**THE PRESIDENT’S OFFICE-**

**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

S**CHEME OF WORK**

TEACHER’S NAME:

SCHOOL’S NAME:

CLASS/STREAM: **FORM ONE**

SUBJECT: **PHYSICS**

YEAR: **2024**

TERM: **1 & 2**

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| **COMPETENCE** | **GENERAL OBJECTIVES** | **MONTH** | **WEEK** | **MAIN TOPIC** | **SUB-TOPIC** | **PERIODS** | **TEACHING ACTIVITIES** | **LEARNING ACTIVITIES** | **T/L MATERIAS** | **REFERENCES** | **ASSESSMENT** | **REMARKS** |
|  | **BASIC ENGLISH ORIENTATION COURSE** | **JANUARY** | **2**  **3** |  |  |  |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |  |  |  |
|  |  | **FEBRUARY** | **1** |  |  |  |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |  |  |  |
| **COMPETENCE** | **GENERAL OBJECTIVES** | **MONTH** | **WEEK** | **MAIN TOPIC** | **SUB-TOPIC** | **PERIODS** | **TEACHING ACTIVITIES** | **LEARNING ACTIVITIES** | **T/L MATERIAS** | **REFERENCES** | **ASSESSMENT** | **REMARKS** |
| Demonstrate laboratory practice and safety | Promote manipulative skill to manage various technological application | **MARCH** | **1** | **1.0 INTRODUCTION TO PHYSICS** | 1**.1 Concepts of physics** | **1** | Guiding students to brainstorm and discuss the concept of physics | Studentsto identify various things related to physics | * Manila card * Charts with diagram.   Science kit.  Charts of different machine   * and picture * Chart with hospital and industrial machine.   Apparatus domestic tools | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | Is the student able to explain the concepts of physics? |  |
| **2** | To guide students in their small group to discuss the relationship between physics with other subject. | Students try to explain the relation between the physics and the other subject | Is the student able to establish the relationship btw physics and other subjects |  |
| **1** | to assist students in groups to state the importance of studying physics | Students discuss and state the importance of studying physics. | Is the students able to state the importance of studying physics? |  |
| **MARCH** | **1**  **&**  **2** | **1.2 Application of physics in real life** | **1** | To guide students and discus the application of physics in real life | students in groups to explain the applications of physics in real life. | Is the stds able to explain the applications of physics in real life? |  |
| **1** | To guide students to discuss various applications of physics in daily life. | Students to perform activities which demonstrate applications of physics. | -is the std able to apply physics in daily life. |  |
| **2** | Guiding students to perform activity which demonstrate application of physics | students to perform activity which demonstrate application of physics | students to perform activity which demonstrate application of physics |  |
| Using the language of physics in communication | Development skills on basic principle of scientific investigation | **MARCH** | **2** | **2.0 INTRODUCTION TO LABORATO**  **RY PRACTICE** | **2.1 Laboratory rules and safety** | **2** | to guide students to discuss the laboratory rules. | Students to list the physics laboratory rules. | -charts of the physics laboratory  rules.  -wall pictures for safety measures for physics lab.  First aid kit.  -wall chart of different warning  sign.  -internet, book and apparatus  internet physics  application |  | -is the student able to state physics lab rules? |  |
|  | **2** | to assist students in group to discuss importance safety measures for the physics lab. | students to explain important safety measures for lab | is the std able to explain safety measures? |  |
| **MARCH** | **3** | **2.2 basic principle of scientific investigation** | **2** | By giving correct names to the items in the first aid kit and to identify warning sign and how to use warning signs in daily life. | Students to identify warning sign and how to use warning signs in daily life. | -is the std able the use each item in a first aid kit? & identify warning sign? |  |
| **1** | to organize students in small group to discuss the concept of scientific investigation. | students in small group to discuss the concept of scientific investigation. | -is the std able to explain concept of investigation? |  |
| **1** | to assist students to brainstorm the uses of scientific investigation method in solving problem. | students to brainstorm the uses of scientific investigation method in solving problem. | -is the student able to  apply s.  i. methods in solving problem? |  |
