

YEAR 9 A - F – PHYSICS

WEEK 26 - (21st Feb to 25th Feb)

Work Sent to the students through Google classroom

Topic: SP4 g Infrasound

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

Date	Lesson	Topic	Mode of Teaching	
21 st Feb. Sunday (Girls)	4	<p>Learning objective: Recall that sounds with frequencies less than 20 hertz, is known as infrasound.</p> <p>Describe what is meant by seismic waves (P waves and S waves).</p>	Zoom	Teacher uses power point presentation that contains interactive questions.
21 st Feb. Sunday (Boys)	8	<p>Describe how seismic waves provide evidence about the internal structure of the Earth.</p> <p>Learning outcome: Recall that seismic waves are infrasound.</p> <p>State the differences between P waves and S waves.</p> <p>Realise that seismic waves can be reflected or refracted at boundaries between crust, mantle, outer core and inner core.</p>		
23rd Feb. Tuesday (Girls)	3	<p>Learning Objective : Describe uses of infrasound in exploration of the Earth's core.</p>	Zoom	Teacher uses power point presentation that contains interactive questions.
25 th Feb. Thursday (Boys)	5	<p>Learning outcome : Explain how study of propagation of seismic waves (both P and S) gives information on the layered structure of earth. Draw a diagram to indicate the shadow zone for P and S waves.</p>		

23 rd Feb. Tuesday (Girls)	4	Learning Objective : Complete the worksheet posted in GC	GC	Instruction will be given in GC to complete the worksheet.
25 th Feb. Thursday (Boys)	6	Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by completing the worksheet.		

YEAR 10 A-F - PHYSICS

WEEK 26 - (21st Feb to 25th Feb)

Topic: Momentum and crash hazards

Lesson Objective: SP 2f Momentum
SP 2i Crash Hazards

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	
21 st Feb Sunday (Boys)	1	L.O: Define momentum, recall and use the equation $p = m \times v$. Use Newton's Second Law $F = (mv - mu) / t$.	Zoom/ GM	Teacher uses a powerpoint presentation to explain the concept of momentum. Introduces the relationship $p = mv$ and Force = change of momentum / time taken. Works out numerical using the relations
21 st Feb Sunday (girls)	2	Learning outcome: The students will be able to <ul style="list-style-type: none"> • Describe the factors that affect the momentum of an object. • Calculate the momentum of moving objects. • Calculate the force needed to produce a change in momentum in a given time. 		

<p>23rd Feb Tuesday (Boys)</p> <p>24th Feb Wednesday (girls)</p>	<p>5</p> <p>5</p>	<p>L O.</p> <ul style="list-style-type: none"> • Recall and apply Newton’s Third Law both to equilibrium situations and to collision interactions and relate it to the conservation of momentum in collisions. • Describe examples of momentum in collisions <p>Learning outcome: Students will be able to</p> <ul style="list-style-type: none"> • Use the idea of conservation of momentum to calculate velocities of objects after collisions. • Describe examples of momentum in collisions 	<p>Zoom/ GM</p>	<p>The teacher uses a powerpoint presentation to explain conservation of linear momentum. Discuss some real examples, snooker ball collisions, Newtons Cradle etc</p>
<p>23rd Feb Tuesday (Boys)</p> <p>24th Feb Wednesday (girls)</p>	<p>6</p> <p>6</p>	<p>L.O: Solve the worksheet posted GC</p> <p>Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by solving the worksheet</p>	<p>GC</p>	<p>Teacher will post the worksheet in the google classroom. Students will solve and turn in the worksheet</p>
<p>25th Feb Thursday (Boys)</p> <p>25th Feb Thursday (Girls)</p>	<p>4</p> <p>1</p>	<p>L.O : Explain the dangers caused by large decelerations and estimate the forces involved in typical situations on a public road.</p> <p>Learning outcome: Students will be able to</p> <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. 	<p>Zoom/ GM</p>	<p>Teacher states third law of motion and differentiates balanced forces and action reaction pairs. Using a ppt shows images of equilibrium situations and asks students to identify action-reaction pairs and balanced forces.</p>

