**THE PRESIDENT’S OFFICE-**

**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

S**CHEME OF WORK**

TEACHER’S NAME:

SCHOOL’S NAME: CLASS/STREAM: **FORM FOUR** SUBJECT: **PHYSICS**

YEAR: **2024**

TERM: **1 & 2**

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| **COMPETENCE** | **GENERAL OBJECTIVE** | **MONTH** | **WEEK** | **MAIN TOPIC** | **SUB-TOPIC** | **PERIOD** | **TEACHING ACTIVITIES** | **LEARNING ACTIVITIES** | **T/L MATERIALS** | **REFERENCES** | **ASSESSMENT** | **REMARKS** |
| Demonstrating effects and application of waves | Understand and the laws and principles of waves | **J A N U A R Y** | 2  3 | **WAVES** | **Introduction to waves** | **4** | Guide students to brainstorm the  concept of waves while they are in groups. | Students in group to discuss the  concept of waves. | Rope, ripple  tank, tuning fork.  -Charts showing graph of displacement against time.  - C.R.O.  - Helical spring  - Drum  - Light |  | Through quiz ask  students to explain  the concept of waves, wavelength,  frequency and velocity of wave.  Ask students to explain mechanical waves and electromagnetic waves. |  |
| Lead students to demonstrate  the production of waves using rope, ripple tank and tuning fork. | students to demonstrate the  production of waves using rope, ripple tank and tuning fork. |
| Using questions and answers  technique to assist students to explain the terms wavelength (), frequency (f) and velocity (v) of the wave. | Students to explain the terms  wave length, frequency, and velocity of the wave .  - to take notes. |
| Guiding students to identify the  types of waves. | students in groups to identify  mechanical waves and electromagnetic waves. |
|  |  |  | **4** |  | **Behavior of waves** | **4** | Using demonstration in class,  guide students to explain the behavior of waves, reflection, diffraction and interference. | Students to explain reflection,  refraction and interference.  - |  Ripple tank, rectangula r prism, and vibrator.   Radio   TV   Mobile phone.   Ripple tank   Rectangula r prisms.   Vibrator. |  | students in groups to  explain the behavior of waves |  |
| Guiding students to brainstorm on the applications of reflection, refraction, diffraction and interference of waves. | Guiding students to mention the application of reflection, refraction, diffraction and interference of waves. |
| Guiding students to present the  applications of behavior of waves. | while in group students to  demonstrate reflection, refraction, diffraction and interference of waves |
|  |  | **F**  **E B R U A R Y** | 1 |  | **Propagation of waves** | 4 | Using question and answer  technique to assist students to describe the propagation of mechanical waves. | Students in groups to describe  the propagation of mechanical waves. | . Slinky spring.   Tuning fork.   Ripple tank.   Rope.   Chart showing the e.m. spectrum. |  | Students to note down  the criteria of propagation of mechanical waves. |  |
|  | through questions and answer  technique explain the propagation of electromagnetic waves. | Students to discuss the  propagation of electromagnetic waves.  - | students to explain  propagation of e.m.w. |

