Fun with electric circuits

'Bus Conductors Light up Understanding'

Materials: 9V batteries, battery cap, graphite pencil, plain paper, LED, water, connecting wires with crocodile clips and human bus conductors.

Definition of Bus (Wikipedia):" In computer architecture a bus is a communication system that transfers data between components inside a computer or between computers"

In the following experiment, the bus conductors do not sell tickets, but are also not being utilized to transfer data. What they collectively transfer between each other is 'understanding'

Make a simple circuit using a battery, battery cap, LED, connecting wires but no switch.

Now how can we add a very simple switch to this circuit? Let us search for materials around us (in classroom environment) that would serve the purpose. In the experiments conducted during AIPSC, 2018 at ISSER, Bhubaneswar, and children used materials like metal keys, lockets, and iron nails, safety pin, etc. Finally one of the students used pencil to connect the circuit. In the process of altering the materials, children also discovered that even human body conducts. Although not an alien concept, this experiment opened several opportunities for having fun with human body as an element of electric circuit.

Human body as a switch, human body as a resistor, effect of wetting the hands before connecting to circuit, using human body as resistance in series and parallel connection, etc. has been explored using the same concept.

Another aspect of this activity is to use pencil drawings to (straight lines and curves of variable thickness) replace connecting wires and draw working circuits on paper.

This series of experiments is designed by Khushboo Kumari of Edugenie Guwahati. It was first tried out in a workshop with students at All India People's Science Congress at Bhubaneshwar on 9 – 12 February 2018.

Children exploring circuits :

Khushaboo Kumari ….

LIGHTING UP UNDERSTANDING