



MAKING A SIMPLE ELECTROSCOPE TO DETECT STATIC CHARGE

Name: _____

Date: _____

Age/Grade: _____

An electroscope detects electric charge. When an object with static charge is brought near or touches the electroscope, the leaves repel each other and spread apart.



GOAL

Build a simple electroscope and use it to detect static charge.



MATERIALS

- 1 clear glass jar (with lid) or plastic bottle with lid
- 1 metal paper clip (large size works well)
- Aluminum foil
- Tape
- Straw or pencil
- Scissors
- Wool cloth, hair, or balloon (for creating static charge)



SAFETY

- This experiment is safe when done carefully. Do not poke sharp objects.



BACKGROUND

Static electricity (static charge) builds up on surfaces. Like charges repel each other. The leaves in the electroscope are connected to the same metal conductor, so when charge is added, both leaves get the same charge and push apart.



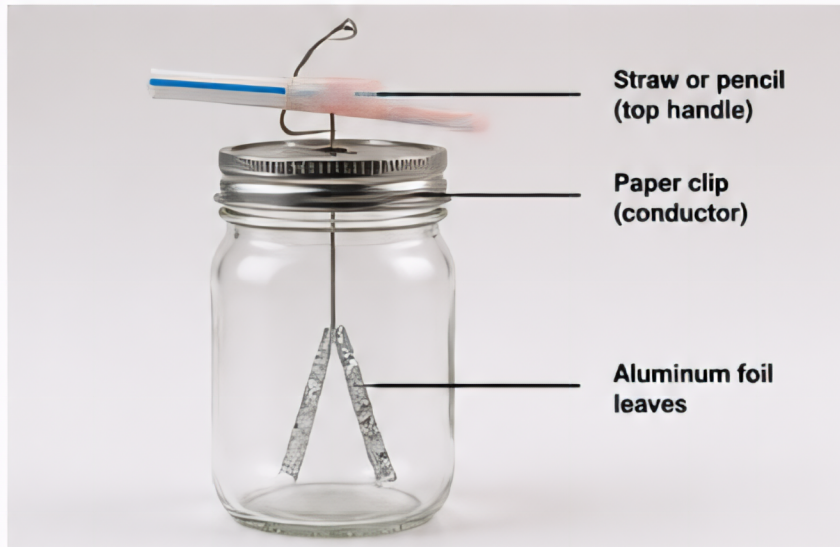
OBSERVATIONS & RESULTS

TEST	WHAT HAPPENED? (Leaves together or spread apart?)
1. Nothing near the electroscope	
2. Rubbed balloon near the top	
3. Rubbed balloon touches the top	
4. Rubbed wool cloth near the top	
5. Rubbed hair near the top	

What did you learn?

WHAT IS AN ELECTROSCOPE?

An electroscope is a simple instrument that can detect the presence of electric charge.



PROCEDURE

1. Straighten the paper clip. Bend one end into a small hook.
2. Cut two small rectangles of aluminum foil (about 2 cm x 6 cm each).
3. Fold each foil piece over the lower end of the paper clip so both leaves hang down evenly. Separate the leaves slightly so they do not touch.
4. Make a small hole in the center of the lid (just big enough for the paper clip).
5. Insert the hooked end of the paper clip through the hole from the top. The leaves should hang inside the jar.
6. Place the lid on the jar and tighten it.
7. Lay the straw or pencil across the top of the lid and tape it in place. This acts as a handle and keeps your hands away from the electroscope.

Your electroscope is ready to use!



CHALLENGE IDEAS

- Try different charged objects (balloon, comb, ruler, plastic bag).
- Test how far away the charged object can be and still make the leaves spread.
- Try different leaf sizes—does it change how far they spread?



THINK LIKE A SCIENTIST! Why do the leaves spread apart when a charged object is near or touches the electroscope?

Use what you learned about like charges repelling. _____