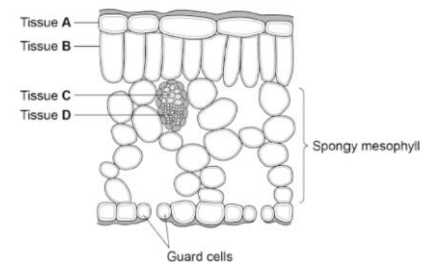


Year 10 Science - Revision Plan PPE Summer

Below are some suggestions for revision that you can complete over the next six weeks – Please also make sure you are using the topic lists to ensure that you have covered everything needed for your exams. Any questions please speak to your science teacher. You also have Sparxs quizzes that you can use to support your revision.

<u>Week</u>	<u>Topic Area</u>	<u>Video Link</u>	<u>Activity</u>	<u>Exam question:</u> <u>EXTENSION</u>								
<u>WEEK 1</u>												
<u>Working Scientifically</u>	<u>Chemistry</u>	Working Scientifically Watch the six videos linked to the following Variables Systematic errors Precision Uncertainty Random errors Repeatability and reproducibility	GCSE Science Revision "Independent Variable, Dependent Variable, Control Variables"									
1	<u>Chemistry</u> Chemical calculations	GCSE Chemistry - The Mole (Higher Tier)	Practice calculations in your notes using the following link: 1.6 Calculations involving masses.pdf	<table border="1"><thead><tr><th>Mass number</th><th>Percentage abundance (%)</th></tr></thead><tbody><tr><td>20</td><td>90.48</td></tr><tr><td>21</td><td>0.27</td></tr><tr><td>22</td><td>9.25</td></tr></tbody></table> Calculate the relative atomic mass (A_r) of neon. Give your answer to 3 significant figures. [3 marks]	Mass number	Percentage abundance (%)	20	90.48	21	0.27	22	9.25
Mass number	Percentage abundance (%)											
20	90.48											
21	0.27											
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1	Biology Specialised cells Higher Investigating Cells with light microscope	GCSE Biology - Differentiation and Specialised Cells - YouTube GCSE Science podcasts - The Cell - BBC Bitesize GCSE Biology Revision "Required Practical 1: Microscopes"	Cell structure - AQA test questions - GCSE Combined Science - AQA Trilogy - BBC Bitesize Investigating cells with a light microscope - Cell structure - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	(b) A microscope has a ×5 eyepiece lens. Describe how to use this microscope to observe a prepared slide of root hair cells at a magnification of ×50
1	Physics Renewable v Non renewable energy	GCSE Physics Revision "Renewable Sources of Energy"	Make a list of Renewable sources of energy – state the pros and cons of each. Comment on reliability	YEAR 9 SCIENCE Exam Sample Questions .pdf
1	Physics	GCSE Physics - Wind and Solar	Think about what times of year might benefit each type and why.	
WEEK 2				
2	Chemistry Electrolysis	GCSE Chemistry - Electrolysis Part 1/3 - Basics and Molten Compounds	Find the definitions for the following key words: electrolyte, anode, cathode, oxidation and reduction.	A mesh is used to keep the products of the electrolysis apart. 0 6 2 Suggest one reason why the products of the electrolysis must be kept apart. [1 mark]
2	Biology Transport in/out of cells Higher Circulatory system	Transport in Cells: Diffusion and Osmosis Cells Biology FuseSchool Transport In Cells: Active Transport 	Describe how the following molecules get into a root hair cell: a) Oxygen b) Water c) Mineral (like potassium or magnesium)	(d) Arteries and veins have different structures and different functions. Explain how the different structure of arteries and veins relates to their different functions.

