

LESSON PLAN 1
SUBJECT : SCIENCE
CLASS: IX

**(BLOOM'S LEVELS AND SUB CATEGORIES TO BE PUT,
ACCORDINGLY, THE TABLE TO BE FILLED)**

TOPIC- MAGNETIC EFFECT OF ELECTRIC CURRENT

BRIEF DESCRIPTION- . Magnetic effects of current : Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.

KPI DEFINITION :

KPI 01: Students face problems in understanding the conceptual questions, HOTS questions

KPI 02 : Students face problems in solving numerical portion/ mathematical calculations

KPI 03 : Students Face problems in solving MCQ based questions of chapter Magnetic effect of electric current

KPI 04: students face problem to understand the concept of mass and weight.

OBJECTIVES:

I- Specific Objectives-

- a) **SP 1** To give more practice to students in form of different pattern of questions.
- b) **SP 2** Proper Book Reading And points to Remember part is to be prepared for preparation of Assertion and reasoning type Questions.
- c) **SP 3** To discuss about the practical example related to topic so that students can be able to solve Case based study. this will help to connect the subject with daily life examples.
- d) **SP 4** Solving simple problems and experiments related to magnetic effects of current to reinforce their understanding.
- e) **SP 5** Understanding the relationship between electricity and magnetism.
- f) **SP 6** Learning about the right-hand rule to determine the direction of magnetic fields around a current-carrying wire.

g) **SP 8** understand the concept of alternating and direct current

II -Behavioural Objectives

To enable the students to-

B1 to develop interest in framing their own practical examples

B2 to understand the basic difference between A.C. and D.C.

B3 To Find problem in understanding the language of questions and time management

B4 Observation: Students should be able to observe and identify the magnetic field produced by a current-carrying conductor using magnetic field lines or iron filings.

B5 Demonstration: They should be able to demonstrate how the direction of the magnetic field around a wire can be determined using the right-hand rule.

B6 Application: Students should apply their understanding to solve problems related to the magnetic effect of current, such as calculating the magnetic field strength or direction in different scenarios.

B7 Construction: They might be asked to construct simple electromagnets and understand how the number of turns and current affect their strength.

B8 Comparison: Students should be able to compare and contrast the magnetic properties of different materials, such as ferromagnetic, paramagnetic, and diamagnetic substances.

ASSESSMENT:

A1 - Worksheet of Related topic should be given to the students

A2 - Written Examinations:

(a) Multiple-choice questions to test basic concepts like the right-hand rule.

(b) Short-answer questions to assess understanding of magnetic field direction in different scenarios.

(c) Problem-solving questions that require students to calculate magnetic field strength or determine the effect of changing variables in electromagnets.

(d) Practical Experiments:

Conduct experiments where students must set up and observe the magnetic field around a current-carrying wire or coil.

Ask them to record observations and draw conclusions from the experiments.

(e) Oral Assessments: Conduct oral quizzes or discussions to gauge their ability to explain concepts verbally.

Encourage students to ask questions and engage in discussions about real-world applications.

(f) Projects and Presentations: Assign projects related to practical applications of the magnetic effect of current, such as building simple electromagnets or researching how magnets are used in everyday devices. Require students to present their findings and explain their projects to the class.

(g) Peer Assessment: Encourage peer evaluations where students assess and provide feedback on each other's presentations or project work.

(h) Class Participation and Homework: Evaluate students based on their active participation in class discussions and their ability to complete homework assignments related to the topic

DIGITAL CONTENT TO BE USED: (if applicable)

To explain the topic properly in a visualized manner.

EXPECTED LEARNING OUTCOME–

Students will be able to:

1. To get the complete understanding of the chapter.
2. Solve different typology of questions
3. Can connect the subject with their daily life examples
4. Understanding Concepts: Students should grasp the fundamental concepts, such as how an electric current produces a magnetic field and the right-hand rule for determining magnetic field direction.
5. Application Skills: They should be able to apply their knowledge to real-world scenarios, such as understanding how electric motors work or how electromagnets are used in devices like doorbells.
6. Problem Solving: Students should develop problem-solving skills related to magnetic fields, such as calculating the strength of a magnetic field or predicting the behavior of magnets in different situations.

