

**MAHAJUBILEE
TRAINING COLLEGE**
MULLOORKARA - THRISSUR (DT) 680 583.



Topic : P E D A G O G I C . A N A L Y S I S

Name : ANNA VIJO

Optional Subject : PHYSICAL SCIENCE

Semester : SECOND SEMESTER

Reg. No. : MTAUT.PN002

Certified that this is the bonafide record of..... ANNA VIJO.....

Reg.No..... MTAUT.PN002 for the year 20.20 - 20.22.....

Roshni
Faculty Member

Date....5/10/2021

Asst. PROFESSOR IN PHYSICAL SCIENCE
MAHAJUBILEE TRAINING COLLEGE
MULLOORKARA - 680 583



Principal

Date...5/10/2021....

Rev. Dr. Chacko Chiramel
PRINCIPAL
MAHAJUBILEE TRAINING COLLEGE
MULLOORKARA - THRISSUR

INDEX

SI.NO	HEADINGS	PAGE NUMBER
1.	Introduction	2
2.	Pedagogical analysis of Science content	3 - 23
3.	Conclusion	24

INTRODUCTION

As a part B.Ed curriculum, we had a task to conduct Pedagogic analysis of a chapter from physics or chemistry in high school session. The students were divided into two groups. Pedagogic analysis consist of 20 steps and we prepared them through various meetings and discussions.

Pedagogic analysis is selection of appropriate objectives and strategies in various instructional institutions, situations to access the level of teaching at the end. A comprehensive vision of required tasks, strategies for realization of specific goals facilitates effective teaching. We selected the chapter 'Work Energy and Power' of class IX for the task.

PEDAGOGICAL ANALYSIS OF SCIENCE CONTENT

- Subject - Physics
- Name of the unit - Work, Energy and Power
- Standard - IX

STEP 1 - Analysis of the unit into major concepts and minor concepts.

MAJOR CONCEPT	MINOR CONCEPT
1. Work	1.1 Work - A body undergoes displacement in the direction of the applied force. 1.2 Unit of work is joule 1.3 Work = Force \times displacement 1.4 Positive work 1.5 Negative work 1.6 Work done against gravitational force = mgh .
2. Energy	2.1 Energy - capacity to do work 2.2 Unit of energy is joule 2.3 Mechanical energy 2.4 Heat energy 2.5 Electrical energy 2.6 Two types of mechanical energy 1) Kinetic energy 2) Potential energy

3. Kinetic Energy

3.1 Kinetic energy - energy possessed by a body by virtue of its motion

$$3.2 \text{ Kinetic energy} = \frac{1}{2}mv^2$$

3.3 Kinetic energy and momentum.

4. Work Energy Principle

4.1 Newton's Second law of motion

4.2 Acceleration

4.3 Initial velocity

4.4 Final velocity.

5. Potential Energy

5.1 Potential energy - energy possessed by a body by virtue of its position.

$$5.2 \text{ Potential energy (U)} = mgh$$

5.3 Position and potential energy

5.4 Potential energy due to strain.

6. Law of conservation of energy

6.1 Energy transformation

6.2 Different types of energy transformations

7. Power

7.1 Power - work done per unit time

7.2 Horse power

7.3 Unit of power J/s or watt

STEP II- Analysis of concepts onto attributes.

CONCEPTS	ATTRIBUTES
1. work	<ul style="list-style-type: none"> A body undergoes displacement in the direction of the applied force. $\text{work} = \text{Force} \times \text{displacement}$
2. Unit	<ul style="list-style-type: none"> The SI unit of work is Joule(J)
3. Positive work	<ul style="list-style-type: none"> Force and displacement are in same direction
4. Negative work	<ul style="list-style-type: none"> Force and displacement are in different direction
5. Energy	<ul style="list-style-type: none"> The capacity to do work.
6. Unit	<ul style="list-style-type: none"> The SI unit of energy is Joule(J)
7. Mechanical energy	<ul style="list-style-type: none"> Sum of kinetic energy and potential energy in an object that is used to do a particular work Energy of an object due to its motion or position or by both.
8. Heat energy / Thermal energy	<ul style="list-style-type: none"> It is result of movement of tiny particles called atoms, molecules or ions in solids, liquids and gases. It can be transformed from one object to another.