FIRST TERM SCHEME OF WORK

WEEK TOPIC/CONTENT

1. HEAT ENERGY
2. Temperature and its measurement
3. Types of thermometers
4. Absolute scale of temperature
5. HEAT ENERGY MEASUREMENT I
6. Concept of specific heat capacity

* Its measurement
* Its significance

1. HEAT ENERGY MEASUREMENT II
2. Latent heat
3. Evaporation, boiling and sublimation
4. Relative Humidity and Dew point
5. GAS LAWS
6. Measurement of Gas Pressure
7. Barometer in practical use
8. Boyle’s law and its application
9. Charles’ law and its application
10. Pressure law
11. General gas law
12. PRODUCTION AND PROPAGATION OF WAVES
13. Production of mechanical waves
14. Pulsating system - Energy transmitted with definite speed, frequency and wavelength
15. Wave form – description and graphical representation
16. Mathematical relationship among
17. TYPES AND PROPERTIES OF WAVES
18. Longitudinal waves
19. Wave equation: (ג
20. Properties of waves – Reflection, Refraction, Diffraction, Interference, Polarization
21. LIGHT WAVES I
22. Sources of Light
23. Light and Matter
24. Transmission of light shadows, Eclipse, Pinhole camera
25. LIGHT WAVES II
26. Reflection of light at plane and curved surfaces
27. Laws of Reflection
28. Formation of images by plane and curved mirrors
29. Application of plane and curved mirrors
30. LIGHT WAVES III
31. Refraction of light through rectangular glass block
32. Laws of Refraction
33. Real and Apparent depth
34. Total internal reflection
35. Critical Angle
36. LIGHT WAVES IV
37. Refraction of light through triangular glass prism
38. Angle of Minimum Deviation
39. Totally Reflecting Prism
40. LIGHT WAVES V
41. Dispersion of white light
42. Refraction of light through converging and diverging lenses
43. Images formed by lenses
44. APPLICATION OF LIGHT WAVES
45. Simple Camera and Film projection
46. The Human eye
47. The simple Microscope and the Compound microscope
48. The Telescopes
49. Prism Binocular

LESSON PLAN FOR WEEK ONE ENDING 15TH SEPTEMBER, 2023

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| THEME: | Heat |
| DATE: | 11 – 09 – 2022 |
| CLASS: | SS2 |
| TIME: | 08:40am – 09:20am |
| DURATION | 40 MINUTES |
| PERIOD | 1 |
| SUBJECT: | Physics |
| UNIT TOPIC: | Heat Energy |
| LESSON TOPIC: | Temperature and Heat |

SPECIFIC OBJECTIVE: By the end of the lesson, learners should be able to

1. Differentiate between Heat and Temperature
2. Enumerate methods of measuring temperature
3. Describe fixed temperature and temperature scales of thermometer

INSTRUCTIONAL RESOURCES: Charts, mercury –in –glass thermometer/ clinical thermometer (used in the sick bay)

LESSON PRESENTATION

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| STEP 1 | PREVIOUS KNOWLEDGE: The students are conversant with thermometers | | Students recall. |
| STEP 2 | EXPLORATION: The teacher arouses the interests of the learners by telling them how a clinical thermometer reads human temperature when placed in the armpit of a human being, using his chart. | |  |
| STEP 3 | DISCUSSION:  **Heat**  Heat is a measure of total internal energy of a body. It is a form of energy due to a temperature difference. It is measured in Joule, J  **Temperature**  Temperature is the degree of hotness or coldness of a body and it is related to the energy of movement. It is a measure of average kinetic energy of the molecules of the body. The unit of temperature is in degree Celsius () or Kelvin ().  **Measurement of temperature**  Temperature is measured by using thermometers. Thermometers have two reference temperatures or fixed points called ***the upper fixed point and lower fixed point***.  The upper fixed point is the temperature of steam from pure water boiling at standard atmospheric pressure of. It is (for Celsius scale).  The lower fixed point is the temperature of pure melting ice at the standard atmospheric pressure of . It is (for Celsius scale).  Temperature scales  The difference in temperature between the upper and lower fixed points is called ***fundamental interval*** of a thermometer. The calibration of this interval depends on any of the three scales below:   1. Celsius scale 2. Fahrenheit scale 3. Kelvin or Absolute scale     The S. I. Unit of temperature is the Kelvin. However, it is also measured in degree Celsius and Fahrenheit. | | Students listen attentively and take down notes. |
| STEP 4 | APPLICATION:  The students are now conversant and familiar with the topic of discourse – temperature and temperature scales. | | Students ask questions on the topic which the teacher answers. |
| STEP 5 | EVALUATION: The teacher evaluates the students using the following:   1. Define temperature? 2. How can temperature be measured? 3. What is fundamental interval? | | The students answer the questions. |
| ASSIGNMENT   1. Clinical thermometer differs from other mercury in glass thermometers because it has I. a constriction II. A wide range III. A short range IV. A narrow bore (a) I and II only (b) I and III only (c) III and IV only (d) I, II and III only (e) I, III and IV only 2. Define the following terms: (i) Ice point (ii) Steam – point   References  **Extensive physics for Senior Secondary Schools and Colleges, by OSINUBI SAHEED et al. New School Physics for SS2 by M.W ANYAKOHA {Ph D}. Senior Secondary Physics for SS2 by P. N OKEKE et al.** | |  |