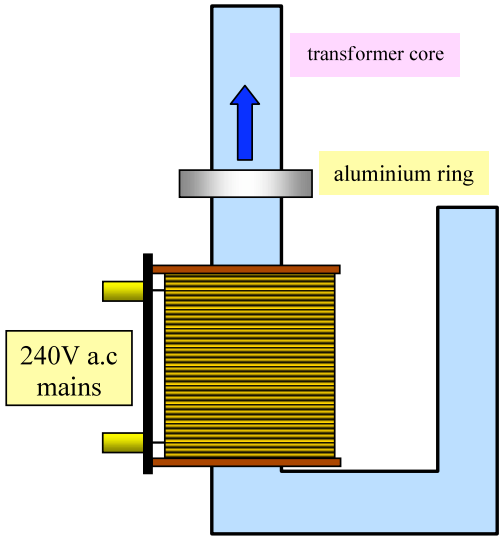
Experiment G: Electromagnetic Induction (age 14 – 16) – Transformers

Experiment Objective:

The demonstration experiment can be used to support explanation of electromagnetic induction and the power of field forces when using transformers.

Experiment:

The primary coil is connected to the mains, the core is "opened up" so that one arm of it is vertical and the secondary is simply an aluminium ring as shown in the diagram. When the current is switched on the ring flies up into the air, usually leaving the core. Extending the core or cooling the ring makes it rise even higher. Building upon previous learning on Electromagnetic induction use to explain effects.



Induced currents in the aluminium ring act in the opposite direction to those in the coil, and so the magnetic filed of the ring repels the magnetic field of the coil and so the ring shoots into the air.

Resource materials needed:

Transformer core; primary coil; aluminium coil.

Expected outcomes:

Students understand the principles of electromagnetic induction and the power of field forces when using transformers.

Linked Resources

www.twothirtyvolts.org

Transformers Student Revision Notes
Transformers Revision Quiz
Transformers Lesson Plan