Lesson 5.1: Electric circuits

Textbook : Pages 40—45
Activity Book : Pages 27—30 (Activities 5.1 and 5.2)
Time required : Weeks 12, 13 and 14, four periods

Essential learning points	Specific learning objectives in My Pals are Here!
• An electric circuit is a system because it is made up of components that work together, such as a battery, wire, bulb and switch. • When the components are connected together, electricity flows along the circuit and is called an electric current. • The battery is the energy source and it drives an electric current through an electric circuit. • Electrical wires are used to connect one electrical component to another and allow an electric current to flow in a circuit. • In order for a bulb to light up, it has to be properly connected in a circuit. • A switch controls electric current flow in a circuit. • The different parts of a circuit are represented by different symbols. • To communicate what an electric circuit looks like, we use a circuit diagram to represent an actual electric circuit. • A circuit through which electric current can flow is called a closed circuit. • A circuit through which electric current cannot flow is called an open circuit.	• Recognise that an electric circuit is an electrical system because it is made up of components that work together, where each has its own function • Recognise that an electric current is a flow of electricity along an electric circuit • Identify the different components of an electric circuit and relate them to their function(s) • Communicate the set-up of an electric circuit through a circuit diagram, using the symbols of electrical components, such as a battery, wire, bulb and switch • Construct a simple electric circuit based on a circuit diagram • Differentiate between a closed circuit and an open circuit • Observe that an electric current flows only when an electric circuit is closed

Information Technology (IT)

Use of the Internet to gather information about electric circuits

National Education (NE)

Bring the pupils to the Singapore Science Centre's Amazing Electron Exhibition to learn more about different electronic devices and their applications

Engage (1st E) Use of an activity	Feature of Science inquiry
Purpose: To raise the pupils' awareness of electrical appliances found around them **Resources:** Science journal, stopwatch 1. Ask the pupils to list as many examples of objects found around them as they can, which require electricity to work, within one minute. 2. Identify the winning pupil who can list the most number of examples and ask him or her to read out the list.	**Question (Q4)** Pupils engage in the question provided by the teacher, materials or other sources.
Explore (2nd E) Guided inquiry **Purpose:** To identify the electrical components in an electric circuit **Resources:** Activity Book, Science journal, D-sized battery, wire, bulb, magnifying glass 1. Inform the pupils that an electrical appliance will work only when electricity passes through it. 2. Ask the pupils to identify the electrical components that make up the electric circuit in an electric torch. 3. Pose the following questions: • Which is the electrical component that gives off light? (Answer: The bulb gives off light.) • Which is the electrical component that provides energy for the electric torch to work? (Answer: The battery provides energy for the electric torch to work.) • Which is the electrical component that starts or stops the flow of electricity in the electric torch? (Answer: The switch starts or stops the flow of electricity in the electric torch.) • Which is the electrical component that connects all the other electrical components together? (Answer: The wire connects all the other electrical components together.)	**Question (Q4)** Pupils engage in the question provided by the teacher, materials or other sources. **Evidence (Evi3)** Pupils are given data and asked to analyse. **Evidence (Evi2)** Pupils are directed to collect certain data.