Physics 100 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Static Electricity – Sticky Tape Activity

1. Tape a ruler firmly to the edge of your table so that 20 - 25cm is sticking off of the table.



2. Get a piece of sticky tape that is 8-10 cm long. Fold over the last 1-1.5 cm and stick it to itself. Stick this tape firmly and evenly to the surface of a desk. Label the folded part “A.”



2. Repeat with another piece of tape, and stick this tape right on top of tape A. Label this tape “B.”

3. Do the same thing you did with tapes A and B, but this time label the tapes C and D. C goes on the bottom, and D goes on the top.

4. Grab the non-sticky end of your A/B pair of tapes and pull it off of the desk surface, all in one piece. Hold it near your body and observe what happens.

What happens when you hold the A/B pair close to your body (circle one)? **Attracts Repels**

5. Separate pair A/B. Hold each piece near your body and observe. Then stick the two pieces to your ruler, near the end, so that their sticky parts hang off the side of the ruler, and so that they are separated by at least 2cm.

 What happens when you hold A near your body? **Attracts Repels**

 What happens when you hold B near your body? **Attracts Repels**

6. Grab the non-sticky end of your C/D pair of tapes and pull it off of the desk surface, all in one piece. Hold it near your body. Then hold it next to tape A. After that, hold it next to tape B. Then separate the two tapes (C and D), and hold each one next to A and then next to B. Finally, stick them to the ruler in the same way that you attached A and B.

 What happens when you hold C/D next to your body? **Attracts Repels**

 What happens when you hold the C/D pair next to tape A? **Attracts Repels**

 What happens when you hold the C/D pair next to tape B? **Attracts Repels**

 What happens when you hold tape C next to A? **Attracts Repels**

 What happens when you hold tape C next to B? **Attracts Repels**

 What happens when you hold tape D next to A? **Attracts Repels**

 What happens when you hold tape D next to B? **Attracts Repels**

7. Now search the internet for a triboelectic series chart that includes acrylic and wool. According to this source, what charge will the acrylic have if you rub wool and acrylic together?

8. Rub some wool on some acrylic. Hold the acrylic next to your tapes and observe. Then identify the charges of all of the following. Write their correct charges ( + or -)

 Tape A: Tape B: Tape C: Tape D:

 Tape pair A/B: Tape Pair C/D: Wool: Acrylic:

9. What charge do you think your body has? Explain.