

Delhi Public School Ghaziabad

Class XII

PHYSICS

Lesson plan

based on DOL

UNIT 3 MAGNETIC EFFECTS OF CURRENT AND MAGNETISM

Unit	UNIT 3 CH 4 - MOVING CHARGE AND MAGNETISM CH5 - MAGNETISM AND MATTER
Class Transaction	Total: 22 periods
Pre-requisite for the course	This lesson requires: • Basic knowledge of magnetic effect of current
Assessment of qualifying knowledge	• Written test • Lab activity
Objective	To provide students with knowledge of Enhance ability to accurately recognize and use appropriate terminology related to magnetic effect due to moving charge To make students able to research on common examples of magnetic effect of current and magnetism.
Learning Outcomes	KNOWLEDGE- <i>Students will know and understand</i> <i>Modes Critical Thinking</i> <i>Creative</i> SKILLS- <i>Students would be able to</i> Understand and differentiate between magnetic effect of current and magnetism
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Brain Storming- The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- ppt and Digital Content would be shared Guided practice followed by Independent Practice- NCERT questions to be discussed in the classroom. Techniques to be used: Student - teacher interaction, collaborative learning, independent research, differentiated teaching, peer learning Competencies: collaborative learning, critical thinking and problem solving,
Resources	NCERT text book, Reference Book, CBSE Exemplar, DPSG Spiral www.learncbse.in/cbse-notes/ https://mycbseguide.com www.examfear.com
Self- Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their spirals. It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.

Assessments	UNIT TESTS , MID TERM EXAMINATION, HALF YEARLY EXAMINATION, PRE BOARD EXAMINATION
Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligences, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i> Encouragement for referring other resources <i>For weak students:</i> Peer education Provide grade-up classes <i>For differently abled students:</i> Call parents at regular intervals Provide PCC classes Encourage and motivate them at every level.
Marks	Reproduction Unit – 14 marks , Chapter – 2 marks

CLASS XII LESSON PLAN
Unit 3- MAGNETIC EFFECTS OF CURRENT AND MAGNETISM
(Based on DOL)

Anticipatory Set: Facilitator introduces the topic **MAGNETIC EFFECTS OF CURRENT AND MAGNETISM**

Objective:

- Given questions based on the topic. Learners will be able to revise the basic principle of geography.
- To make students able to solve questions based on the topics to be discussed
- They will be able to track the growth of subject.

Techniques to be used:

- Peer Assessment
- Quiz

Materials required and Teaching Aids: blackboard, chalk, duster, Text book

Strategy

Student – teacher interaction, collaborative learning, independent practice

DAY 1

- Students will read, interpret and discuss the magnetic field and direction of magnetic field..
- Students will represent Biot savart law in vector form.
- Application of Biot savart law magnetic field due to current carrying loop

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked direction of magnetic field under different conditions (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 2

- Students will read, interpret and discuss the magnetic field and direction of magnetic field..
- Students will represent Biot savart law in vector form.
- Application of Biot savart law magnetic field due to current carrying loop

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked direction of magnetic field under different conditions (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 3

- Students will read, interpret and discuss the magnetic field and direction of magnetic field..
- Students will represent Biot savart law in vector form.
- Application of Biot savart law magnetic field due to current carrying loop

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked direction of magnetic field under different conditions (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 4

Students will discuss **Ampere circuital law**

Students will do applications to infinite long straight wire, Straight solenoid

Students will discuss applications to toroidal solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked use of **Ampere circuital law** (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 5

Students will discuss **Ampere circuital law**

Students will do applications to infinite long straight wire, Straight solenoid

Students will discuss applications to toroidal solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked use of **Ampere circuital law** (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 6

Students will discuss **Ampere circuital law**

Students will do applications to infinite long straight wire, Straight solenoid

Students will discuss applications to toroidal solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked use of **Ampere circuital law** (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 7

Recap

- Student will explore the concept of motion of charged particle in magnetic field.
- Students will discuss Cyclotron

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked different cases of moving charge particles in magnetic field (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 8

- **Recap**

- Student will explore the concept of motion of charged particle in magnetic field.

- Students will discuss Cyclotron

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked different cases of moving charge particles in magnetic field (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 9

- **Recap**

- Student will explore the concept of motion of charged particle in magnetic field.

- Students will discuss Cyclotron

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked different cases of moving charge particles in magnetic field (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 10

Students will learn about Force on a current carrying conductor

Students will learn about Force between two parallel current carrying conductor

Students will discuss definition of one Ampere

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked direction of force on a current carrying conductor in magnetic field (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 11

Students will learn about Force on a current carrying conductor

Students will learn about Force between two parallel current carrying conductor

Students will discuss definition of one Ampere

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked direction of force on a current carrying conductor in magnetic field (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 12

Students will learn about Force on a current carrying conductor

Students will learn about Force between two parallel current carrying conductor

Students will discuss definition of one Ampere

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked direction of force on a current carrying conductor in magnetic field (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 13

Students will learn about torque experienced by current carrying loop in uniform magnetic field

Students will learn about moving coil galvanometer and its sensitivity

Students will discuss about conversion of galvanometer into voltmeter and ammeter

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked uses of voltmeter and ammeter (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills
Closure of the lesson
Summarizing the lesson by mind mapping

DAY 14

Students will learn about torque experienced by current carrying loop in uniform magnetic field
Students will learn about moving coil galvanometer and its sensitivity
Students will discuss about conversion of galvanometer into voltmeter and ammeter

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked uses of voltmeter and ammeter (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills
Closure of the lesson
Summarizing the lesson by mind mapping

DAY 15

Students will learn about torque experienced by current carrying loop in uniform magnetic field
Students will learn about moving coil galvanometer and its sensitivity
Students will discuss about conversion of galvanometer into voltmeter and ammeter

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked uses of voltmeter and ammeter (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills
Closure of the lesson

Summarizing the lesson by mind mapping

DAY 16

Students will discuss about current loop in magnetic dipole and its magnetic dipole moment

Students will discuss about magnetic dipole moment of revolving electron

Students will discuss magnetic field due to magnetic bar at axis and equatorial

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked about properties of magnet (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 17

Students will discuss about current loop in magnetic dipole and its magnetic dipole moment

Students will discuss about magnetic dipole moment of revolving electron

Students will discuss magnetic field due to magnetic bar at axis and equatorial

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked about properties of magnet (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 18

Students will discuss about current loop in magnetic dipole and its magnetic dipole moment

Students will discuss about magnetic dipole moment of revolving electron

Students will discuss magnetic field due to magnetic bar at axis and equatorial

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked about properties of magnet (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 19

Students will learn about earth magnetic field and its elements

Students will learn about para dia and ferro magnetic substances.

Students will learn about electromagnet and

Collaborative learning- the students will work in groups to compare Electrostatic and Magnetostatics.

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked to characterize substances based on magnetic properties (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 20

Students will learn about earth magnetic field and its elements

Students will learn about para dia and ferro magnetic substances.

Students will learn about electromagnet and

Collaborative learning- the students will work in groups to compare Electrostatic and Magnetostatics.

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked to characterize substances based on magnetic properties (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 21

Students will learn about earth magnetic field and its elements

Students will learn about para dia and ferro magnetic substances.

Students will learn about electromagnet and

Collaborative learning- the students will work in groups to compare Electrostatic and Magnetostatics.

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked to characterize substances based on magnetic properties (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills
Closure of the lesson
Summarizing the lesson by mind mapping

DAY 22

Students will performed experiments to find resistance of galvanometer using half deflection method

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked to take observations and find figure of merit.

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills
Closure of the lesson
Summarizing the lesson by mind mapping