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|  |  | **F E B R U A R Y** | 2 |  |  | 4 | Guiding students to  demonstrate the propagation of e.m. waves. | Students to describe frequency  from equation 𝑓 = 𝑣  To state S. I. unit of  quency. |  Chart showing the relationship between frequency, speed and wavelength.   Glass block.   Optical pins.   White sheet.   Protector.   Ruler.   Drawing board. |  | students to state the  S.I. unit of frequency.  To assess students while they are doing practical. |  |
|  | Guiding students to determine  the relationship between frequency, speed and wavelength. | students to determine the  relationship between frequency, speed and wavelength. |
|  | Group students in two and  guide them to determine the refractive index of glass. | Students to determine the  refractive index of a glass black and submit their results to the teacher. |
|  | Guiding students to use the  formula to find refractive index of different materials. | students to use the formula to  find refractive index of different materials |
| - |  | **M A R C H** | **1** |  | **Sound waves** | **4** | Guiding students to identify  sources of sound waves. | Students to produce sound  waves by using different sources of sound. | Drum   Guitar   Whistle   Turning   Model of ear.   Table with audibility range.   Model of the human ear.   Tall wall   Hall/studio.   Sound absorbing materials (cloth, spongy material)   Stop watch   Drum   Tape measure   Guitar   Drum   Sonometer   Turning forks   Violin   Flute   Microphone   C.R.O. |  | students to explain  different sources of sound waves.  students to explain the concept of audibility range. |  |
| Using questions and answer  technique guide students to explain the concept of audibility range. | Students to explain the  concept of audibility range. |
|  | Guiding students to describe  the perception of hearing. | Students to describe the  perception of hearing. |  | students to explain  the concept of echo and reverberation of sound. |
| Guiding students to demonstrate  the production of an echo and explain the concept of reverberation of sound. | Students to explain the  concept of echo and reverberation of sound. |
|  | Using drum and stop watch, to guide students to measure the speed of sound in air. | Students to perform an experiment to measure the velocity of sound in air. |  | students’ participation on measuring velocity of sound in air.  Give the class work asking students to explain factors affecting loudness, pitch and quality of musical sound. |
| **2**  **2** |  | **Musical sound** | 4 | Using different musical  instruments, guide students to explain the concept of musical sound. | Students to give the meaning  of music and noise. |
|  | Lead students to identify factors  affecting loudness, pitch and quality of musical sound. | Students to identify factors  affecting loudness, pitch and quality of musical sound. |
|  | - |  |  | **Musical sound** |  | To organize the study strip to  visit a musical band or studio to identify different types of musical instruments. | By listening students to  distinguish different musical instruments by the sound they produce. |  Pipes, string, membrane, and electronic |  | students to identify  the different musical instrument.  - Give quiz on terms |  |

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|  |  | **M**  **A R C H** |  |  |  |  | To Lead students to explain the  terms of **standing (stationery)**  **waves** | Students to explain the terms  nodes, antinodes, crest and trough as applied in stationery waves. | | instruments.   Helical spring.   Vibrator   Marker pen   White sheet   Motor and battery   Rubber band   String   Sonometer   Guitar   Turning fork |  | used in stationery  waves |  |
|  | Guide students to perform an  experiment to determine the factors which affect the frequency of a note by stretched string. | Students to carry out an  experiment to determine factors which affect the frequency of a note produced by a stretched string | |  | - Assess students’ performance and participation on finding the frequency of a stretched string. |
| Guiding Students to determine  the frequency of a musical note | Students to determine the  frequency of a musical note. | |
|  |  | **M A R C H** | **3** |  |  | 4 | To Lead students to distinguish  between fundamental note and overtones. | Students to distinguish  between fundamental note and overtones | |  Resonance tube/burett  e.   Turning fork.   String   Nails   Membrane   Metal can   Piece of wood.   Glass prism   Chart of rain bow.   Thermomete r   Iron   Heater   Sun rays. |  | Through questions and  answers assess students on distinguish between fundamental note and overtones  To assess students work i.e. their musical instruments they made.  students to identify the bands of electromagnetic spectrum.  To asses and record the participation of students on detecting those rays |  |
| To Lead students to explain the  concept of resonances as applied to sound.  With the guidance of an expert, support student to construct a simple musical instrument. | Students to explain the  concept of resonance as applied to sound. Students to initiate the  construction of simple musical instruments. | |
|  | **4**  **4** | **Electromagnet**  **ic spectrum** | 8 | Guiding students to explain the  concept of the electromagnetic spectrum. | Students to explain the  concept of electromagnetic spectrum. | |
| Guiding students to draw and label the electromagnetic spectrum. | Students to identify bands of the lectromagnetic spectrum. | |
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| Guiding students to detect  infrared radiation, visible and u-v rays | Students in groups to detect  infrared rays, visible and U-V  rays. | |
| **MIDTERM TEST** | | | | | | | | | | | | | |
| **MIDTERM BREAK 31TH MARCH – 08TH APRIL 2024** | | | | | | | | | | | | | |
| Demonstrating  effects and application of electromagneti c induction |  | **A**  **P R I**  **L** | **4** |  | **Application of**  **electromagnet ic wave in daily life** | 4 | Guiding students to identify the application of microwaves, radio waves, and infrared, -rays and x- rays. | Students to identify the applications of microwaves, radio-waves, infrared, -rays and x-rays. |  | |  | Students to identify the  application of e.m.w in daily life. |  |
| Explain the importance of electromagnetic waves in Agriculture and climate. | Students to carryout project work on the importance of electromagnetic waves in agriculture and climate. |

