

## YEAR 9 (A- F) – PHYSICS

**WEEK 31 (18<sup>th</sup> April to 22<sup>nd</sup> April)**

**Work Sent to the students through Google classroom**

**Topic: SP 5i – EM radiation dangers & SP 5g – Radiation and temperature**

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

Date	Lesson	Lesson objectives & Learning outcomes	Mode of Teaching	
18 <sup>th</sup> April Sunday (Girls)	4	<p><b><u>Learning objectives:</u></b></p> <p>Discuss the potential danger associated with an electromagnetic wave increases with increasing frequency.</p> <p>Describe the harmful effects on people of excessive exposure to electromagnetic radiation.</p> <p><b><u>Learning Outcomes:</u></b></p> <p>Describe how the potential danger of electromagnetic radiation depends on its frequency.</p>	Zoom	Teacher uses power point presentation that contains interactive questions..
18 <sup>th</sup> April Sunday (Boys)	8	<p>Explain the harmful effects on people of excessive exposure to electromagnetic radiation, including:</p> <p>(a) microwaves: internal heating of body cells</p> <p>(b) infrared: skin burns</p> <p>(c) ultraviolet: damage to surface cells and eyes, leading to skin cancer and eye conditions</p> <p>(d) X-rays and gamma rays: mutation or damage to cells in the body.</p>		
20 <sup>th</sup> April Tuesday (Girls)	3	<p><b><u>Learning objectives:</u></b></p> <p>Recognize that all bodies emit radiation that the intensity and wavelength distribution of any emission depends on their temperature.</p> <p>Discuss what happens to a body if the average power it radiates is less or more</p>		Teacher uses power point presentation that contains interactive questions.

<p>22<sup>nd</sup> April Thursday (Boys)</p>	<p>5</p>	<p>than the average power that it absorbs.</p> <p>Explain how the temperature of the Earth is affected by factors controlling the balance between incoming radiation and radiation emitted.</p> <p><b><u>Learning outcomes:</u></b></p> <p>Recall how the intensity and wavelength of emitted radiation depends on the temperature of the body.</p> <p>Explain what happens to the temperature of a body when the average power radiated is not balanced by the average power absorbed.</p> <p>Describe the factors that affect the energy absorbed and radiated by the Earth.</p>	<p>Zoom</p>	
<p>20<sup>th</sup> April Tuesday (Girls)</p> <p>22<sup>nd</sup> April Thursday (Boys)</p>	<p>4</p> <p>6</p>	<p><b><u>Learning Objective :</u></b></p> <p>Complete the worksheet posted in GC</p> <p><b><u>Learning outcome:</u></b></p> <p>Students will be able to reinforce the concepts learned in the previous lesson by completing the worksheet.</p>	<p>GC</p>	<p>Instruction will be given in GC to complete the worksheet.</p>

## YEAR 10 A-F - PHYSICS

**WEEK 31 (18<sup>th</sup> April to 22<sup>nd</sup> April)**

**Topic:** Particle Model

**Lesson Objective:** SP 14b energy and changes of state  
SP 14c Energy calculations

**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	
18 <sup>th</sup> April Sunday (Boys)	1	<b>L.O:</b> Explain how heating a system will change the energy stored within the system and raise its temperature or produce changes of state.	<b>Zoom/ GM</b>	Teacher uses a powerpoint presentation to explain the concept of specific heat capacity . Works out numerical using the $Q = m \times c \times \Delta\theta$
18 <sup>th</sup> April Sunday (girls)	2	Define the terms specific heat capacity  Use the equation: change in thermal energy (joule, J) = mass (kilogram, kg) x specific heat capacity (joule per kilogram degree celsius, J/kg *c) x change in temperature (degree celsius, *C)  <b>Learning outcome:</b> The students will be able to <ul style="list-style-type: none"> <li>• Define the term specific heat capacity</li> <li>• Use the formula relating change in thermal energy, mass, temperature change and specific heat capacity</li> </ul>		
20 <sup>th</sup> April Tuesday (Boys)	5	<b>L O.</b> Define specific latent heat and explain the differences between specific heat capacity and latent heat.  Describe how the temperature of an object changes with time while being heated or cooled to make it change state.	<b>Zoom/ GM</b>	Teacher uses a powerpoint presentation to explain the concept of specific latent heat . Analyses the cooling/heating curve Works out numerical using the $Q = m \times L$
21 <sup>st</sup> April Wednesday (girls)	5	<b>Learning outcome:</b> Students will be able to <ul style="list-style-type: none"> <li>• Define the term specific latent heat</li> <li>• Explain the difference between specific heat capacity and specific latent heat</li> <li>• Use the formula relating thermal energy, mass and specific latent heat.</li> </ul>		

<b>20<sup>th</sup> April</b> Tuesday (Boys)	6	<b>L.O:</b> Solve the worksheet posted GC	<b>GC</b>	Teacher will post the worksheet in the google classroom. Students will solve and turn in the worksheet
<b>21<sup>st</sup> April</b> Wednesday (girls)	6	<b>Learning outcome:</b> Students will be able to reinforce the concepts learned in the previous lesson by solving the worksheet		
<b>22<sup>nd</sup> April</b> Thursday (Boys)	4	<b>L.O :</b> To discuss the methods to determine the density of different materials	<b>Zoom/ GM</b>	Teacher will discuss the method to determine the density of regular and irregular solids and liquids using a video/simulation
<b>22<sup>nd</sup> April</b> Thursday (Girls)	1	<b>Learning outcome:</b> Students will be able to <ul style="list-style-type: none"> <li>• Measure the volume of regular and irregular solids</li> <li>• Measure the volume of liquids</li> </ul>		

