

YEAR 9 (A- F) – PHYSICS

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Google classroom

Topic: SP 5d – Electromagnetic waves

Resources: Student text book, Worksheet, GCSE science free lesson video, power point.

Date	Lesson	Topic	Mode of Teaching	
28 th Feb. Sunday (Girls)	4	Assessment 1 SP 4d - Waves crossing boundaries 4e - Ears and hearing 4f - Ultrasound	Zoom	Instruction will be given to the students to complete the Assessment.
28 th Feb. Sunday (Boys)	8			
2 nd March Tuesday (Girls)	3	Learning Objective : Recall that all electromagnetic waves are transverse, that they travel at the same speed in a vacuum. Explain, with examples, that all electromagnetic waves transfer energy from source to observer. Learning outcome : Understand that all electromagnetic waves are transverse and that they travel at the same speed in a vacuum Describe the transfer of energy by electromagnetic waves.	Zoom	Teacher uses power point presentation that contains interactive questions.
4 th March Thursday (Boys)	5			
2 nd March Tuesday (Girls)	4	Learning Objective : Recall that our eyes can only detect a limited range of frequencies of electromagnetic radiation. Explain the effects of differences in the velocities of electromagnetic waves in different substances. Learning outcome: State the approximate value for the speed of electromagnetic waves. Recognize the range of electromagnetic waves that our eyes can detect. Describe an effect caused by the different velocities of electromagnetic waves in different substances	Zoom	Teacher uses power point presentation that contains interactive questions.
4 th March Thursday (Boys)	6			

YEAR 10 (A-F) - Physics

WEEK 27 (28th Feb to 4th March)

Topic: Momentum and crash hazards

Lesson Objective: SP 2i Crash Hazards
SP 2g Stopping distances

Resources: Student text book, worksheet file, interactive power point from Board works and Online animations

Worksheets and Zoom link will be posted in google classroom

Date	Lesson	Lesson objectives & Learning outcome	Mode of Teaching	
28 th Feb Sunday (Boys)	1	L.O: Assessment	Zoom/ GM	Teacher will post the question paper in the google classroom and students will turn in their scanned answersheets.
28 th Feb Sunday (girls)	2	Learning outcome: The students will be assessed on the topics <ul style="list-style-type: none"> • 2a-Resultant forces 2b-Newton's first law, 2c- Mass and weight, 2d- Newton's second law, 2e- Newton's third law 		
2 nd March Tuesday (Boys)	5	L.O: Explain the dangers caused by large decelerations and estimate the forces involved in typical situations on a public road.	Zoom/ GM	Teacher explains the dangers due to large decelerations and discusses the forces involved in collisions
3 rd March Wednesday (girls)	5	Learning outcome: Students will be able to <ul style="list-style-type: none"> • Describe the dangers caused by large decelerations. • Explain why large decelerations cause dangers. • Recall some typical forces involved in road collisions. • Use knowledge of changes in momentum to estimate the forces involved in road collisions. 		
2 nd March Tuesday (Boys)	6	L.O: Research n safety features employed in modern cars	GC	Students in groups research on the safety features employed in modern cars and explain feature helps during a crash in terms of momentum change and turn in their work
3 rd March Wednesday (girls)	6	Learning outcome: Students will research and present their findings on the topics Group 1: Airbags Group 2: Crumple zones Group 3: Seat belt Group 4 : Head rest		

4th March Thursday (Boys)	4	L.O : Explain methods of measuring human reaction times and recall typical results.	Zoom/ GM	Teacher provides instructions for testing reaction times using online application and students will work out their reaction times and compare it.
4th March Thursday (Girls)	1	Learning outcome: Students will be able to <ul style="list-style-type: none"> Describe how human reaction times are measured. Recall typical human reaction times 		

Online reaction time test <https://faculty.washington.edu/chudler/java/redgreen.html>

YEAR 11 (A- F) – PHYSICS GCSE

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Google classroom

Topic:– CP 7 Investigating water and paper 1 topics

Resources: Text book, Worksheets, GCSE science free lesson video& power points.

Date	Lesson	Topic	Mode of Teaching	
28 th Feb Sunday (Girls)	3	Learning Objective : Revise paper 1 topics Astronomy and radioactivity	Zoom	Teacher uses power point presentation that contains interactive questions and online simulation
1 st March Monday (boys)	4	Learning outcome: Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.		
1 st March Monday (Girls)	1	Learning Objective : To investigate how the temperature of ice changes as it melts.	Zoom	Teacher uses a handout that contains productive questions
2 nd March Tuesday (Boys)	1	Learning outcome: Know the safety measures to do the experiment safely Present results as a line graph and interpret it Evaluate how well the experiment works.		

