Science: 10 Week Revision Plan

Date	Topic and actions			Practice Paper
	Biology	Chemistry	Physics	Use Physicsand Mathstutor.com to complete practice questions on each topic. Ensure that you select AQA as the exam board. Speak to your teacher for move practice questions as required.
Week 1: March 17th 2020	Biology Paper 1 Cells During this week you need to revise parts of the cells and what each part does. The organelles are listed below: • Nucleus – Controls the activity of the cell • Mitochondria – Releases energy, the site of aerobic respiration • Cell membrane – Allows substances to move into and out of the cell • Ribosomes – Makes proteins (protein synthesis) You need to know the difference between a eukaryotic cell and a prokaryotic cell. Eukaryotic cell – This has a true nucleus – animal or plant cell Prokaryotic cell – A bacterial cell which does not have a nucleus. Task – Define the following words:	**During each week you should spend some time reviewing the previous weeks revision.** **For each chapter there is a link to BBC Bitesize where you can revise the content and test yourself.** **Once you have done that you should be answering the key questions.** Chapter 6 -Rates of Reaction. https://www.bbc.co.uk/bitesize/guides/zpkp7p3/revision/1 Key Questions: 1. Name the 5 things that can speed up a reaction 2. Using the sentence 'more frequent or successful collisions', explain why they speed up reactions.	**PAPER 1:** Chapter 1 – Energy Memorise the following equations: $\text{kinetic energy} = \frac{1}{2} \times \text{mass} \times \text{speed}^2$ $\text{GPE} = \text{mass} \times \text{gravitational field strength} \times \text{height}$ $\text{power} = \frac{\text{work done}}{\text{time taken}} = \frac{\text{energy transferred}}{\text{time taken}}$ $\text{efficiency} = \frac{\text{useful energy output}}{\text{total energy input}}$ $\text{efficiency} = \frac{\text{useful power output}}{\text{total power input}}$ **Answer these questions:** 1. What are the different energy stores? 2. What is the conservation of energy? 3. What does efficiency mean? 4. Define specific heat capacity. 5. What is a renewable energy source? 6. What is the biggest advantage of **most** renewable energy sources?	

	1. Active transport 2. Osmosis 3. Diffusion Challenge – Where do these take place?	3. Write a method to investigate the rate of reaction with changing concentration. 4. Remember the equation to calculate rate: Change/ time 5. Higher only: describe how changes affect equilibrium		
Week 2: March 23rd	Cell division – Paper 1 Keywords: DNA – Double Helix made from 2 strands. It has 4 bases A, T, C & G. Chromosomes – You have 23 pairs, 46 in total. Mitosis – This is how normal body cells divide. Cells need to divide for growth and repair. Task – Learn the stages of mitosis. Answer the following questions: 1) What is a stem cell? 2) Where do you find stem cells? 3) Why are stem cells good for treating disease?	Chapter 7 Hydrocarbons and crude oil. https://www.bbc.co.uk/bitesize/guides/zxd4y4j/revision/1 You need to learn the names/ formula and diagrams for the first 4 alkanes (methane, ethane, propane, butane) Key Questions: 1. What is a hydrocarbon? 2. Describe the process of fractional distillation of crude oil. 3. Name the different properties of long and short chain hydrocarbons.	PAPER 1: Chapter 2 – Electricity Memorise these equations: charge flow = current × time potential difference = current × resistance total resistance = resistance of component 1 + resistance of component 2 power = current × potential difference power = $(\text{current})^2$ × resistance energy transferred = power × time energy transferred = charge flow × potential difference Answer these questions: 1. How does current behave in a series circuit? 2. How does potential difference behave in a parallel circuit? 3. Draw circuit symbols for an LED, Diode, Thermistor, LDR, Cell, Battery and Fuse. 4. Draw the I-V characteristic graphs for a resistor, filament bulb and diode.	

