Plan of Work

**Physics**

**Grade 8**

For examination 2025

Contents

[Introduction 3](#_Toc25322470)

[FIRST TERM [13/01/2025 – 11/04/2025] 5](#_Toc25322471)

Topic 1: Measurement…………………………………………………………………………………………………………………………………………………………………………………………………….6-9

March Assesssment………………………………………………………………………….…………………………………………………………………………………………………………….………………………………………9

SECOND TERM [28 /04/2025 - 18/07/2025 ……………………..…………………………………………………………………………………………………………………………………………………………..……………..10

Topic 2: Forces and Pressure Around Us…………………………………………………………………………………………………………………….………………………………………………...11-13

THIRD TERM [11 /08/2025 - 31/10/2025]……………………………………………………………………………………………………………………………………………………………………………..14

Topic 3: Work , Energy and Power………………………………………………………………………………………………………………………………………………………………………………..14-16

## Introduction

**Prescribed textbooks:**

* Science grade 8 [code: MIE]

**Reference book:**

* Discovering science

***Students are STRONGLY advised to look for this reference book and to make judicious use of it.***

**Recommended prior knowledge**

Learners beginning this course are expected to have knowledge of the following topics:

|  |  |
| --- | --- |
|  | **Topic** |
|  | Arithmetic |
|  | Physical Quantities and Units |
|  | Measurement |
|  | Energy and Energy Transformations |

**Websites and videos**

This plan of work includes website links providing direct access to internet resources. Modern College is not responsible for the accuracy or content of information contained in these sites. The inclusion of a link to an external website should not be understood to be an endorsement of that website or the site's owners (or their products/services).

The website pages referenced in this plan of work were selected when the plan of work was produced. Other aspects of the sites were not checked and only the particular resources are recommended.

**The objectives set in this plan of work are achievable if we have normal school days.**

# FIRST TERM [13/01/2025 – 11/04/2025]

## Topic 1: Measurement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Objectives** | **Worked Examples** | **Classwork & Homework** | **Extra Work** | **Resources** |
| ***Students should be able to:***   1. Express physical quantities in appropriate SI   Units   1. Recall the use of different instruments to measure mass and volume of irregular solid | **[Book MIE]**  Activity 1.1 (pg. 1)  Test Yourself (pg. 2-3)  Activity 1.2 (pg. 4-5)  Test Yourself (pg. 5)  Activity 1.6 (pg. 9-10)  Activity 18 (pg. 11-12) | **[Book MIE]**  **Workout MCQS**  **Question:** 2 (pg. 22)  **Structured Questions**  5 part 3, 5, 10 (pg. 23)  6 part 1, 4, 8 (pg. 23)  7 (i), (ii) (pg. 23) | Worksheet 1.1B | * Volume of a cuboid and cube – Corbettmaths  <https://www.youtube.com/watch?v=M2g3KQ_Uaag>  * How to Read a Graduated Cylinder.   <https://www.youtube.com/watch?v=Xhig8eCpL48>   * Displacement method of determining volume- Kisembo Academy   <https://www.youtube.com/watch?v=YQO2etQfE_0>   * Activity 3 - Volume of an Irregular Solid using the Overflow Method   <https://www.youtube.com/watch?v=LUicSCVkR5g>   * Measuring Mass with Electronic Balance   <https://www.youtube.com/watch?v=NayQou_jjew>   * 43 Converting Units of Mass   <https://www.youtube.com/watch?v=fw-hiaZ5ovM> |
| 1. Demonstrate understanding of accuracy in   measurements | Activity 1.4 (pg. 7)  Activity 1.5 (pg. 8) | **Workout MCQS**  **Questions:** 1, 3 (pg. 22)  **Structured Questions**  5 part 1, 2 (pg. 23)  6 part 6, 7 (pg. 23) | Worksheet 1.1C | * Zero Error | Introduction to Physics   (<https://www.youtube.com/watch?v=xnZVCyVgWm4>   * Parallax Error (How Parallax Error Happens, How to Avoid Parallax Error)   <https://www.youtube.com/watch?v=jr50cmfR61o> |
| 1. Demonstrate understanding of density 2. Define density as the mass per unit volume   of a substance   1. Recall and use the formula for density in calculations: density =mass/volume | Activity 1.9 (pg. 14)  Test yourself (pg. 18) | **Structured Questions**  5 part 4 (pg. 23)  7 (iii), (iv) (pg. 24)  8, 9, 10, 11, 12, 13 (pg. 24) | Worksheet 1.1D | * What is density?   <https://www.youtube.com/watch?v=kE8I_M2pyg8>   * Draw My Science: Mass, Volume, and Density   <https://www.youtube.com/watch?v=n-pQf71TI-w> |
| 1. Discuss the experimental determination of the density of liquids and solids through the measurement of mass and volume | Activity 1.10 (pg. 15) | Worksheet 1.1 A | Worksheet 1.1E | * Density of liquids and solids   <https://www.youtube.com/watch?v=ejtf-UaGid0> |
| 1. Principle of floating and sinking 2. Compare the relative density of gases, liquids and solids | Activity 1.12 (pg. 19) | **Workout MCQS**  **Question:** 4 (pg. 22)  **Structured Questions**  5 part 6, 7, 8, 9 (pg. 23)  6 part 9, 10 (pg. 23) | Worksheet 1.1F | * Density of Different States | Matter | Physics | FuseSchool   <https://www.youtube.com/watch?v=nVrsgESZh-Y> |