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|  | Understand  laws and principles of electromagnet ic induction | M  A Y | **2** | **ELECTRO**  **MAGNETI SM** | **Magnetic field**  **due to a current carrying conductor.** | 2 | Assisting students to explain how  electric current produce magnetic field. | Students in group to perform an  experiment to produce magnetic field due to current carrying wire. |  Wire   Source of electric current   Compass needle.   Cardboard   Iron fillings   Wire   Source of electric current. |  | students to write short  notes on how electric current produce magnetic field and identify patterns of the field lines. |  |  |
| 2 | Guiding students to carryout experiments to investigate the magnetic. | Students, in groups, to identify the patterns of the field lines. |
| Guiding students to perform experiment associated with an electric current passing through a straight wire, loop and solenoid | Students to carry out an experiment on straight conductor, loop and solenoid. |
|  |  |  | 3 |  |  | 2 | Guide students to state **right hand rule and the cork screw rule.** | Students to state the right hand rule and cork screw rule. |  Compass needle   Iron fillings. |  | students to state right  hand rule and cork screw rule.  To Assess students involvement on determining the direction of magnetic field produced. |  |
| Guiding students to determine the direction of magnetic field due to current flowing through straight wire, loop and solenoid. | Students to identify the direction of the magnetic field due to current carrying conductor. |
|  |  |  |  |  |  | 2 | Guiding students to determine the direction of the force acting on a current carrying conductor placed at right-angle to a magnetic field | students to determine the direction of the force acting on a current carrying conductor. |  Wire   U-shaped magnet   Wire   Meter rule   Source of electricity |  | students to state  Fleming’s left hand  rule.  Students to make performance on doing experiment. |  |
| Guiding students to state Fleming’s  left hand rule. | students to state Fleming’s left  hand rule. |
| Guiding students to determine the attraction and repulsion of current flowing through parallel wire. | Students to perform experiment to show the directions of repulsive and attractive force. |
|  |  |  | 3 | ELECTROM  AGNETIS M | **Electromagnet**  **ic induction.** | 4 | Guide students to demonstrate  the production of induced current using a coil and a magnet. | Students, in group, to  demonstrate the production of induced current using coil and magnet. |  Magnet   Coil   Galvanome ter |  | To assess students in  group while they are demonstrating.  students to state the laws of electromagnetic induction.  students to note down the factors affecting electromagnetic induction. |  |
| Guide students to explain the concept of electromagnetic induction. | Students to explain the concept of electromagnetic induction. |
| Guide students to state and  explain Faraday’s and Lenz’s laws of electromagnetic induction. | Students to explain Faraday’s  and Lenz’s laws of  electromagnetic induction. |

