

Science 10-Electricity & Magnetism

Activity 2

Worksheet on Static Electricity

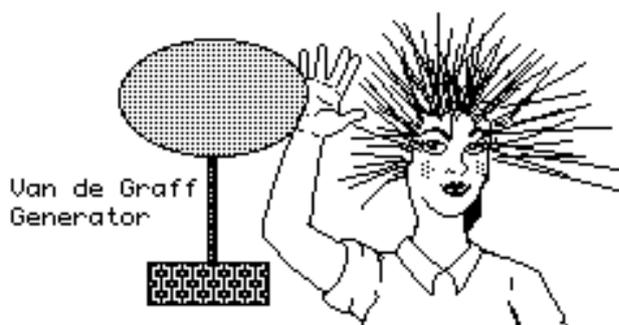


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1. What is meant by a static charge? _____

2. Use the following diagram to answer the questions below:



- a) Explain why the girl's hair sticks out when she touches the charged Van de Graff generator. _____

- b) Why is the girl probably standing on a plastic box rather than right on the floor? _____

- c) What might happen if the girl got her left hand close to a water tap or other grounded object? _____
 Explain why this would happen? _____



d) What will happen to puffed rice when it is thrown onto the Van de Graff

generator? _____

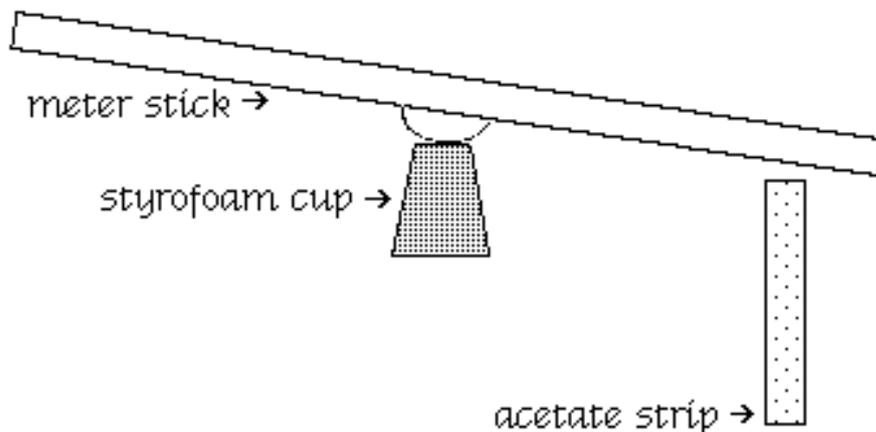
Explain why this happens _____

An *acetate* strip rubbed with *cotton* is said to have a **positive** charge.

An *vinyl* strip rubbed with *wool* is said to have a **negative** charge.

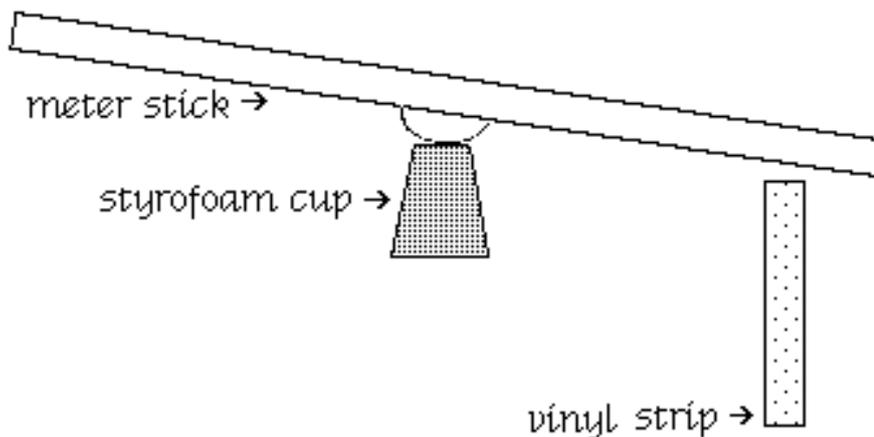
3. An object is attracted to a charged **acetate** strip. This tells us that the object is _____ or _____.
4. An object is attracted to a charged vinyl strip. This tells us that the object is _____ or _____.
5. An object is repelled by an acetate strip. This tells us that the object is definitely _____.
6. Something which has a **negative** charge is said to have _____ electrons than protons.
7. Something which has a **positive** charge is said to have _____ electrons than protons.
8. Opposite charges _____, like charges _____, and charged objects _____ neutral objects.
9. Explain why a positively charged object will bend a stream of water coming from a water tap when held near. Use a diagram in your explanation. Use the concept of **induced charges**.

10. Given the following diagram:



- Draw the charges on the **acetate strip**. (Show that there are more “+”s than “-”s.)
- Draw + and - charges on the **meter stick**, showing how they would behave when the acetate strip is brought near. (Remember, electrons move but protons don’t.)
- The meter stick and the acetate strip will _____ each other.
- What is the purpose of the styrofoam cup? _____

11. Given the following diagram:



- Draw the charges on the **vinyl strip**. (Remember, there are more “-”s than “+”s.)
- Draw + and - charges on the **meter stick**, showing how they would behave when the vinyl strip is brought near. (Remember, electrons move but protons don’t.)
- The meter stick and the vinyl strip will _____ each other.

