), space exploration, developing perfumes and cosmetics, pharmaceuticals, energy, teaching, science writing, software development and research.

Physics is a particularly useful subject for most STEM careers too. Physics is especially helpful for jobs that involve building things and developing modern technologies, including engineering (flight, buildings, and space), astronomy, robotics, renewable energies, computer science, communications, space exploration, science writing, sports and games technology, research, and nanotechnology.



## Science Department Overall Intent:

*Our aim is to develop our student's core body of scientific knowledge, hone their skills of scientific enquiry and help them to more fully understand the world and their place in it.*

*This will provide them with the key skills and knowledge, enabling them to successfully progress onto the next stage of their education and into their working lives.*

## Key Stage 4 (KS4) Science Years 9-11 Departmental Aims:

- \*Deepen students scientific enquiry and laboratory skills, allowing more independent investigation planning to prepare them for further education or work-based learning.
- \*Build upon their foundation of key concepts and maths skills, widening the content to encompass the GCSE syllabus.
- \*Reinforce and widen the influences *science* has on our lives.
- \*Further develop the skills of an independent and resilient learner through group work, research and presentation tasks and collaborative learning activities.

## GCSE Science Exam Details:

Exam board: AQA

Combined Science: [www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464](http://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464)

Specification details/code: Combined Science: Trilogy 8464

Assessment: 100% external examination with six papers; two biology, two chemistry and two physics. Each paper is 1h 15 minutes, worth 70 marks (including multiple choice, structured, closed short answer and open response) and worth 16.7% of the GCSE.

Grades: You will be awarded a joint grade worth two GCSEs if you sit the combined papers – e.g., 9:9 two top grades, 5:5 two strong passes, or a 5:4 a strong pass and a standard pass. This will be calculated using your cumulative score over all six papers (2 papers per subject).

Separate Sciences (Triple Science) <https://www.aqa.org.uk/subjects/science/gcse>

Specification details/code: Biology 8461, Chemistry 8462, Physics 8463

Assessment: 100% external examination with six papers; two biology, two chemistry and two physics. Each paper is 1h 45 minutes, worth 100 marks (including multiple choice, structured, closed short answer and open response) and worth 50% of each GCSE.

Grades: You will receive a single grade for each of the three sciences, calculated using your cumulative score over both the papers for that science.

For both qualifications, the higher papers have grades ranging from 4-9, whereas the foundation papers range from grades 1-5.

Progress onto A-level science courses are NOT based on whether a student took Triple or Trilogy but on their GCSE Science LEVEL. To be successful at GCE (A-level) a student will need to achieve at least a GCSE level 6.

**Year 11 Science Topics covered per term: (TRILOGY Combined Science course)**

	<b>Biology</b>	<b>Chemistry</b>	<b>Physics</b>
<b>Autumn</b>	<u>Ecology:</u> communities, quadrats, transects, competition, adaptations, feeding relationships, materials cycling, carbon cycle, human population explosion, land and water pollution, air pollution, deforestation & peat destruction, maintaining biodiversity, global warming.  <u>Hormonal coordination:</u> hormonal control, blood glucose control, diabetes control, negative feedback loops, human reproduction, menstrual cycle, artificial control of fertility.	<u>Quantitative chemistry:</u> Conservation of mass, moles, relative atomic mass. Reacting mass equations. Limiting factors, uncertainty, concentration, atom economy, gas volumes.  <u>Rates of reaction:</u> Collision theory, factors of temperature, concentration, surface area and catalysts.	<u>Magnetism:</u> Magnetic fields, Permanent and induced magnets, Magnetic fields around electric wires, how electric motors work.  <i>Higher Tier Only:</i> Calculating the force on an electric wire in a magnetic field, the 'motor effect'.  <u>Forces B:</u> The parallelogram of forces, Newton's laws of motion.