**March Assessment**

|  |  |  |
| --- | --- | --- |
| **Time Allocation** | **Type** | **Maximum Mark** |
| 45 minutes | Mcqs and structured questions | 50 |

The exam paper consists of section A and section B.

**All** questions should be answered in both sections A and B.

In section A, there are 10 multiple choice questions and in section B, there may be 7 to 8

structured questions. Calculators are **not allowed**.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus and questions will not necessarily be restricted to a single topic.

# SECOND TERM [28/04/2025 – 18/07/2025]

**Topic 2: Forces and Pressure Around Us**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Objectives** | **Worked Examples** | **Classwork & Homework** | **Extra Work** | **Resources** |
| ***Students should be able to:***   1. Recognise and investigate different examples of forces around us 2. Demonstrate a simple understanding of the force of gravity, frictional force and magnetic force | **[Book MIE]**  Activity 1.1 (pg. 84-85)  Activity 1.2 (pg. 86-87)  Activity 1.3 (pg. 89-90) | **Workout MCQS**  **Question1:** (ii), (iii), (iv) (pg. 115)  **Structured Question**  2 (b) (pg. 117) | Worksheet 2.1A | * Friction class-4   <https://www.youtube.com/watch?v=UbOSR5F7WZU>   * Gravity Compilation: Crash Course Kids   <https://www.youtube.com/watch?v=EwY6p-r_hyU>   * Science - Magnets - Attraction and repulsion   <https://www.youtube.com/watch?v=-BvpTlyHUUQ> |
| 1. Define force as a push or a pull and state its unit of measurement 2. Investigate the effects of forces on the size, shape and motion of objects | Activity 1.4 (pg. 91-92)  Activity 1.5 (93-94) | **Workout MCQS**  **Question 1:** (i), (vi)  (pg. 115-116)  **Structured Questions**  2 (a), (c) (pg. 116)  3 (pg. 118) | Worksheet 2.1B | * Physics - What is Force?   <https://www.youtube.com/watch?v=IJWEtCRWGvI>   * Force changes motion, position, direction, shape, size of objects | Force | Physics   <https://www.youtube.com/watch?v=uTvCnHlzdFI> |
| 1. Demonstrate a simple understanding of weight as the effect of gravity on a mass 2. Distinguish between mass and weight | Activity 1.6 (pg. 95-96)  **Questions** 1, 2 (pg. 97) | **Workout MCQS**  **Question 1:** (vii) (pg. 116)  **Structured Questions**  2 (e) (pg. 117)  4 (a) (pg. 119) | Worksheet 2.1C | * Mass, Gravity, and Weight!   <https://www.youtube.com/watch?v=J0Y-VM7NTZ8> |
| 1. Recall that force can be measured using newton meter (spring balance) in the laboratory 2. Measure force using newton meter |  | **Workout MCQS**  **Question 1:** (v) (pg. 115)  **Structured Questions**  6 (pg. 119) | Worksheet 2.1D | * Using a Spring Scale   <https://www.youtube.com/watch?v=FKRZCQhcgqc> |
| 1. Define pressure as the force acting normally per unit area of a surface and state its unit of measurement 2. Solve problems related to pressure | Activity 1.1 (pg. 101-102)  **Questions**  1 (pg. 103)  1, 2 (pg. 104) | **Workout MCQS**  **Question 1:** (viii), (ix), (x) (pg. 116)  **Structured Questions**  2 (d), (f) (pg. 117)  4 (b) (pg. 119) | Worksheet 2.1E | * solid pressure   <https://youtu.be/bYvkvA1tGr0> |
| 1. State some applications of examples of pressure in daily life | Activity 1.2 (pg. 105)  Test Yourself (pg. 106-107) |  | Worksheet 2.1F | * [3.1] Pressures and their applications   <https://www.youtube.com/watch?v=5UnNfkX3Qc4> |
| 1. Demonstrate a simple understanding of pressure in liquids and gases | Activity 1.3 (pg. 108-109)  Activity 1.4 (pg. 110-112) | **Structured Questions**  5 (pg. 119)  7 (pg. 120) | Worksheet 2.1G | * Physics - Understanding liquid pressure – English   <https://www.youtube.com/watch?v=i42TaUiCNf0>   * What is Air Pressure: Balloons   <https://www.youtube.com/watch?v=axbFo-wsp4g> |