| Making appropriate measurements of physical quantities | Develop skills for making physical measurement |  | **4** | 3**.0 MEASUREMENT** | **3.1 Concept of measurement** | **2** | by using yes no cards the teacher lead students to explain concept of measurement. | i) students to explain the concept of measurement. | -Metre rules -beam balance  -solid  -liquid  -measurement tools | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | is the student able to explain concept and importance of measurement? |  |
| to guide students to state importance of measurement in real life. | students to state importance of measurement in real life |
| **4** |  | **3.2 basic fundamental quantities** | **2** | to assist students to define a fundamental quantities.  to lead students to mention the three basic fundamental quantities and state SI unit of basic fundamental quantities | students to define a fundamental quantities.  to lead students to mention the three basic fundamental quantities and state SI unit of basic fundamental quantities | -metre rule  stop watch thermometer  digital balance  metre rule | Is the student able to define a fundamental quantity?  -is the student able to mention three basic fundamental quantities? |  |
| **MIDTERM TEST** | | | | | | | | | | | | |
| **MIDTERM BREAK 31TH MARCH – 08TH APRIL 2024** | | | | | | | | | | | | |
|  |  | **APRIL** | **2** |  | **3.3**  **Derived quantities** | 2 | By using think-pair – share technique students to discuss derived quantities. | iThe students to explain derived quantities. | Beaker  Barometer |  | **-** Is the std able to explain derived quantities?  -Is the std able to identify S.I Units of derived quantities? |  |
| The teacher to guide students to state S.I units of derived quantities | Students in group state the S.I unit derived quantities. |
| **2** | **3.4**  **Basic apparatus/**  **equipments and their uses** | **2** | By using thumps up/down technique, the teacher to ask questions relating to basic apparatus used for measuring. | Students to describe the basic apparatus for measurement. | **-**Measuring cylinder  -Digital balance | -Is the std able to describe basic apparatus used for measurement? |  |
|  |  |  | **2** |  | **3.5**  **Density and relative density** | **2** | To guide students to investigate the source of error and how to minimize them. | The students in group to discuss the concepts parallax, zero instrumental error. | **-** Stop watch  - Weight | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | **-** Is the std able identify source of error in measurement. |  |
| 1 | to assist students to discuss the concept of density a substance and its SI Unit. | Students in group discuss the concept of density and its SI unit. | - Beam balance  - Metre | - Is the std able to explain concept of density and its SI unit? |
|  |  |  | 1 | to organize students in groups to determine the density of regular solid, irregular solid and insoluble substances. | iii) Students to solve problems of density of regular, irregular solids. | rule  -eureka can  - Regular & Irregular solid | -Is the std able to determine density of any substances? |
|  |  |  | **3** |  |  | **1** | To guide students to determine the density of liquids by using experiment. | The students to determine density of oil and kerosene using density bottle and burette | - Density bottle  - Kerosene  - Oil |  | **-** Is the stds able to determine density of liquids |  |
|  |  |  |  | **1** | By using think-pair-share techniques the teacher to assist students to describe the concept of relative density. | The students in groups solve the problems of relative density. | -Sand, beads  -Lead shot | - Is the stds able to define relative density of substance. |  |
| **1** | To guide students to perform experiments to determine relative density of solid and liquids. | Students to perform experiments to determine relative density of solid and liquids. | -Solid ob.  -Liquid Beaker  -Density  bottle  -Picture showing bodies floating.  -Magnets  -Rubber | -Is the stds able to determine relative density of substances? |  |
| **1** | To assist students to discuss the applications of density in real life. | Students in groups discuss the applications of density in real life | -Is the stds able to interpret the applications of density in real life? |  |
