Name: _____ Date: _____

Lab: Interaction of Charged and Neutral Objects

Learning Goals

I can explain how a neutral object and charged object, and two charged objects, interact with each other.

Materials

- Retort stand
- Ring clamp
- Wire stirrup
- Two vinyl strips
- Two acetate strips
- Fur
- Cotton
- Pencil or straw

Procedure

1. Set up the retort stand with the ring clamp attached. Hang the wire stirrup by tying the string to the ring clamp. Make sure this can be undone easily.
2. Hang the pencil in the stirrup.
3. Rub the vinyl strip with fur and hold it close to the pencil, without touching it. Record your observations.
4. Rub the acetate strip with cotton and hold it close to the pencil, without touching it. Record your observations.
5. Remove the pencil from the stirrup. Rub a vinyl strip with fur and put it into the stirrup without touching the charged area.
6. Record observations for an acetate strip rubbed with cotton held close to the vinyl in the stirrup, and for a second vinyl strip rubbed with fur.
7. Remove the vinyl strip from the stirrup. Replace it with an acetate strip charged with cotton.
8. Record observations for a vinyl strip rubbed with fur held close to the acetate in the stirrup, and for a second an acetate strip rubbed with cotton.

Observations

Object in Stirrup	Charge	Object Held Close	Charge	What Happens?	
Pencil	Neutral	Vinyl		Attract	Repel
		Acetate		Attract	Repel
Vinyl	–	Vinyl		Attract	Repel
		Acetate		Attract	Repel
Acetate	+	Vinyl		Attract	Repel
		Acetate		Attract	Repel

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Discussion

1. Identify the charge on each object held close in your observations.
2. What happened when a charged object was brought near a neutral object? Was it different if the charged object was positively charged or negatively charged? Was this what you expected to happen?

3. What happened when two objects with the same charge (both positive or both negative) were brought near each other? Was this what you expected to happen?

4. What happened when two object with opposite charges (one positive and one negative) were brought near each other? Was this what you expected to happen?

5. Write a prediction for what you think would happen if a charged object touched a neutral object. (Think about what happens when you touch a Van de Graaff generator!)