**July Assessment**

|  |  |  |
| --- | --- | --- |
| **Time Allocation** | **Type** | **Maximum Mark** |
| 45 minutes | Mcqs and structured questions | 50 |

The exam paper consists of section A and section B.

**All** questions should be answered in both sections A and B.

In section A, there are 10 multiple choice questions and in section B, there may be 7 to 8

structured questions. Calculators are **not allowed**.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus and questions will not necessarily be restricted to a single topic.

# THIRD TERM [11/08/2025 – 31/10/2025]

**Topic 3: Work, Energy and Power**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Objectives** | **Worked Examples** | **Classwork & Homework** | **Extra Work** | **Resources** |
| ***Students should be able to:***   1. Recall the forms of energy | Activity 7.1(pg. 202)  Test Yourself (pg. 203) | Worksheet 3.1A | Worksheet 3.1B | * Different Forms Of Energy | Physics   <https://www.youtube.com/watch?v=XiNx7YBnM-s> |
| 1. Demonstrate an understanding of work done 2. Relate work done to the magnitude of a force and the distance moved in the direction of the force 3. Solve problems using work done = force x distance moved in the direction of the force | Activity 7.2 (pg. 204)  Test Yourself (pg. 205)  Activity 7.3 (pg. 207-209)  Activity 7.4 (pg. 211)  Activity 7.5 (pg. 212)  Test Yourself (pg. 212-213) | **Workout MCQS**  (a), (b) (pg. 236)  **Structured Questions**  4, 5 (pg. 237) | Worksheet 3.1C | * Physics - What is Work Done - Work and Energy - Part 1 English   <https://www.youtube.com/watch?v=ERTYZYsk6ao> |
| 1. Define and calculate kinetic energy | Activity 7.6 (pg. 215-216)  Activity 7.7 (pg., 216-217) | Test Yourself  1, 2, 3, 4, 5 (pg. 218)  **Workout MCQS**  (c) (pg. 236)  **Structured Questions**  6 (pg. 238) | Worksheet 3.1D | * GCSE Science Physics (9-1) Kinetic Energy   <https://www.youtube.com/watch?v=-zy9eWzmGe4> |
| 1. Calculate changes in gravitational potential   Energy near Earth | Activity 7.8 (pg. 220-223)  Test Yourself (pg. 224-225) | **Workout MCQS**  (d) (pg. 236)  Worksheet 3.1E | Worksheet 3.1F | * GCSE Physics Revision: Gravitational potential energy   <https://youtu.be/VafUJehX48w> |
| 1. Explain the interchange of kinetic energy and potential energy | Activity 7.10 (pg. 227-228) | **Structured Questions**  7 (pg. 238)  10 (pg. 239-240) | Worksheet 3.1G | * Conservation of Energy: Free Fall, Springs, and Pendulums   <https://www.youtube.com/watch?v=OTK9JrKC6EY> |
| 1. Relate power to work done and time taken and solve problems related to work done and power | Activity 7.11 (pg. 230-232)  Test Yourself (pg. 233) | **Workout MCQS**  (e) (pg. 237)  **Structured Questions**  2, 3 (pg. 237)  8, 9 (pg. 239)  11 (pg. 240) | Worksheet 3.1 H | * GCSE Science Physics (9-1) Calculating Power   <https://www.youtube.com/watch?v=EDT0DPhaaMY> |

## October Assessment

|  |  |  |
| --- | --- | --- |
| **Time Allocation** | **Type** | **Maximum Mark** |
| 45 minutes | Mcqs and structured questions | 50 |

The exam paper consists of section A and section B.

**All** questions should be answered in both sections A and B.

In section A, there are 10 multiple choice questions and in section B, there may be 7 to 8

structured questions. Calculators are **not allowed**.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus and questions will not necessarily be restricted to a single topic.