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| PHYSICS FORM 1 SCHEMES OF WORK – TERM 1 | | | | | | | | |
| WEEK | LESSON | TOPIC | SUB-TOPIC | LEARNING OBJECTIVES | TEACHING/LEARNINGACTIVITIES | TEACHING/LEARNINGRESOURCES | REFERENCES | REMARKS |
| **5** | **1-2** | INTRODUCTION TO PHYSICS | Physics as a science | By the end of the lesson, the learner should be able to   1. Explain what the study of physics involves 2. Relate physics to other subjects and to technology 3. Identify career opportunities related to physics | * Discussions of value and meaning of physics * Drawing flow charts of the braches of physics * Listing career opportunities related to physics | * Chart on definition of physics * Flow charts on branches of physics * Chart on scientific method * List of career related to physics | * Comprehensive secondary physics   Students Book 1 page 1-2  Teacher’s Book 1 pages 1-3   * Secondary Physics students Book 1 (KLB) pages 1-6 |  |
|  | **3-4** | INTRODUCTION TO PHYSICS | Basic laboratory rules | By the end of the lesson, the learner should be able to   1. State and explain the basic laboratory rules | * Discussions * Explanation of rules | * Chart on standard laboratory rules * Pictures showing dangers of not observing laboratory rules | * Comprehensive secondary physics   Students Book 1 page 1-2  Teacher’s Book 1 pages 1-3   * Secondary Physics students Book 1 (KLB) pages 6-7 |  |
| **6** | **1-2** | MEASUREMENTS | Measuring length, area volume and mass | By the end of the lesson, the learner should be able to:   1. Define length, area, volume, mass and state their symbols and SI units | * Conversions * Measuring * Experiment * Counting * Demonstrations | * Meter rule * Burette * Pipette * Measuring cylinder * Weighing balance * Rod * Shadow | * Comprehensive secondary physics   Students Book 1 page 4-8  Teacher’s Book 1 pages 4-6   * Secondary Physics students Book 1 (KLB) pages 8,22,14,33 * Golden tips physics pages 1-7 |  |
|  | **3-4** | MEASUREMENTS | Measuring instruments | By the end of the lesson, the learner should be able to:   1. Use measuring instrument accurately 2. Metre rule, tape measure, beam balance, stop clock, measuring cylinder, pipette and burette | * Demonstrations * Reading scales and correcting errors | * Meter rule * Pipettes * Burettes * Stop watches * Tape measure * Measuring cylinder, beam balance | * Comprehensive secondary physics   Students Book 1 page 6-7  Teacher’s Book 1 pages 5-6   * Secondary Physics students Book 1 (KLB) pages 10,28 * Golden tips physics pages 2 |  |
| **7** | **1-2** | MEASUREMENTS | Measuring density | By the end of the lesson, the learner should be able to:   1. Determine and mentally explain the density of substances 2. Work our density of mixtures 3. Solve numerical problems involving density | * Experiment * Working out answers to problems | * Measuring cylinder * Mass weighing balance * Density bottle | * Comprehensive secondary physics   Students Book 1 page 9-12  Teacher’s Book 1 pages 4-6   * Secondary Physics students Book 1 (KLB) pages 35-48 * Golden tips physics pages 7,10 |  |
|  | **3-4** | MEASUREMENTS | Measuring Time | By the end of the lesson, the learner should be able to   1. Determine experimentally, the measurement of time | * Experiments with pendulum * Timing events | * Pendulum * Clock * Watch | * Comprehensive secondary physics   Students Book 1 page 12-15  Teacher’s Book 1 pages 6   * Secondary Physics students Book 1 (KLB) pages 46-47 * Golden tips physics pages 8 |  |
| **8** | **1-2** | FORCES | Types of forces | By the end of the lesson, the learner should be able to   1. Define force and state its SI units 2. Describe types of forces 3. State the effects of force | * Discussions * Explaining * Demonstrations * Identifying effects of forces | * Charts of force * String * Elastic material * Magnets * Water * Greece * Oil spring balance | * Comprehensive secondary physics   Students Book 1 page 61-19  Teacher’s Book 1 pages 6-10   * Secondary Physics students Book 1 (KLB) pages 49-68 * Golden tips physics pages 11-12 |  |
|  | **3-4** | FORCES | Surface tension | By the end of the lesson, the learner should be able to:   1. Describe experiments to illustrate cohesion, adhesion and surface tension 2. State the factors affecting surface tension, its consequence and importance | * Discussions * Demonstrations * Explaining the effects of surface tensions | * Funnel * Water * Wire loop * Tap * Soap/detergent | * Comprehensive secondary physics   Students Book 1 page 19-22  Teacher’s Book 1 pages 6-10   * Secondary Physics students Book 1 (KLB) pages 63-70 * Golden tips physics pages 12 |  |
| **9** | **1-2** | FORCES | Mass and weight | By the end of the lesson, the learner should be able to:   1. State and explain the relationship between mass and weight 2. Define scalar and vector magnitude | * Demonstrations * Discussions * Problems solving on mass and weight | * Beam balance * Spring balance * Sponge * Store * Polythene | * Comprehensive secondary physics   Students Book 1 page 17-22  Teacher’s Book 1 pages 6-10   * Secondary Physics students Book 1 (KLB) pages 72-75 * Golden tips physics pages 7 |  |
|  | **3-4** | FORCES | Measuring Force | By the end of the lesson, the learner should be able to:   1. Measure weight using spring balance 2. Solve numerical problems on numerical forces | * Discussions * Experiments | * Spring balance * Chart on vectors and scalars | * Comprehensive secondary physics   Students Book 1 page 17-18  Teacher’s Book 1 pages 17-15 |  |
