

FUN FLY STICK

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Va. SOL

Electric Fields and electric charge

National Standards:

Students will understand conservation of charge.

Topic/Concept

The “Fun Fly Stick” here is a great electric field source. Portable. Many of the Van deGraaff experiments can be duplicated on a small scale.

Materials

- Fun Fly Stick (\$30 from www.arborsci.com, www.teacherssource.com, <http://www.stevespanglerscience.com> Refill packs are also available from these sources.)

Safety Considerations

- Avoid turning on near pacemakers. This is a warning from the package.
- Do not attempt to swallow the wand in parts or whole.

Presentation

What can you do?

1. Make Benjamin “Franklin’s Bells”
2. Cover it with a plastic bag and hold it near a stream of water to bend the water.
3. Move an empty soft drink can.
4. Put a cork in the end of it. The cork should have a pin sticking out of it. The pin will act like a lightning rod creating an ionic wind. This wind can be felt by the students when they hold their hand in front of the pin.
5. Spill Rice Krispies™ and hold it over them. They will rise and fall to and from the Fun Fly Stick.
6. Put Rice Krispies™ in a Styrofoam™ cup and point the Fun Fly Stick at them to make them come out of the cup.
7. Wrap the Styrofoam™ cup in foil and fill with Rice Krispies. Point the Fun Fly Stick at them and they will not come out. –Electric fields do not exist inside of metal containers. But they do exist inside of insulated containers.
8. Layer thin aluminum foil in a stack. Point the stick at it and the foil will levitate.
9. Light a neon lamp. (The one’s without a dropping resistor.)

10. Make a homemade capacitor out of a film canister and charge it up with the Fun Fly Stick.
11. Stick paper to the wall.

Many of these ideas came from “Prof. Bunsen Science.” <http://www.profbunsen.com.au/>
http://www.youtube.com/watch?v=TVNpY-Ay_XM here is a link to his instructions,
<http://www.profbunsen.com.au/documents/FunFlyStickEducationalWeb.pdf> “Prof Bunsen” goes into a lot more detail and shows you how it works!

How the physics is demonstrated

Basically the Fun Fly Stick is a hand held Van de Graaff generator. The picture below is from <http://www.profbunsen.com.au/documents/FunFlyStickEducationalWeb.pdf> “



Construction and Tips Regarding the Demonstration

It is pretty much what you see on the video link above,
http://www.youtube.com/watch?v=TVNpY-Ay_XM

Sources & References

In the article above.