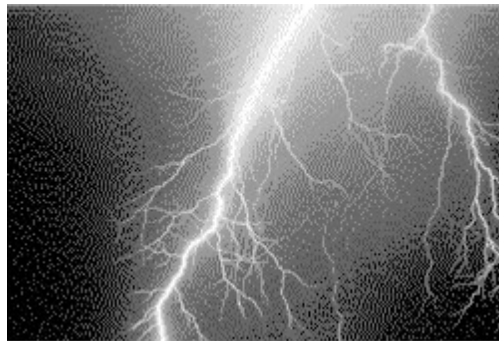




# Post-Visit Activities

Grades 6-12

Developed August 2006



# Activities

These activities are intended for use after your visit to the Virginia Air and Space Center. Your students should recall the information, demonstration, and activities from the ZAP! demonstration in order to do these activities. All of the activities can be tailored to your specific classroom needs, and the procedures listed are just suggestions for teaching.

## Activity 1: Current, Resistance, and Voltage

To make sure the students understand the definitions of these words, have them act it out. For current, have the students stand in a line, side by side. Give one of the students on either end a ball of some sort, and tell him/her to pass it to their neighbor, all the way down the line. Give them several balls to keep the “current” flowing. As long as there is a ball moving through the line, there is current. Explain that one “unit” (ball) of current is called an Ampere.

For resistance, the opposition to electrical current, have one volunteer help you. Stand in front of the students and tell the student volunteer to push you. Explain that you are the resistance, and the student volunteer is the current trying to get around you to keep the current flowing. Explain the resistance (you) is in opposition to the flow of current.

Finally, to explain voltage, pick another student to help you with this one. Tell them that he/she is the current, and you are the voltage. Explain that voltage helps “push” the current through the circuit. Demonstrate this by pushing the student by the shoulders. Explain that the higher the voltage, the more “push” the current has, and vice versa.

If the students are older, and this might be a little too simple for them, have them come up with their own way to act it out instead of you telling them how to do it.

## Activity 2: Crossword

Attached is a crossword puzzle with all the vocabulary terms. Have the students work on this to reinforce the definitions.

## Activity 3: Wrap Up

To wrap the whole program up, ask the students what they learned throughout the whole experience? Ask questions like, “What is electricity?” “What is it used for?” “Can you name some things we use electricity for?” “What would life be like without electricity?” “Do you remember who invented the light bulb?” etc. Try to include everyone, and have at least one answer from every student.

If you want to share some fun facts with the students, check out some of the websites, included in the resources section.

# Resources

[http://www.powerhousekids.com/stellent2/groups/public/documents/pub/phk\\_eb\\_ae\\_001470.hcsp](http://www.powerhousekids.com/stellent2/groups/public/documents/pub/phk_eb_ae_001470.hcsp)

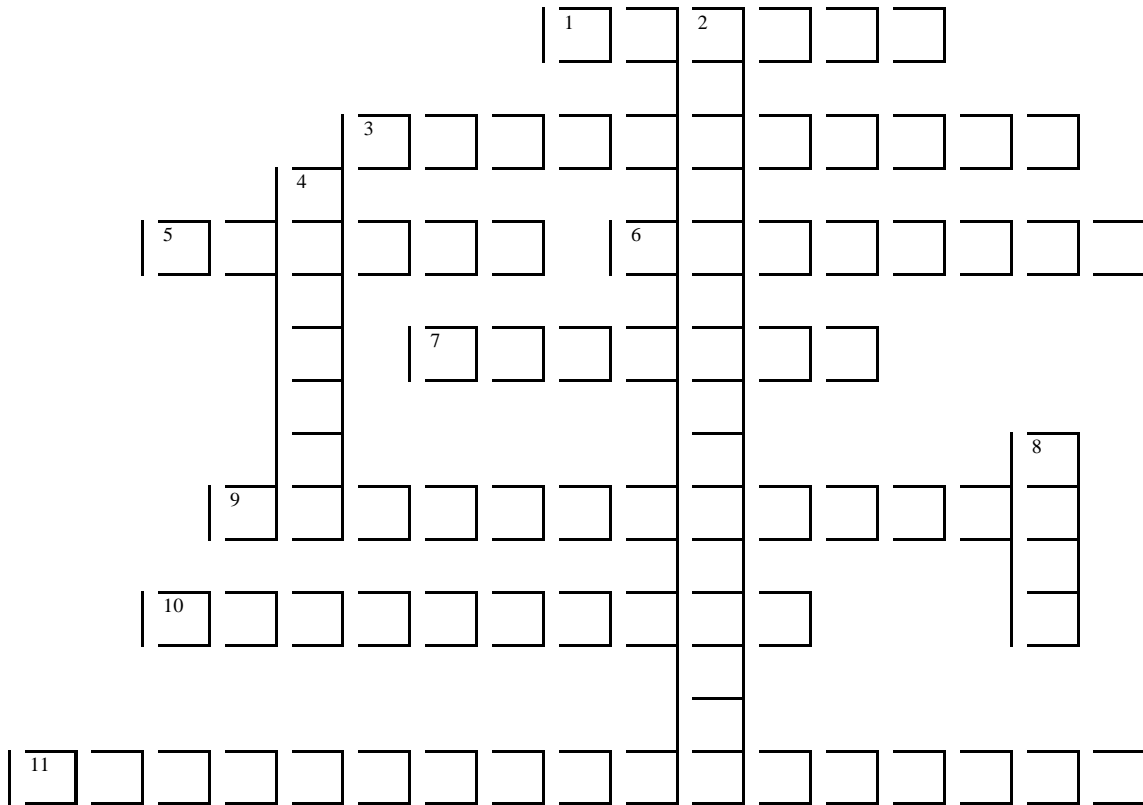
<http://www.fortelectric.com/Funfacts.html>

<http://www.loc.gov/rr/scitech/mysteries/static.html>

<http://school.discovery.com/curriculumcenter/electricity/glossary.html>

[http://www.pbs.org/wgbh/nova/teachers/viewing/3214\\_02\\_nsn.html](http://www.pbs.org/wgbh/nova/teachers/viewing/3214_02_nsn.html)

# ZAP! Crossword Puzzle



## ACROSS

- 1 Units to measure the electrical current
- 3 The flow of electrons
- 5 The positively charged particles in an atom; they are inside the nucleus
- 6 The negatively charged particles in an atom; they orbit the nucleus
- 7 The flow of electric charge
- 9 A circuit where charge flows through each component in turn. If one part of the circuit is disconnected and stops the current, it will stop throughout the circuit. (2 words, no space)
- 10 Measure of opposition to electrical current. Measured in ohms.

- 11 An electrical charge that builds up due to friction between two dissimilar materials. Created when electrons "jump" from one atom to another. You can create this by rubbing certain things together, such as a brush and your hair. Lightning is also an example of it.

## DOWN

- 2 A circuit that splits into branches. A break in one branch will not stop current in the other branches. (2 words, no space)
- 4 Pressure behind the flow of electricity, measured in volts
- 8 The basic building block of life that makes up all the matter around us.

## **ANSWER KEY**

### Across:

1. ampere
3. electricity
5. proton
6. electron
7. current
9. seriescircuit
10. resistance
11. staticelectricity

### Down:

2. parallelcircuit
4. voltage
8. atom

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