

# Semiconductor Diode

## Apparatus

a germanium diode, a power supply, a switch, a small low voltage globe, a match or other heat source

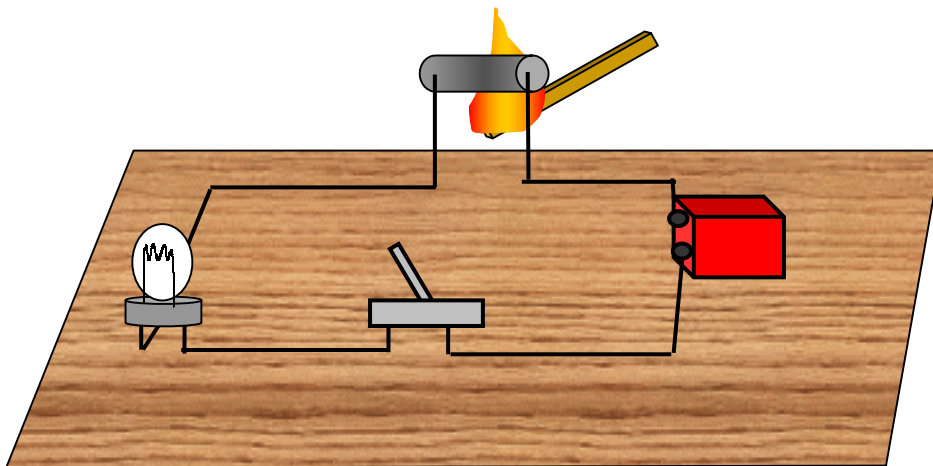
The globe, switch, power supply and germanium diode are wired in series.

## Action

The students close the switch to complete the circuit. They then heat the germanium to light the globe. They swap the polarity and repeat the process.

## The Physics

When the germanium is heated more electrons move into the conduction band, allowing current to flow and the globe to light up. In reverse bias the globe takes longer to light and does not glow so brightly.



## Accompanying sheet:

### Semiconductor Diode

Diodes are made from semiconductor material, such as germanium.

Use a match to heat the germanium diode, to light the lamp.

Can you light the lamp with the diode connected the other way?

Explain some uses for a diode in an electrical circuit.