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| **COMPETENCE** | **GENERAL**  **OBJECTIVES** | **MONTH** | **WEEK** | **MAIN TOPIC** | **SUB-TOPIC** | **PERIOD** | **TEACHING ACTIVITIES** | **LEARNING ACTIVITIES** | **T/L MATERIAS** | **REFERENCES** | **ASSESSMENT** | **REMARKS** |
| By the end of  the topic, students should be able to understand concepts and principles of magnetism  and electricity. | By the end of  the topic, students should have develop competence in applying and magnetism knowledge in daily life. | **J**  **A N U A R Y** | **2** | **1.0**  **STATIC ELECTRICITY** | **1.1**  **Concept of static electricity.** | **2** | i) Guiding students on  demonstration of picking up of tiny pieces of papers by plastic pens and other materials. | i) Demonstrate picking up  tiny pieces of paper. | -Plastic pen  -Ebonite rod  -Glass rod  -Fur | **SCSU &**  **MoEVT (2012), Physics for secondary schools form 2, Uhuru media, Zanzibar** | Are the students able to  explain the concept of statistic electricity**?** |  |
| ii) Organize for read- review on origin of charges. | -Discuss the origin of charges. | Is the student able to explain the origin of charged? |
| iii) Organize for discussion  on charge movement when two bodies are rubbed each other. | iii) Students should  identify two types of charges on a body. | -Ebonite rod  -Fur  -Polytheme rod  -Glass rod. | Is the student able to  identify two types of charges. |
| iv) Demonstration of  attraction and repulsion between the suspended rod and other bodies. | -Students to charge bodies by different methods. | Pieces of paper  -plastic pen  -Glass rod  -Ebonite rod  -Polytheme rod. | Is the student able to  state the fundamental law of static electricity? |
| **3** | **1.2**  **Detection of charges** | **2** | i) To describe the structure  and function of gold leaf electroscope. | i) Students to draw and  label gold leaf electroscope. | -Gold leafs  electroscope  -Diagram of g/l electroscope | Is the student able to  describe the structure of the leaf electroscope? |  |
|  | ii) Lead the discussion of  the modes of action of electroscope. | ii) charge the  electrophorus by induction using charged polythene base. | - Charged  polythene base  -Electrophorus | Is the student able to  charge leaf electroscope? |
| **3** | **1.3**  **Conductors and Insulators** | **2** | Lead students to distinguish between Insulator and Conductor and explain the difference between electrical conductivities of  Conductors and Insulators. | )Students to identify conductors and Insulators by passing electric current through them. | - Copper wire  - Aluminium  - Glass rod  - Ebonite rod  - Wood  - Fur, Wax. | Is the student able to distinguish between a conductor and insulator? |  |

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|  |  | **J**  **A N U A R Y** | **4** |  | **1.4**  **Capacitors.** | **3** | i) Lead the students to  define the capacitance of a body. | i) Students  In groups to give the meaning of capacitance. | -Source of charge  -Copper electrodes. Air filled capacitors.  -Two or more  capacitors  -Connecting wire | **SCSU & MoEVT (2012), Physics for secondary schools form 2, Uhuru media, Zanzibar** | Student to  -define capacitance  -describe mode of action of a capacitor  -List different types of capacitors  to derive equivalent capacitors in series and in parallel. |  |
| i) Describe the  Mode of action of capacitor. | i) Demonstrate charge  and discharging of a capacitor. |
| ii) Lead students to  identify different types of capacitors. | students to identify  different types of capacitors. |
| iii) Explain the construction  of air capacitor | ii) Carry out a project to  construct an air capacitor. |
| iv) To guide students to  determine the equivalent capacitance of two or  more capacitors connected in series and in parallel by derivation. | iii) Students to derive  equivalent capacitance of two or more capacitors connected in series and in parallel. |
| **F E B R U A R Y** | **1** |  | **1.5**  **Charge distribution along the surface of a conductor** | **3** | To guide students on experiment to demonstrate charges reside on outer surface of a conductor. | Students to verify experimentally that charges resides on outer surface of a conductor. | - Electrophorus  - Spherical conductor  - Pear shaped conductor. | Is the student be able to recognize on a conductor reside on its outer surface. |
| To lead students to carry out experiment to find out the distribution of charges on conductor. and highlight the structure and mode of action of lightning conductor. | Students to discuss in groups the result of their observations.and the structure and mode of action of lightning conductor. | - Cylindrical and pear shaped conductor.  Lightning conductor mode.  - Copper rod,  wire  - Sharp pointed conductor |

