

Student sheet: Electromagnetism – Induction.

Objectives:

By the end of the session students will understand the principle of electromagnetic induction and the basis of Faraday's Law.

Resources required:

Two metres of insulated copper wire, a bar magnet, two magnadur magnets on a holder, a sensitive meter, a mounted coil of wire of a few hundred turns.

Access to internet for www.twothirtyvolts.org

Introduction:

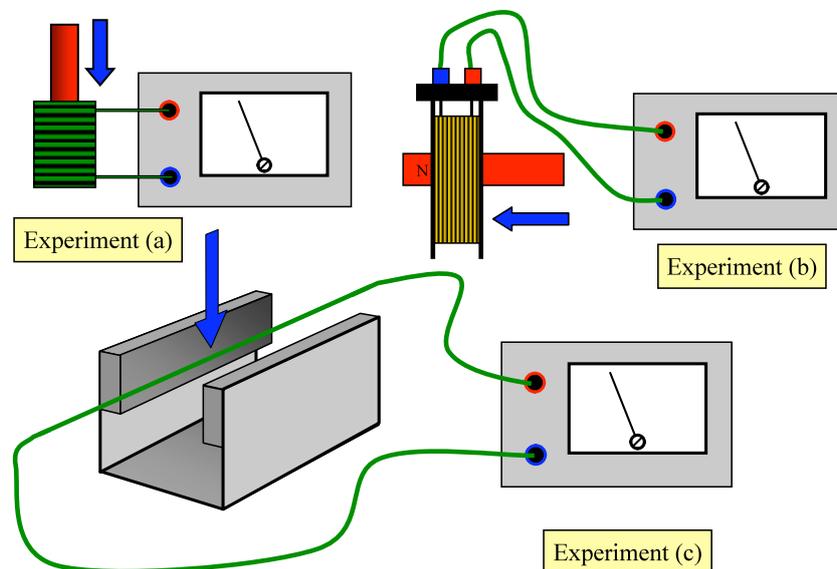
Access and review the Electromagnetic Induction Student Revision Notes at www.twothirtyvolts.org.

Activity:

Working in pairs undertake the following tasks:

Experiment (a)

Wind the copper wire into a coil of 20 turns. Connect it to the meter. Hold the coil still and push the North pole of the magnet into the coil. Record what happens. Now try the same with the South pole. Try moving it fast and then slowly. Now hold the magnet still and move the coil. Watch carefully as the meter movements will be small. Record the size and direction of the current on the meter in the Worksheet table.



Experiment (b)

Connect the wire to the meter as shown in the diagram. Move it downwards between the two magnets, record what happens on the meter. Now move it upwards. Now move the wire sideways between the magnets and then from end to end. Watch carefully as the meter movements will be small. Record the size and direction of the current on the meter in the Worksheet table. How do these readings compare with those you got in the first experiment?

Further work:

An extension activity is to undertake:

Experiment (c).

Repeat experiment (a) but this time use the large mounted coil.

Complete Electromagnetic Induction Student Quiz at www.twothirtyvolts.org .

Linked Resources

www.twothirtyvolts.org:

Electromagnetic Induction 14 -16 Student Revision Notes

Electromagnetic Induction 14 -16 Revision Quiz

Worksheet: Electromagnetism – Induction.

Experiment (a):

Action	Size of Current	Direction of Current

Experiment (b):

Action	Size of Current	Direction of Current

Experiment (c):

Action	Size of Current	Direction of Current