

# Sparking excitement for electricity

## Electrostatics activities that work

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<http://www.exo.net/~drsteph>

### Flying Hydra

Full activity online at

[http://www.exo.net/~pauld/activities/flying\\_hydra.html](http://www.exo.net/~pauld/activities/flying_hydra.html)



### Stuck on electricity

Full activity online at

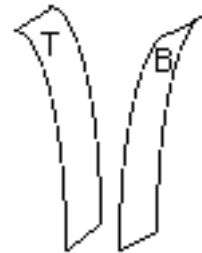
Short: <http://www.exo.net/~pauld/activities/tapeelectroscopeshort.html>

Long: [http://www.exo.net/~pauld/summer\\_institute/summer\\_day14electrostatic/tape\\_electroscope.html](http://www.exo.net/~pauld/summer_institute/summer_day14electrostatic/tape_electroscope.html)

1. Tape two bendy straws to the edge of your table
2. Pull off two pieces of tape
3. Stick them together (sticky side of one to smooth side of the other) and rub them together so they're well-stuck
4. Pull them apart rapidly
5. Do they attract or repel? *Don't let them touch...*
6. *So: they have opposite charge.*
7. Stick the tapes to the bendy straws for safekeeping. They may need to be refreshed once in a while.



1. Bring your hand close to the tapes. Does it attract or repel the B and T?
2. An uncharged object will attract both tapes, so use repulsion to test for charge sign
3. Rub the PVC pipe with the wool. Does it attract or repel the B or the T? *Don't let them touch...*
4. *PVC repels the B tape, so it has the same charge as B*
5. By convention, a comb rubbed with wool is negatively charged. Does it attract or repel the B and the T tapes?
6. Label the tapes + and - accordingly. *So is the PVC positive or negative? Test it!*
7. See if you can make something with positive charge – you may want to use the “What do I rub with what” sheet on the next page. Hey, your tape electroscopes let you test for differences in electronegativity!



## What do I rub on what?

(+)

Rabbit fur  
Human hair  
Glass  
Mica  
Nylon  
Wool  
Cat fur  
Silk  
Paper  
Cotton  
Wood  
Plexiglas  
Sealing wax  
Amber  
Styrofoam  
Plastic bread bags  
Rubber balloon  
Hard rubber (eg., hair comb)  
Saran wrap

(-)

## Electrophorus: Charge and carry

Full activity online at

[http://www.exo.net/~pauld/summer\\_institute/summer\\_day14electrostatic/Electrophorus.html](http://www.exo.net/~pauld/summer_institute/summer_day14electrostatic/Electrophorus.html)

1. Tape Styrofoam cup to middle of aluminum plate (the inside)
2. Rub styrofoam slab with wool until it crackles (test for formication)
3. Is it positive or negative?
4. Try moving an aluminum can with the Styrofoam
5. *The Styrofoam polarizes the neutral aluminum can*
6. Recharge the Styrofoam
7. Place the aluminum pie plate on the Styrofoam
8. Bring your finger near the pan. Zap!
9. Lift the pie plate in the air.
10. Bring your finger near the pan. Zap!
11. Lather, rinse, repeat.
12. Explore with the tape electroscope.