<p><b>Spring</b></p>	<p><u>Genetics and Reproduction:</u> Meiosis, Asexual vs sexual, DNA &amp; the genome, genetic inheritance, inherited disorders, screening for genetic disorders. Variation, evolution by natural selection, selective breeding, genetic engineering, ethics of genetic technologies. Evidence for evolution, fossils, extinction, antibiotic resistant bacteria, classification.</p>	<p><u>Rates of reaction:</u> Collision theory, factors of temperature, concentration, surface area and catalysts.</p> <p><u>Energy changes:</u> Energy profile diagrams, bond energy calculations.</p> <p><u>Electrolysis:</u> Theory and practical.</p>	<p><u>Forces B</u> Car safety, Terminal velocity, Work Done, Power</p> <p><i>Higher Tier Only:</i> Momentum, Pressure, Moments, Levers, and Gears.</p>
<p><b>Summer</b></p>	<p>Revision ahead of the final GCSE exams.</p>	<p><u>Reactions and equilibrium:</u> Cells, batteries, exo and endothermic reactions, pH scale, weak and strong acids, neutralization, reverse reactions, equilibrium, factors affecting equilibrium. Fertilisers and the Haber process.</p> <p>Revision ahead of the final GCSE exams.</p>	<p>Revision ahead of the final GCSE exams.</p>

**Additional Year 11 TRIPLE Science Topics covered per term:**

	<b>Biology</b>	<b>Chemistry</b>	<b>Physics</b>
<b>Autumn</b>	<u>Ecology:</u> Rates of decomposition, impact of change, trophic levels and biomass, biomass transfers, factors affecting food security, making food production efficient, sustainable food production.  <u>Hormonal coordination:</u> Plant hormones and responses, using plant hormones. Controlling body temperature, removing waste products, human kidneys, dialysis, kidney transplants.	<u>Quantitative chemistry:</u> percentage yield and atom economy.	<u>Magnetism:</u> Loudspeakers, Electromagnetic Induction, Transformers.
<b>Spring</b>	<u>Genetics and Reproduction:</u> Best of both worlds, DNA structure and protein synthesis. Cloning, adult cell cloning, history of genetics, theories of evolution, accepting Darwin's ideas, evolution, and speciation.	<u>Quantitative chemistry:</u> Titrations.	<u>Space</u> Structure of the solar system, Life cycle of stars, orbital motion, satellites, red-shift and the big bang.
<b>Summer</b>		<u>Organic chemistry:</u> alcohols, carboxylic acids, esters, condensation polymerization.	

Each of these topics will come at the start of the teaching with a check-in sheet that provides more details of the sub-areas covered and revision links – see appendix 2 for an example.

Within each topic there will also be classroom-based teacher-assessed task(s) to check on individual progress and to provide students with meaningful feedback as a topic is completed.

**Formal Synoptic Assessments 1, 2 and 3 Timings:**

Early October – Mocks on all Year 9 & 10 topic areas plus as per initial Autumn schedule in table above and scientific skills. (Completed in the Sports 'Exam Centre' Hall).

Late November - Mocks on all Year 9 & 10 topic areas plus as per Autumn schedule in table above and scientific skills. (Completed in the Sports 'Exam Centre' Hall).

Mid-March – Mocks on all Year 9 & 10 topic areas and topics as per Autumn and initial Spring schedule in table above and scientific skills. (Completed in the Sports 'Exam Centre' Hall).

**Student Feedback:** with the aim of addressing two key questions: -

*What am I doing well? What do I need to do to improve my work?*

After each formal synoptic assessment, we will be using a follow-up wrap-around 'wrapper' resource which will indicate a student's individual strengths and weaknesses on topic areas and provide supportive follow-up learning resources that should be use at home to address any areas a student has been found to have difficulty with.

In completing the wrapper, students will also be asked to consider their preparations for the assessment, where they went wrong and to also set themselves some targets to aim for towards improving their performance next time on their assessments.

See Appendix 6 for an example of such an assessment 'wrapper'.

### **Student book checks:**

These will take place half-termly with a feedback sheet (Appendix 7). Staff will check students' book for the quality of presentation (underlining title and date, use of pencil to draw tables, no graffiti etc.....) and student engagement with work (tasks completed and feedback acted upon). Students will also be asked to consider their own recent work and to set themselves a target to aim for towards continual improvement. Scores will be recorded on G4S using the following standard codes: Blue – excellent, Green – good, Amber – fair/improvement required, Red – much room for improvement and X - missing book.

**Departmental Rewards:** these will be issues throughout the year for reasons such as students asking and answering questions (active participation), persevering on a task they find challenging, working successfully within a group task to completing extension tasks. These will feed into the wider school pastoral reward system.

### Departmental Postcards:

Each half-term, science departmental postcards will be sent home to students selected by their teachers in recognition of their positive progress in any of the following areas: engagement, attitude, progress, classwork, or behavior.

