

FIFTH AND SIXTH – MAGNETISM AND ELECTRICITY

Teacher Guidelines:

- Pp. 96-106
- Exemplar 4 p.42
- Heat - page 129
- Materials and Change - page 123

Linkage:

- Materials - Properties and characteristics
- Light
- Science and the environment

Integration:

- Oral Language Development – English and Gaeilge
- SPHE - Safety
- History

Content Objective:

LEARN THAT MAGNETS CAN PUSH OR PULL MAGNETIC MATERIALS.

Some suggested activities:

- Revise poles and their effects, relationship with compasses, magnets on
- Magnetic Field Window

Content Objective:

INVESTIGATE HOW MAGNETS MAY BE MADE

Stroking a piece of iron or steel with a magnet

Passing electricity through a coil around a piece of iron or steel (electromagnet)

Some suggested activities:

- Refer to and build on activities for third and fourth.
- How can I make an electromagnet, Exemplar 28, p.104 Science Teacher Guidelines

Some suggested investigations:

- How can I make the electromagnet stronger?

Content Objective:**EXPLORE THE USE OF MAGNETS TO LIFT AND HOLD OBJECTS**

How magnets can be used in cranes, door catches. How magnets may be used to sort materials.

Some suggested activities:

- Separate materials using magnets e.g. ball bearings and marbles, nails and sand. What else could be separated using magnets?

Some suggested designing and making:

- A crane that uses an electromagnet

Content Objective:**LEARN ABOUT ELECTRICAL ENERGY****Some suggested activities:**

- Refer to Science Teacher Guidelines p. 98

Content Objective:**INVESTIGATE CURRENT ELECTRICITY BY CONSTRUCTING SIMPLE CIRCUITS.**

Use wire, bulbs, motors and batteries.

Use more than one bulb in a circuit.

Use more than one battery in a circuit.

Experiment with simple switches.

Design and make a set of traffic lights using a simple circuit and switch.

Some suggested activities:

- Refer to and build on activities for third and fourth class
- Use circuit with motor to spin cardboard disk with the colours of the spectrum– to illustrate the mixing of light.

Some suggested investigations:

- Does the length, thickness or type of wire effect the brightness of the bulb?
- Do switches have to be made from magnetic materials?

Some suggested design and make:

- Traffic lights
- Buzz off game

- Burglar alarm (pressure switch)
- Quiz board
- Tilt switch

Content Objective:

BECOME AWARE OF HOW SOME COMMON ELECTRICAL APPLIANCES WORK.

Some suggested activities:

- Discuss and examine what is inside a torch. What is the function of each part? Trace the path of the electricity through the bulb.

Some suggested design and make:

- Make a torch using a plastic bottle as the body and kitchen foil as the reflector

Content Objective:

BECOME AWARE OF AND UNDERSTAND THE DANGERS OF ELECTRICITY

Dangers of mains electricity in the home and at work

The importance of fuses and circuit breakers for safety.

Some suggested activities:

- Refer to activities for previous content objective.
- Teacher demonstration of how fuse works with steel wool
- Location of circuit breaker board in school.
- Refer to Exemplar 5, p. 43 – Unit of work on Electricity