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|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | **Resource** |
| **Week 9** | MOMENTUM. | Monday | 1. Define momentum. 2. CALCULATE the momentum of an object moving with constant acceleration. | E.g. 1 | Activity 11A:  Quest: 1 | Page 125-126 |
| Tuesday | 1. Calculate the change of momentum of an object due to an external force. | E.g. 1,2 | Activity 11A:  Quest: 1-7 | Page 126-130 |
| Wednesday | 1. STATE the law of conservation of momentum. | E.g. 1,2,43 | Activity 11B:  Quest: 1-7 | Page 131-134 |
| Thursday | 1. USE the relationship: ΔP= FΔt to solve related word problems. | E.g. 1,2 | Activity 11A:  Quest: 1-7 | Page 127-130 |
| Friday | 1. USE law of conservation of momentum to solve word problems involving two dimensional collisions and explosions. | No Example | Activity 11B:  Quest: 1-7 | Page 133 |

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|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | | **Resource** |
| **Week 10** | Work and power | Monday | 1. STATE the formula for calculating work done. | Notes | Activity 14A:  Quest: 1-2 | | Page 151-152 |
| Tuesday | 1. CALCUATE the work done using:   W = Fs. |  | Activity: Refer notes on year 11 | |  |
| Wednesday | 1. DETERMINE the component of the force which is in the direction of movement and thus contributing to the work done. |  | Activity: Refer notes on year 11 | |  |
| Thursday | 1. DETERMINE power attributes relating to work activity and machines. |  | Activity: Refer notes on year 11 | |  |
| Friday | * *Complete Activities 14 A* | | | | |
| **Week 11** | Hooks Law | Monday | 1. EXPLAIN the relationship between the area under a force-displacement graph and the amount of work done. | E.g. 1 | | Activity 14A:  Quest: 3 & 4 | Page 153-155 |
| Tuesday | 1. IDENTIFY the qualities that make materials good or bad conductors. |  | | Activity:  Read notes and check your understanding on learning outcome. | Yr 11 txt book p. 137-138 |
| Wednesday | 1. STATE the charge flows from higher to lower potentials. | E.g. 1,2,3,4,5 | | Acivity 17A:  Question 1-8 | Chapter 17:  Page 185-194 |
| *Thursday* | 1. .DISTINGUISH the direction of conventional current and flow of electrons. |  | |  |  |
| *Friday* | 1. IDENTIFY current results from movement of charge, qt-1, in an electric field. |  | |  |  |
| **Week**  **12** |  | *Monday* | 1. DEFINE electric fields. 2. DRAW a uniform electric field. 3. CALCULATE electric field strength. |  | |  |  |
| *Tuesday* | 1. DEFINE resistances as materials opposing charge movement, and receiving energy from passing charge. |  | |  |  |
| *Wednesday* | 1. DEFINE Ohm conductor.. | E.g. 1,2,3,4 | | Activity 18A:  Quest: 1-3 | Page 195-207: |
| *Thursday* | 1. IDENTIFY non ohm conductor using graph. | E.g. 1,2,3,4,5 | | Activity 18B:  Quest:1-3 | Page 201-210 |
|  |  | *Friday* |  |  | |  |  |