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|  |  | |  |  |  |  |  | Group students to perform the  experiment on electromagnetic induction. | Students to apply **Faraday’s**  **law and Lenz’s law of electromagnetic induction** to demonstrate the factors affecting magnitude of induced electromagnetic force and direction of induced current |  |  |  |  |  |
|  |  | | M A Y | 4 |  |  |  | Guiding students to explain the  concept of self induction and mutual induction | Students to explain the  concept of self and mutual induction. |  Source of electricity   Iron ring   Coil   Galvanome ter   Induction coil   Chart showing induction coil   Chart of a.c and d.c generator |  | students to write short  notes on mode of action of induction coil.  students to write the notes on the mode of action of a.c and d.c generator |  |  |
| Using diagram describe the  structure of the induction coil and how it works | Students to describe the mode  of action of an induction coil. |
| To explain to the students the  flow of a.c and d.c from a coil rotating in a magnetic field | Students to explain the flow  of a.c and d.c from a coil rotating in a magnetic field. |
| The teacher to explain the mode  of action of a.c and d.c generators and how to convert a.c generator to d.c. | Students to discuss the applications of a.c generator and the advantages of a.c generator over d.c generator. |
|  |  | To describe the structure and mode of action of a transformer.  Using enquiry deductive technique guide students to develop the relation Es/Ep = Ns/Np  Guide students to apply the above formula. | - To explain the mode of action of a transformer.  - Students to discuss the applications of a transformer. |  Wire   Primary and Secondary coil.   Voltmeter.   Rectangular soft iron ring. | - Ask students to construct simple step- up and step down transformer. |
| Recognizing the importance and hazards of radioactive emissions. | | Realize the importance and hazards of radioactive emission. | **J U N E** | **1** | **RADIOAC TIVTY** | **The nucleus of an atom** | **1** | Guide students to discuss the structure of the atoms while they sit in groups. | Students in group and discuss the structure of the atom. |  Chart of atom   Model of atom.   Model showing atomic no., mass no. of elements.   Charts showing electron and proton in  an atom. |  | Students in group to describe the structure of the nucleus of an atom.  students on atomic no., mass no., and isotopes of element and forces holding nucleus. |  |
| Assist students to give the  meaning of atomic number, mass number and isotopes of elements. | Students to discuss the  meaning of atomic number, mass number and isotopes of elements. |
| To assist students to mention the  existence of forces holding the nucleons. | Students in groups to  mention the forces holding the nucleus. |
|  | |  |  | **1** |  | **Natural**  **radioactivity** | **1** | To explain the concept of  radioactivity. | - Students to explain the concept of radioactivity. | Periodic  table. |  | students to  write few sentences to explain the concept of radioactivity. |  |
| To highlight the  properties of alpha () and  Beta () and gamma ()  radiations. | While in groups, students to  describe the properties of radiations emitted by radioactive substances. |

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|  |  | J U N E | **1**  **2** |  |  | **1**  **1** | To highlight the nuclear changes due to the emission of ,  and   radiations. | Students to discuss in groups  the nuclear change due to emission of ,  and  radiations. |  Periodic emission.   Chart showing emission of  ,  and   radiations.   Chart showing the detectors. |  | students to explain the  nuclear changes due to emission of,  and  radiations.  To give students home work to write short notes on one of the detectors discussed. |  |
| Guiding students on the detection of  and  rays using  G-M counters, spark chamber or  Wilson Cloud Chamber. | Students to follow the  explanation and take note. |
| Guiding students to detect - rays using photographic plate. | students to detect -rays using photographic plate. |
|  | 4 | Guide students to describe the  meaning of **half-life as applied to a radioactive** substance highlight of background radiations.  To demonstrate on how to determine half-life using various methods.  Guiding students to identify the applications of radio isotopes. | Students to demonstrate the  half-life using dice.  in groups, students to determine half-life of radioactive elements.  Students to identify the applications of Radioisotopes in agriculture, medicine and industry. |  Graph showing radioactivit  y.   Dice   Graph paper   Graph of count-rate against time   Graph paper   Pencil   Charts |  | - Students to do homework on determining the half- life of radioactive substances.  - Students to be asked to write the applications of radio isotopes. |
|  |  |  | **3** |  | **Artificial**  **Radioactivity** | 2 | Guiding students to distinguish  between natural and artificial radioactive isotopes.  To describe the methods of producing artificial radioactive isotopes.  Guide students to mention the applications of artificial radioactivity. | Students to distinguish  between natural and artificial radioactivity.  Students in groups to discuss methods of producing  artificial radioactive isotopes.  Students to use library search technique to write down uses of artificial radioactivity. |  Periodic table   Chart of bomb adding elements. |  | students to distinguish  between natural and artificial radioactivity  students in group to write method of producing and applications of artificial radioactivity. |  |
|  |  |  | **3** |  | **Radiation Hazards and safety** | 2 | To explain the effects of nuclear radiations on human body.  To highlight about protection from the nuclear radiations. | Students in group to explain the effect of nuclear radiation on human body.  Students to demonstrate using role play on how to protect themselves from nuclear radiations. | Chart showing the hazards of radiations, Pictures showing people working with radioactive materials. |  | - Ask students to explain effects of nuclear reactions of human body. |
| **TERMINAL EXAMINATIONS** | | | | | | | | | | | | |
| **TERMINAL LEAVE 31TH MAY – 01TH JULY 2024** | | | | | | | | | | | | |