### Departmental detentions:

These run if required, during lunchtimes or after-school – if a student issued with a teacher detention fails to show for the initial 20-minute slot, the sanction will increase to a 1-hour detention at a later date organized by a member of the senior management team. Parents/Carers would be updated of the initial lunchtime/after-school detention by the science teacher either by phone or email and a record of the detention be placed on G4S.

**Departmental Open Evenings:** with opportunities to meet the science teachers

- 28th September 2022: Open Evening 4.30-6.30pm – for all Year groups

### Step 3: Parents and Carers:

We hope you find this home booklet useful to refer to over the course of the Year 11 academic year. Please feel free to contact the science department/ your child's science teacher(s) if you require any further advice or have any questions as the year progresses. We will be please to assist.

Best regards from all at QEGS Science,

R. Meecham

R. Sangster

E. Hindes

M. Ward

J. Challinor

A. Smith

C. Keeling

K. Watson-Jones

C. Aston

S. Wright

S. Rogers

J. Abraham

K. English

G. Harrison

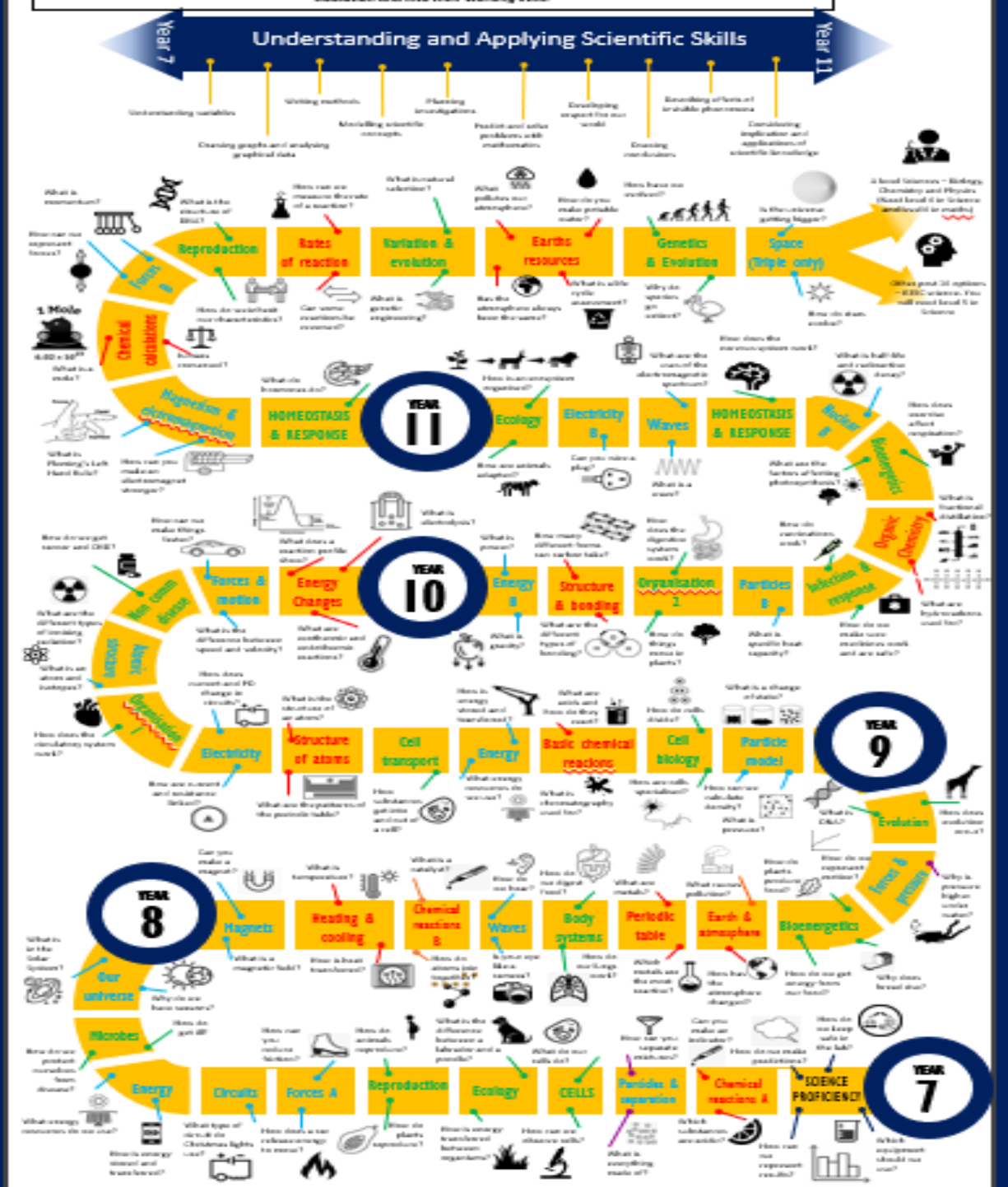
R. Brewell

### Appendix 1: Science Learning Journey

# Science Learning Journey

Our aim is to develop our student's core body of scientific knowledge, hone their skills of scientific enquiry and help them to more fully understand the world and their place in it.

This will provide them with the key skills and knowledge, enabling them to successfully progress onto the next stage of their education and into their working lives.



Question Explore Give Succeed

## Appendix 2: Laboratory Safety rules.



# QEGS LABORATORY RULES

The biggest danger in the lab is **YOU!** You are at risk when you don't understand the hazards or you are careless, or both. The person most likely to suffer from your mistakes is **YOU!** Report any accident or breakage to your teacher.



Only enter a lab when told to do so by a teacher. Never rush about or throw things in the lab. Keep your bench and floor area clear, with bags and coats well out of the way.



Follow instructions precisely; check bottle labels carefully and keep tops on bottles except when pouring liquids from them; only touch or use equipment and materials when told to do so by a teacher; never remove anything from the lab without permission.



Wear eye protection when told to do so and keep it on from the very start until all practical work is finished and cleared away.



When using naked flames (eg, Bunsen or spirit burners or candles), make sure that ties, hair, baggy clothing etc are tied back or tucked away.



Always stand up when working with hazardous substances or when heating things so you can quickly move out of the way if you need to.



Never taste anything or put anything in your mouth in the laboratory. If you get something in your mouth, spit it out at once and wash your mouth out with lots of water. Tell your teacher.



