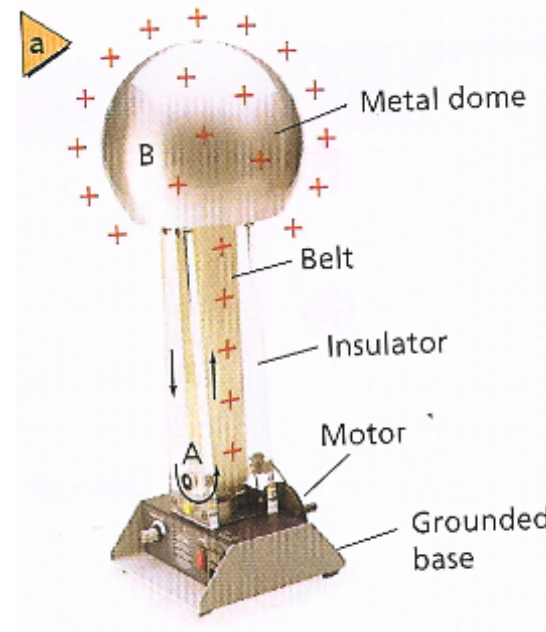


# Chapter 20 Electrostatics

Read Pages 541-545 and be sure you can answer the questions on page 545

## 20.2 Electric Force

Electroscope: A device which is used for detecting charges.



## Charging by Contact

The charged object receives a charge of sign similar to that on the charging object.

## Charging by induction

The charged object receives a charge of sign opposite that on the charging object.



Charge is conserved  
--but it can be moved around

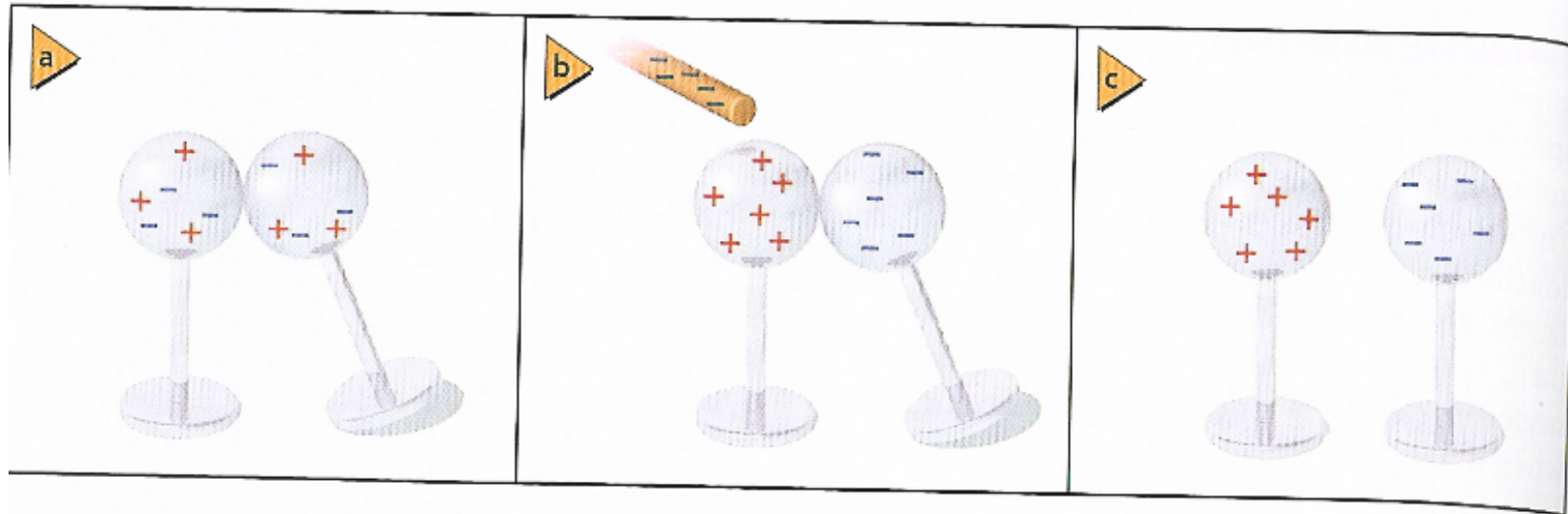


Figure 20.8 One method of

# Coulomb's Law

$$F = \frac{k q_1 q_2}{r^2}$$

Unit of charge: the coulomb =  $6.24 \times 10^{18} e^-$

1 elementary charge =  $1.6 \times 10^{-19}$  coul

## Problems:

1. What is the magnitude of the force between 2 electrons which are 1.0 cm apart?

2. What is the magnitude of the force between the proton and the electron in a hydrogen atom. Assume they are separated by  $5.3 \times 10^{-11}$  m?

3. Page 559 #'s 43, 48, 49, 54, 55

