

## Student sheet: Electromagnetism – Generators.

### Objectives:

By the end of the session you will understand the principles of and be able to construct both DC and AC generators.

### Resources required:

Motor/generator kit. Voltmeter (a.c and d.c), Leads, An oscilloscope or equivalent.  
Access to internet for [www.twothirtyvolts.org](http://www.twothirtyvolts.org)

### Introduction:

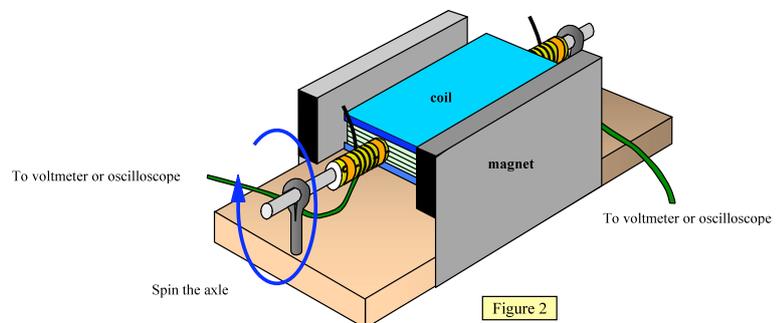
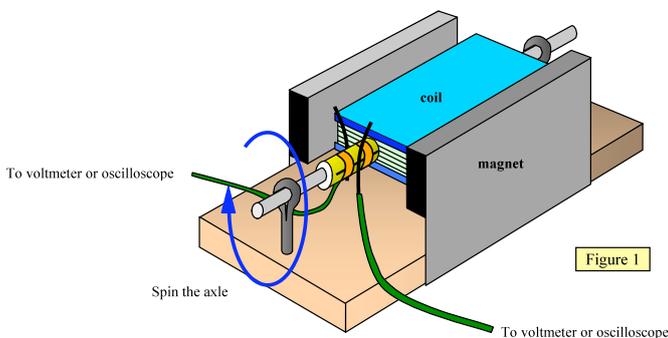
Access and review the Generator Student Revision Notes at [www.twothirtyvolts.org](http://www.twothirtyvolts.org) .

### Activity:

Working in pairs undertake the following tasks:

#### (a) DC generator

Build your DC generator as shown in Figure 1. Connect the voltmeter across the ends of the coil using the wires shown and then gently spin the axle. Observe what happens to the voltmeter reading. Try spinning the axle both ways and also faster and slower. If you have access to an oscilloscope connect your generator to the Y input and repeat the experiment. Record in the Worksheet table the effects of spin speed and spin direction.



#### (b) AC generator

Repeat the experiment using the AC generator shown in Figure 2. Cover both ends of the axle with insulating tape. Bare both ends of the wire and wrap it round the axle over the insulating tape.

### Further work:

Complete Generators Student Quiz at [www.twothirtyvolts.org](http://www.twothirtyvolts.org) .

### Linked Resources

[www.twothirtyvolts.org](http://www.twothirtyvolts.org):

Generators 14 -16 Student Revision Notes  
Generators 14 -16 Revision Quiz

## Worksheet: Electromagnetism – Generators.

### Experiment DC Generator:

Spin Speed	Spin Direction	Observation

### Experiment AC Generator:

Spin Speed	Spin Direction	Observation

**Other Observations:**