

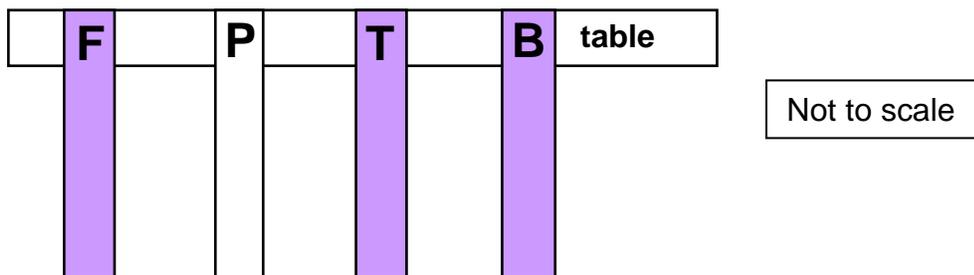
Electrostatics  
Sticky Tape Activity

Names \_\_\_\_\_  
1 2 3 4 5 6 7 8

1. Take a 15 cm to 20 cm piece of transparent tape and make a handle on the end by folding under the first cm of tape, sticky side to sticky side. Place this tape on the lab table. This is the base tape.
2. Attach a second similarly prepared strip of tape onto the base tape. Label this tape "B" for bottom.
3. Repeat steps 1 and 2 so that you have two sets of base and bottom tapes.
4. Add another piece of tape on top of each set. Label this tape "T" for top. You should now have two sets of three pieces of tape that look like the picture below.



5. Cut 2 pieces of paper, the same dimensions as the tapes, and hang one from the edge of the table. Label the hanging paper "P." Approach the hanging paper with the other piece of paper. *Describe what you see.*
6. Cut 2 pieces of aluminum foil, the same dimensions as the tapes, and hang one from the edge of the table. Label the hanging foil "F." Approach the hanging foil with the other piece of foil. *Describe what you see.*
7. Gently peel one set of T and B tapes from its base tape, keeping the T and B tapes together. Rub the tape on a faucet until there is no attraction to your hand. Quickly peel them apart.
8. Hang each strip next to the hanging paper and foil. (Place them at least 15 cm apart.)



9. Repeat step 10 with the other set of tapes.
10. With a T tape hanging from one hand and a B tape hanging from the other, experiment by approaching each of the four strips hanging on your table (top tape, bottom tape, foil and paper). *Describe what you see. Include a series of sketches of the tapes as they approach one another with vectors to represent the forces on the tapes. Label the forces.*

Names: \_\_\_\_\_

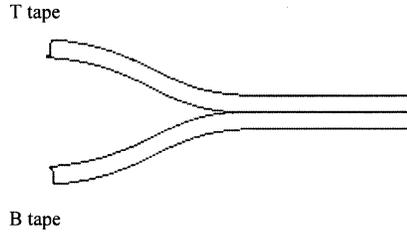
Summary Page:

Describe the interaction between two pieces of paper.	Describe foil on foil interaction
Describe top tape and foil interaction  Diagram with forces	Describe top tape and paper interaction  Diagram with forces
Describe top tape and top tape interaction  Diagram with forces	Describe top tape and bottom tape interaction  Diagram with forces
#13: Describe bottom tape and foil interaction	Describe bottom tape and paper interaction

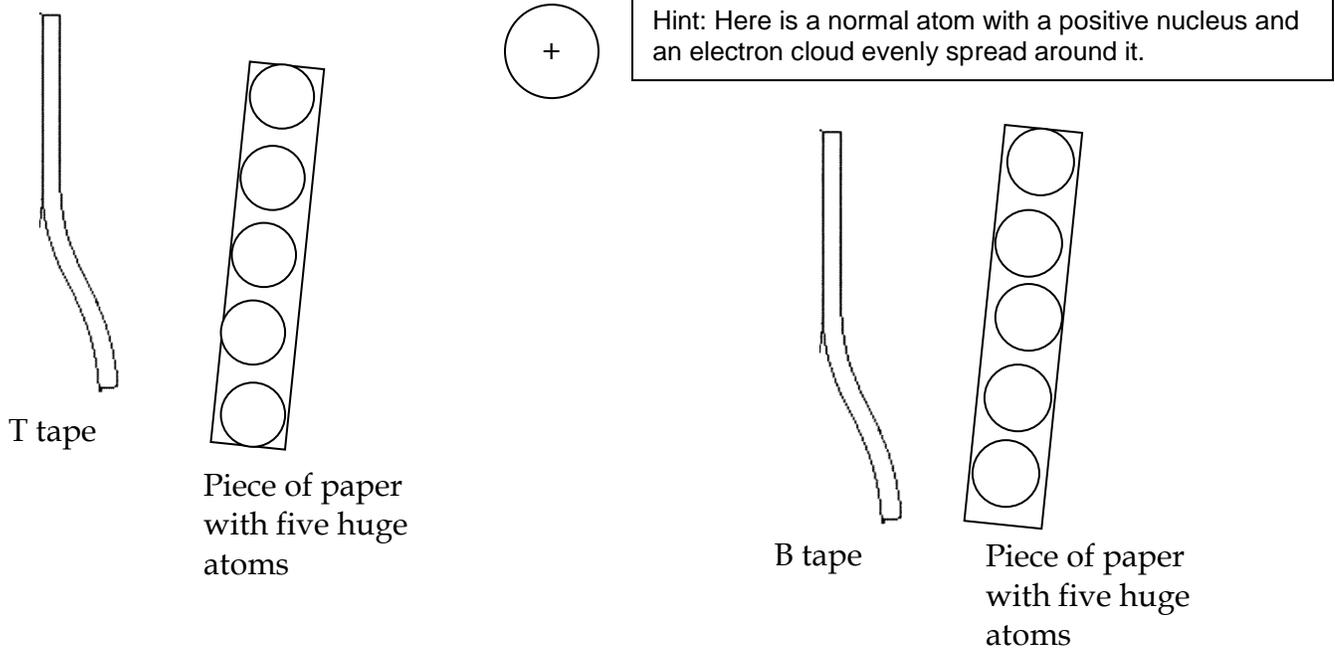
Diagram with forces	Diagram with forces
#13: Describe bottom tape and top tape interaction  Diagram with forces	Describe bottom tape and bottom tape interaction  Diagram with forces
State top and top tape interaction based upon charges	State bottom and bottom tape interaction based upon charges
State top and bottom tape interaction based on charges	State tape and foil interaction based on charges

Our current model of the atom includes a positive nucleus and a negative electron cloud around the nucleus. In chemistry, you learned about how electrons are sometimes free to move from atom to atom and about how those positive and negative charges interact. Apply this information to complete the final four boxes above and the questions on the next two pages.

1. Imagine you could see the differences between the top and bottom tapes at the atomic level. On the partially separated T and B tapes invent a way of representing how the tapes change as they are separated.



2. Invent a way for the paper to be attracted to both a top and a bottom tape while keeping these facts in mind. The paper is neutral and electrons can't move away from the nucleus



3. Invent a way for the foil to be attracted to both a top and a bottom tape while keeping these facts in mind. The foil is neutral and each atom has a free electron that can move around