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| **WEEK 13** | **Strand 3**  E  L  E  C  T  R  I  C  I  T  Y  AND | Direct current circuit.  *Monday* | CALCULATE resistance of a resister using a color code. |  | Activity 18C:  Quest:1&2 |  |
| *Tuesday* | 1. USE ohm’s law V = IR and explain its limitations. |  |  |  |
| *WEDNESDAY* | 1. CALCULATE resistance of a combined series and parallel circuits. |  |  |  |
| *Thursday* | 1. APPLY P =VI and E=VIT to solve related problems. |  |  |  |
| *Friday* | 1. Continue with problem solving |  |  |  |
| **TERM 1: WEEK 1** | M  A  G  N  E  T  I  S  M | Ohm’s law and electrical energy  *Monday* | 1. DESCRIBE the magnetic effect around a conductor e.g. straight wire, circular coil and solenoid. | No E.g. | Activity: 18D  Quest: 1-8 | Page 211-213 |
| *Tuesday* | 1. DESCRIBE the magnetic field lines around a conductor: straight wire, circular coil, and solenoid. |  |  |  |
| *WEDNESDAY* | 1. DESCRIBE applications of the motor effect e.g. turning force on a rectangular coil, kept in a uniform magnetic field, moving coil meter, D.C electric motor, moving coil loud speakers, force between two parallel conductors carrying current. |  |  |  |
| *Thursday* | * *Continue working on activity 18C & 18D.* * *Cross check answers with answer sheet and correct own work.* * *Post on Year 12 physics forum on any questions confused on.* | | | |
|  |  | *Friday* | * *Continue working on activity 18C & 18D.* * *Cross check answers with answer sheet and correct own work.* * *Post on Year 12 physics forum on any questions confused on.* | | | |
| **WEEK 2** | Magnetic effects, motor effects and electromagnetic induction | *Monday* | 1. EXPLAIN how a transformer works. | E.g. 1 | Activity:  Exercise 1-5.  Page 146-147. | Yr12 Textbook.  Page 144-145. |
| *Tuesday* | 1. DRAW and label the magnetic field lines around a conductor: straight wire, circular coil and a solenoid. | E.g. 1,2,3 | Activity 19A:  Quest: 1-4. | Page 215-220 |
| *Wednesday* | 1. EXPLAIN how factors affect the amount of current formed in electromagnetic induction e.g. speed of movement, strength of magnet, number of turns of a coil. |  |  |  |
| *Thursday* | 1. DEMONSTRATE the production of a current through electromagnetic induction e.g. . . . . A magnet moving into a coil, moving a coil towards a magnet through a practical activity. |  |  |  |
| *Friday* | 1. DISCUSS the practical application and working principles of examples of electromagnetism e.g. bicycle dynamo, induction through a primary and secondary coil, ignition coil in a car, magnetic relay, electric bell, telephone microphone, moving iron ammeter.(3) |  |  |  |
| **WEEK 3** | Propagation and reflection of light | *Monday* | 21 EXPLAIN the properties of reflection of light in plane and spherical mirrors. | E.g.1,2,3,45 | Activity 6A:  Quest: 1-3 | Chapter6:  Page 65-77 |
| *Tuesday* | 22, CONSTRUCT, using ray diagram, a geometric representation to locate images formed by reflections on mirrors. |  | Activity 6D:  Quest: 1-13 |  |
| *Wednesday* | * *Continue working on activity 6A & 6D.* | | |  |
| *Thursday* | * *Cross check answers with answer sheet and correct own work.* | | |  |
| *Friday* | *Post on Year 12 physics forum on any questions confused on.* | | |  |
|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | **Resource** |
| **WEEK 4** | Refraction of light | *Monday* | 1, SHOW how light is refracted in water, glass block and lenses. | E.g. 1,2,3,4,5 | Activity 7A:  Quest:1-5 | Page 78-90 |
| *Tuesday* | 2, EXPLAIN how rainbows are formed in terms of dispersion of light by prisms. |  | Activity 7B:  Quest: 1-3 |  |
| *WEDNESDAY* | 3, DISCUSS the applications of refraction in real life equipment e.g. microscope, eyes, camera. |  | Activity 7C:  Quest: 1-3 |  |
| *Thursday* | 4, REPORT on observations about dispersion of light by prisms through a practical activity.  5, SHOW how light is refracted in water, glass block and lenses. |  | Activity 7D:  Quest: 1-7 |  |
| *Friday* | 6, DEFINE waves as the propagation of a disturbance.  7, EXPLAIN how rainbows are formed in terms of dispersion of light by prisms. | * *Continue working on activity 7A, 7B, 7C, & 7D.* * *Cross check answers with answer sheet and correct own work.* * *Post on Year 12 physics forum on any questions confused on.* | | |