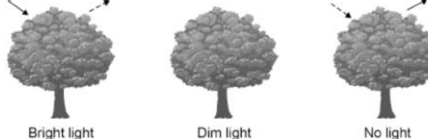
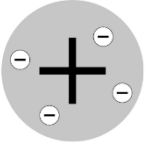
		Cells Biology FuseSchool GCSE Biology Revision "The Heart and Circulation"	The heart - Animal organisation - transport systems - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	
2	Physics Resistors	GCSE Physics Revision "Resistors in Series and Parallel"	Draw a series and parallel circuit with 2 resistors in each. Annotate each explaining how resistance is calculated for each circuit and general comments	Resistors in Series Quiz A — Isaac Physics
2		GCSE Physics - Components	Cover and test yourself on circuit symbols – name them from a diagram – draw them from name	
WEEK 3				
3	Chemistry Reduction and oxidation	GCSE Chemistry - Oxidation and Reduction - Redox Reactions (Higher Tier)	Recall your mnemonic for OILRIG, research which one happens at which electrode, write a paragraph explaining oxidation and reduction.	Hydrogen was produced at the negative electrode and oxygen was produced at the positive electrode. Explain how oxygen was produced from water during the electrolysis of this aqueous solution. [4 marks]
3	Biology Circulatory system Higher Leaf tissues	GCSE Biology - The Circulatory System The Heart GCSE Biology Revision "Plant Tissues"	Click on the correct chamber or vessel in the game: Label the heart gcse Quiz Plant tissues - Plant organisation - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	A leaf is a plant organ. Figure 1 shows tissues in a leaf. Figure 1  Label the tissues found

3	Physics National Grid	GCSE Physics - How Transformers Work	Draw and annotate a diagram of a step up transformer – Is it AC or DC?? How do the coils relate to the change in voltage?	Transformers Questions and Revision MME
3		GCSE Physics Revision "The National Grid"	Create a flow chart showing how the National grid voltage changes from Power station to home	The National Grid Worksheets, Questions and Revision MME

WEEK FOUR

4	Chemistry Half equations	GCSE Chemistry - Oxidation and Reduction - Redox Reactions (Higher Tier) 2:19-end	Ensure you understand electrolysis. Recap your bonding: ionic bonding. Worksheet-Chemistry-Electrolysis-ks4.pdf	06.1 Which is the correct half equation for the production of sodium? [1 mark] Tick (✓) one box. Na + e⁻ → Na⁺ Na → Na⁺ + e⁻ Na⁺ + e⁻ → Na Na⁺ → Na + e⁻																				
4	Biology Communicable disease Higher communicable disease	GCSE Biology - Communicable Disease GCSE Biology - Communicable Disease	Copy and complete the table <table><tr><td></td><td>Example</td><td>How it spreads</td><td>Method of prevention</td></tr><tr><td>Virus</td><td></td><td></td><td></td></tr><tr><td>Bacteria</td><td></td><td></td><td></td></tr><tr><td>Fungus</td><td></td><td></td><td></td></tr><tr><td>Protist</td><td></td><td></td><td></td></tr></table>		Example	How it spreads	Method of prevention	Virus				Bacteria				Fungus				Protist				(e) Antibiotics cannot be used to treat measles. Suggest why. (f) Gonorrhoea is a disease caused by a bacterium. Gonorrhoea can be treated with antibiotics. Give one other way to control the spread of gonorrhoea.
	Example	How it spreads	Method of prevention																					
Virus																								
Bacteria																								
Fungus																								
Protist																								
4	Data analysis	analysis of graphs GCSE science - Google Search	Watch and make notes on graph analysis	Graphs and Data Worksheets, Questions and Revision MME																				

