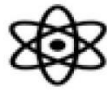


QEGS  
Science department

.. awakening curiosity



# YEAR 8

# WRAP-AROUND

# LEARNING FOR

# SUCCESS

# 2022-23



## Year 8 Wrap-around Learning for Success: how does this work?

Successful learning at KS3 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 will continue into Years 9-11 to see them ready to succeed and be confident going into their ultimate GCSE Science external examinations. 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

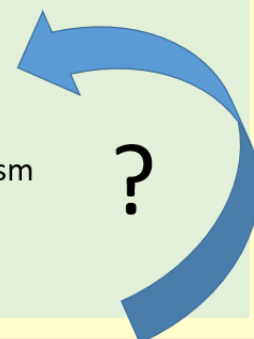
I listen well to and follow all instructions

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 8 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 8 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) 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 8 Interactive Self-Assessed Revision Resources available for free for use at home:

1. BBC Bitesize KS3 Science: <https://www.bbc.co.uk/bitesize/subjects/zng4d2p>
2. National Oak Academy: <https://classroom.thenational.academy/subjects-by-year/year-8/subjects/science>

(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 KS3 Science:

\*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.

\*After every topic make revision card or flash cards to key definitions or information or equations to know.

\*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 one 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.

\*Note cards – condense your notes until they fit onto one small note card for each area of a topic. Learn the important parts on each card and see how much you can remember.

\*Glossary – make a glossary of all the key words in the topic. Cover the definitions and practice defining the terms without your notes. Repeat until you can.

\*Linking- link parts of the topic you struggle with to parts of your body e.g., link your thumb and forefinger together and say 'aerobic respiration in mitochondria' five times every day, when you do this action in the exam you should remember the phrase/detail.

\*Copying diagrams – copy out diagrams ten times then try to draw them without looking at your notes at all. Repeat until you can.

\*Be active in your revision – always work with a pen and paper – focus on doing tasks to revise and not the time for which you are revising.

\*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.

## 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)



EHI = Emma Hindes  
**Deputy Head of Department**  
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RSA = Robin Sangster  
**Science Teacher**  
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MWA = Michelle Ward  
**Science Teacher**  
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JCA = Jane Challinor  
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CKE = Caren Keeling  
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KWJ = Katie Watson-Jones  
**Science Teacher**  
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CAS = Caroline Aston  
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SRG = Sara Rogers  
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[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)

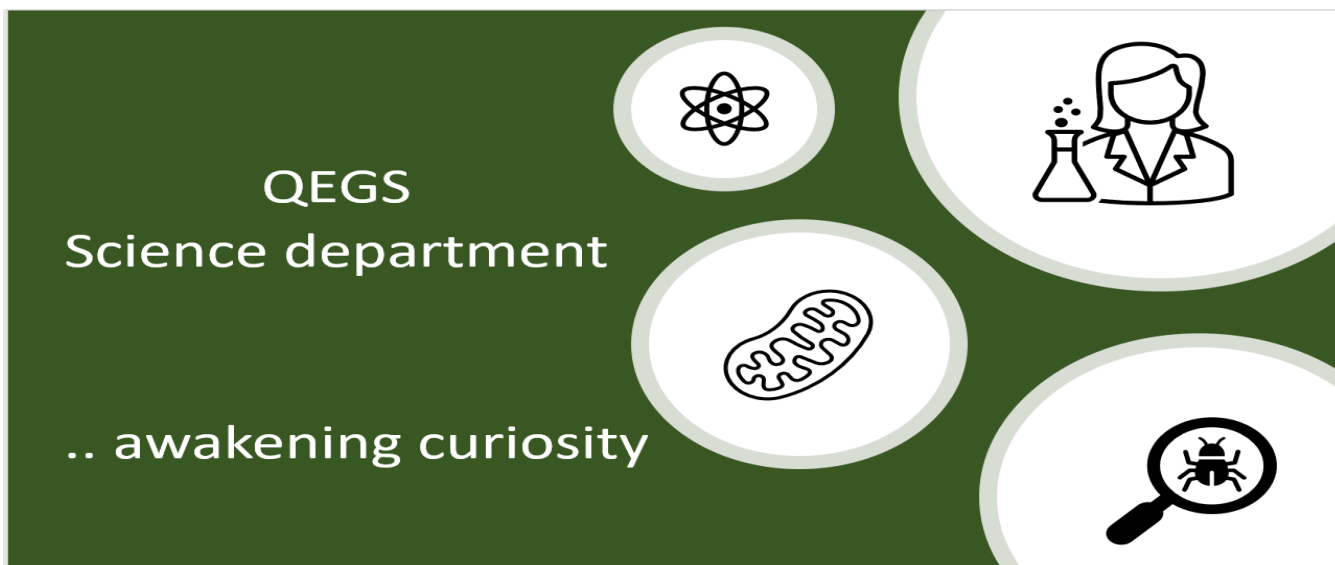


RHA = Becca Brewell  
**Senior Science Technician**  
[brewell@qegs.email](mailto:brewell@qegs.email)