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| Recognizing the importance and hazards of x- rays. | Realize the  importance and hazard of x-ray | **J U L Y** | 4 | **RADIOAC**  **TIVITY** | **Nuclear**  **fission and fusion** | 2 | To assist the students to explain  the concept of nuclear fission and fusion.  To explain the applications of nuclear fission and fusion. | Students to explain the  nuclear fission and fusion.  While in groups, students to mention the applications of nuclear fission and fusion. | Chart of  nuclear power station. |  | Each group to give  their report and teacher to assess their presentation. |  |
| **4** | **THERMIO**  **NIC EMISSION** | **Cathode rays.** | 2 | To explain the production of  cathode rays.  To facilitate students to state the properties of cathode rays.  To assist students to state the applications of cathode ray tube in daily life. | Students to explain the  production of cathode rays.  Students to state properties of cathode rays.  Students to state the applications of cathode ray tube. | Cathode ray tube.,  Chart showing cathode ray tube.,  TV, Computer monitor. Charts of maltose cross and paddle wheel. |  | Assessing students on  explaining the production of cathode rays.  students to state the properties of cathode rays. |
| Recognizing the importance and hazards of X- rays. | Realize the importance and hazard of X-ray | A U G U S T | 1 | **THERMIO NIC EMISSION** | **X-rays** | 2 | Guiding students to describe the  structure and mode of action of the X-ray tube. | Students to describe the  structure and mode of action of an X-ray tube.  - |  Chart showing X- rays tube.   X-rays unit centre.   X-ray photograph ic plate. |  | Students in group  students and ask them to note down the structure and mode of action of X-rays tube.  Give a quiz on soft and hard X-rays.  - Let students write the applications of X- rays. |  |
| Through question and answer  technique, the teacher to guide students to distinguish between X-rays and their production. | Students to draw and label  the diagram of the X-ray tube. |
| Guide students to review the  position of X-rays in electromagnetic spectrum. | Students in group to  distinguish between soft and hard X-rays. |
| To arrange a study visit to the  X-rays unit centre. | Students to brainstorm on the  properties of X-rays. |
| Guiding students to discuss the  applications of X-rays in daily life. | Students to discuss the  applications of X-rays in daily life. |
| to write notes on their  educational trip. | Students to write notes on  their educational trip. |