WEEK FIVE

5	Chemistry Balancing equations	GCSE Chemistry - Balancing Chemical Equations	Ensure you know how to add in your 'big' numbers only, using a method to clearly show how you worked this out. Balancing Equations	0 5 . 3 Complete the equation for the reaction of rubidium with water. You should balance the equation. $\text{Rb} + \text{H}_2\text{O} \rightarrow \quad + \quad$
5	Biology Higher Photosynthesis/respiration	GCSE Biology Revision "Photosynthesis" GCSE Biology Revision "Respiration"	Bioenergetics - GCSE Combined Science - BBC Bitesize	Light intensity varies during 24 hours. The figure below shows the overall exchange of carbon dioxide and oxygen at different light intensities.  Bright light Dim light No light Explain the overall exchange of carbon dioxide and oxygen at the three conditions.
5	Physics Radiation	GCSE Physics - Why Radiation is Harmful	Write a set of instructions to calculate the radioactivity of an unknown substance. State what equipment is needed. Include Background radiation in your answer	Uses and dangers of radiation - AQA test questions - GCSE Physics - BBC Bitesize
WEEK SIX				
6	Chemistry History of an atom	GCSE Chemistry - History of the Model of the Atom	Create a fact file on the history of an atom, focusing on details of the plum pudding model.	Atoms were originally thought to be tiny spheres that could not be divided. The plum pudding model of the atom was then developed. Figure 1 represents the plum pudding model of the atom. Figure 1  Describe the plum pudding model of the atom. [2 marks]
6	Biology Photosynthesis	GCSE Biology - Photosynthesis	GCSE combined science questions - photosynthesis biology revision - BBC Bitesize	

6	Physics Energy	GCSE Physics - Gravity, Weight and GPE	Be confident using and rearranging this equation	Gravitational Potential Energy Equation - GCSE Physics
		GCSE Physics - Internal Energy and Specific Heat Capacity	Be confident using and rearranging this equation	YEAR 9 SCIENCE Exam sample quesytions on SHC.p
		GCSE Physics - Factors Affecting Gas Pressure	Produce 3 flash cards on this topic	Gases and Pressure Questions and Revision MME

Triple Biology –

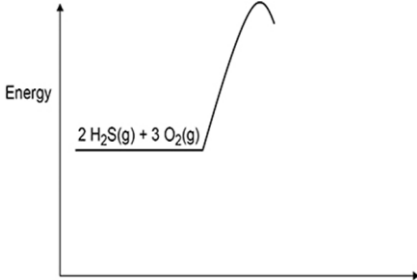
All the above, plus:

	Plant diseases	<u>Plant diseases and pathogens - Higher - Plant disease - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</u>	
	Coronary heart disease	<u>Development of cardiovascular disease - Animal organisation - transport systems - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize</u>	
	vaccinations	<u>Vaccinations - Treating, curing and preventing disease - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize</u>	
	Aseptic technique	<u>How do antiseptics affect the growth of bacteria? - Treating, curing and preventing disease - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</u>	
	Monoclonal antibodies	<u>Production of monoclonal antibodies - Higher Tier - Monoclonal antibodies - Higher - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</u>	

Triple Chemistry-

All the above, plus:

5.5 Temperature change required practical	Temperature Changes - GCSE Science Required Practical	Exothermic & Endothermic Reactions Lesson GCSE Chemistry AQA Higher Triple Cognito	Write the required practical – include the different variables. How can you make this a fair test? Why use a polystyrene cup and not a glass one?
Working Scientifically Watch the six videos linked to the following Variables Systematic errors Precision Uncertainty Random errors Repeatability and reproducibility	GCSE Science Revision "Independent Variable, Dependent Variable, Control Variables"		
5.4 - Making a soluble salt from an insoluble carbonate or oxide.	Making Salts - GCSE Science Required Practical	Acids & Bases Lesson GCSE Chemistry AQA Higher Triple Cognito	Write up the practical and know what the words excess mean Why do you not boil the acid? Why do you leave the crystals to dry out and not continue to heat?