YEAR 11 (A- F) – PHYSICS GCSE

WEEK 26 - (21st Feb to 25th Feb)

Work Sent to the students through Google classroom

Topic:– CP 4 Radiation and Revision

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

Date	Lesson	Topic	Mode of Teaching	
21 st Feb Sunday (Girls)	3	Learning Objective : To investigate the effect of different coloured surfaces on the amount of energy transferred by radiation from a boiling tube of hot water.	Zoom	Teacher uses power point presentation that contains interactive questions and online simulation
22 th Feb Monday (boys)	4	Learning outcome: Predict the effect of mat black and silver coloured surfaces on the amount of energy transferred by radiation from a boiling tube of hot water, Discuss control variables and plan an investigation to decide which colour is the best emitter of heat radiation.		
22 th Feb Monday (Girls)	1&2	Learning Objective : To investigate the effect of different coloured surfaces on the amount of energy transferred by radiation from a boiling tube of hot water.	Zoom	Teacher uses a handout that contains productive questions
23 rd Feb Tuesday (Boys)	1&2	Learning outcome: Draw a graph using the secondary data given Analyse the result by identifying the patterns in the data and shape of the graph. Draw a conclusion from the result they obtained Evaluate how well the experiment works .		
24 th Feb Wednesday – (girls)	1	Learning Objective: Revise Conservation of energy Waves Electromagnetic spectrum	Zoom	Teacher uses worksheet that contains productive questions
24 th Feb. Wednesday – (boys)	7	Learning outcome : Recall The movement of energy between different stores. Examples of efficiency in energy transfers. Thermal insulation and conductivity. Sources of energy and their uses..		

		Describing longitudinal and transverse waves Measuring the speed of waves in liquids and solids Waves reflection, refraction, transmission, and absorption by different materials Sound waves- ear and hearing, uses of ultrasound and infrasound Electromagnetic spectrum		
25 th Feb Thursday – (girls)	3	Learning Objective: Assessment Conservation of energy Waves	GC	Teacher uses assessment sheet that contains productive questions
25 th Feb Thursday – (boys)	7	Electromagnetic spectrum Learning outcome : Students solve different leveled questions based on conservation of energy, waves and electromagnetic spectrum		

YEAR 11 G/H (IGCSE) – PHYSICS

WEEK 26 - (21st Feb to 25th Feb)

Work sent to the students through Google classroom

Topic: Unit 8 Astrophysics

Lesson Objective: Describe HR diagram

Reinforce the topic Astrophysics by discussing text book and worksheet file questions.

Resources: Text book, Worksheet file, interactive power point and online simulations.

Date	Lesson	Learning objective and Success Criteria	Mode of teaching	
22 nd Feb Monday (boys & girls)	8	LO- To draw the main components of the Hertzsprung–Russell diagram (HR diagram) Learning Outcome- <ul style="list-style-type: none"> • Describe HR diagram. • Draw the main components of the Hertzsprung–Russell diagram (HR diagram) 	Zoom/GM	Teacher uses power point presentation to describe the HR diagram.
23 rd Feb Tuesday (boys & girls)	7	LO- To discuss the worksheet file and text book question - answers. Learning outcome <ul style="list-style-type: none"> • Reinforce the concepts stellar evolution and HR diagram 	Zoom/GM	Teacher uses power point presentation to discuss the question - answers
23 rd Feb Tuesday (boys & girls)	8	LO- To reinforce the topic ‘Astrophysics’ by solving the unit questions. Learning Outcome- <ul style="list-style-type: none"> • Recollect the knowledge about the concepts motion in universe, stellar evolution, Doppler effect and Bing bang theory and it’s evidences. • Reinforce the concepts by solving the questions. 	GC	Instructions will be given to solve the questions.
24 th Feb Wednesday (boys & girls)	8	LO- To discuss the worksheet file and text book question - answers. Learning Outcome- <ul style="list-style-type: none"> • Reinforce the concepts Doppler effect and the evidence that supports Big Bang theory. 	Zoom/GM	Teacher uses power point presentation to discuss the question - answers