	4) What are the two types of stem cells? 5) Why do some people not agree with stem cell treatments?	4. What is the difference in complete and incomplete combustion of a hydrocarbon fuel? 5. Why do we carry out cracking? 6. How is cracking done?	5. What is the National grid? 6. What is the role of transformers in the National grid?	
Week 3: March 30th	Paper 1 – Organisation part 1 You will need to revise the following areas: 1 – The digestive system – Can you label it? 2 – The heart – Can you label it? 3 – Enzymes – Can you name all of the enzymes and what they do? Key Questions: 1. Can you describe the structure of an artery? 2. Can you describe the structure of a vein? 3. Can you describe the structure of a capillary? 4. What is the function of a valve? 5. What does it mean by double circulatory system? 6. Can you name the parts of the blood?	Chapter 8 Chemical Analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6 Key Questions: 1. What is a pure substance? 2. What is a formulation? Give some examples. 3. How can you test if a substance is pure? 4. What is chromatography used for and how is it carried out? 5. How are Rf values calculated? 6. What are the chemical test for oxygen; hydrogen and carbon dioxide.	PAPER 1: Chapter 3 – Particle model of matter Memorise this equation: $\text{density} = \frac{\text{mass}}{\text{volume}}$ Answer these questions: 1. Describe how to calculate density using the displacement method. 2. Describe how a solid will change state into a liquid and then a gas. Ensure you refer to the kinetic energy and spacing of the particles. 3. Define the following key terms: Specific latent heat, sublimation, evaporation, freezing and condensation. 4. Describe the motion of gas particles. 5. Describe how a gas will create pressure on the walls of a container.	

Week 4: April 6th	Paper 1 – Organisation part 2 Learn the parts of the plant: • Waxy Cuticle • Upper epidermis • Palisade mesophyll • Spongy mesophyll • Guard cells • Stomata Key Questions: 1. Why is a leaf an organ? 2. What is the function of the stomata? 3. How is the spongy mesophyll adapted for its function? 4. What is the function of the phloem? 5. What is the function of the xylem?	Chapter 9- The atmosphere https://www.bbc.co.uk/bitesize/topics/zysvv9q This chapter is revision from your Year 9 work. Key Questions: 1. How has the atmosphere changed since the formation of the Earth? 2. Why did it change? 3. How is the atmosphere changing more recently? 4. Why is it changing? 5. How can we slow down this change? 6. What are the consequences of this change?	PAPER 1: Chapter 4 – Radioactivity There are no equations to memorise for this topic. **Ensure you can still remember the equations above.** Answer these questions: 1. Describe the current structure of the atom including relative mass and charges of each sub-atomic particle. 2. Describe how Rutherford's experiment led to his model of the atom. 3. What are the three types of radiation and what is their penetration power? 4. Define half-life and explain how you would calculate this from a decay graph. 5. Describe the difference between contamination and irradiation. 6. Triple only: Describe the process of **Nuclear Fission** and compare this to **Nuclear Fusion.**	
Week 5: April 13th	Paper 1 – Communicable and non-communicable disease. You need to know the following types of pathogens: • Bacteria • Fungi • Virus • Protist			

	Bacteria = Salmonella & Gonorrhoea Virus = HIV, Measles & TMV Fungal = Athletes foot Rose black spot Protist = Malaria You need to learn the symptoms of all diseases. Drug treatments – You need to revise the stages of clinical trials: 1. Testing on healthy cells and tissues 2. Testing on small animals 3. Testing on healthy volunteers 4. Testing on volunteers with the disease Key Questions 1. What is a placebo? 2. What is a double-blind trial?			

	3. Why do we test new drugs? 4. What is a vaccination? 5. How does your body prevent you against disease? TRIPLE – Explain what monoclonal antibodies are?			
Week 6: April 20th				
Week 7: April 27th 2020				
Week 8: May 4th 2020				
Week 9: May 11th 2020				
Week 10: May 18th 2020				