

Activity Title

“Explore Faraday’s Current through Puzzles”

Objective:

Help students understand **Faraday’s Law, induced current, magnetic flux, direction of current, and real-life applications** through fun, hands-on puzzles.

Puzzle 1: Match the Pairs (Concept Match)

Activity:

Students match terms with correct definitions.

Example Pairs:

- Faraday → Electromagnetic induction
- Changing magnetic field → Induced current
- Coil turns \uparrow → Induced EMF \uparrow
- Fleming’s Right-Hand Rule → Direction of current

 Skill: Concept clarity

Puzzle 2: Picture-Based Puzzle

Activity:


Show diagrams of:

- Magnet moving toward coil
- Magnet moving away

- Magnet stationary

Students identify:


- Direction of current
- Whether current is induced or not

 Skill: Visual interpretation

Puzzle 3: Fill in the Blanks

Activity Sheet Example:


1. Induced current is produced when there is a change in _____.
2. Faster motion of magnet produces _____ induced current.

 Skill: Recall & understanding

Puzzle 4: Crossword Puzzle (Key Terms)

Words to include:

Faraday, Flux, Coil, Magnet, EMF, Induction, Current, Motion


 Skill: Vocabulary building

Puzzle 5: Arrange in Order

Activity:

Arrange steps of electromagnetic induction in correct order:

- Magnet moves
- Magnetic flux changes
- EMF is induced
- Current flows in circuit

 Skill: Logical sequencing

Puzzle 6: True or False Challenge

Statements Example:

1. Induced current flows even if magnet is stationary.
2. More turns in coil produce more EMF.
3. Direction of induced current depends on motion of magnet.


 Skill: Critical thinking

Puzzle 7: Prediction Puzzle

Activity:

“What happens to induced current if...”

- Magnet speed doubles?
- Number of coil turns increases?
- Magnet direction is reversed?

 Skill: Application of concepts

Puzzle 8: Code-Breaking Puzzle

Activity:

Each correct answer gives a letter.

Final decoded word: **FARADAY**

 Skill: Problem solving + fun

Puzzle 9: Real-Life Application Puzzle

Activity:

Match device with principle:

- Generator → Faraday's Law
- Transformer → Induction
- Bicycle dynamo → Induced current

 Skill: Real-world connection

Puzzle 10: Role-Play / Act It Out

Activity:

- One student = Magnet
- One student = Coil
- Others = Electrons

Students act out how electrons move when magnet moves.

 Skill: Experiential learning

Assessment Method

- Participation: ★★ ★
 - Accuracy of answers
 - Group discussion reflection
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Materials Needed

- Printed worksheets
 - Charts / diagrams
 - Magnet & coil (optional)
 - Blackboard / projector
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