

Static Electricity Grade 4 Evaluation

Teacher Section

Overview: Kids will demonstrate how well they understand important key concepts from this section.

Suggested Time: 45-60 minutes

Objectives: Students will be tested on the key concepts of electricity:

1. The proton has a positive charge, the neutron has no charge, and the electron has a negative charge. These charges repel and attract one another kind of like magnets repel or attract. Like charges repel (push away) one another and unlike charges attract one another. Generally, things are neutrally charged. They aren't very positive or negative, but rather have a balance of both.
2. Objects that are electrically charged can create a temporary charge on another object.
3. The Triboelectric Series is a list that ranks different materials according to how they lose or gain electrons.

Students will also demonstrate these principles:

4. Design and build simple experiments that demonstrate the principles above.
5. Know how to demonstrate that electrically-charged objects attract or repel each other.

Materials (one set for entire class)

balloon
ping pong ball
paper

Lab Preparation

1. Print out copies of the student worksheets, lab practical, and quiz.
2. Have a tub of the materials in front of you at your desk. Kids will come up when called and demonstrate their knowledge using these materials.

Lesson

The students are taking two tests today: the quiz and the lab practical. The quiz takes about 20 minutes, and you'll find the answer key to make it easy to grade.

Lab Practical

Students will demonstrate individually that they know electrically-charged objects attract or repel each other. While other kids are waiting for their turn, they have a choice of three different homework assignments to get started on. You choose whether they get to work together or individually.

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Student Worksheet

Overview: Today you're going to take two different tests: the quiz and the lab practical. You're going to take the written quiz first, and the lab practical at the end of this lab. The lab practical isn't a paper test – it's where you get to show your teacher that you know how to do something.

Lab Test & Homework

1. Your teacher will call you up so you can share how much you understand about electrical charges and how they interact with each other. Since science is so much more than just reading a book or circling the right answer, this is an important part of the test to find out what you really understand.
2. While you are waiting for your turn to show your teacher how much of this stuff you already know, you get to choose which homework assignment you want to complete. The assignment is due tomorrow, and half the credit is for creativity and the other half is for content, so really let your imagination fly as you work through it. Choose one:
 - a. Write a short story or skit about static electricity from the perspective of the electron or proton. You'll read this aloud to your class.
 - b. Make a poster that teaches the main concepts to static electricity. When you're finished, you'll use it to teach to a class in the younger grades and demonstrate each of the principles that you've learned.
 - c. Write and perform a poem or song about static electricity. This will be performed to your class.