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|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | **Resource** |
| **WEEK 5** | Wave Model | *Monday* | 1, DEFINE waves as the propagation of a disturbance.  2, DRAW reflection and refraction portrayed by the effect of boundaries on incident wave fronts. | E.g. 1,2,3,4,5 | Activity 5A:  Quest: 1-8 | Page 49-57 |
| *Tuesday* | 3, DEMONSTRATE dispersion of different frequencies present in white light.  4, EXPLAIN why blue lights bends more than red upon refraction. |  |  |  |
| *WEDNESDAY* | 5, EXPLAIN the photon light model.  6, EXPLAIN the dual nature of light. |  |  |  |
| *Thursday* | 7, DISCUSS the failure of the corpuscular light model. |  |  |  |
| *Friday* | 8, DISCUSS the application of the wave model of light in real life situations. | * *Continue working on activity 5A.* * *Cross check answers with answer sheet and correct own work.* * *Post on Year 12 physics forum on any questions confused on.* | | |

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|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | **Resource** |
| **WEEK 6** | Diffraction and interference of waves | *Monday* | USE the superposition principle to draw the resultant shape when two waves or pulses are wholly or partly superimposed. | E.g. 1,2,3 | Activity 5B:  Quest:1-6 | Page 57-64 |
| *Tuesday* | EXPLAIN the phenomena of diffraction and interferences. |  | Activity 5C:  Quest:1-8 |  |
| *WEDNESDAY* | USE the relationships: = x/L and dsin0 = (n – ½) . |  |  |  |
| *Thursday* | EXPLAIN/APPLY the correspondent relations from Young have double slit experiment. |  |  |  |
| *Friday* |  | * *Continue working on activity 5B & 5C.* * *Cross check answers with answer sheet and correct own work.*   *Post on Year 12 physics forum on any questions confused on.* | | |

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| *Friday* |  | * *Continue working on activity 5B & 5C.* * *Cross check answers with answer sheet and correct own work.*   *Post on Year 12 physics forum on any questions confused on.* | | |

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|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | **Resource** |
| **WEEK 7** | Thermal physics | *Monday* | 1, DEFINE conduction.  2, DEFINE convention.  3, DEFINE radiation.  4, DEFINE ‘latent heat’.  5,DEFINE heat.  6, DEFINE temperature | E.g. 1, | Exercise 11.90.  Quest: 1-12 | Refer to Chapter 11 year 11 Physics Text Book:  Page 89-99 |
| *Tuesday* | 7, DESCRIBE the behavior of particles in the expansion of solids.  8, DESCRIBE the behavior of particles in the expansion of liquids.  9, DESCRIBE the behavior of particles in the expansion of gases. |  |  |  |
| *WEDNESDAY* | 10, EXPLAIN how conductors and insulators influence the rate of heat transfer.  11, INTERPERT information in cooling and heating curves in terms of latent heat and changes of state |  |  |  |
| *Thursday* | 12, GATHER information about temperature scales and construction and use of thermometers, e.g. mercury, alcohol, thermocouples, gas.  13, PRESENT information about temperature scales and construction and use of thermometers, eg. mercury, alcohol, thermocouples, gas |  |  |  |
| *Friday* | 14, EXPLAIN the use of the concept of absolute zero and absolute temperature in fixing temperature scales  15, Explain the applications of differences in specific heat capacity in everyday situations e.g. land and sea breezes, water cooling of engines, cooking utensils. |  |  |  |

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|  | **Topic:** | **Lesson** | **Learning Outcome** | **Example** | **Activity** | **Resource** |
| **WEEK 7** | Thermal physics | *Monday* | 16, EXPLAIN applications of expansion in everyday situations e.g. telephone lines, a bottle of water in the freezer.  17, EXPLAIN the difference between heat and temperature. |  | Continue on from week 6 activities. |  |
| *Tuesday* | 18, DEMONSTRATE how heat is transferred through conduction, convection or radiation  19, EXPLAIN how the transfer of heat by conduction, convection, and radiation occurs or is reduced in simple applications e.g. gas stove, radiator, coil element, refrigerator, chilly bin, thermos flask. |  |  |  |
| *WEDNESDAY* | 20, REPORT on the specific heat capacities of different substances using calorimeters or mixtures method after an activity e.g. water, iron, copper, alloy |  |  |  |
| *Thursday* | 21, ILLUSTRATE and report on the expansion of gases, liquid or solids through an experiment. |  |  |  |
| *Friday* |  |  |  |  |