

LESSON 20:

FLYING BUTTERFLIES

SUPPLIES

PENCIL BOX

- Scissors
- Glue sticks
- Markers

MAIN BIN

- Cardboard pieces (20)
- Construction paper (50)
- Balloons (5)

FOLDER

- Butterfly template (20)
- Pre cut tissue paper wings (teacher cut before class) (20)

OBJECTIVE



Students will explore static electricity by making the tissue paper wings move using charged balloons and other objects.

🕒 5-10 mins

INTRODUCTION:

Have you ever rubbed a balloon on your hair and then seen your hair stand up or felt a little zap? That's because of something called static electricity! It's a kind of invisible power that can make things stick together or move without touching them. When you rub the balloon on your hair or clothes, you give the balloon extra tiny things called electrons (they're so small we can't see them!). These electrons like to jump from the balloon to other things nearby, like the tissue paper wings on our butterflies.

HOOK:

Static electricity is a type of electric charge that builds up on the surface of certain materials. When you rub a balloon on your hair or clothing, it picks up extra electrons and becomes charged. This happens because the charged balloon attracts the tissue paper by pulling it closer, showing how static electricity works in a fun way!

Because the balloon and the wings have different kinds of charges now, they pull towards each other, almost like magic! That's why the wings will start to flap or move when you bring the balloon close, even if you don't touch them. Static electricity is what makes your socks stick together when you take them off or makes your hair stand up when you take off a sweater. It's all around us and is a fun way to see how science works with things we use every day.

Today, we'll make butterflies with special wings that can move all by themselves when we use static electricity. We'll see how rubbing the balloon can make the wings fly just like real butterflies!



DISCUSSION:

🕒 2-3 min

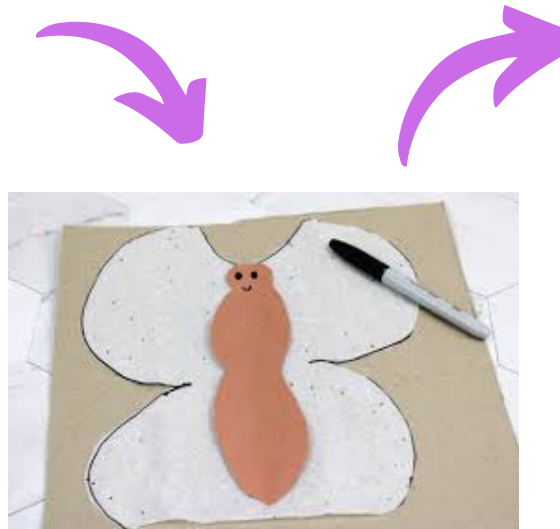
Before we start making our butterflies, let's think about some questions together:

- What do you think will happen to the butterfly's wings when we bring a balloon close?
- Do you think the wings will move if we don't touch them? Why or why not?
- Have you ever rubbed a balloon on your hair or clothes? What happened?
- Why do you think your hair stood up or the balloon stuck to the wall?
- Can you guess how something invisible, like static electricity, can make the wings move?



EXPERIMENT

1. Give each student a cardboard butterfly body, butterfly template, and construction paper. Have them trace the butterfly template on the construction paper. Alternatively, they can just color in the template. Decorate it with markers.
2. Attach pre-cut tissue paper wings to the butterfly body with tape or glue.
3. Once butterflies are complete, give each student a balloon. Show them how to rub the balloon on their hair or clothing to create static electricity.
4. Hold the charged balloon near the tissue paper wings and watch how the wings lift or flutter!
5. Encourage students to try using other objects around the room or from the bin to see if they can create static electricity to move their wings too.
6. Talk about what they observe and why the wings move without being touched.



MOVEMENT BREAK

Have students pretend to be butterflies fluttering their wings. When the teacher says "Static!" students freeze and hold their wings still. When the teacher says "Fly!" students flutter their arms like wings and move around again.



OBSERVE & EXPLAIN:

As students begin rubbing their balloon on their hair or clothing, have them stop and observe what happens when they hold the balloon near their tissue paper butterfly.

Ask:

- What do you notice when you bring the balloon close to your butterfly?
- Did the butterfly wings move? How?
- Are you touching the butterfly with the balloon? Why do you think it moved without touching it?

Now explain:

"When we rub the balloon on our hair or shirt, we build up something called static electricity. That means the balloon gets a kind of invisible energy that can make light things move. When you bring the balloon near the butterfly, the electricity makes the butterfly's wings flap or rise up! It's just like a little invisible force pulling the paper."

Ask:

- What do you think would happen if we used a different material, like a sweater instead of your hair?
- Do the wings move more if you rub the balloon longer?

Encourage students to test different ways of charging their balloons and observe how it affects the butterfly's motion. This shows that static electricity is a force we can't see, but we can see what it does!



Exit Ticket



Ask each student the following questions as they walk out the door.

Ask students these simple questions as they leave the room:

- What did you use to make your butterfly flap?
 - A: A balloon!
- What made the wings move without touching them?
 - A: Static electricity!
- What did you have to do to build up static electricity on your balloon?
 - A: Rub it on my hair or shirt!

FLYING BUTTERFLIES

BUTTERFLY TEMPLATE