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|  |  |  | **2** |  | **1.6**  **Lighting conductor** | **3** | To guide students to  explain the phenomena of lighting conductor  To explain the structure and mode of action of a lighting conductor and construct a simple lighting coductor | students to explain the  phenomena of lighting conductor  To explain the structure and mode of action of a lighting conductor and construct a simple lighting coductor | chart, model,  copper rod, copper plate, copper wire, sharp pointed conductor. |  | students to explain the  phenomena of lighting conductor  To explain the structure and mode of action of a lighting conductor and construct a simple  lighting coductor |  |
| **F E B R U A R Y** | **3** | **2.0**  **CURRENT ELECTRICITY** | **2.1**  **Concept of current Electricity** | **1** | -To lead the students to define current electricity.  -To lead students through question and answer to identify the sources of electricity. | -Students to define current electricity.  -Students to discuss in groups the different sources of electricity. | - Charged capacitor  - Uncharged  capacitor  - Dry cell  - Dynamo  - Solar panel | - Is the student be able to identify basic circuit components.  - State the SI unit s of  current, voltage and resistance. |
|  |  |  | **3**  **&**  **4** | **2.2**  **simple electric circuit** | 2 | i)The Teacher to lead  students to discuss different circuit components. | i) Students in groups to  list down circuit components. | - Battery  - Cell  - Resistor  - Switch  - Connecting wire. | **SCSU &**  **MoEVT (2012), Physics for**  **secondary schools form 2, Uhuru media, Zanzibar** | Is the student able to  connect simple electric circuit  Is the student able to:-  -Measure electric current and voltage?  -To analyse simple electric circuits. |
| ii)The teacher to guide  students to identify basic electric symbols. | ii) Students through  information searching is to identify basic electric symbols. | - Ammeter  - Volt meter  - Circuit  Components |
|  |
| iii)To guide students to  state the SI units of current, voltage and resistance. | iii) Students to discuss and  present units of current, voltage and resistance. | - Reference books |
| Series and  parallel connections. | 2 | iv) To give the guidelines  on how to connect series and parallel circuits | iv) To connect circuit in  series and parallel | -Bulb & holders  - Battery & Switch  - Resistor  - Ammeter  - Voltmeter  - Connecting wires |  |  |

Ohm’s law **1** i) Perform an experiment

to Verify Ohm’s Law

vii) to guide students to deduce the equivalent resistance for both parallel and series connections.

vi) To Verify Ohm’s law vii)To deduce equivalent resistance.

- Circuit diagrams.

By the end of the Form Two course,

students should have develop competence on applying electricity and magnetic knowledge in

daily life.

**M 1 3.0**

**A MAGNETISM R**

**C H**

**3.1**

**Concept of magnetism.**

**3** The teacher to assign students to library to find out the origin of magnetism.

The teacher to display different types of magnetic and non- magnetic materials and organise for their testing on magnetic behaviour.

Students in groups using gallery walk to discuss the origin of magnetism.

Students to identify magnetic and non magnetic materials.

- Reference books

-Internet

- Magnets

- Iron rod

- Cobalt plate

- Copper rod

- Piece of wood

**SCSU & MoEVT (2012),**

**Physics for secondary schools form 2, Uhuru media,**

Is the student able to explain the origin of magnetism.

Is the student be able to identify magnetic and non magnetic materials/substances?

**2**

**on and demagnetis ation**

and direct students to name them.

The teacher to lead students to investigate the properties of a magnet.

Teacher assign students through library search to explain the concept of magnetisation and demagnetisation.

The teacher to assign students to do library or internet search on applications of the earth’s magnetic field.

The students to suspend a bar magnet to find its direction at rest.

Students to present their findings.

Students in groups discuss their finding on application of the earth’s magnetic field.

Bar magnet Horse-shoe magnet.

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|  | | To guide students to state  the properties, identify the types and application of magnet | students to state the  properties, identify the types and application of magnet |  | **Zanzibar** |  |
| **3.2**  **Magnetisati** | **3** | The teacher to display  various types of magnets | Students to identify the  types of magnets. | U- shaped  magnets. |  | Is the student able to  identify types of |

- String

- Support

- Iron filling

-magnets.

- Chart

- Internet

- Bar magnet

Iron nails

- Library internet

magnets?