Always wash your hands carefully after handling chemicals, microbes or animal and plant material.



If you are burnt or a chemical splashes on your skin, wash the affected part at once with lots of water. Tell your teacher.



Never put waste solids in the sink. Put them in the bin unless your teacher instructs you otherwise.



Wipe up all small spills and report bigger ones to your teacher.



## Appendix 3: Advice sheet on using IT systems at QEGS

### Using IT Systems at QEGS

#### Username

A student's username is made up of a number, followed by their surname and initial. The number represents the year they joined the school, so the username of someone starting Year 7 in 2021 would start with the number 1. So, for example, a student called 'John Smith', starting in 2021, would have the username '1SmithJ',

#### Email Address

A student's email address is in the format username@queenelizabeths.derbyshire.sch.uk so, using the above example of 'John Smith', their email address would be 9smithj@queenelizabeths.derbyshire.sch.uk Be very careful with the spelling/typing. If you get one character wrong the email will not reach its intended recipient.

#### Logging In

To access the school's systems, go to the main school homepage at [www.queenelizabeths.derbyshire.sch.uk](http://www.queenelizabeths.derbyshire.sch.uk) Click 'Login' and enter your username and password.



If you have difficulty, the 'Login Help' option may help you. You can also reset your password from here if you have forgotten it or think it might have expired.

Once you've logged in, you'll see lots of useful links. You can access your email, Go4Schools and Teams from here.

#### Accessing Microsoft Teams

A link to Microsoft Teams is available on the school intranet. This should automatically log you in when clicked on.



If using the Teams app, you will be prompted to login when you open the app. Use your school username and password to log in when prompted.

Teams is where you can access live lessons and find resources if you need to work from home.

#### Go 4 Schools

To access Go 4 Schools as a student for the first time, go to <https://www.go4schools.com/students/Login.aspx> (there is a separate link for parental access).

Click on the link 'First-time User?'

Fill in your school email address and click 'New password'.

Welcome!

Thank you for using the Go 4 Schools login page. In order to use the app, you will need to use the email address that you use for school login. If you don't have a password, you can request a new password. If you have a password, you can log in. If you are having problems logging in, please contact your school's IT support. (Reporting status about Microsoft Internet Explorer 11)

Go 4 Schools Parent App

If your child's school uses Go 4 Schools, they can use the Go 4 Schools mobile app to make it even easier for you to see and share progress, homework, behaviour reports, attendance, etc. (that you will see depends on which Go 4 Schools)

First-time User?

