



Lightning and Thunder

Description

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Students engage in two short experiments to help explain lightning and thunder.

Supplies

- Balloons
- Metal spoon (or anything metal)
- Brown paper bags

How to Play

1. Have the group think about thunderstorms and ask what they think might be the cause of lightning and thunder.
2. Explain that our eyes actually see light first before our ears hear sound, so that is why during a thunderstorm we see lightning before hearing the crash of thunder. But really lightning and thunder happen at the same time.
3. Inform students about clouds and how they fill up with water particles. Sometimes when clouds get full of ice and water particles they start to bounce around into each other and cause electricity.
4. Tell students that they are going to make some electricity on their own and see what happens.
5. Pass out a balloon to each student and have them blow it up and tie it off.
6. Let them rub a balloon on their heads or on their shirt to try and create static. It takes about two minutes of rubbing before it will be ready.
7. Tell the students that it is easier to see lightning when it is dark outside. Turn off the lights or go to a dark area.
8. Once the lights are off, have the students touch the metal spoon to the balloon. They should see a spark similar to lightning.

9. Explain that they just created electricity by charging the balloon and moving the electricity to the metal spoon. This is similar to lightning because the water particles that are bouncing around create electricity and jump from cloud to the ground or cloud to cloud. When the electricity jumps it makes a quick flash of light.
10. Remind them that we always hear thunder after we see lightning occur. So now it is time to see what causes the sound of thunder.
11. Tell the students that lightning bolts are really, really hot. When it strikes it causes the air around it to heat up, too. When the air gets hot it actually expands and gets larger.
12. Hand out a brown paper bag to each student and tell them they are going to try to fill the bag with hot air. First, they will open the bag and then wrap their hand around the opening of the bag leaving a small hole.
13. Instruct them to put their mouth to the hole and breathe into the bag with their warm breath, sealing off the air by closing their hand around tightly once it is full.
14. With their free hand have them pat the bag softly to show the air particles that are trapped inside moving around and creating pressure. Then have them quickly smack the bag, colliding it with their free hand. This should create a lot of pressure and students should hear the bag pop, similar to thunder.
15. Since the hot air expanded so quickly from the lightning, it bounces around off the cooler air making sound vibrations. These vibrations are what we hear when we hear thunder!

Activity Prompts for Reflection

- Was there anything that surprised you during this experiment?
- How does it make you feel when you hear thunder or see lightning?
- Is there anything that helps you stay calm when surprises happen?
- What were some of the good choices you needed to make during this experiment to make sure they were successful?
- What were some of the distractions you faced during this activity? What did you do to help you stay focused and not get distracted?

Other Ways to Play

- Already have the balloons blown up and tied off so students can just start creating electricity.
- Do the thunder activity more as a demonstration for the group instead of having each student do their own.
- Have students come up with a song, clap, or beat about thunderstorms.
- Have students test different materials that they can use on the balloon to try and make static and determine which one creates the best spark. *For example: pants, wood desk, cotton shirt, nylon or polyester clothing, rubber sole of shoe, carpet, etc.*
- Allow students to color on their brown paper bags what a thunderstorm looks like before they pop it.

Additional Notes

- Use the [SEL Activity Prompts](#) to tie other SEL competencies to this activity.
- The lightning experiment was adapted from this [source](#).

- The thunder experiment was adapted from this [source](#).
- Additional weather-related activities: [Rain in a Jar](#), [Windchimes](#), [Let's Make a Rainbow](#)

Category

1. Activities
2. Self-Management

Sel-competency

1. Self-Management

Allotted-time

1. 30 minutes

Themes

1. STEM