Is the students be able to tell the properties of a magnet?

Is the student able to explain the concept of magnetization and demagnetization?

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|  |  |  | **3** |  | **3.3**  **Magnetic fields of magnet** | **3** | - To stimulate discussion on  how a magnet can lose its magnetisation and mention methods of storing magnetism. | -Students to identify  ways in which a magnet lose its magnetism and methods of storing magnets. | - Bar magnet  - Iron filling  - Plain paper  - Pencil  - Compass needle. |  | Is the student able to  design methods of storing magnets? |  |
| To lead students to  perform experiment to study the pattern of the lines of force around a bar magnet. | Students to plot the  pattern of lines of forces around a bar magnets | Is the student table to  illustrate the magnetic lines of forces around a magnet using iron fillings or compass needle? |
|  |  |  |  | **MIDTERM TEST & CLOSING THE SCHOOL** | | | | | | |  |  |
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|  |  | **A P R**  **I L** | **2** |  | **3.4**  **Earth’s magnetic field** | **3** | To lead students to explain the existence of the earth’s magnetic field. | Students to explain the concept of magnetic fields | - Compass needle  - Thread  Retort stand  - globe | **SCSU & MoEVT (2012), Physics for secondary schools form 2, Uhuru media, Zanzibar** | Is the student able to  -Explain the existence of  earth’s magnetism  -Determine the direction of earths magnetic field. |  |
| To lead students to  determine the direction of  the earth’s magnetic field. | Students to suspend bar  magnetic freely to determine the direction of the earth’s magnetic field. | - Bar magnetic  - Iron fillings |
| -To assist students to  locate the earth’s magnetic lines of force about a bar magnet | -Students to use iron  filling to locate the earth’s magnetic lines of force about a bar magnet | - Compass needle  - Protector  - Scale  - support |
| -To guide students to  determine the angle of declination and inclination. | -measure the angle made  by the settled needed with the horizontal plane. |
| Demonstration how to  shield a magnetic material from magnetic line of force. | To practice how to shield  a magnetic material from magnetic lines of force. | - Soft irony magnet. | Is the student be able to  explain the effects of turning force |  |

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|  |  | **A P R**  **I L** | **3** | **4.0**  **FORCE IN EQUILBRIUM** | **4.1**  **Movements of a force** | **3** | Lead students to explain  the existence of the earth’s  magnetic fields.  To guide students to perform activities of pulling or pushing objects and observe the results. | In group to explain the  phenomenon of the earth’s magnetic field.  Students to apply simultaneously parallel and opposite force on different objects. | - Hinged door  - Suspended  -piece of wood  - Students’  desk |  |  |  |
| Lead students to determine the moment of force. | Determine the moment of force. | - Metre ruler  - Strings  - Two  different masses. | Is the student able to determine the moment of a force? |
| **4** |  | **4.2**  **Centre of gravity.** | **3** | Guiding students to  determine the centre of gravity of a regular shaped body. | Determine the centre of  gravity of regular shaped body. | - | Is the student able to  determine the centre of gravity of regular shaped body? |
| Guide students to conduct experiment to verify the principle of moments. | To state the principle of moments. | - Variety masses. | Is the student able to state the principle of moment? |
| Lead the students to apply  the principle of moments. | Explain how the principle  of moments is applied in different situations. | - Seesaw  - Bean balance  - Door | Is the student able to  apply the principle of moments in daily life? |
| Assign students to  determine the centre of gravity of an irregular shaped body. | Students Determine the  centre of gravity of an irregular body. | -A piece of  irregular shaped  -Plumb line  - Support nail | Students Determine the  centre of gravity of an irregular body. |
|  |  | **M**  **A Y** | **1** |  | **4.3**  **Types of equilibrium** | **3** | Lead students to brain  storm on the condition for equilibrium. | Explain the conditions for  equilibrium. | - Solid objectives  - various shaped  - model of a bus or lorry. | **SCSU &**  **MoEVT (2012), Physics for**  **secondary schools form 2, Uhuru media, Zanzibar** | Is the student able to  explain the conditions for equilibrium? |  |
| Lead students to identify  three states of equilibrium. | Explain stable, unstable  and neutral equilibrium. | Is the student able to  explain and apply stable, unstable and neutral equilibrium? |
| Lead students to apply  conditions of stable unstable and input equilibrium in daily life. | Identify application of  the three states of stability in daily life. |

