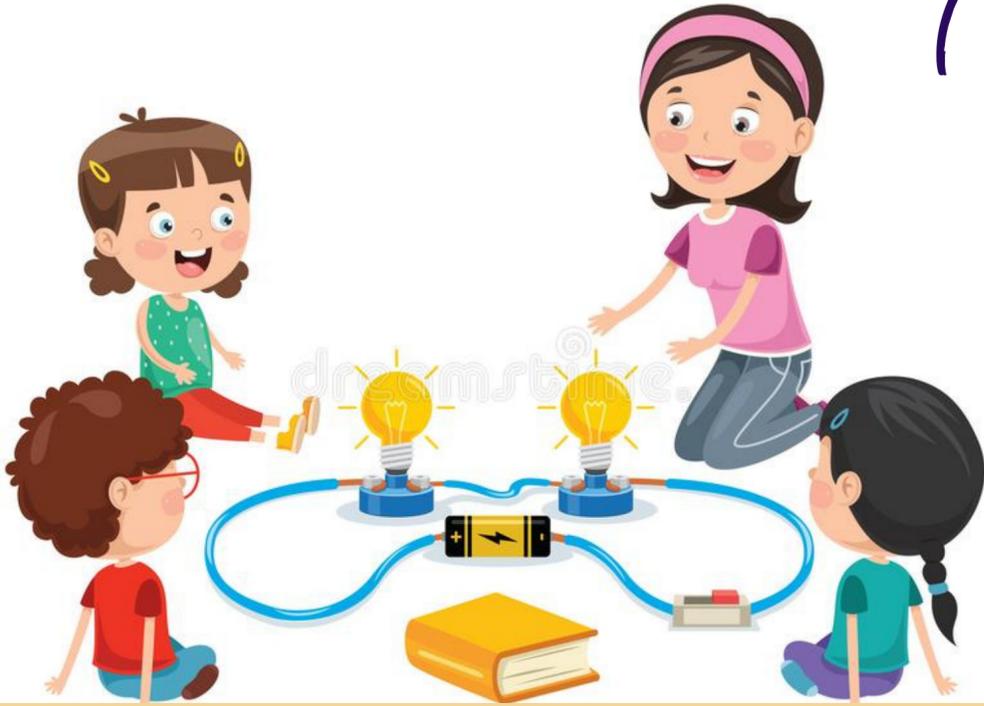


Physics and chemistry activity

Articulation: Eletrical Circuits, Study of Physical Features, 4th grade, blocK 5, point 3

EXPLORING ELECTRICAL CIRCUITS



The oriented movement of electrical charges is called electrical current. Electric charges, when in motion, transfer energy from generators to receivers.

The batteries used in various objects in common use (watches, calculator...) produce electrical energy. An electrical circuit consists of several elements: a power supply (a battery, for example) and one or more receivers (light bulbs, for example), connected by wires of good conductive materials (copper, for example).

For electrical current to exist in an electrical circuit, it is necessary to connect the elements of the circuit in a closed path.

PHASE III AFTER EXPERIMENTATION

http://bit.ly/afterEXP_PARTS1and2

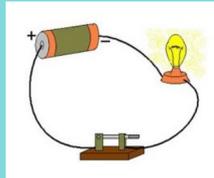
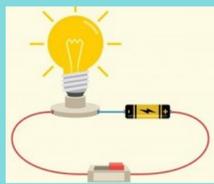
Part 1

É It is possible to light a _____ by establishing a circuit between the _____, _____ and _____ poles

- ... light bulb ... open... battery... switch... light bulb
- ... light bulb ... closed... battery... switch... light bulb
- ... light bulb ... open... light bulb ... switch... battery

The electrical wires that connect to each other, for _____ to pass, form a _____.

- ... Electric current... open circuit.
- ... Static electricity... open circuit
- ... Static electricity... closed circuit
- ... Electric current... closed circuit



Part 2

When one of the light bulbs is unscrewed, in a circuit in which they are connected in series, the other _____ light bulb or when the light bulbs are connected in series, if one burns out the other _____ light bulb.

- ... goes off... burns out
- ... stays on ... burns out
- ... goes off... goes off
- ... stays on... goes off



When one of the light bulbs is unscrewed, in a circuit where they are connected in parallel, the other _____ light bulb or when the lamps are connected in parallel, if one burns out the other _____ light bulb.

- ... goes off... burns out
- ... stays on ... stays on
- ... goes off... goes off
- ... stays on... goes off



I evaluate what I learned

http://bit.ly/I_evaluate_what_I_learned

PHASE I BEFORE EXPERIMENTATION

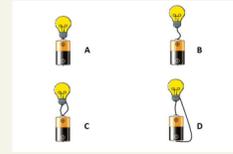
Parte 1

How do I light a lamp? I think that ...

- you connect the positive pole of the battery to the light bulb with a conductive wire.
- components are connected in a closed circuit.
- the negative pole of the battery is connected to the light bulb with a conductive wire.
- none of the above.

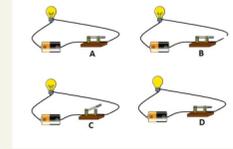
The light bulb turns on in ...

- A
- B
- C
- D



The light bulb turns on in ...

- A
- B
- C
- D



http://bit.ly/beforeEXP_PART1

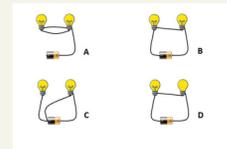
Parte 2

Is it possible to connect two light bulbs so that they light both?

- True
- False

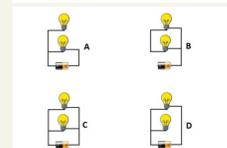
The two light bulbs light up in...

- A
- B
- C
- D



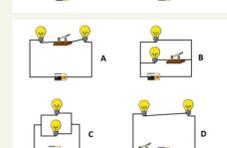
The two light bulbs light up in...

- A
- B
- C
- D



The two light bulbs light up in...

- A
- B
- C
- D



http://bit.ly/beforeEXP_PART2

PHASE II EXPERIMENTATION

View the Video of the experiment described

<http://bit.ly/phaseII-Experimentation>

EXPERIMENTAL PROCEDURE

Part 1

- 1- Make the light bulb turn on using the material found on the bench.
- 2- Observe what happens.

Part 2

- 1- Assemble an electrical circuit with two light bulbs connected in series.
- 2 - Unscrew one of the light bulbs and observe what happens.
- 3 - Unscrew the other light bulb and observe what happens.
- 4 - Assemble an electrical circuit with two light bulbs connected in parallel.
- 5 - Unscrew one of the light bulbs and observe what happens.
- 6- Unscrew the other light bulb and observe what happens.