1 st March Monday (Girls)	2	Learning Objective : To find specific heat capacity of water. Learning outcome: Know the safety measures to do the experiment safely Record the result by doing the experiment virtually Evaluate how well the experiment works.	GC	Teacher uses power point presentation that contains interactive questions and online simulation
2 nd March Tuesday (Boys)	2			
3 rd March Wednesday (girls)	1	Learning Objective : Revise paper 1 topics Forces and motion Learning outcome: Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.	Zoom	Teacher uses worksheet that contains productive questions
3 rd March Wednesday (boys)	7			
4 th March Thursday (girls)	3	Learning Objective : Revise paper 1 topics Waves and energy Learning outcome: Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.	Zoom	Teacher uses worksheet that contains productive questions
4 th March Thursday (boys)	7			

YEAR 11 G/H (IGCSE) – PHYSICS

WEEK 27 (28th Feb to 4th March)

Topic: Revision

Lesson Objective: Revise the concepts sound waves, energy resources and energy transfers, solids, liquids and gases.

Date	Lesson	Learning objective and Success Criteria	Mode of teaching	
1 st March Monday (boys & girls)	8	LO- To reinforce the concepts sound waves, energy stores and energy transfers Learning Outcome- <ul style="list-style-type: none"> • Recollect the knowledge about sound waves, energy stores and transfers. • Apply the concept by solving the questions. 	Zoom/GM	Teacher uses power point presentation to revise the concepts sound waves, energy resources and energy transfers.
2 nd March Tuesday (boys & girls)	7 & 8	LO- To solve the questions based on paper 1 topics. Learning outcome <ul style="list-style-type: none"> • Reinforce the concepts based on paper 1 topics • Apply the concepts. 	Zoom/GM	Teacher post the questions in GC and students will solve it.
3 rd March Wednesday (boys & girls)	8	LO- To reinforce the concepts solids, liquids and gases. Learning Outcome- <ul style="list-style-type: none"> • Recollect the knowledge about solids, liquids and gases. • Apply the concept by solving the questions. 	Zoom/GM	Teacher uses power point presentation to revise the concepts solids, liquids and gases.
4 th March Thursday (boys & girls)	2	LO- To solve the problems based on the concepts forces and motion, waves, energy and energy transfers, solids, liquids and gases. . Learning Outcome- <ul style="list-style-type: none"> • Use and apply the equations. • Solve the problems. 	GC	Instructions will be given to solve the problem.

YEAR 12 A/ B –PHYSICS

WEEK 27 (28th Feb to 4th March) - (3 lessons)

Work sent to the students through: Google classroom / Zoom Learning Platform

Topic: Optics

Resources: Student text book, worksheet file, interactive power point from Board works and Online PHET simulations

Date	Class	Lesson	Lesson objectives & Learning outcomes	Mode of teaching	
Feb 28 th Sunday	12 A	8	<p><u>Learning objectives:</u> State laws of reflection. Draw ray and wave front diagrams for reflection.</p> <p><u>Learning Outcomes :</u></p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
March 2 nd Tuesday	12 B	6	<p>Recalls reflection of waves. Use law of reflection in different situations Differentiates between normal and oblique incidence. Differentiates between wave front diagrams and ray diagrams</p>		
March 1 st Monday	12 A	1	<p><u>Learning objectives:</u> Defines refraction of light waves as the change in speed.</p> <p><u>Learning Outcomes :</u></p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
March 4 th Thursday	12B	3	<p>Identifies the change in wavelength and speed of a wave in a medium of different density. Draw and interpret ray diagrams for refraction.</p>		
March 1 st Monday	12 A	2	<p><u>Learning objectives:</u> Defines refraction of light waves as the change in speed.</p> <p><u>Learning Outcomes:</u> Define refractive index of a material. Calculate refractive index of a material.</p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives Lesson carried over.
March 4 th Thursday	12B	4			

YEAR 12 A/ B – PHYSICS

WEEK 27 (28th Feb to 4th March) - 3 lessons for both batches

Work sent to the students through: Whatsapp group / Google classroom / Zoom Learning Platform

Topic: 5.21 Wave phase and superposition

Resources: Student text book, worksheet file, interactive power point from Board works and Online animations

Date & Class	Lesson	Lesson objectives & Learning outcomes	Mode of teaching	
28 th Feb Sunday - 12 B	6	L.O – Explain how pulse-echo techniques allow the measurements of distances. Learning outcomes- <ul style="list-style-type: none"> • Describe pulse – echo techniques used in radar and sonar. • Discuss the pulse-echo techniques used by bats to locate its prey and the use of ultrasound to form image. • Use the equation $v = 2d/t$ in numerical problems. 	Zoom	Teacher uses ppt, board works and videos to explain pulse-echo techniques.
2 nd March Tuesday - 12 A	4			
28 th Feb Sunday - 12 B	7	L.O – Describe an experiment to determine the speed of sound in air. <u>CORE PRACTICAL 6:</u> Determine the speed of sound in air using a 2-beam oscilloscope, signal generator, speaker and microphone. Learning outcomes- <ul style="list-style-type: none"> • Design an experiment to investigate the speed of sound in air. • Identify the appropriate apparatus. • Plan the procedure. • State how the results will be used. • Consider the uncertainties involved. 	Zoom	Teacher explains the use of oscilloscope to measure the time period of a wave. Breakout session in groups to plan the experiment to measure the speed of sound in air.
4 th March Thursday - 12 A	1			
3 rd March Wednesday - 12 B	3	<ul style="list-style-type: none"> • Assessment • Topics: Moments Momentum Conservation of momentum • Learning outcome: Students will be able to reinforce the concepts learned by answering the questions in the assessment. 	Zoom	Instruction will be given to the students to complete the Assessment.
4 th March Thursday - 12 A	2			