5.5 Calculating bond energies	Bond Energies Lesson GCSE Chemistry AQA Higher Triple Cognito	(d) Figure 2 shows the displayed formula equation for the reaction of hydrogen sulfide with oxygen. Figure 2 $2\text{H}-\text{S}-\text{H} + 3\text{O}=\text{O} \longrightarrow 2\text{H}-\text{O}-\text{H} + 2\text{O}=\text{S}=\text{O}$ The table below shows some of the bond energies. <table border="1"><thead><tr><th>Bond</th><th>H—S</th><th>O=O</th><th>H—O</th><th>S=O</th></tr></thead><tbody><tr><td>Energy in kJ/mol</td><td>364</td><td>498</td><td>464</td><td>X</td></tr></tbody></table> In the reaction the energy released forming new bonds is 1034 kJ/mol greater than the energy needed to break existing bonds. Calculate the bond energy X for the bond. Use Figure 2 and the table above.	Bond	H—S	O=O	H—O	S=O	Energy in kJ/mol	364	498	464	X	(c) Figure 1 shows part of the reaction profile for the reaction. The reaction is exothermic. Complete Figure 1. You should: - complete the profile line - label the activation energy - label the overall energy change. Figure 1 
Bond	H—S	O=O	H—O	S=O									
Energy in kJ/mol	364	498	464	X									
Acid and Alkalis - Weak acids Strong acids. Titration practical	Strong Acids & Weak Acids Lesson GCSE Chemistry AQA Higher Triple Cognito	Titration Practical Lesson GCSE Chemistry AQA Higher Triple Cognito	Put together a mind map or flash cards of the differences between acids and alkalis Know the ions present How to calculate concentration in a titration.										
Metals and alloys	Metallic Bonding Lesson GCSE Chemistry AQA Higher Triple Cognito	GCSE Chemistry Revision "Alloys" (Triple) GCSE Chemistry Revision "Metals and Alloys"	Draw the structure of alloys and metals What are the properties of each? Why are metals better at conducting electricity than alloys?										

[GCSE Chemistry Revision "Introducing Electrolysis"](#)

[GCSE Chemistry Revision "Electrolysis of Aqueous Solutions 1"](#)

Use the above to click on the next 7 videos linking to electrolysis

Draw a diagram of electrolysis
What forms at each electrode?
What would you see?
Write down ionic equations and examples

(c) The table below shows products of the electrolysis of two molten ionic compounds.

Complete the table.

Molten compound	Product at the negative electrode	Product at the positive electrode
Magnesium bromide	Magnesium	_____
Potassium chloride	_____	Chlorine

(2)

(d) The table below shows the products of electrolysis of two molten compounds.

Molten compound	Product at negative electrode	Product at positive electrode
Potassium iodide	Potassium	_____
Zinc bromide	_____	Bromine

Complete the table above.

(2)

TRIPLE Physics

All the above, plus:

Specific latent heat	GCSE Physics - Specific Latent Heat	Define this term and draw a graph showing the SLH of fusion and vaporisation.	Specific Latent Heat Questions and Revision MME
isotopes	Isotopes for AQA GCSE Physics and combined science	Write a 1 sentence definition for an isotope and an ion.	Atoms, isotopes and ions - AQA test questions - GCSE Combined Science - AQA Trilogy - BBC Bitesize
Half life	GCSE Physics Revision "Half Life"	Write a set of instructions on how to calculate half life.	Atoms & Nuclear Radiation AQA GCSE Physics Exam Questions & Answers 2016 [PDF]
Irradiation v contamination	Contamination and irradiation - Radiation and risk - AQA Synergy - GCSE Combined Science Revision - AQA Synergy - BBC Bitesize	Invent a scenario where 1 person is contaminated and 1 is irradiated – who is most at risk and why. How might being exposed to Alpha, Beta or Gamma affect the seriousness of this?	Irradiation vs Contamination - GCSE Physics Revision Notes
GPE v KE	Transfer Between KE & GPE Lesson GCSE Physics AQA Higher Triple Cognito	Draw a swing in motion – explain the energy transfers as the swing slowly comes to a stop.	Energy Calculations - AQA GCSE Physics Revision Notes
Atomic models	GCSE Chemistry - History of the Model of the Atom	Make a timeline of the key points of how the theory of atomic structure has changed.	Multiple choice questions - Sample exam questions - atomic structure - AQA - GCSE Physics (Single Science) Revision - AQA - BBC Bitesize
Gas Temperature and pressure	GCSE Physics Revision "Particle Motion in Gases"	Draw a diagram of a sealed container being heated. Explain using particle theory what might happen?	Gases and Pressure Questions and Revision MME