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|  |  | **M**  **A Y** | **2** | **5.0**  **SIMPLE MACHINES** | **5.1**  **Concept of simple machine** | 3 | Lead students to deduce  the meaning of simple machine. | To explain the concept of  a simple machine. | - | **SCSU &**  **MoEVT (2012),**  **Physics for secondary schools form 2, Uhuru media, Zanzibar** | Is the student able to  identify different kinds of simple machines? |  |
| - Facilitate the students to  deduce the meaning of the term. Load, Effort mechanical advantage velocity ratio and efficiency as applied to simple machine.  -To stimulate students to identify different kinds of simple machine. | Students in groups to  mention different types of simple machines. | - Bolts and nuts  - Spanners  - Single fixed pulley.  - Masses  - Stapler  - Rope. |
|  | **3** | **5.2**  **Levers** | **1** | To facilitate students to identify three classes of levers. | Students in groups to identify the three classes of levers. | - Beam balance  - Crow bar  - Wheel barrow  - Scissors  - See-saw  - Coal tong. | Is the student able to identify three classes of levers? |  |
| Guide students to  determine the M.A, V.R  and efficiently of a levers. | Students in group to  perform experiment to determine the M.A, V.R and efficiency of a lever. | Is the student able to  determine the M.A, V.R and efficiency of a lever?  Is the student able to use levers in daily life? |
| To organize students to  discuss application of levers in daily life. | Students to discuss  applications of levers in daily life. |
| **4** | **5.3**  **Pulleys** | **2** | To guide students to  identify different pulley system. | To identify the different  pulley systems. | - Single fixed  pulley  - Movable and tactics pulley  - Ropes  - Flip charts  - Marker pens. | Is the student able to  determine M.A, V.R and efficiency of pulleys and apply in daily life? |
| Guide students to  determine the M.A , V.R and efficiency of a pulley systems. | Calculate the M.A, V.R  and efficiency of the pulley system. |
| Organize for a field visit by students to observe application of pulley system. | Discuss results of the field visit and identify other possible application of pulley system. |
|  |  |  |  | **TERMINAL EXAMINATIONS & CLOSING** | | | | | | | | |
|  |  |  |  | **TERMINAL EXAM HOLIDAYS** | | | | | | | | |

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|  |  | **J**  **U**  **L**  **Y** | **1** |  | **5.4**  **Inclined**  **Plane** | **3** | Lead students to discuss  why it is easier to push a heavy load up an inclined plane than to lift it vertically.  To facilitate students to determine M.A, V.R and efficiency. | To determine the M.A, V.R and efficiency of the inclined plane. | - Ladder  - Building slopes  - Screw jack  - Car jack  - Heavy load | **SCSU &**  **MoEVT (2012), Physics for secondary**  **schools form 2, Uhuru media, Zanzibar** | Is the student able to  state the concept of inclined plane?  -Are they able to determine M.A, V.R and efficiency of inclined plane. |  |
| Lead students to discuss  the applications of inclined plane in daily life. | student to discuss situation  where the inclined plane is applied in everyday life. | - Screw jack  - Car jack | Is the student able to use  inclined plane in daily life? |
| **2** | **5.5**  **Screw Jack** | **3** | To organize students the  main features of the screw Jack and the way it functions. | Practice lifting a heavy  load using a screw jack. | - Car  - Screw jack  - Wheel and axle  - bicycle | Is the student able to  describe the structure of a screw jack? |
| To facilitate students to  discuss the applications of the screw jack in daily life. | Discuss in groups the  various situations where the screw jack in used. | Is the student able to  determine M.A, V.R and efficiency of screw jack?  -Can student use screw jack on daily life? |
| Display a wheel and axle of a bicycle. | - In groups students to discuss the main features of a wheel and axle |
|  | **3** | **5.6**  **Wheel and axle** | **3** | To guide students to  determine M.A, V.R and efficiency of a wheel and axle.  -To organize groups discussion on the application of wheel and axle in daily life. | To determine the M.A,  V.R and efficiency of the wheel and axle.  -In groups to explain devices which utilize the principle of the wheel and axle. | -Heavy load.  - Windlass machine  - Bicycle. |  | Can the student able to  describe and determine the M.A, V.R and efficiency of wheel and axle? |  |
|  |  |  | **4** |  | 5.7  Hydraulic  Press | **3** | Displaying model of the  hydraulic press and guide students to discuss its working mechanism.  To guide students to determine the M.A, V.R and efficiency of a hydraulic press.  Lead students to discuss on applications of the hydraulic press. | To discuss in groups  structure of a hydraulic press.  To determine the M.A, V.R and efficiency of the hydraulic press.  Discuss in groups of hydraulic press and identify example of devices. | Model of  hydraulic press. | Is the students able to  describe the structure of hydraulic press?  -Is the student able to determine M.A, V.R and efficient of hydraulic press?  -Can students apply hydraulic press in daily life? |  |

