

Science 9
Unit D: Electrical Principles and Technologies
Lesson 1
Practice Worksheet 36: Balloon Simulation

Use the balloon simulation in the online course to complete the questions.

Question 1

Reset the simulation to starting conditions. Look at the balloon. What can you say about its charge? (Hint: Count both types of charges. Be sure the button "Ignore initial balloon charge" is not on.)

Question 2

Click and drag the balloon and rub it against the sweater.

- a) What happens to the balloon?
 - b) How did the balloon get charged? With what type of charge?
 - c) Where did the charge on the balloon come from?
 - d) What happened to the sweater? How did it become charged?
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Question 3

Bring the balloon in the middle, between the sweater and the wall. Unclick the balloon to let it go. What happens to the balloon when you let it go? Explain.

Question 4

- a) What is the general charge of the wall?
- b) What do you think will happen when the charged balloon is brought close to the wall? Write a prediction before you try it.
- c) Bring the charged balloon in contact with the wall. What happens to the charges in the wall?
- d) Unclick to let go of the charged balloon. What happens? Explain. Which law of charges does this demonstrate?

Question 5

Click the "Reset Balloon" button. Select "Show all charges" and "Two balloons".

- a) What can you tell about the general charge of all the objects in your simulation window?
- b) Select "Show charge differences." Rub each balloon against the sweater. What happens to each?
- c) Click and drag a balloon off the sweater and place it over by the wall. Drag the second balloon towards the first balloon and then let it go. What happens to the two balloons? Use the law of charges to explain why this happens.

Congratulations! You have completed this practice worksheet.

Now it's time to carefully compare your answers to the suggested answers in the online course. When comparing, you should feel free to make changes to your answers or make extra notes.

Keep this worksheet for study purposes. You have some options for keeping it – you can leave it stored in your Google Drive, or you could download it in the format of your choice and store it on your computer.

If you are unsure about any of the questions or answers, or you just want more feedback, share this worksheet with your teacher and ask for assistance.
