

## Behaviour of Statistically Charged Matter

**Purpose:** To determine the effect of a positively charged object on another object, a negatively charged object on another object, a positively charged object on a negatively charged object, and a charged object on a neutral object.

### Procedure:

1. Tape an acetate strip to a ring stand so that it hangs freely.
2. Charge the acetate strip by rubbing it with paper towel. Then charge a second acetate strip in the same manner. Bring the second acetate strip near the first. Do the strips attract or repel one another? Record the result in your table.
3. Repeat the experiment using two vinyl strips and rubbing them with fur. Record whether the strips attract or repel one another.
4. Bring a charged acetate strip near a suspended vinyl strip. Record what happens.
5. Neutralize a metre stick by running your hands along its length. Then balance the metre stick on a watchglass. Bring a charged acetate strip near the end of the metre stick but do not let it touch the stick. Is the metre stick attracted or repelled? Record the result.
6. Bring a charged vinyl strip near the end of the metre stick without touching the stick. Again, record what happens.

### Observations:

Table 1: Results of charges objects on other objects

Suspended Object	Charge	Object brought near	Charge	Result (Attract or Repels)
Acetate*	+	Acetate	+	
Vinyl**	-	Vinyl	-	
Vinyl	-	Acetate	+	
Metre stick	0	Acetate	+	
Metre stick	0	Vinyl	-	

\* rubbed with paper towel      \*\*rubbed with fur

### Questions:

1. What is the effect of a –
  - a. Positively charged object on another object?
  - b. Negatively charged object on another object?
  - c. Positively charged object on negatively charge object?
  - d. Charged object (+ or -) on a neutral object?
2. Why was the metre stick balanced on a watch-glass in this activity?
3. Suppose you suspended a plastic spoon with a piece of tape so that it was free to move, and then charged the spoon by rubbing it with a paper towel. If you charged a second plastic spoon in the same manner and brought it near the first spoon, would you expect the two spoons to attract or repel? Explain your answer.

**Note:** No conclusion necessary.