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|  |  | A  U  G  U  S  T | **1** | **6.0**  **MOTION IN**  **STRAIGHT LINE** | **6.1**  **Distance & displaceme nt** | **1** | Guide students to  distinguish between distance and displacement  Displayed various flash cards with SI Units, one of which has the correct SI unit of distance and displacement. | -Give the difference  between distance &  displacement.  -State SI units of distance  & displacement.  -Identify SI unit of distance & displacement. | - Tape measure  - Marker  - Reference books  - Flash card. |  | Is the student able to  distinguish between distance and displacement?  -Is the student able to state the SI Unit of distance and displacement? |  |
|  |  |  | **1** |  | **6.2**  **Speed and velocity** | **2** | Assist students to distinguish between speed and velocity. | Distinguish between speed and velocity | -Timer,  -Measuring tape, Internet  Reference Books. | Is the student able to distinguish between speed and velocity? |
|  | Organize think pair share  on the SI units of speed and velocity. | To state the SI unit of  speed and velocity. |
|  | Stimulate students to  determine average velocity of a body. | To determine average  velocity of the body. | -Speed metre  -Timer  - Measuring tape |
|  |  |  | **2** |  | **6.3**  **Acceleratio n** | **1** | Display different velocity time graphs for students to interpret.  Through question and answer techniques students to interpret velocity time graphs for increasing velocity, constant velocity and decreasing velocity. | Students to determine the rate of change of the velocity with time. | - |  | Can the students interpret velocity time graph? |  |
|  |  | To guide students to  discuss the velocity time graph.  Lead student to explain  the concept of retardation. | Students to determine  acceleration of the body.  Students to explain the concept of retardation. | - Trolley  - Ticker tape  - Timer  - Velocity –time graph. | Can student determine  the acceleration of a body?  -Is the student able to explain the concept of retardation? |
|  |  |  | **2** |  | **6.4**  **Equations of uniformly**  **Accelerated**  **Motion** | 2 | To facilitate students to  apply deductive thinking to derive equations of uniformly accelerated motion. | Students to derive  equations of uniformly accelerated motion. | - Kinematic reference books.  - Velocity  time graphs for |  | -Is the student able to  derive equations of uniformely accelerated motion?  -Is the student able to |  |

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|  |  |  |  |  |  |  | To motivate students to  share their ideas on a body thrown vertically upwards and a falling body. | Students to solve problem  related to equations of uniformly acceleration motion. | uniformely  accelerated motion  - Bank of Kinematics equations |  | apply equations of  motion in daily life? |  |
| **3** |  | **6.5**  **Motion under gravity** | **3** | To encourage students to  share their ideas on a body thrown vertically upwards and a falling body. | Students in groups to  explain the concept of gravitational force. | - Pendulum bob  - Metre rule  - Retort stand  - Graph paper  - Internet  - Flip charts  - Marker pens | -Is the student able to  explain the concept of gravitational force? |
| To organize students to  determine acceleration due to gravity by simple pendulum. | To perform an  experiment on determination of acceleration due to gravity by simple pendulum | -Is the student able to  explain the concept of gravitational force? |
| To direct the students to  search and discuss application of gravitational force. | Students to present their  findings on application of gravitational force. | -Is the student able to  explain the applications of gravitational force? |
|  |  |  | **4** | **7.0**  **NEWTON’S**  **1ST LAW**  **OF MOTION** | **7.1**  **Law of**  **Motion** | **3** | The teacher to stimulate  discussion on the behaviour of an object when there is a sudden change of its state of Motion. | Students to brainstorm,  the tendency of applied force on a body when is at rest or in motion. | - Heavy load  - Bottle  - Cards  - Cons  - Tea cups  - Trolley  - Table, cloth on a table. | **SCSU &**  **MoEVT (2012), Physics for**  **secondary schools form 2, Uhuru media, Zanzibar** | **-**Is the student able to  explain the concept of inertia?  -Is the student able to state Newton’s 1st Law of motion?  -Is the student able to verify Newton’s 1st Law of motion? |  |
| To lead students to state Newton’s first Law of motion. | State Newton’s 1st Law of motion. |
| Facilitate for  demonstrations of Newton’s first law of motion on an object at rest. | Students to perform an  experiment to verify Newton’s first law of motion. |
|  |  |  |  | **MIDTERM TEST & CLOSING** | | | | | | |  |  |
|  |  |  |  | **MIDTERM BREAK** | | | | | | |  |  |

