It's a Fact-Electric Copiers

Some photocopiers make use of static electricity. Tiny particles of fine, black powder are attracted by static electricity onto a metal drum to form an image of the document being copied. The image is then transferred from the drum onto paper.

Static Charges

Sometimes electrons are attracted from the atoms in one material to those in another. Have you ever noticed that sometimes when you comb your hair, it sticks out from your head? Electrons move from your hair to the comb. The comb, which now has more electrons than before, has a negative electric charge. Your hair, which has lost electrons, has a positive electric charge. Opposite charges are attracted to each other, making your hair stick up toward the comb. The build-up of electric charges as they move from one place to another is what causes static electricity. It was the very first form of electricity to be discovered.



Try 1019 Sticky Balloons You need: a balloon, wool, and a wall What to do: Blow up the balloon. Rub it gently with wool-your sweater, will work, very well. Now gress the balloon against a wall. The static electric charge on the balloon attracts it to the wall and keeps it there.

BRIGHT SPARKS

In Greece around 2,500 years ago, people used polished amber, a fossil formed from pine tree resin, for jewelry and decoration. The Greeks discovered that if amber was rubbed with a cloth, it attracted small pieces of material, such as hair, wool, and feathers.

Two flies were trapped in the sticky resin when this piece of amber became fossilized.

What's in a Name?

We now know that rubbing amber gives it an electric charge, in the same way that combing your hair gives it a charge. The Greek word for amber is "elektron," from which we get our words, electron and electricity.

> For many centuries, static electricity was just a curiosity. But then, in the 17th century, investigators such as William Gilbert in England, the first person to use the term "electricity," an Otto von Guerike ir Germany began to look into it further. Von Guerike made a large sphere of sulph that he turned with a crank. He produced sparks by touching the sphere lightly as it spun

It's a Fact–Electric Entertainments

In the 17th century, electric demonstrations were put on for an amazed public. A favorite demonstration involved suspending a boy using silk cords, charging him up with electricity, and then igniting a small amount of gunpowder with a spark from his finger! Don't try this at home!

Moving Charges

Devices were invented to store electric charges. But the only thing scientists did with these was to **discharge** them, by letting the charge flow away. In the 1730s, French scientist Charles du Fay found that he could transfer electric charges from one place to another using a charged-up glass rod. He discovered that sometimes charged objects attracted each other and sometimes they repelled each other. We now know that what happens depends on whether the objects are positively or negatively charged. Opposite charges (a negative and a positive) attract, and like charges (say, a positive and a positive) repel.



The water is being attracted to the electrically charged comb.

 Ity ID1S - Make the Spark's Fly!
 charged comb.

 This is a safe but exciting way of making tiny lightning flashes at flome.
 You need:
 a storofoam tray, an aluminium item (such at a site diff.).

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 What to do:
 Cut a shall piece off the styrofoam and stack is on the aluminium dish to make a basele. But the big piece of storofoam on your bar. Then drop it on the table. Pick up the aluminium dish using its handle and carefully drop it. onto the styrofoam. Very slowly, being careful not to bouch the styrofoam to using the handle and touch it again for more sparks.



Time to pay props to the craziest science man alive. Give it up for Bill Nye. Pay attention to watt (that's an electricity joke) he's got to say 'cause here are some questions below that you need to answer.



14. When static electricity builds up too much, it_

Centre 1

- 1. Charge your balloon on your hair.
 - 2. Place the balloon against the wall (use the side of the balloon that you rubbed). Let go!
 - 3. Document your findings on your discovery sheet.

4. **BATTLE:** With your partner, see who can make their balloon stay on the wall the longest!

Centre 2

- 1. Charge your balloon on your hair.
- 2. Move the balloon over/beside the little pieces of straws.
- 3. Document your findings on your discovery sheet.

4. **BATTLE:** With your partner, see who can transport the MOST straws from one plate to the other!

Centre 3A

1. Charge between both balloons at the same time and face the charged sides of each balloon toward the other balloon.

2. Document your findings on your discovery sheet.

Centre 3B

- 1. Now slide a piece of paper between the 2 balloons.
- 2. Document your findings on your discovery sheet.

Centre 4

- 1. Charge your balloon with your hair.
- 2. Hold the balloon above the salt and pepper and slowly move it towards the pile. Which one jumps first? Why?
- 3. Document your findings on your discovery sheet.

Centre 5

1. Charge your balloon with your hair.

2. Hold it/move it above the tissue paper snakes. Which number

of snake was easiest to pick up?

3. Document your findings on your discovery sheet.

4. **BATTLE:** See who can pick up the most snakes, and/or who can hold onto a snake the longest!

Centre 6

- 1. Charge your hair with a balloon. What happens to your hair?
- 2. Why does this happen?
- 3. Document your findings on your discovery sheet.

Centre 7

- 1. Charge your balloon with your hair.
- 2. Move your balloon over the paper clips.
- 3. Document your findings on your discovery sheet.

Centre 8

- 1. ***STOP*** You can not come to this station unless you have completed at least 4 other stations.
- 2. Use an object or objects from the classroom to create an "attraction" or "repulsion" experiment of your own.
- 3. Document your findings on your discovery sheet.



Using this discovery sheet, complete as many stations as you can. When writing down your comments be sure to use vocabulary that you have learned such as:

-positively charged -attraction/attract -negatively charged-repulsion/repel

Centre #1 Observations: Why did this happen?: Centre #2 Observations: Why did this happen?: Centre #3A Observations: Why did this happen?: Centre #3B Observations: Why did this happen?:

Centre #4

Observations:	na na sana na s
Why did this happen?:	
Centre #5	
Observations:	
Why did this happen?:	
Centre #6	
Observations:	
Why did this happen?:	
Centre #7	
Observations:	
Why did this happen?:	
	a),
Centre #8	
Observations:	
Why did this happen?:	·*
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