25 th Feb Thursday (boys & girls)	2	AFL Topics unit 8.26- Motion in universe unit 8.27- Stellar Evolution unit 8.28- Cosmology	Zoom/GM	Questions will be in google form.
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H.W- Research work on dark energy. (Thursday 25/2/2021)

YEAR 12 A/ B –PHYSICS

WEEK 26 - (21st Feb to 25th Feb) - (3 lessons)

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

Topic: Electrical circuits

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 21st Sunday	12 A	8	<u>Learning objectives:</u> Review the worksheet file questions on graphical analysis of emf and r. Research on Practical effects of internal resistance.	GC	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
Feb 23 rd Tuesday	12 B	6	<u>Learning Outcomes :</u> Self review of the worksheet done. Realise why It's better to turn the headlamps off when starting the car. How can we prevent EHT supplies giving the user an unpleasant shock while working in school laboratories?		
Feb 22 nd Monday	12 A	1	<u>Learning objectives:</u> Peer checks the research on practical effects of internal resistance.	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
Feb 25 th Thursday	12B	3	<u>Learning Outcomes :</u> Realise how to calculate current flowing in a circuit while recharging a dead battery Complete the worksheet file questions on the topics done.		

Feb 22 nd Monday	12 A	2	<p><u>Learning objectives:</u> Describe maximum power transfer theorem qualitatively.</p> <p><u>Learning Outcomes:</u> Realise that power transferred from a cell is not constant. Recognize that maximum power is transferred when the external load resistance is equal to internal resistance.</p> <p>Recognize that efficiency of a cell is maximum when $R \gg r$.</p> <p>Compare the internal resistances of car battery, dry cell and E.H.T supply.</p> <p>Predict the effect of using two or more cells in series and parallel in a circuit.</p> <p>Explore the effect of internal resistance on efficiency and safety.</p>	Zoom	<p>Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives</p> <p>Lesson carried over.</p>
Feb 25 th Thursday	12B	4			

YEAR 12 A/ B – PHYSICS

WEEK 26 - (21st Feb to 25th Feb) - 3 lessons for both batches

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

Topic: 5.1 Basic waves

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	
21 st Feb Sunday - 12 B	6	L.O – Define and use the terms <i>displacement, amplitude, frequency, period, speed and wavelength</i> Learning outcomes- <ul style="list-style-type: none"> • Distinguish between mechanical and electromagnetic waves. • Define the terms <i>displacement, amplitude, wavelength, period, frequency</i> and <i>speed of a wave</i>. • Draw and interpret displacement time graphs for wave motion and label time period on it. • Draw and interpret displacement distance graphs for wave motion and label wavelength on it. 	Zoom	Teacher uses ppt, board works and online simulation - Discuss waves on the sea; waves in ropes and slinky springs, looking at displacement-distance and displacement-time graphs of waves. Label relevant wave terms
23 rd Feb Tuesday - 12 A	4			
21 st Feb Sunday - 12 B	7	L.O – Deduce, from the definitions of speed, frequency and wavelength, the wave equation $v = f\lambda$	Zoom	Teacher provides worksheet with plenty of practice examples where the wavelength is given in mm/cm/nm needing conversion, and the frequency is given in kHz, MHz or GHz.
25 th Feb Thursday - 12 A	1	Learning outcomes- <ul style="list-style-type: none"> • Derive from the definitions of speed, frequency and wavelength, the wave equation $v = f\lambda$ • Use equations $v=d/t$, $v = f\lambda$ and $f= 1/T$ in numerical and graphical questions. 		
24 th Feb Wednesday - 12 B	3	L.Objective - Compare transverse and longitudinal waves	Zoom	Students analyse and interpret graphical representations of transverse and longitudinal waves Students build a table to compare and contrast transverse and longitudinal waves, including key words and giving examples of each.
25 th Feb Thursday - 12 A	2	Learning outcome: <ul style="list-style-type: none"> • Describe longitudinal waves with examples. • Describe the propagation of a sound wave using compressions and rarefactions. • Describe transverse waves with examples. • Identify the different regions of the electromagnetic spectrum in terms of wavelength or frequency. 		

