

Student Handout—Conducting Balloon Experiments

Introduction: Benjamin Franklin was one of the most innovative and versatile men of his time. Franklin used the scientific method to conduct many experiments with electricity. He concluded that lightning was a form of electricity. He also theorized that electricity was composed of positive and negative charges that flowed through objects. In this activity, you will conduct an experiment with static electricity using the scientific method to test variations on the experiment and to answer questions.

PART ONE: After your teacher gives you a balloon and a piece of wool cloth or leather, conduct the first part of your experiment by doing the following:

1. Blow up the balloon and tie off the end.
2. Rub the balloon against the piece of wool cloth or leather several times.
3. Place the balloon just above your partner's hair (preferably long hair, not a crew cut).
4. Observe what happens. What caused the hair to react this way?

PART TWO: Take the experiment a step further:

1. How strong do you think the static electricity is in the balloon? Is it strong enough to hold up the balloon against gravity?
2. Rub the balloon again several times with the cloth.
3. Place the balloon against a wall and observe what happens (teacher will explain).
4. What happens if you leave the balloon on the wall for several minutes?

PART THREE: Review the Static Electricity Balloon Experiment Chart (below) with your teacher. Use the worksheet to record your experiment data from the following:

1. Rub the balloon against the cloth for different amounts of time: 5, 10, and 15 strokes.
2. After each rubbing, place the balloon against the wall.
3. Record on the worksheet how many minutes the balloon stays on the wall with each amount of rubbing.
4. Conduct the experiment again to make sure your numbers are accurate, or at least similar.
5. From what you know about electrons moving from one object to the next, what conclusions can you make about why different amounts of rubbing the balloon cause the balloon to stick to the wall for different lengths of time? Record your conclusions on the worksheet.

Static Electricity Balloon Experiment Chart

	Time at 5 strokes	Time at 10 strokes	Time at 15 strokes
First Trial			
Second Trial			
Conclusions, according to my results:			