HOMEWORK: Complete TB ques: Pg 156

YEAR 13 A/ B –PHYSICS

WEEK 27 (28th Feb to 4th March) - 3 lessons for both batches

Work sent to the students through: Whatsapp group / Google classroom / Zoom Learning Platform

Topic: - 12.1 Space

Resources: Student text book, interactive power point, Board works, worksheet file and online videos/animations

Date	Lesson	Lesson objectives & Learning outcome	Mode of teaching	
1 st March Monday - 13 A	1	Learning Objective: Explain stellar evolution – describe the life cycle of stars.	Zoom	Teacher uses ppt, board works to explain the various stages in the life cycle of a star.
2 nd March Tuesday - 13 B	6	Learning Outcome: <ul style="list-style-type: none"> • Describe the evolution of stars of similar mass to the Sun through the following stages: <ul style="list-style-type: none"> • nebula • protostar (main sequence) • red giant • white dwarf ...black dwarf • Describe the evolution of stars with a mass larger than the Sun. <ul style="list-style-type: none"> • supergiant • supernova • black hole • neutron star 		
1 st March Monday - 13 A	2	L.O – Sketch and interpret a simple Hertzsprung- Russell diagram that relates luminosity and temperature.	Zoom	Teacher uses ppt, board works to explain the H-R diagram and to locate the position of a star on the diagram
4 th March Thursday - 13 B	3	Learning outcomes- <ul style="list-style-type: none"> • Define the properties of main sequence stars. • Describe the logarithmic scale of luminosity and inverted scale of temperature on HR diagram. • Use HR diagram to explain the life cycle of stars • Locate a star on HR diagram, given its features. • Predict the transition of a star's position on HR diagram as it undergoes different stages in its life cycle. 		
2 nd March Tuesday - 13 A	5	L.O – Recognise and use the expressions $z = \Delta\lambda/\lambda \approx \Delta f/f \approx v/c$ for a source of electromagnetic radiation moving relative to an observer	Zoom	Teacher uses power point presentation to explain the

4 th March Thursday - 13 B	4	Learning outcomes- <ul style="list-style-type: none"> • Define the Doppler effect and explain its application to the light from other stars and galaxies. • Understand how the movement of a source of waves relative to an observer/detector gives rise to a shift in frequency (Doppler effect). • Determine red shift and hence the speed of a source of electromagnetic radiation moving relative to an observer using the expressions $z = \Delta\lambda/\lambda \approx \Delta f/f \approx v/c$. • Use the equation for red shift of light $z = \Delta\lambda/\lambda \approx \Delta f/f \approx v/c$. 		terms Doppler effect and red-shift.
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HOMEWORK: Complete the textbook Qs: Page 196-197 and worksheet file questions

YEAR 13 A/ B –PHYSICS

WEEK 27 (28th Feb to 4th March) - (3 lessons)

Work sent to the students through: Google classroom / Zoom Learning Platform

Topic: - Oscillations

Date	Classes	Lessons	Lesson objectives & Learning outcome	Mode of teaching	
March 1 st Monday	13 B	6	Learning objectives: Complete the Investigation of the simple harmonic oscillation of a mass and spring system <i>(lesson carried over)</i>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
March 2 nd Tuesday	13A	4	Learning Outcomes : Investigate an experiment to find the spring constant of a spring from SHM. Use the data collected to find Spring constant K		
March 1 st Monday	13 B	7	Learning objectives: Recall that the total energy of an undamped simple harmonic system remains constant and recognise and use expressions for total energy of an oscillator	zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
March 4 th Thursday	13A	1	Learning Outcomes : Derive the equation for the KE and total energy and state how the total energy of an oscillating system depends on the amplitude of motion. Recognise the points in a pendulum oscillation where the KE or PE is maximum/minimum.		

			<p>Sketch or identify a graph of kinetic or potential energy as a function of time.</p> <p>Identify points in the motion where this energy is all potential or all kinetic.</p>		
<p>March 3rd Wednesday</p>	13 B	3	<p>Learning objectives:</p> <p>Distinguish between free, damped and forced oscillations</p> <p>Define resonance</p>	zoom	<p>Teacher uses GC and breakout sessions for students to collaborate and attain the objectives.</p>
<p>March 4th Thursday</p>	13 A	2	<p>Learning Outcomes :</p> <p>Define free and forced oscillations</p> <p>Describe and explain resonance</p> <p>Construct a graph that shows the amplitude with which a simple harmonic oscillator will vibrate, against the driving frequency applied to it.</p>		