

# Electrostatics- Low Prep Balloon Labs

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# Directions

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- 1) Set up lab stations
- 2) Separate students into groups of 2-4 students
- 3) Students spend 4-5 minutes at each station.
- 4) Students perform the experiment and then model their findings and describe what happened.
- 5) At the end of the lab stations, students can create CER's for each situation: charged vs. charged, charged vs. neutral and charged vs. water for an assessment

# Notes and Helpful Hints

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- Humidity affects these electrostatics labs. Check your humidity for the day. Over 60% will make some more difficult to do.
- Make sure students are charging on their hair, yarn, felt or wool. Hair works the best!
- Make sure balloons are blown up the maximum amount.
- Replace balloons daily or halfway through the day (if they are being used more than 3 times in a day)
- All balloons should be wiped down with a damp paper towel and dried between each station.
- If you have a Van De Graaff it is great compliment to these stations. It will provide additional evidence for their CERs.

# Balloon Labs

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## Materials Needed:

- ❑ 9 Balloons blown up to maximum (replace daily)
- ❑ Yarn, felt, wool, etc.
- ❑ Plastic band from plastic bag (halo)
- ❑ Hole Punch scraps
- ❑ Plastic Ruler (optional)
- ❑ Salt and Pepper
- ❑ Sink
- ❑ Bubbles
- ❑ Ping Pong Ball and/or empty soda can
- ❑ Foil, Streams, scrap paper, etc.

# Station #1

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- Place 15-20 scraps of paper from a hole punch on the table.
- Charge a balloon or plastic ruler for 1 minute.
- Bring the balloon or plastic ruler close to the hole punches.
- Observe the effect the ruler has on the scraps of paper.

# Station #2

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- Charge the balloons for 1 minute.
- Place the balloons next to each other without touching them together.
- Observe the interaction of the balloons.
- Now only charge 1 balloon and bring them close together. Observe.

# Station #3

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- Charge the balloon for 1 minute.
- Bring the charged balloon near the salt. Observe what happens
- Bring your charged balloon near the pile of salt and pepper particles. Observe what happens.
- Wipe of the balloon with a wet paper towel and dry.

# Station #4

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- Charge the balloon for 1 minute.
- Turn on a faucet so a thin, steady stream of water comes out.
- Bring the balloon near the stream of water, but not touching. Observe.



# Station #5

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- Charge the balloon for 1 minute.
- Place a ping-pong ball or soda can on a level surface such as a table.
- Bring the charged balloon near the ping-pong ball and/or soda can. Observe.

# Station 6

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- Charge a balloon.
- Bring the balloon close to each object that is laid out (yarn, string, aluminum, etc.).
- Observe what you notice.

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Teach about electrostatics with these low prep balloon labs! Kids 6th-12th can do these mini labs and discover how electrostatics work. Students can make connections between charged objects, neutral objects, and water.

8 Lab stations are included with a material list, directions, and helpful hints.