| Using force knowledge principle and concept in daily life. | Develop knowledge on concept laws, theories and principal of physics. |  | **3** | **4.0**  **FORCE** | **4.1**  **Concept of force** | 2 | To use information from YES/NO cards to asses students understanding on the concept of force. | Students hold up either YES/NO cards to respond to the teacher questions on the concept of force. |  |  | -Is the stds able to explain concept of the force? |  |
| To guide students to discuss the SI unit of force. | students to discuss the SI unit of force. | students to discuss the SI unit of force. |
| **4.2**  **Types of force** | 2 | To assist students to identify fundamental force. | Students in group to state SI Unit of force. | Students in group to state SI Unit of force. |
|  | To guide students to describe the properties of fundamental forces. | Students in groups to discuss the fundamental forces. | Students in groups to discuss the fundamental forces. |
| **4** | **4.3**  **Effect of forces** | 4 | To lead students to demonstrate effects of force on materials. | Students in groups to describe the properties of fundamental forces. | -Is the stds able to identify fundamental forces? |
| Using force knowledge principle and concept in daily life. | Development knowledge on concept laws, theories and principal of physics | **MAY** | 1 | **5.0 ARCHMEDES PRINCIPAL AND LAW OF FLOTATION** | **5.1 Archimedes principle.** | 2 | To guide students to discuss the concept of upthrust. | Students in group to perform an experiment to determine the upthrust. | -spring balance  -water  -stone | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | Students in group to perform an experiment to determine the upthrust. |  |
| 1 | To lead students carry out the experiment to verify Archimedes principle experimentally. | Students in group to verify Archimedes principle experimentally. | -water  -beaker  -stone | Students in group to verify Archimedes principle experimentally. |  |
| 1 | To facilitate students to state the relationship between apparent loss weight (upthrust) and real weight. | Students to discuss the relationship between apparent loss in weight and real weight and to determine the relative by applying the Archimedes. | -Eureka can  -kerosene  -alcohol  -sand  -water  -density | Students to discuss the relationship between apparent loss in weight and real weight and to determine the relative by applying the Archimedes. |  |
|  |  |  | 2 |  | **5.2**  **Law of flotation** | **2** | To assist students to distinguish between floating body and sinking body. | Students in group to discuss and differentiate floating and sinking bodies. | -bottle  -balloon  -wood  -coin modal  of ship.  -test tube  -lead shot  Water  -beaker  -spring balance  -water  -eureka can  -beaker  -toy  -wooden ship  -container |  | Principle?  -Is the std able to distinguish floating and sinking bodies? |  |
| **1** | To guide students to explain the conditions for a substance to float in fluid. | Students to perform experiments to verify the conditions for a substance to float in fluids. | Is the std able to explain the conditions of a substance to float in fluids? |  |
| **1** | To assign students to relate upthrust and weight of floating body. | Students in group to carry out experiment to relate upthrust and weight of floating body. | Is the std able to relate upthrust and weight of floating body? |  |
|  | 3  3 |  |  | **1**  **1** | To guide students to state the law of flotation. | Students in group to state law of floatation. | Is the std able to state law of flotation in daily life? |  |
| To guide students to discuss various bodies which apply the flotation law and to discuss the mode of action of a ship and submarine. | Students to mention bodies which obey the law of floatation | -water  -buoyant  -ship, boat  -balloons  -kite  -  hydrometer  -chart of hydrometer  -straw  -wax  -diagram of hydrometer  -kerosene  -water  -hydrometer  -milk | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | Is the std able to apply the law of flotation |  |
| **1** | The teacher supervises students in groups to construct simple  hydrometer. | Students in their groups to construct a simple hydrometer. | Is the std able to describe the hydrometer? |  |
| **1** | Guiding students on how to measure the relative density of liquid? | Students to measure the relative density of liquid? | Is the std able to construct a simple hydrometer? |  |
| **TERMINAL EXAMINATIONS** | | | | | | | | | | | | |
| **TERMINAL LEAVE 31TH MAY – 01TH JULY 2024** | | | | | | | | | | | | |