## YEAR 12 A/ B – PHYSICS

**WEEK 31 (18<sup>th</sup> April to 22<sup>nd</sup> April) - 3 lessons for both batches**

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

**Topic: 5.22 Stationary 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	
18 <sup>th</sup> April Sunday - 12 B	6	<p><b>L.Objective</b> – Explain what is meant by a <i>standing (stationary) wave</i></p> <p><b>Learning outcome:</b></p> <ul style="list-style-type: none"> <li>Explain the formation of stationary waves by two waves of same frequency travelling in opposite directions using graphical methods.</li> <li>Construct stationary wave diagrams and interpret them.</li> <li>Demonstrate (video/simulation) the formation of stationary waves and discuss the conditions needed for the formation of a stationary wave.</li> </ul>	<b>Zoom</b>	Teacher use simulations and video to explain the the formation of stationary waves
20 <sup>th</sup> April Tuesday - 12 A	4			
18 <sup>th</sup> April Sunday - 12 B	7	<p><b>L.Objective</b> – Investigate how stationary wave is formed and identify nodes and antinodes.</p> <p><b>Learning outcome:</b></p> <ul style="list-style-type: none"> <li>Define the terms <i>nodes</i> and <i>antinodes</i>.</li> <li>Identify nodes and antinodes and observe that nodes do not move.</li> <li>Use the equation: separation between adjacent nodes (or antinodes) = <math>\lambda/2</math>.</li> <li>Describe the similarities and differences between progressive and stationary waves.</li> </ul>	<b>Zoom</b>	Teacher explains how to construct, on graph paper, the relative positions of the two waves at several stages of overlap, and use the principle of superposition to find the resultant disturbance in each case.
22 <sup>nd</sup> April Thursday - 12 A	1			
21 <sup>st</sup> April Wednesday - 12 B	3	<p><b>L.Objective</b> – Describe the formation of stationary waves in stretched strings.</p> <p><b>Learning outcomes-</b></p> <ul style="list-style-type: none"> <li>Identify different modes of vibration in stretched strings.</li> <li>Use the equation for the speed of transverse waves on a string (<math>v = \sqrt{T/\mu}</math>)</li> <li>Derive the formula for the fundamental frequency of a stretched string from <math>v = \sqrt{T/\mu}</math></li> </ul>	<b>Zoom</b>	Teacher use simulations and video to explain the the formation of stationary waves in stretched string.
22 <sup>nd</sup> April Thursday - 12 A	2	<p><a href="https://www.youtube.com/watch?v=-gr7KmTOrx0">https://www.youtube.com/watch?v=-gr7KmTOrx0</a></p>		

**HOMEWORK:** Complete the exam style questions from worksheet.

## YEAR 12 A/ B –PHYSICS

**WEEK 31 (18<sup>th</sup> April to 22<sup>nd</sup> April) - (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	
April 18 <sup>th</sup> Sunday	12 A	8	<p><b><u>Learning objectives:</u></b> understand that lenses focus rays of light and be able to trace the paths of rays through lenses</p>	GC	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
April 20 <sup>th</sup> Tuesday	12 B	6	<p><b><u>Learning Outcomes :</u></b> Recap the key terms</p> <ul style="list-style-type: none"> <li>● Focus (focal point)</li> <li>    Diverging lens</li> <li>    Virtual focus</li> <li>    Focal length</li> </ul> <p>Find the paths of parallel rays of light through a convex/concave lens-shaped prism.</p> <p>Define focal length for a convex/concave lens.</p> <p>Identify the factors affecting focal length</p>		
April 19 <sup>th</sup> Monday	12 A	1	<p><b><u>Learning objectives:</u></b> Trace the paths of rays through lenses to form images</p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
April 22 <sup>nd</sup> Thursday	12B	3	<p><b><u>Learning Outcomes :</u></b> Demonstrate and define the three predictable rays for a</p> <ol style="list-style-type: none"> <li>i) Convex lens.</li> <li>ii) Concave lens</li> </ol> <p>Show how these can be used to locate the real and virtual image position for a real object</p> <p>Differentiate between real and virtual images</p>		
April 19 <sup>th</sup> Monday	12 A	2	<p><b><u>Learning objectives:</u></b> Define object and image distance</p> <p>Use the lens formula to calculate <math>u/v/f</math></p>	Zoom	. Teacher uses power point presentation and breakout

<p>April 22<sup>nd</sup></p> <p>Thursday</p>	<p>12B</p>	<p>4</p>	<p><b><u>Learning Outcomes:</u></b></p> <p>Be able to solve independently some problems using the lens equation</p> <p>Follow up the ray diagrams drawn by identifying how the lens equation can be used with a convex/concave lens.</p> <p>Identify the value of <math>f</math> is negative for concave lens because it is a virtual focal point.</p>		<p>sessions for students to collaborate and attain the objectives</p>
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