



3 Halloween-Themed Science Activities

Each Activity Includes a Full Description, Procedure, Optional Rubric, and Answer Key

Ghost Balloon Rockets Activity (Force and Motion)

Description

Students will launch "ghost rockets" to see Newton's third law in action: for every action, there is an equal and opposite reaction.

Materials

- White balloons (one per group)
- Permanent marker (to draw ghost faces)
- Drinking straw (1 per group, cut in half for easier handling)
- String (about 3 meters/10 feet long)
- Tape (masking or clear)
- Two sturdy chairs or desks
- Measuring tape (optional for distance)

Detailed Procedure

1. **Prepare the rocket line:**
 - Cut a 10-foot length of string. Thread the string through a straw.
 - Tie each end of the string securely to the backs of two chairs or desks placed about 8–10 feet apart. Pull the string tight so it's level and does not sag.
2. **Decorate your ghost:**
 - Inflate a white balloon slightly, just enough to draw on it. Use the marker to draw ghost eyes and a spooky mouth. Let it deflate afterward.
3. **Inflate the rocket:**
 - Reinflate the balloon fully but **do not** tie the end. Pinch the balloon's neck to keep the air inside.
4. **Attach the balloon to the straw:**
 - Use two pieces of tape to attach the top of the balloon to the straw. Make sure the balloon opening points backward (toward where the balloon will start).
5. **Launch:**
 - Slide the straw to one end of the string. Release the balloon's neck and watch the "ghost" rocket fly to the other chair!
6. **Experiment with variables:**
 - Try larger or smaller balloons or adjust how much you inflate the balloon. Measure how far or fast the rocket travels.

Discussion Questions:

1. What force pushes the balloon forward?
2. How does the size of the balloon affect its motion?
3. Which of Newton's laws does this demonstrate?

Ghost Balloon Rockets Activity Rubric:

Category	Excellent (3)	Good (2)	Needs Improvement (1)
Preparation & Safety	All materials ready, string set up correctly, workspace safe	Most materials ready, string setup mostly correct, mostly safe	Materials missing, string setup incorrect, unsafe workspace
Following Steps	Followed all steps carefully and correctly	Followed most steps	Many steps missing or incorrect
Observation & Experimentation	Observed motion carefully; tried different balloon sizes or inflation amounts; measured or estimated distance	Observed motion; tried some variations	Minimal observation; did not try variations
Discussion Questions	Correctly answers all questions about forces, balloon size, and Newton's laws	Answers some questions correctly	Cannot answer or answers mostly incorrect
Creativity & Presentation	Balloon decorated creatively as a ghost	Balloon somewhat decorated	Balloon not decorated or minimal effort