Forgot your Password?

Go 4 Schools will then send you an email (check your junk items if it doesn't show up in your inbox). Go to your email account and follow the instructions in the email to complete setting up your account. Once set up, return to the link above and log in.

## Appendix 4: Topic check-in sheet

### Year 9 Biology GCSE topics Check-in Sheet 1 of 3.

#### Topic B1 - Cell Biology

Links to other KS3/KS4 learning - These topics covers the areas of cell structure, cell transport and cell division. They tie in previous work at KS3 on cell organelles, specialised cells, magnification calculations, microscopes as well as topics covered later in Y9, Y10 and Y11 such as [the Y9 Heart & Circulation](#), the Y10 topics of organisation of animal and plants, the digestive system and bioenergetics and the Y11 meiosis cell division.

##### 1. Cell Biology - Cell structure

- a. Prokaryotic vs Eukaryotic cells ☐
- b. Cell organelles in plants & animals ☐
- c. Specialised cells ☐
- d. Required Practical - microscopes ☐
- e. Order of Magnitude & Standard form ☐
- f. Magnification & Microscopes ☐

##### 2. Cell Biology - Cell Division & Stem cells

- a. Cell division ☐
- b. Stem cells animals and plants ☐
- c. Stem cells Therapeutic uses ☐

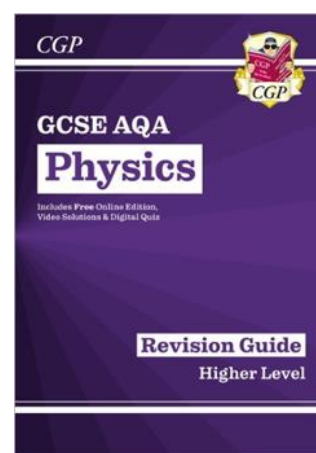
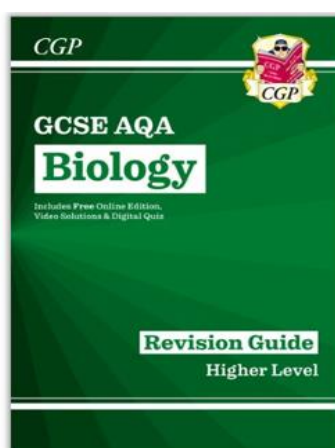
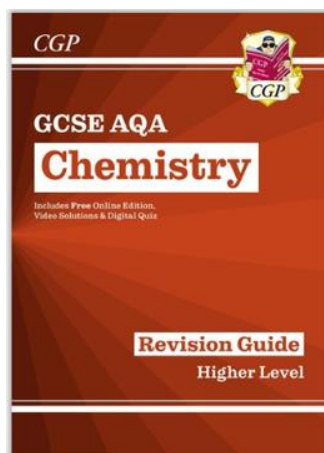
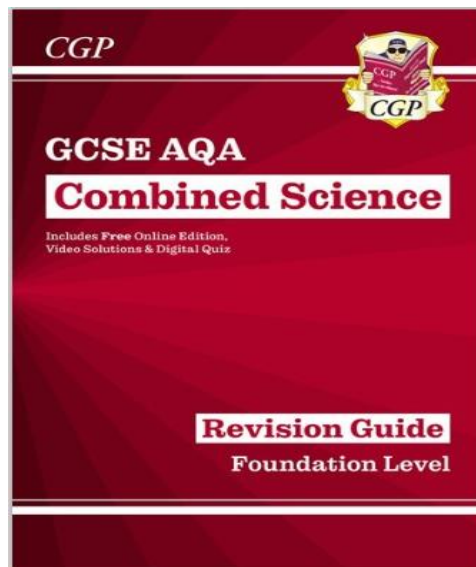
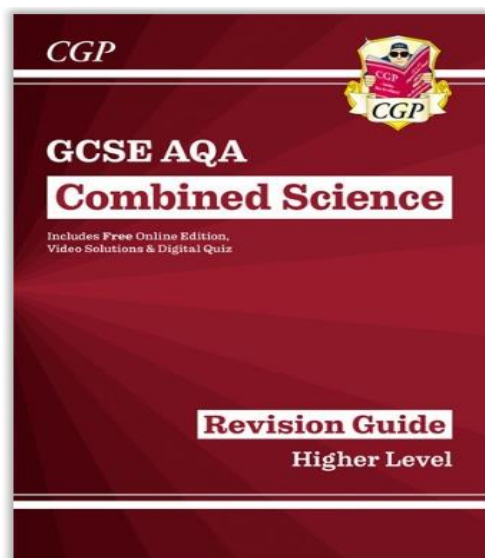
##### 3. Cell Biology - Cell Transport