| **10** | **1-2** | FORCES | Pressure and force | By the end of the lesson, the learner should be able to:   1. Define pressure and state its SI units 2. Determine pressure exerted by solids | * Discussions * Demonstrations * Problem solving | * Block of wood * Spring balance * Meter rule | * Comprehensive secondary physics   Students Book 1 page 6-10  Teacher’s Book 1 pages 6-10   * Secondary Physics students Book 1 (KLB) pages 82-85 * Golden tips physics pages 44 |  |
|  | **3-4** | PRESSURE | Pressure in liquids | By the end of the lesson, the learner should be able to   1. Investigate experimentally the factors that affect pressure in liquids (Fluids) 2. Derive the formula for calculating pressure in fluids 3. State the principle of transmission of pressure in fluids | * Demonstrations * Working out problems * Discussions * Experiments | * Communication tubes * Tin with holes at different heights * Waters | * Comprehensive secondary physics   Students Book 1 page 27-30  Teacher’s Book 1 pages 12-15   * Secondary Physics students Book 1 (KLB) pages 49-68 * Golden tips physics pages 44-45 |  |
| **11** | **1-2** | PRESSURE | Pressure in gases | By the end of the lesson, the learner should be able to   1. Explain atmospheric pressure and its effects 2. State and explain how pressure is transmitted in fluids | * Demonstrations * Explanation of pressure transmission in fluids * discussions | * Water/oil * Syringe | * Comprehensive secondary physics   Students Book 1 page 25-26,30-32  Teacher’s Book 1 pages 12-15   * Secondary Physics students Book 1 (KLB) pages 115-116,93-100 * Golden tips physics pages 45-46 |  |
|  | **3-4** | PRESSURE | Ganges and siphons | By the end of the lesson, the learner should be able to   1. Describe the working of siphon and pressure gauge | * Discussions * Explanations * Questions and answers | * Barometer * Bourdon gauge * Syringes | * Comprehensive secondary physics   Students Book 1 page 31-34  Teacher’s Book 1 pages 13-15   * Secondary Physics students Book 1 (KLB) pages 113,117 * Golden tips physics pages 44-45 |  |
| **12** | **1-2** | PRESSURE | Application of pressure in liquids and gases | By the end of the lesson, the learner should be able to   1. Explain the working of a hydraulic, braking system of vehicle 2. Explain the working of mercury and forties barometer, bicycle pump and pressure gauges | * Explaining the application of pressure in liquids and gases * Class discussion on the principles of pressure in liquids * Experiments | * Chart showing the working of a hydraulic braking system * Model of hydraulic brake system * Barometer * Bicycle pump | * Comprehensive secondary physics   Students Book 1 page 30-39  Teacher’s Book 1 pages 13-15   * Secondary Physics students Book 1 (KLB) pages 96-112 * Golden tips physics pages 46-47 |  |
|  | **3-4** | PRESSURE | Revision on question on the topic pressure | By the end of the lesson, the learner should be able to   1. Answer questions on pressure | * Questions and answers | Questions in students book 1 | * Comprehensive secondary physics   Students Book 1 page 39-41  Teacher’s Book 1 pages 13-15   * Secondary Physics students Book 1 (KLB) pages 119-123 * Golden tips physics pages 54-55 |  |
| **13** | **1-2** | PARTICULATE NATURE OF MATTER | States of matter | By the end of the lesson, the learner should be able   1. to show that matter is made of up tiny particles | * Demonstration * Discussions of kinetic theory | * Beaker * Crystals * Solutes * Solvent | * Comprehensive secondary physics   Students Book 1 page 42  Teacher’s Book 1 pages 15-18   * Secondary Physics students Book 1 (KLB) pages 124-128 * Golden tips physics pages 68 |  |
|  | **3-4** | PARTICULATE NATURE OF MATTER | The Brownian motion | By the end of the lesson, the learner should be able to:   1. Give evidence that matter is made up of tiny particles 2. Demonstrate the Brownian motion in liquids & gases 3. Explain the arrangement of particles in matter 4. Explain the state on matter in terms of particle movement | * Experiments * Observations * Discussions | * Chalk dust * Transparent lid * Pollen grains * Lens * Beaker * Smoke cell * Source of light | * Comprehensive secondary physics   Students Book 1 page 43-48  Teacher’s Book 1 pages 15-18   * Secondary Physics students Book 1 (KLB) pages 127-130 * Golden tips physics pages 68 |  |
| **14** | **1-2** | PARTICULATE NATURE OF MATTER | Diffusion in liquid, gases and solids | By the end of the lesson, the learner should be able to   1. Explain diffusion in gases/liquids and solids | * Experiments * Discussions | * Promise gas * Jars * Potassium permanganate * Solvent * Hydrochloric acid * Ammonia * Glass tube cotton wool | * Comprehensive secondary physics   Students Book 1 page 46-49  Teacher’s Book 1 pages 15-18   * Secondary Physics students Book 1 (KLB) pages 132-136 * Golden tips physics pages 69 |  |
|  | **3-4** | PARTICULATE NATURE OF MATTER | Revision on Particulate nature of matter | By the end of the lesson, the learner should be able to:   1. Answer questions in students Book 1 | * Discussion * Demonstrations * Asking questions * Answering questions |  | * Secondary Physics students Book 1 (KLB) pages 136-138 * Golden tips physics pages 69-70 * Past Papers |  |