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|  |  | **S**  **E**  **P**  **T**  **E**  **M**  **B**  **E**  **R** | **3** |  | **7.2**  **2nd Law of**  **Motion** | 2 | Facilitate students to  investigate the relationship between the velocity and mass of a body moving in  a straight line. | Students to explain the  concept of linear momentum. | Trolley  -Various masses. | **SCSU & MoEVT (2012),**  **Physics for secondary schools form 2, Uhuru media, Zanzibar** | -Is the student able to  explain the concept of linear momentum?  -Is the student able to state the S.I Units of linear momentum? |  |
| **1** | To encourage students to  deduce the SI unit of  linear momentum from the product of mass & velocity. | Students to deduce and  state the SI unit of linear momentum. |
| **1** | To guide students to  determine experimentally the linear momentum of a body | Students to perform  experiment to measure the velocity of a trolley, loaded with a known mass.  To compute the product of mass & velocity. |
|  | 4 | **1** | Teacher to guide students  to determine experimentally the linear momentum of a body. | Students to perform an  experiment to measure the velocity of a loaded with a known mass. |  |  | Is the student able to  determine linear momentum?  -Is the student able to state Newton’s 2nd Law of motion? |  |
| **1** | Facilitate students to carry  out an experiment to verify Newton’s second law of motion. | To perform experiment to  find relationship of force and acceleration. |
| **O**  **C T O B E R** | **1** |  | **7.3**  **Conservatio n of Linear momentum** | **1** | To organize students to  investigate types of collision. | Students to organize for  conduct experiment to distinguish between elastic and inelastic collision. | - Tennis ball  - Spongy floor  - Hard floor  - Muddy surface. | Is the student able to  distinguish btn elastic and Inelastic collisions? |
|  | **1** | To deduce the relationship  btn linear momentum before and after a collision. | To determine experimentally the linear momentum of two bodies moving towards each other before and after collision.  -Compare total momentum before and after collision. | - | Is the student able to  state the principle of conservation of linear momentum? |

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|  |  |  | **2** |  |  |  | To organize students  group discussion to see application of the principle of conservation of linear momentum. | -To discuss the principle  -To copy the principle. | - | **SCSU & MoEVT (2012),**  **Physics for secondary schools form 2, Uhuru media, Zanzibar** | Is the students able to  apply the principle and solve question? |  |
| **O C T O B E R** | **2** | **7.4**  **Third law of motion** | **3** | To organize the students  to demonstrate that action and reaction force are related. | Students to deduce that  each action force there is equal and opposite reaction force.  -To state Newton’s 3rd  law of motion. | - | Is the student able to  distinguish btn action and reaction forces?  -Is the student able to state Newton’s 3rd Law of motion. |
| Teacher to lead students  to give the meaning of action and reaction forces. | To identify the action  force and reaction forces in bodies. | - Balloons  - Air  - Bicycle pump |
| Organize students in  groups to discuss application of Newton law of motion. | In group discuss the  application of 3rd law of motion.  -Solve problem. | - |
|  |  |  | **2** | **8.0**  **TEMPERATU RE** | **8.1**  **Concept of temperature** | **1** | The teacher lead students  using think pair –shore to define the temperature. | -Define the temperature. | - Water  - Ice  - Heater  - Deep freezer | Is the student able to  define the term temperature? |  |
|  | Lead students to state SI  unit of temperature. | Students state the SI unit  of temperature. |  | is the student able to  state the S.I unit of temperature? |
| **2** | **8.2**  **Measure ment of temperature** | 2 | Assist students to seek  information from difference sources on measureable physical properties that change with temperature. | Students to work in group  to collect information on physical properties that change with temperature. | - | Is the students able to measure accurately the temperature of a body? |
|  | By using question and  answer to guide students to define fundamental interval of a thermometer  . | Students to define the  upper and lower fixed points of a thermometer. | - Alcohol  - Melting ice  - Hot water |