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 3 (KS3) Years 7&8 Science Departmental Aims:

- \*Introduce the students to the idea of independent and resilient learners through group work, research and presentation tasks and collaborative learning activities.
- \*Develop their scientific enquiry and laboratory skills through practical investigation work.
- \*Introduce the concept that *science* influences all aspects of our lives.
- \*Build a broad and solid foundation of key concepts which prepares students for future science study.

## Year 8 Science Topics covered per term:

Autumn 1	Body Systems, Chemical reactions B
Autumn 2	Forces B, Bioenergetics, Waves
Spring 1	Forces B, Earth's resources, Waves
Spring 2	Earth's resources, Waves, Magnets, Periodic table
Summer 1	Magnets, Periodic table, Evolution & Inheritance, Heating & Cooling
Summer 2	Evolution & Inheritance, Heating and Cooling, STEM investigation

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 4 for an example.

Within each topic there will also be a classroom-based teacher-assessed task 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:**

Mid-October – topics of Body Systems and Chemical Reactions B.

Early-February – topics as above as well as Bioenergetics, Forces B, Waves and Earth Resources.

Mid-May – topics as above plus Magnets, Periodic Table, Evolution & Inheritance and Heating & Cooling.

**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 5 for an example of such an assessment 'wrapper'.

### **Student book checks:**

These will take place half-termly with a feedback sheet (Appendix 6). 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 Evening:** with opportunity 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 8 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.