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| Students to be able to design and implementing the simple electronic circuits | Students to understand basic building unit  for electronic circuit  . | A U G U S T | 1 | **ELECTRO**  **NICS** | **Semiconductor**  **s** | 2 | To guide students to explain the  concept of energy bands in solids.  Guiding students to distinguish between conductors, semiconductors and insulators. | Students to draw the energy  bands in solids.  Students to distinguish between conductors, semiconductors and insulators. |  Chart of energy bands in solids |  | students to distinguish  conductors, semiconductors and insulators using energy bands. |  |
| Guiding students on the effect of temperature on conductivity of conductors, semiconductors and insulators.  Guiding students to identify types of semiconductors.  Guiding students to describe the mechanisms of doping in intrinsic semiconductors. | Students to explain the effect of temperature on  conductivity of solid.  Students to identify types of semiconductors.  Students to describe the mechanism of doping. |  |  | students to explain the effect of temperature on conductivity of solids.  Assessing students to identify types of semiconductors. |
|  |  |  | **2** | **ELECTRO NICS** | **Diodes** | 2 | To lead students to describe the  constructions the construction of a P-N junction.  To display different types of diodes. | Students to explain the mode  of action of a P-N junction.  Students to identify types of diodes. |  Diodes   Chart showing diodes.   P-N junction diode.   LED |  | students to explain  mode of action of P-N  junction.  Test the students on types of diodes. |  |
| **2** |  | **Transistor** | 2 | Guiding students to discuss a  circuit which shows half and full- wave rectification.  To display transistors and show a diagram of a transistor.  The teacher to display transistors.  Through question and answer technique the teacher to lead students to outline the application of transistors. | Students to construct circuits  which show half-wave and full wave rectifications.  Students to describe the construction of a transistor. Students to describe the structure of a transistor.  Students to identify types of transistors.  - Students to outline the applications of transistors |  DC sources   Diodes.   Capacitor   Resistors   Connecting wires   Chart showing a transistors.   Transistors   PNP and NPN  transistors.   Radio   TV   Voltage amplifier. |  | students to construct  half wave and full wave rectifier.  Assessing the students work on outlining the applications of transistors. |
|  |  |  | **3** |  | **Single stage amplifier** | 2 | To explain the analogue signal.  To assist students to explain the concept of digital signals.  Guiding students to design single stage amplifier. | Students to explain the concept of analogue signal.  Students to explain the concept of digital signals.  Students in groups to design single state amplifier. |  Chart showing analogy signal.   Mobile phone  (analogy)   Chart showing digital signal   Watch   Transistor   Resistors |  | To assess students on explaining analogue and digital signal.  Giving work students to design a single stage amplifier. |  |

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| Students to be able to describe the solar system and other  celestial bodies | Promote knowledge on the solar system and relationship with other celestial bodies | A U G U S T | **3** | **ELEMENT ARY ASTRON OMY** | **Introduction to astronomy** | 2 | Guiding students to explain the  concept of astronomy.  To arrange students in groups and guide students to explain the importance of astronomy. | Students, using think-pair-  share technique to explain the concept of astronomy.  Students in groups to discuss on importance of astronomy in daily life. | Model of  universe.   Chart of universe.   Clear sky   Chart of heavenly bodies. |  |  |  |
|  |  |  | **4** |  | **Solar system** | 2 | Guiding students to distinguish between star and planet.  Guiding students to explain the concept of force of gravitation which maintains bodies in their orbits. | Students in group to give the difference between star and planet.  Students in groups to explain the concept of force of gravitation which maintain bodies in their orbits. |  Venus   Jupiter   Binoculars   Chart of earth   Earth and moon |  | - Ask students to distinguish star from planet.  - Ask students to explain the concept of gravitation. |  |
| 4 | **ELEMENT**  **ARY ASTRON OMY** | **Constellations** | 2 | Guiding students to explain the  concept of constellation.  Guiding students to identify kinds of constellations.  Guiding students to discuss the uses of constellations in navigation and seasons prediction. | Students to explain the  concept of constellations.  Students to identify and name common constellations.  Students to discuss with teachers the uses of constellations. |  Chart of different constellations.   Chart showing seasons. |  | - Ask students to explain the concept of constellation.  - Test students on the kind and uses of constellations. |
| **MIDTERM TEST** | | | | | | | | | | | | |
| **MIDTERM BREAK 30TH AUGOST – 16TH SEPTEMBER 2024** | | | | | | | | | | | | |
|  |  | **S E P T E M B E R** | 4 |  | **The earth and the moon** | 2 | To guide students to describe the surface features and temperature of the moon.  To guide students to explain the causes of ocean tides. Students can visit the coast of sea to observe the effects of water tides. | Students to describe the surface features and temperature of the moon.  Students to write down the observations they made on effects of water tides |  Chart of the moon and of the earth.   Chart of ocean tides |  | - Give a group work for students to describe the surface features and temperature of the moon and give the effects of water tides. |  |
| Describing the occurrence of environmental disaster | Develop knowledge on the  occurrence of environmenta l disaster |  | 4 | **GEOPHYS ICS** | **Structure and composition of the Earth** | 2 | - The teacher to guide students to describe the structure of the earth.  - The teacher to guide students to describe the composition  of the layers of the earth.  - Guide the students to explain the importance of the layers of the earth. | - Students to describe the structure of the earth.  - Students in groups to describe the composition of the layers of the earth.  - Students in groups to explain the importance of the layers of the earth. |  Chart of the structure of the earth.   Minerals. |  |  |  |

