



Electricity Lesson 1: The Solve

Student Handout

I. Watch the Mosa Mack Mystery

Read or [watch](#) the Electricity Comic Mystery, either on your own, in a small group, or as a class (your teacher will let you know). Then, fill out the questions below. Include a page number in your answer as evidence of where you found your answer.

Name: _____

Date: _____

Electricity Comic Mystery Questions

1. What do lightning and Eddie the Eel have in common?
2. When electrons and protons are equal, they balance each other out and have no charge. This is not what we want for electricity. What do we need to generate electricity?
3. In which direction do electrons always move? What does this generate?
4. How does a battery work?
5. What solution does Mosa propose to Jessie?
6. Describe or draw a labeled diagram explaining electric current.
7. How does a generator work, according to the electrical engineer?
8. What is the result of a larger generator?
9. What did Mosa figure out? How can she help Jessie make her light bulb brighter?



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II. Vocabulary Activity

Note: Your teacher will tell you whether you will complete this activity [online here](#), or offline by following the instructions below.

1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**.
2. Write the definitions on the back of the cards. Then, match the vocabulary word with the correct picture on the Electricity Mind Map. When you're ready to glue, raise your hand so you can check your Mind Map with your teacher.
3. Fold along the dotted line on each vocabulary card to create a flap. Put glue **ONLY** on the hinge of your vocabulary cards (the word should be on top). **You should be able to open the flap to see the definition and the picture underneath.**
4. Discuss with your group:
 - a. What is the difference between a closed and an open circuit?
 - b. In what direction does the electric current of electrons flow as you see it in your Mind Map?
 - c. Are there conditions when it is safe to touch electric current moving through a wire? In what conditions would it be unsafe? Confirm your ideas with your teacher.

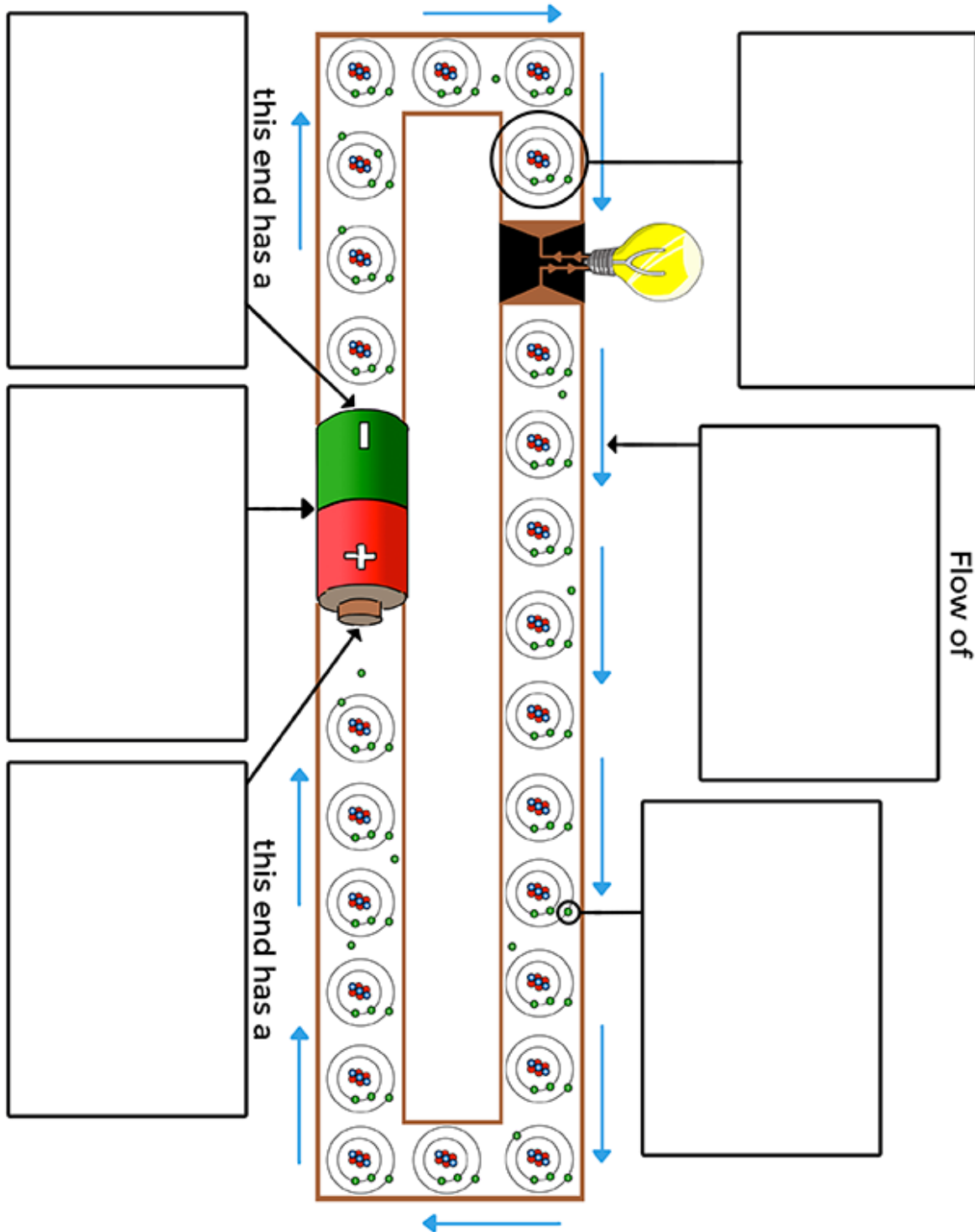




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Mind Map





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Charged Atom	Negative Charge	Electron
Positive Charge	Battery	Electricity

Vocabulary

- **Charged Atom:** an atom in which the total number of electrons is not equal to the total number of protons
- **Battery:** a container in which positively-charged atoms and negatively-charged atoms are separated and stored to be used as potential energy
- **Electricity:** the flow of electric current from a negatively-charged area toward a positively-charged area
- **Electron:** the part of the atom with a negative charge
- **Positive Charge:** when the number of protons is greater than the number of electrons
- **Negative Charge:** when the number of electrons is greater than the number of protons



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III. Quiz: Check for Understanding

Complete the quiz below, or you can take the [quiz online!](#)

Name: _____

Date: _____

1. If there are more electrons than protons, it creates a/an:
 - a. Positive charge
 - b. Neutral charge
 - c. Negative charge
 - d. Electrical charge
2. True or false? Electrons always move from an area with a negative charge to an area with a positive charge.
 - a. True
 - b. False
3. An electric current involves energy moving along which of the following particles?
 - a. Protons
 - b. Electrons
 - c. Electricity
 - d. Neutrons
4. Which of the following would be a good medium to transfer electric current from one place to another?
 - a. Protons
 - b. Neutral atoms
 - c. Separator
 - d. Copper wire
5. Fill in the blanks: The _____ the generator, the _____ electricity is produced.
 - a. Smaller; more
 - b. Larger; more
 - c. Larger; less
6. Fill in the blanks: The _____ the battery, the _____ electricity is produced.
 - a. Smaller; less
 - b. Larger; less
 - c. Smaller; more
7. Which of the following is not a part that helps make or conduct electricity?
 - a. Magnet
 - b. Battery
 - c. Generator
 - d. Copper wire
 - e. All of the above help make or conduct electricity