| Using force knowledge principle and concept in daily life. | Development knowledge on concept laws, theories and principal of physics. | **JULY** | 4 | **6.0 STRUCTURE AND PROPERTIES OF MATTER.** | **6.1 Structure of matter** | 2 | Guiding students to explain the concept of matter and to justify the particulate nature of matter by applying Brownian motion in liquids and in gases. | Students explain the concept of matter and perform experiment to justify the particulate nature of matter by applying Brownian motion in liquids and in gases. | -Various object  -Liquids  -Gases  -Water |  | - Is the std able to explain concept of matter? |  |
| 1 | To guide students to discuss the kinetic theory of matter. | Students discuss kinetic theory of matter and to demonstrate movement of particles in smoke. | Magnifying lens  -solid, stone  -liquid, water, Gas,  Oxygen  -rubber  Spiral spring  Ruler  Spring  Balance | -Is the std able to explain the kinetic theory of matter? |
| 1 | To assist students to discuss the concept of elasticity | Students in group to discuss the concept of elasticity. | -Is the std able to explain concept of elasticity? |
|  |  | **AUGUST**  **AUGUST** | 1 |  | **6.2**  **Elasticity** | 4 | To lead students to demonstrate the relationship of tension and extension of loaded elastic material. | Students in group to justify the relationship of tension and extension of loaded material. | -spring balance  -ruler  -slotted weight  Iron rod  -catapult  -Bowand arrow |  | -Is the std able to justify relationship between tension and extension of a loaded elastic material?  -Is the students able to identify the application of elasticity in real life? |  |
| To assist students brainstorm the application of elasticity in real life. | Students to discuss the application of elasticity in real life. |
| 2 |  | **6.3 Adhesion and cohesion** | 4 | By using thump up/thump down technique and group discussion the teacher to lead students to answer questions reacted to adhesion and cohesion. | Students to explain the concept of adhesion cohesion force. | -test tube  -sheet of glass  -water  -mercury. | -Is the std able to explain the concept of adhesion and cohesion force?  -Is the student able to apply adhesion and cohesion in daily life. |  |
| 3  3  4 |  | **6.4 surface tension** | 2 | To assist students to discuss the concept of surface tension. | Students to carry out an experiment to verify the concept of surface tension. | -soap  -Needle  -Thread  - | -Is the std able to explain the concept of surface tension?  -Is the std able to identify the application of surface tension in daily life? |  |
| By using question and answer the teacher to motivate students to identify the application of surface tension | Students in group to identify the application of surface tension. |
| **AUGUST** |  | **6.5 Capillarity.** | 2 | To guide students to discuss the concept of capillarity. | Students to carry out an experiment to show capillarity by rise of water in glass tube with narrow bores of different diameter. | -Glass tube with narrow bores of different kerosene lamp.  -Irish potato | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | -Is the std able to explain the concept of capillarity?  -Is the std able to identify the application of capillarity in daily life? |  |
| To assist students brainstorm the application of capillarity in daily life. | Students to discuss the applications of capillarity in daily life. |
| **6.6**  **Osmosis** | 2 | To guide students to carry out an experiment for verifying the concept of osmosis. | Students in group to carry out an experiment for verifying the concept of osmosis. | -Beaker with water  -sugar  -salt | -Is the std able to explain the concept of osmosis?  -Is the std able to identify the application of osmosis in daily life? |  |
| To assist students to brainstorm the application of osmosis. | Students to discuss the application osmosis in everyday life. |
| Using force knowledge principle and conceptin daily life. | Development knowledge on concept laws, theories andprincipal of physics. |  | 4 | **7.0 PRESSURE** | **7.1 Concept of pressure** | 2 | Guiding students to explain the concept of pressure. | Students to discuss and explain the concept of pressure | -Water  -Bucket wit thin and thick  handle |  | -Is the std able to explain the concept of pressure?  Is the student able to state SI unit of pressure? |  |
| To guide students to state SI unit of pressure. | Students in group to discuss the term pressure and then state SI Unit. |