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|  |  | **O**  **C T O B E R** | **2** |  |  | **1** | Organize students to study  how alcohol in glass thermometer works. | Students to record the  reading of the thermometer in ice and hot water.  Describe mode of action of liquid in glass thermometer. | - Hot water  - Ice  - Alcohol  - One-sided  - Closed narrow glass cylinder |  |  |  |
|  |  |  | **3** |  | **1** | Lead the students to  measure temperature of different bodies. | In groups to record the  temperature different bodies. | - Thermometer  Hot water | **SCSU &**  **MoEVT (2012), Physics for**  **secondary schools form 2, Uhuru media, Zanzibar** |  |  |
| **9.0**  **SUSTAINABL E ENERGY SOURCES** | **9.1**  **Water energy** | **1** | The teacher should lead  the students to discuss the generation of electricity. | Students describe energy  change in the generation of hydro electricity. | - Diagram of  hydroelectric power plant city. | Is the student able to  explain the generation of electricity from water? |
| To lead the student to  discuss the importance and advantage of hydroelectricity | To describe common  application of water energy. | - Reference books. |  |
| To guide students to construct a model of an hydroelectric Power Plant. | To draw a diagram of a model of an hydroelectric Power Plant. | Manila sheet Styrofoam Razor blades wood. |  |
|  |  | **O C T O B E R** | **4** | **SUSTAINABL E SOURCE OF ENERGY** | **9.2**  **Solar**  **Energy** | **3** | Lead students to discuss the sun as the primary source of energy on earth. | To list down the main application of solar energy | Solar panel photoroltonic cells |  | Is the student able to explain the conversion of solar energy to electricity? |  |
| To guide students to  discuss how solar energy can be converted to electricity. | Make group discussion conversation mechanisms to electricity.  To draw a circuit diagram showing the conversation of solar energy into electricity by a solar cell. | **-** |
| To guide students to  discuss the construction of a model of a solar panel. | To design and construct a  model of a solar panel. | **-** Model of a solar  panel  - Solar cells | Is the student able to  construct a model of solar panel |

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|  |  | **N**  **O V E M B E R** | **1** |  | **9.3**  **WIND ENERGY** | **1** | The teacher to stimulate  the students to identify evidence which proves that wind has energy. | Students to show that  wind can cause objects to move. | - Wind  - Feathers  - Cotton wool. | **SCSU &**  **MoEVT (2012), Physics for secondary**  **schools form 2, Uhuru media, Zanzibar** | Is the student able to  explain wind as a source of energy? |  |
|  | **1** | To organize for  educational visit to a place where wind mill is used. | To construct a model of a  wind mill. | - Wind mill  - Wood  - Nails  - glue | - Is the student able to construct a model of a wind mill? |
| **1** | Lead the students to discuss the applications of wind mill in daily life. | In groups to discuss the application of the wind mill. | - |
| **2** |  | **9.4**  **SEA WAVE ENERGY** | **2** | The teacher to lead  students to discuss the sea waves as a source of energy. | Students in their group to  discuss the energy from the sea water. | - Internet | Is the student able to  explain sea wave as source of energy? |
| **1** | The teacher to guide  students to discuss on how sea water can be converted to electricity. | To brainstorm on how sea  wave energy can be converted to electricity.  In groups construct the model system of convert Sea wave energy into electricity. | - Car board  - Scissors  - Nails  - Tape/glue  - Reference books  - Internet | Is the student able to  explain the conversion of sea wave energy to electric energy  ? |
|  |  | **N**  **O V E M B E R** | **3** |  | **9.5**  **GEOTHERM AL ENERGY** | **3** | To guide students in  groups as the source of energy. | Students in their group to  discuss the source of geothermal energy. | - |  | Is the student able to  explain geothermal as a source of energy? |  |
| The teacher to lead  students to discuss how geothermal energy can be converted into electricity. | Students to discuss the  ways of converting geothermal energy to electricity.  Students to draw a diagram of a steam turbine and explain how it works to convert steam to electricity. | - Manila paper  - Scissors  - Glue  - Marker pen  - Reference books. | Is the student able to  explain the conversion of geothermal energy to electric energy? |
|  |  |  | **ANNUAL EXAMINATIONS & HOLIDAYS** | | | | | | | | | |