

Fourth Grade “Electricity” Assessment

1a. Electricity is caused by the flow of _____.

- a. protons
- b. electrons

1b. Electricity is caused by the flow of _____.

- a. neutrons
- b. protons
- c. charges
- d. electrons

1c. How is electricity related to attracting and repelling?

2a. _____ builds up on an object and does not move.

- a. A magnetic field
- b. Static electricity

2b. What type of electricity builds up on an object and does not move?

2c. Give two examples of static electricity and how they are caused.

1. _____
-
-
2. _____
-
-

3a. The actual flow of electricity is called _____.

- a. conductor
- b. current

3b. A(n) _____ is the flow of electrons over a material that can carry it.

- a. conductor
- b. electric current
- c. circuit
- d. series

3c. A(n) _____ is the flow of electrons over a material that can carry it.

- 4a. Current flows through a _____.
- a. route
 - b. circuit
- 4b. What is the name of the path formed by conductors for the flow of electric charges?
- a. a route
 - b. a circuit
 - c. a map
 - d. electricity
- 4c. Explain the differences between a series circuit and a parallel circuit.
3. _____
- _____
- _____
4. _____
- _____
- _____
- 5a. Who made the very first generator? _____
- a. Michael Faraday
 - b. Benjamin Banneker
- 5b. Who made the very first generator? _____
- 5c. What invention did Michael Faraday create and what is the process he followed?
- _____
- _____
- _____
- _____
- _____
- 6a. In which circuit will electrical current be able to flow completely
- a. open circuit
 - b. closed circuit
- 6b. Draw a picture of a closed circuit using a battery, wire, light bulb and switch.

6c. Draw one picture of a closed circuit using a battery, wire, light bulb and switch and one picture of an open circuit using a battery, wire, light bulb and switch.

7a. Materials that let electrical charges pass through them are called _____ and _____ are materials that do not easily transmit an electric current.

- a. circuits; currents
- b. conductors; insulators

7b. Label the following items as either an insulator or a conductor:

Plastic	_____
Wood	_____
Copper	_____
Paper	_____
Aluminum	_____
Paper clip	_____

7c. List four good conductors and four good insulators.

Conductors	Insulators
_____	_____
_____	_____
_____	_____
_____	_____

8a. What does letting an electric current pass through a coil of wire create?

- a. electromagnet
- b. fire

8b. What is created from letting electric current pass through a coil of wire?

8c. How is an electromagnet made?

The following Colorado Model Content Standards are covered in this assessment by the questions indicated:

None

Answer Key

1a. b. electrons

1b. d. electrons

1c. Acceptable answers could include:

-Different charges are attracted to each other

-Electricity is the flow of negative charges to a place of positive charges

-This flow is caused by the attraction of the unlike charges

2a. b. Static electricity

2b. static electricity

2c. Acceptable answers could include:

-Lightning; the build up of negative charges in clouds that jump from cloud to cloud or clouds to the ground

-Sparks; extra charges that build up on one object and are attracted to another object; if the objects become close enough the charges will jump and a spark will occur

-Balloon sticking to a wall; rubbing a balloon causes the balloon to pick up extra charges that are attracted to the opposite charges in the wall

3a. b. current

3b. b. electric current

3c. Electric current

4a. b. circuit

4b. b. a circuit

4c. Acceptable answers could include:

-a series circuit has only one path for the current to follow

-in series circuit if the circuit is broken at any point the circuit will not work

-a parallel circuit has more than one path for current to flow

5a. b. Benjamin Banneker

5b. Michael Faraday

5c. Acceptable answers could include:

-the first generator

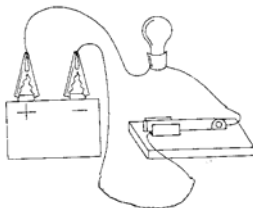
-created electricity by moving copper near a magnet

-made electricity flow continuously

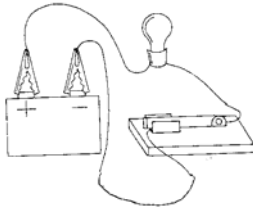
-led to the development of most generators of today

6a. b. closed circuit

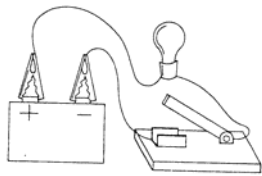
6b. Closed circuit:



6c. Closed circuit:



Open circuit:



7a. b. conductors; insulators

7b. Plastic insulator

Wood insulator

Copper conductor

Paper insulator

Aluminum conductor

Paper clip conductor

7c. Acceptable answers could include:

-Conductors; wire, copper, aluminum, water, paper clip, steel nail

-Insulators; wood, plastic, foam, paper, cardboard, straw, rubber band

8a. a. electromagnet

8b. electromagnet

8c. Acceptable answers could include:

-pushing electric current through a coil of wire

-wrapping a good conductor around a piece of metal and letting current flow through the wire