| **MIDTERM TEST** | | | | | | | | | | | | |
| **MIDTERM BREAK 30TH AUGOST – 16TH SEPTEMBER 2024** | | | | | | | | | | | | |
|  |  | **SEPTEMBER** | 4 |  | **7.2 Pressure due to solid** | 1 | Guiding students to explain dependence of pressure on surface of contact. | Students in small group to cut bars of soap into pieces by using a thin and thick wire loop and state what they experience. | -Bars of  soap  -Thin and thick wire loop | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | -Is the std able to explain the dependence of pressure on contact surface area?  Is the std able to identify the application of pressure due to solid? |  |
| 4 |  | **7.3**  **Pressure in Liquids** | 1 | To guide students to describe the characteristic of pressure in liquids | Students to brainstorm the characteristic of pressure in liquids | - Cans with hole punches in different depth.  Manometer  -Tumbler with lid, empty can, cold water, source of heat  -Bicycle pump  -Siphon  -Water  -Flushing tank.  -Fortin  barometer  -Aneroid barometer. | -Is the std able to describe the characteristic of pressure in liquids?  -Is the std able to examine the variation of pressure with depth in liquids? |
| 1 | To support students to examine the variation of pressure with depth in liquids and derive the formula p=hpg | Students in small groups to perform activities on the spurting out of the water from the holes a can which are at different depth. |
| 1 | To Guide students to solve problems involving pressure in liquids. | Students in small group to solve problems involving pressure in liquids | -Is std able to solve problems, involving pressure in liquids?  -Is students able to explain the principle of a hydraulic press?  -Is std able to measure pressure of a liquids? |  |
| **OCTOBER** | 1 |  |  | 2  2 | To lead students un deriving the relation f/a = F/A for pressure on small and large piston of hydraulic press. | Students in groups to investigate the actions of an applied force to a load by using hydraulic press. |
| To assist students to demonstrate measurement of pressure of a liquids. | Students demonstrate how to measure pressure of liquids. |
|  |  | **OCTOBER** | **2** |  | **7.4 Atmospheric pressure** | 2 | -To assist students to demonstrate the existence of atmospheric pressure.  -to guide students to identify the application of atmospheric pressure. | -Students in groups to demonstrate and explain the existence of atmospheric pressure.  -Students in group of discuss and identify the application of atmospheric pressure. |  | -Is the std able to describe the existence of atmospheric pressure?  -Is the std able to identify the application of atmospheric pressure?  -Is the std able to measure the atmospheric pressure? |  |
| Using force knowledge principle and concept in daily life. | Development knowledge on concept laws, theories, and principal of physics. | **OCTOBER** | 2 | **8.0 WORK, ENERGY AND POWER** | **8.1 Work** | 2 | -To guide students to brainstorm the concept of work as applied to physics.  -To guide students to state SI unit of work.  -To guide how to determine the work done by an applied force. | Students to discuss the concept of work as applied to physics.  Students to state SI unit of work.  Students in group to perform an experiment to determine the work done. | Block of wood, thread, spring, clock  -Heavy body  -tape measure  -meter rule  -Helical spring  -object  -stone  -bob | -Is the std able to explain the concept of work?  -Is the std able to state the SI unit of work?  -Is the std able to determine the work done by an applied force? |  |
| 3 |  | **8.2 Energy** | 4 | -To assist students to discuss the concept of energy.  -To guide students to discuss the SI unit of energy.  -To guide students to brainstorm different forms of energy. | -Students in group of discuss the concept of power.  -Students in group to discuss and state the SI unit of energy.  -The students in group to discuss different forms of energy. | -Is the std able to explain the concept of energy?  -Is the std able to state the SI unit of energy?  -Is the std able to identify different forms of energy? |  |
