LESSON PLAN

Subject: science date: 14-09-26

Topic: Electrical Current Flows duration: 40 Minutes

Class: 4

OBJECTIVES

LOTS:

- *Remember:* Students will recall key words - circuit, electricity, flow, particle, voltage.
- *Understand:* Students will explain that electrical current flows around a complete circuit.
- *Apply:* Students will demonstrate the flow of current using the ball-passing circle model.

HOTS:

- *Analyze:* Students will compare central heating system models with electric circuit and match components - boiler/battery, pipes/wires, radiator/bulb, hot water/electricity.

TEACHING METHODS:

- Inquiry-Based Learning
- Cooperative Learning / Circle Activity
- Discussion Method

3. CLASSROOM MANAGEMENT

The teacher announces rules; respect, respond and raise hand

TEACHING RESOURCES / TEACHING AIDS

- Soft balls / tennis balls: 2
- Flash cards of Key Words: Circuit, Voltage, Battery, Bulb, Wires
- Whiteboard, markers

INITIATION ACTIVITY (5 Mins)

The teacher asks: "Explain to your partner what happens to the flow of electricity when it comes to a break in a circuit?"

The teacher takes 2-3 responses. Teacher gives a recap of the previous lesson: In a battery chemicals react and release tiny particles that flow around the circuit to make electricity. If the circuit is broken, the current cannot flow.

Introduction of the topic: Today we will use MODEL to understand how electricity flows.

DEVELOPMENT (25 Mins)

Passing Balls Around a Circle Activity (15 Mins)

The teacher makes a circle of 5-6 students in the center.

The ball = tiny particles that create electricity.

- *Situation or model 1:* What if someone drops the ball?

  Students act it out.
  Explanation: This is a BREAK circuit. Current cannot flow. Light goes off.

- *Situation or Model 2:* What if everyone passes balls MORE QUICKLY?

  Students pass fast.
  Explanation: This models HIGHER VOLTAGE. More energy is flowing.

- *Model 3:* What if one person throws a ball in the air before passing?
  Students act.
  Explanation: This model shows what happens in a BULB or BUZZER. Flow slows down as it flows through the component. Energy is used.
- *Model 4:* Make a gap between two people.
  Explanation: This is an OPEN SWITCH. Flow stops when it reaches the break.

Part B - Central Heating Model (10 Mins) the teacher shows and draws textbook diagrams on board.

Explain: We can model electricity flow like a central heating system used in colder countries.

Ask students to match:

- boiler and pump = battery - pushes water/electricity
- pipes = wires - path for flow

- radiator = bulb - uses energy
- hot water flowing = electricity

Stretch Zone - HOTS Discussion: "There are some problems with the central heating model. Can you see what they are?" Expected answers: Water can leak, water is seen, electricity cannot be seen. Water flows slowly and gets used up, but electricity particles keep flowing in a loop.

The teacher shares a science Fact: Tiny particles move at the speed of a snail, but the energy they carry moves at the speed of light!

RECAP (5 Mins) Key Idea: Electricity flows around a circuit.

Quick recap with gestures:

- Complete circuit means that the current will flow around the wire
- Break in circuit means that the current will not flow around the circuit

ASSESSMENT - ORAL QUESTIONING (5 Mins)

LOTS Questions:

1. What are the key words we learned today?
2. What does the ball represent in our circle activity?
3. What happens when there is a break in the circuit?
4. Which part of central heating is like the bulb?

BOARD WORK:

Topic: Electrical Current Flows

Key Words: Central Heating = Electric Circuit

- circuit boiler & pump -> battery
- electricity pipes -> wires
- flow radiator -> bulb (component)
- particle hot water -> electricity