

Bridgwater Science Faculty

Y11 'Road to exams' for GCSE Science- How to Prepare

Question 1

What do I need to know for my science exams? Is there anything I can use to help me, like a revision list?

Answer

You should use the PLCs – Personalised Learning Checklists -found at the back of your knowledge Organisers. They look like the one below for Biology, and tell you what you need to know for both paper 1 and paper 2 exams in biology, chemistry and physics. You need to tick parts that you are happy with and highlight parts you may need to do more work on.....or you could RAG rate each area

4.1.1 Cell struc ture	Describe the functions of the structures in animal and plant (eukaryotic) cells			
	Describe what a specialised cell is, including examples for plants and animals			
	Describe what differentiation is, including differences between animals and plants			
	Define the terms magnification and resolution			
	Compare electron and light microscopes in terms of their magnification and resolution			
	Carry out calculations involving magnification using the formula: magnification = size of image/ size of real object -inc standard form			
	<i>Bio ONLY: Describe how bacteria reproduce and the conditions required</i>			
	<i>Bio ONLY: Describe how to prepare an uncontaminated culture</i>			
	<i>Bio ONLY: Calculate cross-sectional areas of colonies or clear areas around colonies using πr^2</i>			
	<i>Bio ONLY: Calculate the number of bacteria in a population after a certain time if given the mean division time</i>			
	<i>Bio & HT ONLY: Express answers for last two points in standard form</i>			
4.1.2 Cell divisi on	<i>Required practical 2: investigate the effect of antiseptics or antibiotics on bacterial growth using agar plates and measuring zones of inhibition</i>			
	Describe how genetic information is stored in the nucleus of a cell (inc genes & chromosomes)			
	Describe the processes that happen during the cell cycle, including mitosis (inc recognise and describe where mitosis occurs)			
	Describe stem cells, including sources of stem cells in plants and animals and their roles			
	Describe the use of stem cells in the production of plant clones and therapeutic cloning			
4.1.3 Trans port in cells	Discuss the potential risks, benefits and issues with using stem cells in medical research/treatments (inc diabetes and paralysis)			
	Describe the process of diffusion, including examples			
	Explain how diffusion is affected by different factors			
	Define and explain "surface area to volume ratio", and how this relates to single-celled and multicellular organisms (inc calculations)			
	Explain how the effectiveness of an exchange surface can be increased, inc examples of adaptations for small intestines, lungs, gills roots & leaves			
4.1.3 Trans port in cells	Describe the process of osmosis (inc calculation of water uptake & percentage gain and loss of mass of plant tissue)			
	<i>Required practical 3: investigate the effect of a range of concentrations of salt or sugar solutions on the</i>			

There are Paper 1 and Paper 2 versions for all subjects, Biology, Chemistry and Physics

Question 2

How should I focus my revision so that I work on the things that I am unsure on?

Answer:

FIRSTLY:

Use your Knowledge Organisers as a starting point. Eg If you don't know about Osmosis use the knowledge Organisers to recap i.e. Read> Cover>Self test what you know or create Flashcards for the areas you forget easily. It is IMPORTANT to self quiz at this stage and whilst you are revising.

You can also choose whole topics on Tassomai to focus your revision on particular topics. Your teacher can show you how to do this if you don't know

SECONDLY:

For greater detail and depth, use your mastery booklets that cover the topics you are unsure about. Eg For osmosis, that would be in Biology mastery booklet B1 B2- the first biology booklet

LASTLY:

GCSE POD is a good resource to use that will help you with the topics that you find difficult or are unsure on. Your science teacher will show you how to use the PLC to identify things you are unsure



on and followed then by accessing the GCSE pods that can help

Click on the

QR code to access GCSE pods for Combined Science, Biology , Chemistry and Physics – You will need your log on details

Combined science

Biology

Chemistry

Physics

Question 3

How could I check how strong my knowledge is currently?

Answer

TASSOMAI is really good for this. Lots of questions that cover the entire course for GCSE science....getting everything correct, your on the right track!!!

Exam practice- at this stage the **largest affect on performance** will be due to **practice of exam questions**.

Click on the QR code below that will take you to GCSE Biology, Chemistry and Physics past papers and markschemes. The more you can complete the more likely you will be to SUCCEED!



Question 4

How much revision should I be doing and what subject should I focus on?

Answer

As a general rule, no more than 30-40 mins on a subject or topics area. Below is schedule you may find useful, but you may have your own 'exam timetable' ready to go or already using

Week beginning	Subject topics to recap and revise on PAPER 1 PAPER 2		
	Biology	Chemistry	Physics
13.2.23	CELL BIOLOGY		
20.2.23		ATOMIC STRUCTURE AND THE PERIODIC TABLE	
27.2.23			ELECTRICITY
6.3.23	ORGANISATION	ENERGY CHANGES	
13.3.23		BONDING, STRUCTURE AND MATTER	PARTICLE MODEL OF MATTER
20.3.23		QUANTITATIVE CHEMISTRY	ENERGY
27.3.23	INFECTION AND RESPONSE	RATE AND EXTENT OF CHEMICAL CHANGE	
20.3.23	BIOENERGETICS		FORCES
27.3.23		CHEMICAL CHANGES	
3.4.23	ECOLOGY		PARTICLE MODEL OF MATTER
10.4.23		CHEMICAL ANALYSIS	
17.4.23		USING RESOURCES	WAVES
24.4.23	HOMEOSTASIS	ORGANIC CHEMISTRY	
1.5.23			MAGNETISM AND ELECTROMAGNETISM
8.5.23	INHERITANCE AND EVOLUTION	CHEMISTRY OF THE ATMOSPHERE	
15.5.23	EXAMS BEGIN		
			SPACE (SEP SCI ONLY)

Question 5

How should I revise and are there any successful strategies for revision?

The top TWO techniques are:

1. Practice testing

The most effective strategy according to research is practice testing. It consists of studying and reviewing by answering questions and actively bringing information back to mind. When this is done, information is reconsolidated, new connections are created, and memory and understanding are strengthened.

2. Distributed practice

Research consistently shows that studying small chunks of content spread out over time is more effective than studying long blocks of the same topic only once. To use it successfully, students should start preparing way ahead of their exam dates and organise their time with a calendar.

And techniques to use least as they are **LESS helpful....**

3. Highlighting

Despite its popularity, the evidence is that performance after reading and highlighting is not better than performance after reading only.

4. Rereading

Also a very popular technique, rereading seems to only help with knowing, but not with understanding. That is, it improves students' ability to recall something as old, but does not enhance their learning for that topic.