Static electricity Lab

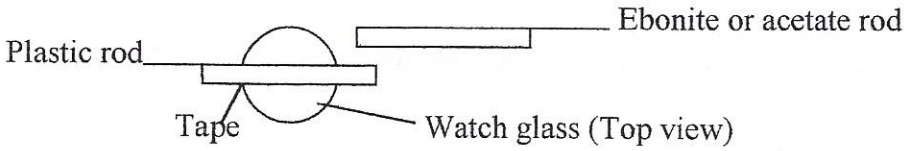
Materials

Watch glass	Piece of tape	Ebonite (black) rod
Plastic (clear) rod	Acetate (clear) rod	Fur
Kleenex ball	Electroscope	

Procedure

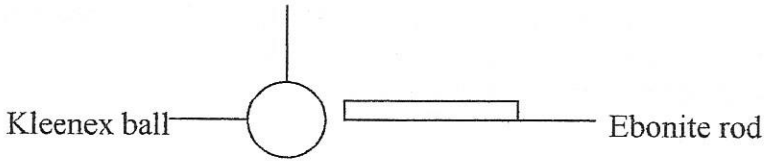
Part A

1. Place the watch glass with the round end on the table and a piece of tape on the rim. The tape should be rolled in a way that the sticky part is facing out.
2. Rub one end of the plastic rod and place it on the watch glass so it is balanced. (Be careful not to touch the rubbed part of the rod)
3. Rub one end of the ebonite rod and bring it close to the rubbed end of the plastic rod (Make sure they do not touch and record your observations).
4. Repeat step #3 using the acetate rod (record your observations).



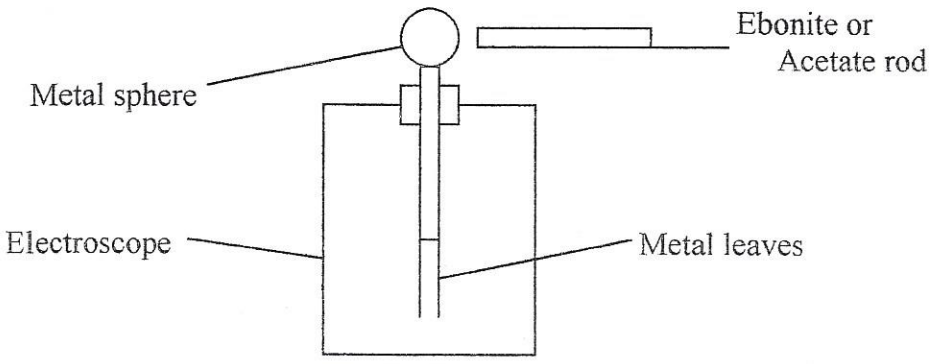
Part B

1. Rub one end of the ebonite rod and bring it close to the kleenex ball (record your observations).
2. Rub the ebonite rod again and with the rod rub the kleenex ball all over (be careful not to touch it with your hand).
3. Finally rub one end of the ebonite rod a third time and bring it close to the kleenex ball (record your observations).



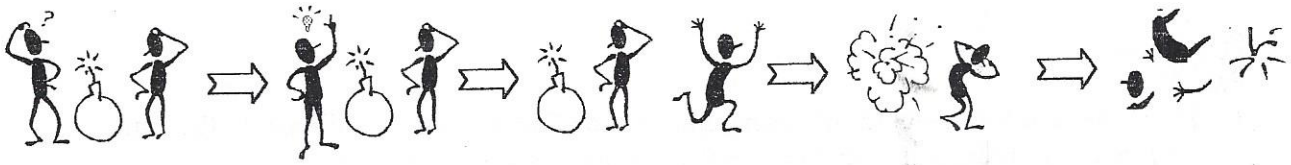
Part C

1. Rub one end of the ebonite rod and bring it close to the metal ball of the electroscope (observe what happens to the leaves of the electroscope).
2. Repeat step #1 with the acetate rod (record your observations)



Part D

1. Turn on the water and try to get as thin a line of water as possible.
2. Rub one end of the plastic rod and bring it close to the water (record your observations).



Discussion Questions

Part A

1. Using the electrostatic series explain what charge was put on the plastic, ebonite and acetate rods after they had been rubbed with fur.
2. Draw diagrams showing how the rods became charged (show the protons and the movement of electrons)
3. Why did the ebonite rod and the acetate rod cause different effects?

Part B

1. In #1 of Part B the ebonite rod was rubbed and charged but the kleenex had not yet been charged. Why did the ebonite rod attract the kleenex?
2. In #3 of Part B the ebonite rod and the kleenex ball repelled each other, use a diagram to explain why this occurred (show the protons and the movement of electrons)

Part C

1. What happened to the leaves of the electroscope when oppositely charged objects were brought close to the metal sphere?
2. Draw diagrams of the differently charged rods and how they affected the leaves of the electroscope. (For the electroscope use a similar drawing to the one in this handout and show the protons and movement of electrons).

Part D

1. What happened when the charged plastic rod was brought close to the water?
2. Try to explain your observations by drawing a picture.
3. What do you think would happen to the water if you had used a charged acetate rod?