HOMEWORK: Complete TB ques: Pg 150-151 (exam style questions)

YEAR 13 A/ B –PHYSICS

WEEK 26 - (21st Feb to 25th Feb) - 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	
22 nd Feb Monday - 13 A	1	Learning Objective: Use Stefan-Boltzmann equation $L = \sigma T^4 \times \text{surface area}$, for black body radiators	Zoom	Teacher uses ppt, board works to explain the black body radiator in astronomy
23 rd Feb Tuesday - 13 B	6	Learning Outcome: <ul style="list-style-type: none"> • Define a black body radiator in astronomy and interpret radiation curves for such a radiator. • State and explain Stefan-Boltzmann law for black body radiators • Use the expression $L = \sigma T^4 \times \text{surface area}$, (for a sphere $L = 4\pi r^2 \sigma T^4$) 		
22 nd Feb Monday - 13 A	2	L.O – Use Wien's law $\lambda_{\max} T = 2.898 \times 10^{-3} \text{ mK}$ for black body radiators	Zoom	Teacher uses ppt, board works to explain the black body radiation curves for different temperatures
25 th Feb Thursday - 13 B	3	Learning outcomes- <ul style="list-style-type: none"> • State and explain Wein's law for black body radiators • Recognise and use the expression $\lambda_{\max} T = 2.898 \times 10^{-3} \text{ mK}$ for black body radiators • Investigate energy output – wavelength graphs for black body radiators at different temperatures. 		
23 rd Feb Tuesday - 13 A	5	L.O – Stellar classification- describe how stars can be classified.	Zoom	Teacher uses power point presentation to describe how stars can be classified.
25 th Feb Thursday - 13 B	4	Learning outcomes- <ul style="list-style-type: none"> • Understand how stars can be classified according to their colour. • Know that a star's colour is related to its surface temperature 		

HOMEWORK: Complete the textbook Qs: Page 175 and worksheet file questions

YEAR 13 A/ B –PHYSICS

WEEK 26 - (21st Feb to 25th Feb) - (3 lessons)

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

Topic: - Oscillations

Date	Class	Lesson	Lesson objectives & Learning outcome	Mode of teaching	
Feb 22 nd Monday	13 B	6	<p>Learning objectives: Discuss the answers for the worksheet file questions given</p> <p>Learning Outcomes : Students will solve the questions to identify points in the motion where the velocity achieves its maximum positive or negative value</p> <p>Identify the gradient of a-x graph as ω^2</p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
Feb 23 rd Tuesday	13A	4	<p>Learning objectives: Investigate the simple harmonic oscillation of a mass and spring system</p> <p>Learning Outcomes : Prove that a mass at the end of a spring will execute SHM and identify the factors on which the time period (frequency) of oscillation of mass and spring system depend. Show that the period of a loaded spring is given as $T = 2\pi\sqrt{(m/k)}$</p> <p>Investigate an experiment to find the spring constant of a spring from SHM.</p>	zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
Feb 22 nd Monday	13 B	7	<p>Learning objectives: Investigate the simple harmonic oscillation of a simple pendulum</p> <p>Learning Outcomes : Prove that a pendulum bob will execute SHM and identify the factors on which the time period (frequency) of oscillation of pendulum depend. Show that the period of a pendulum is given as $T = 2\pi\sqrt{(L/g)}$.</p> <p>Investigate an experiment to find the gravitational field strength (g) using SHM of pendulum</p>	zoom	Teacher uses GC and breakout sessions for students to collaborate and attain the objectives.
Feb 25 th Thursday	13A	1			
Feb 24 th Wednesday	13 B	3	<p>Learning objectives: Investigate the simple harmonic oscillation of a simple pendulum</p> <p>Learning Outcomes : Prove that a pendulum bob will execute SHM and identify the factors on which the time period (frequency) of oscillation of pendulum depend. Show that the period of a pendulum is given as $T = 2\pi\sqrt{(L/g)}$.</p> <p>Investigate an experiment to find the gravitational field strength (g) using SHM of pendulum</p>	zoom	Teacher uses GC and breakout sessions for students to collaborate and attain the objectives.
Feb 25 th Thursday	13 A	2			