7. **Experimental Skills:** Proficiency in conducting experiments to observe and measure magnetic fields and using equipment such as compasses and iron filings.
8. **Critical Thinking:** Encouraging critical thinking by asking questions like, "What happens to the magnetic field when the current direction changes?" or "How can we increase the strength of an electromagnet?"
9. **Scientific Inquiry:** Fostering curiosity and inquiry by prompting students to ask questions and explore magnetic phenomena in their environment.
10. **Communication:** Developing the ability to communicate their understanding of magnetic effects clearly and effectively through written and oral presentations.
11. **Safety Awareness:** Instilling a sense of safety when working with electricity and magnets, emphasizing precautions and proper handling.
12. **Connection to Future Studies:** Recognizing the relevance of electromagnetism and its importance in advanced physics and engineering courses.

Placement of Objectives, Instructional Activities and Assessment						
	Topic:					
	KNOWLEDGE	UNDERSTANDING	APPLICATION	ANALYSIS	SYNTHESIS	EVALUATION
Objectives	SP1,	SP2/SP3	SP4-SP8			
Activities	B1/B5	B3/B4	B2/B6/B7/B8			
Assessment				A1 / A2		

REVIEW OF THE LESSON PLAN
(TO BE DONE WHEN THE LESSON GETS OVER)

Problems faced –
Success-
Failure-
Real Learning Outcomes
ELO-

Students' response/ participation

Teacher's Learning

TO INCORPORATE IN TERM 2-

<u>What are the problems?</u>	<u>Compilation of problems</u>	<u>Categorization of Problems (Subjective & Behavioral)</u>	
1. Lack of proper writing skills.	Students find problem in : 1. Deriving the formula, Universal law of gravitation, value of g and its application of weight (Application) 2. relating the concept with daily life. (Application) 3. understanding the language of question paper and time management during exam. (Evaluate) 4. Attempting a smaller number of Question in exam due to above problem	<u>Subjective</u> 1. Students, instead of understanding, few of them Mug up the subject content and could not able to solve the Application based Question paper 2.	
2. Difficulty in solving case studies. Source – based questions Assertion Reasoning and logical reasoning-based Questions.		<u>Behavioral</u> 1. Students lack focus and perform careless mistakes during application of formulae. 2. Lack of regular practice in numerical. 3. Lack of concentration and interest in the topic and takes more time to understand the concepts.	
4. Not using proper format in solving numerical questions.			
5. Slow in Mathematical calculations. 6. applying concepts to day-to-day life. 7. Comprehending the language of question paper.			

KPI NAME	KPI DEF. NO	KPI DEFn.	WHERE ARE WE NOW? (scale & description)	KPI GOAL	KPI LIMIT	WHAT WE NEED TO DO?	HOW WILL IT BE ACHIEVED?	KPI MEASUREMENT	REVIEW	KPI REPORTING	KPI ACHIEVEMENT	KPI IMPROVEMENT
Analytical and scientific problems	01	<p>KPI 01: Students face problems in understanding the conceptual questions, HOT'S questions</p> <p>KPI 02 : Students face problems in solving numerical portion/</p>	Appr. 30% of the students are able to understand.	40%	+2% / - 2%	To give more Practice and continuous follow – up action.	<ol style="list-style-type: none"> To prepare lesson plan according to the KPI. Written assignment sheet after completing topic / Chapters will be given. Providing Supporting Material to understand the basic terminologies 	Self – Assessment test /practice Test after every Chapter.	It will be done after every periodic test and exam based on marking Schemes	In every Six months.		

		<p>mathematical calculations</p> <p>KPI 03 : Students Face problem in analytical study of Graphical portion,</p> <p>applying proper formula, to understand the sign convention in topics such as motion, forces and Laws of motion , Gravitation, work and Energy and sound</p>					<p>of the chapter in the form of notes should be provided.</p> <p>4. proper formula practice along with its unit should be given to all the students in class along with the framing of given content in numerical part.</p> <p>5. proper copy checking work should be done in class for their updates.</p> <p>6. Remedial classes to be</p>					
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							<p>taken for average and Below average students.</p> <p>7. Proper follow up to be given to parents regarding the improvement of the students.</p> <p>8.To give practice on class Board</p>					
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CHEM and BIO												
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