



# Firrhill High School



## Summary Questions: P1 Electricity & Magnetism

Before you answer these questions, look over your summary sheets and the success criteria from this topic.

### 1. MAGNETS

- What are the two poles on bar magnets called?
- What would happen if a north pole magnet and a north pole magnet were brought together?
- What would happen if a north pole magnet and a south pole magnet were brought together?
- Why does the earth have north and south poles?
- What do magnetic field lines show?

### 2. CHARGES

- What are the two types of electrical charge?
- What is the name given to the positive charge found in the centre of an atom?
- What is the name given to the neutral particle found in the centre of an atom?
- What is the name of the centre of the atom?
- What is the name of the negative particle found circling the centre of the atom?
- Draw a diagram of the atom and label as much of it as you can.
- What would happen if a positive charge was brought next to another positive charge?
- What would happen if a positive charge was brought near a negative charge?

### 3. STATIC CHARGE

- Most objects are said to be neutrally charged. What does this mean?
- When a metal rod is rubbed with a cloth what happens to the charges?
- What is the flow of moving negative charges called?
- When a small bulb is moved very quickly across the metal rod it lights up. Why is this?
- What is static electricity?
- Give three examples of when you experienced static electricity.

### 4. CONDUCTORS AND INSULATORS

- What is an electrical conductor?
- What is an electrical insulator?
- Give three examples of conductors.
- Give three examples of insulators.
- Why would electrical wires be made out of metal?
- Why would the protective coating that goes around wires be made of plastic?
- Why do electrical engineers wear big rubber boots when dealing with electricity?

## 5. SIMPLE CIRCUITS

a) Copy and complete the passage below:

All electrical circuits must form a \_\_\_\_\_ so that \_\_\_\_\_ (negative charges) can travel around the circuit. Charges get a 'push' from the \_\_\_\_\_ supply.

- b) Draw the symbol for a battery.
- c) Draw the symbol for a lamp.
- d) Draw the symbol for a switch.
- e) What is electrical resistance?
- f) Name three things that can affect the resistance of a circuit.
- g) What is the name of the device used to measure current?

## 6. SERIES CIRCUITS

- a) How many paths do series circuits have for electrons to flow?
- b) Draw a simple series circuit with a light that can be switched on or off.
- c) A series circuit has three bulbs in it. One of the bulbs breaks. What would happen would to the other two bulbs?
- d) What happens to the brightness of bulbs in a series circuit if you keep adding more bulbs? Why is this?

## 7. PARALLEL CIRCUIT

- a) How many paths do parallel circuits have for electrons to flow?
- b) Draw a simple parallel circuit with two lights than can be switched on or off separately.
- c) A parallel circuit has three bulbs in it. One bulb breaks. What would happen to the other two bulbs?
- d) What happens to the brightness of bulbs in a parallel circuit if you keep adding more bulbs in parallel? Why is this?

## 8. SCIENCE SKILLS

These results show the resistance of different lengths of the same wire:

<u>LENGTH OF WIRE (cm)</u>	<u>RESISTANCE (ohms)</u>
25	0.5
50	1.0
75	1.5
100	2.0
125	2.5
150	3.0

Using graph paper display this information as a line graph.