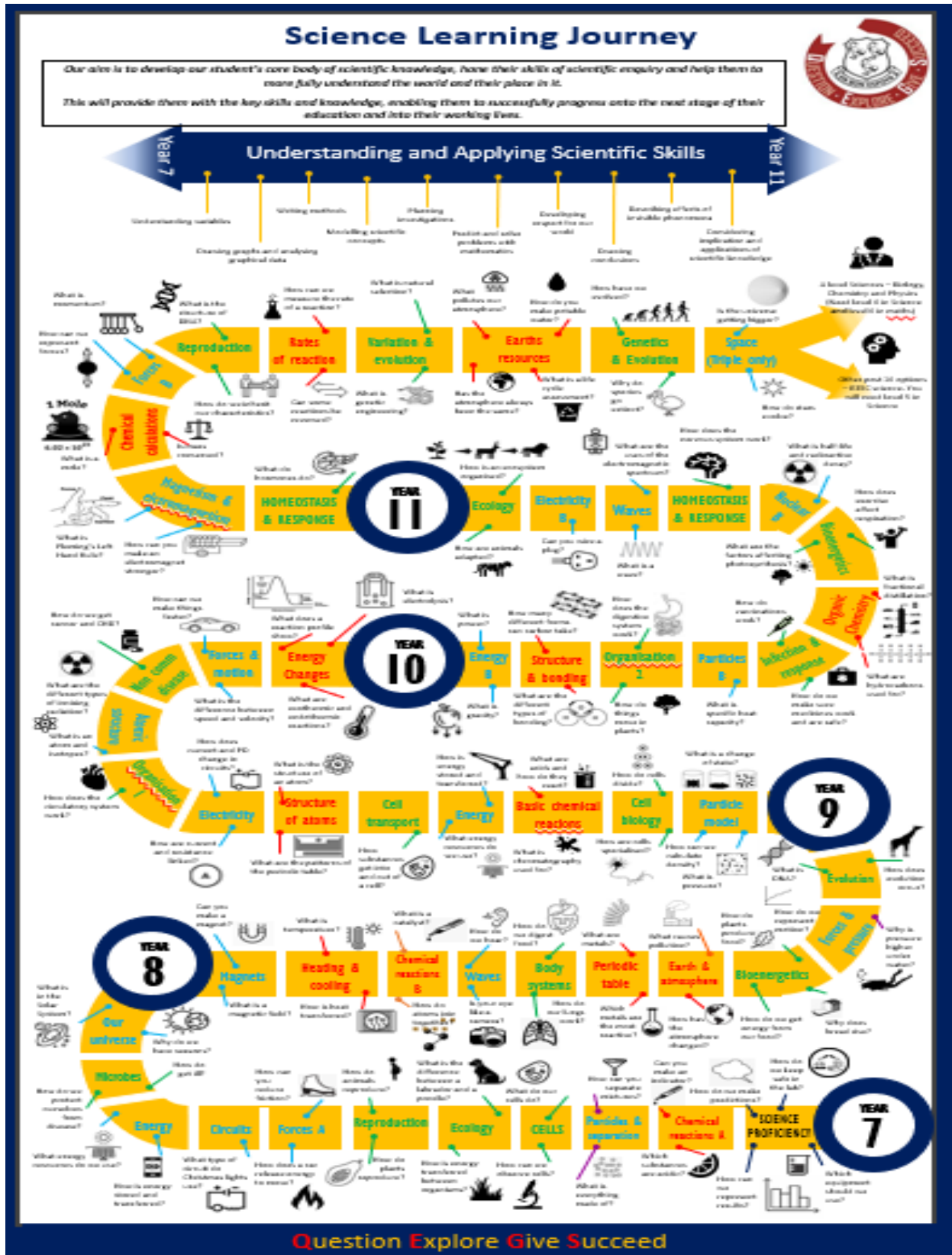
Best regards from all at QEGS Science,

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



## 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'.

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

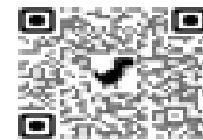


Year 7  
**Cells**



Lesson	Tick
1. Life processes	
2. Cell structures	
3. Using a microscope	
4. Viewing cells under a microscope	
5. Microscope maths (challenge lesson)	
6. Specialised cells	
7. Model cells	
8. Cells, tissues, organ systems	

Oak Academy:



BBC bitesize:



**Things I am doing well:**

**Things I need to improve:**



## Appendix 5: Assessment Wrapper

### Y7 Summer 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:
--	---	---------------------------

How confident were you going into the test?

1 2 3 4 5 6 7 8 9 10

How happy are you with your performance on the test?

1 2 3 4 5 6 7 8 9 10

4. What types of mistakes did you make on the test?	5. What would you do differently next time to prepare for a test?	6. Set yourself two study targets for the next topic:
---	---	---

#### Diagnosing my performance

Question	Score	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 - Science apparatus	/6							
Q2 - Separation techniques	/4							
Q3 - The solar system & gravity	/7							
Q4 - Separation techniques & conservation of mass	/6							
Q5 - Investigation skills (burning crisps)	/7							
Q6 - Investigation skills (testing insulation)	/8							
Q7 - Acids & alkalis	/4							
Q8 - Reproduction	/5							
Q9 - Cells	/5							
Q10 - Separation techniques (distillation)	/7							
Q11 - The solar system	/7							

Diagnosis	Suggested next step
Did not know the science	Use revision resources to make notes on weak topics
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)

Question	Topic	Link to resources
1,5,6	Science apparatus & investigation skills	<a href="https://www.bbc.co.uk/bitesize/topics/zsg6m39">https://www.bbc.co.uk/bitesize/topics/zsg6m39</a>
2,4,10	Separation techniques	<a href="https://www.bbc.co.uk/bitesize/topics/zych6g8">https://www.bbc.co.uk/bitesize/topics/zych6g8</a> <a href="https://www.bbc.co.uk/bitesize/topics/zypsgk7/articles/xh7jsg">https://www.bbc.co.uk/bitesize/topics/zypsgk7/articles/xh7jsg</a>
3,11	Space	<a href="https://www.bbc.co.uk/bitesize/topics/z8c9a6f">https://www.bbc.co.uk/bitesize/topics/z8c9a6f</a>
7	Acids & alkalis	<a href="https://www.bbc.co.uk/bitesize/topics/zn6hvcw">https://www.bbc.co.uk/bitesize/topics/zn6hvcw</a>
8	Reproduction	<a href="https://www.bbc.co.uk/bitesize/topics/zybbkat">https://www.bbc.co.uk/bitesize/topics/zybbkat</a>
9	Cells	<a href="https://www.bbc.co.uk/bitesize/topics/znnycdm">https://www.bbc.co.uk/bitesize/topics/znnycdm</a>

**Strengths** (what did you do well?)

**Next steps** (what do you need to do to improve?)

**Appendix 6: Book Check sheet**

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

**Book check teacher feedback**

	<b>Criteria</b>	<b>Blue</b> <i>(always)</i>	<b>Green</b> <i>(mostly)</i>	<b>Amber</b> <i>(inconsistent)</i>	<b>Red</b> <i>(rarely/never)</i>
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**