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|  |  | **O**  **C T O B E R** | **1** |  | **The**  **Greenhouse effect and global warming** | 2 | Guiding students to explain the  green house effect.  To lead students to identify sources of green house. | Students in groups to explain  the green house effect.  Students to identify sources of green house. |  Chart of green house.   Chart of ozone layer.   Green  house gases |  | - Ask students to tell about green house effect and identify sources of green house |  |
|  | Guiding students to explain the occurrence of global warming.  Guiding students to state the consequences of global warming. | Students in groups to explain the occurrence of global warming.  Students to state the consequence of global warming. |  Chart of effect of global warming.   Pictures of effects of global warming   Melting ice caps.   Charts of volcanoes.   Pictures showing effects of volcanoes.   Chart of earthquake.   Picture of earthquake.   Seismometer chart.   Seismometer.   Animal signs.   Meteorology report.   Chart of structure of atmosphere showing the layer.   Communicati on system. |  | students to explain the occurrence of global warming and state the consequences of global warming. |
|  |  |  | **1** |  | **Earthquakes and volcanoes** | 2 | To guide students to explain the origin of volcanoes.  Guiding students to describe the effects of volcanoes.  Group students and guide them to explain the concept of the earthquake. | Students to explain the origin of volcanoes.  Students to describe the effects of volcanoes.  Students in groups to explain the origin of earthquake. |  | students to explain the origin of earthquake. |  |
|  | to describe the principle of measurement of earthquakes.  To assist students to identify the hazards, precautions against earthquake hazards. | Students to discuss in groups how to record the measurement of earthquake.  Students in groups to identify the precautions against earthquake and hazards. |  | students to describe the principle of measuring earthquake. |
|  | **2** |  | **Structure and composition of the atmosphere** | 2 | To Lead students to describe the vertical structure of the atmosphere.  Guiding students to describe the compositions of the atmosphere.  Guiding students to describe the importance of various layers of the atmosphere. | Students to describe the vertical structure of the atmosphere.  Students using think-pair- technique to describe the composition of atmosphere.  Students to explain t he importance of various layers of the atmosphere. |  | students to describe the vertical structure of the atmosphere. |
|  |  |  | **2** |  | **Greenhouse Effect and Global warming** | 4 | Guiding students to explain the greenhouse effect  Guiding students to identify sources of greenhouse effect  Guiding students to explain the occurance of global warming and its consequences | students to explain the greenhouse effect  students to identify sources of greenhouse effect  students to explain the occurance of global warming and its consequences | Chart, Text,  Picture on effect  of global warming |  | Students to explain the impact of greenhouse effect and occurance of global warming |  |
| R E V I S I O N | | | | | | | | | | | | |
| **FORM FOUR NATIONAL E X A M I N A T I O N S** | | | | | | | | | | | | |

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