| -To guide students to demonstrate and explain the pushing effect of a compressed spiral spring when released and the existence of PE and KE using a spiral spring.  -Through a question and answer technique, the teacher to facilitate students to explain the transformation of energy.  -To assist students to brainstorm the principle of conservation of energy.  -To assist students to discuss the uses of mechanical energy. | Students compute the PE and KE for a moving body.  Students to explain the transformation of energy.  Students to state the principle of conservation of energy.  Students to discuss the uses of mechanical energy. | -  -tube light  -motor  -candle  -electric fan | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | -Is the students able to distinguish between the PE and KE energy?  -Is the std able to explain the transformation of energy?  -Is the able to state the principle conservation of energy?  -Is the std able to explain the uses of mechanical energy? |  |
|  |  |  | 4 |  | **8.3 Power** | 2 | -To use YES/NO cards to ask questions related to the concept of power.  -To guide students to discuss the SI unit of power.  -To guide students to determining the rate of raising a heavy body through a given distance. | -Students to explain the concept of power.  -Students to discuss the SI unit of power by relating work done and time.  -Students to determine the rate of doing work.  -Students in group to discuss the concept of light. | -heavy body  -stop watch  -meter rule  -meter rule  sting  -card board  -torch  -box with a hole  -candle  -kerosene  -lamb  -sun  -flame  -luminous object  -candle  -electric lamb |  | -Is the std able to explain the concept of power?  -Is the std able to state SI unit of power?  -Is the std able to determine the rate of doing work? |  |
| Using force knowledge principle and concept in daily life. | Development knowledge on concept laws, theories, and principal of physics. |  | 4 | **9.0**  **LIGHT** | **9.1 Source of light** | 2 | -To guide students to explain concept of light.  -To guide students to identify the source of light.  -To guide students to distinguish between luminous and non luminous bodies. | Students in small groups to identify the source of light.  Students in small group to distinguish between luminous and from non-luminous bodies | Students in small groups to identify the source of light.  Students in small group to distinguish between luminous and from non-luminous bodies |  |
|  |  | **N**  **O**  **V**  **E**  **M**  **BER** | 1 |  | **9.2**  **Propagation and transmission of light.** | 4 | -To supervise students to perform experiment on the concept of rays and beam of light.  -To lead students to discuss how to verify that light travels in a straight line  -To guide students to identify transparent, translucent, opaque materials. | -Students in small group perform experiment to explain concept of rays and beam of light.--Students to perform demonstration to verify that light travels in straight line.  -Students in group to identify transparent, translucent, opaque materials. | -ray box  -candle  -string  -card board  -source of light  -oiled paper  -iron sheet  -glass  -walls.  -ray box  -plane mirror  -ruler  -source of | **SCSU &MoEVT**  **(2012), Physics for secondary schools form 1, Uhuru media, Zanzibar** | -Is std able to explain the concept of rays and beam of light?  -Is the std able to verify that light travels in straight line?  -Is the std able to identify transparent, translucent, and opaque materials? |  |
|  |  |  | 2 |  | **9.3**  **Reflection of light** | 4 | -The teacher to lead students to demonstrate the concept of reflection. The teacher to facilitate -students to distinguish regular and irregular of light. | -Student in group to demonstrate concept of reflection of light.  -Students in small group to distinguish regular and irregular and reflection of light. | light  -sift board.  -plan mirror  -protractor  -source |  |  |  |
|  |  | **NOVEMBER** | 3 |  |  | 4 | to carry out an experiment to investigate the laws of reflection of light and from the result of experiment the teacher assist students to state the laws of reflection of light.  To assist to students to describe the position and size and nature of image formed by a plane mirror. | The teacher and students apply the laws of reflection of light to observe the position of the incident ray, the reflected ray and the normal.  Students to perform an experiment to investigate the image formed by a plane mirror. | -Plane paper  -ray box  -plane mirror  -protractor  -ruler  -optical pins  -source  -plane paper. |  | -Is the std able to apply the laws of reflection of light?  Is the std able to describe image formed by a plane mirror? |  |
| **ANNUAL EXAMINATIONS** | | | | | | | | | | | | |
| **ANNUAL HOLIDAYS**  **06/12/2024** | | | | | | | | | | | | |