- a. Diffusion theory ☐
- b. Diffusion practical ☐
- c. Osmosis theory ☐
- d. Required Practical - Osmosis practical ☐
- e. Osmosis application ☐
- f. Active transport ☐
- g. Exchanging materials/ Surface area to Volume ratios ☐



Key word	Definition
Eukaryotic	Cell with a nucleus
Prokaryotic	Cell without a nucleus
Sub-cellular structures	Small structures inside a cell <a href="#">e.g.</a> nucleus
Nucleus	Contains DNA
Cytoplasm	Where chemical reactions take place
Cell membrane	Controls what enters and leaves the cell
Mitochondria	Where aerobic respiration takes place and energy is released.
Ribosomes	Where proteins are made
Chloroplasts	Where photosynthesis occurs
Vacuole	Contains cell sap
Differentiation	When a cell becomes a specialised cell
Mitosis	Cell division where one set of chromosomes are pulled to each end of the cell & the nucleus divides
Stem cell	Cells that are undifferentiated but can turn into other types of <a href="#">cell</a>
Diffusion	Movement of particles from a HIGH concentration to a LOW concentration down a concentration gradient
Osmosis	The movement of WATER from a DILUTE solution to a MORE CONCENTRATED solution
Active transport	The movement of particles, <a href="#">e.g.</a> mineral ions, from a HIGH concentration to a LOW concentration, AGAINST the concentration gradient using ENERGY

**Appendix 5: Recommended CPG GCSE AQA Science Revision Guides.**

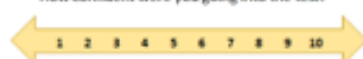


## Appendix 6: Assessment Wrapper

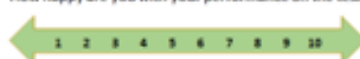
### Year 10 Physics Summer Term 2022 Synoptic Assessment Feedback Sheet

1. How did you prepare for the test (what did you do to revise?) a) b) c)	2. Do you feel like you prepared enough for this test?  <b>Yes</b>  <b>No</b>	3. Explain your decision:
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How confident were you going into the test?



How happy are you with your performance on the test?



		Did not remember the science	Did not understand the question	Repeated the question	Did not give enough points/detail	Maths let me down	Described rather than explained	Did not follow instructions in question
Q1 - Density and Particles	/12							
Q2 - Energy stores and transfers	/9							
Q3 - Electricity	/12							
Q4 - Energy sources and specific heat capacity	/12							
Q5 - Electricity	/11							
Q6 - Radiation	/4							

#### Next steps:

Did not know the science – use revision resources to make notes on weak topics; use the link and select the topic that requires work to look at summary notes / mind maps / PPQs; <https://www.physicsandmathstutor.com/physics-revision/gcse-aga/>

Did not understand the question – highlight the command word (it starts the question off) and key words in the information.

Repeated the question – don't write straight away - take time to think of your answer

Did not give enough points/detail – look at the question's mark and bullet point your answers to match, using key words.

Maths let me down – highlight the numbers. Use given equation and if answer 'looks' wrong, it probably is so check again

Describe rather than explain – need to give a reason (because...) in an explain answer but not in a describe

Did not follow instructions – read question and highlight command words (especially for maths questions)

Strengths (list the topics and skills where you scored well):

Next steps (list the topics and skills where you need to improve. Say what you will do to improve)

## Appendix 7: Book Check sheet

Name: \_\_\_\_\_

### Book check teacher feedback

	Criteria	Blue (always)	Green (mostly)	Amber (inconsistent)	Red (rarely/never)
1	Book neat, tidy & free from graffiti				
2	Underlined date and title				
3	Red pen used for self/peer assessment				
4	Work completed to the best of ability				
5	Correct equipment used (blue/black pen, pencil, ruler)				
6	Worksheets are stuck in				
7	Feedback sheets/next steps completed for assessments				

Overall:

**BLUE**

**GREEN**

**AMBER**

**RED**