ELECTRIC CHARGE AND FORCE

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Supplementary Material for PHY1308 (General Physics - Electricity and Magnetism)

ANNOUNCEMENTS

- Homework 0:
  - Due next Monday by 8pm
  - Submit using Blackboard (courses.smu.edu)
    - there is an assignment called "Homework 0"
- First official in-class Quiz
  - Next Thursday
  - Bring pens/pencils and calculator
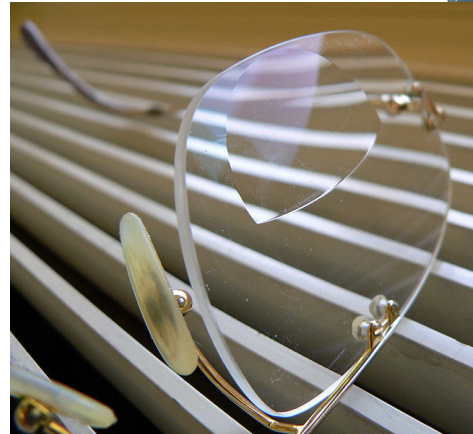 - Based on Homework 0
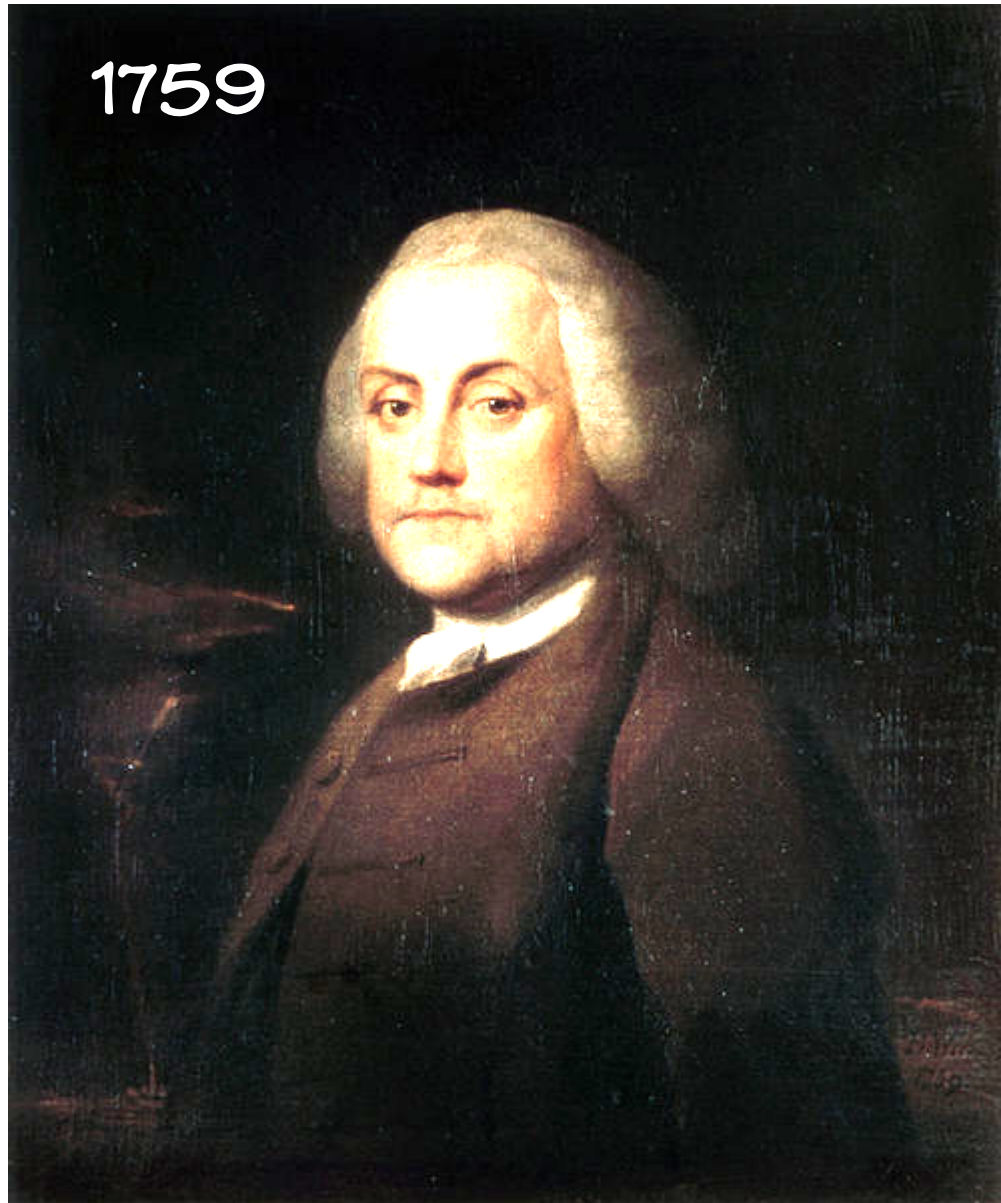
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BENJAMIN FRANKLIN

1759

1706-1790

Experimented with electricity around the 1750s.

LANGUAGE TO MATH

"The total electric charge in any system is equal to the algebraic sum of the individual charges that make up the system."

DEMONSTRATIONS

- Van de Graaf generator

- Candle and Capacitor

ATTRACTIVE BALLOON

- In-class demonstration of electric charge using a balloon

- PhET simulation of the same process

http://phet.colorado.edu/en/simulation/balloons

http://www.youtube.com/watch?v=1EVQmhBoWy8

BEAM TREE!

http://www.youtube.com/watch?v=-Qq7U7tFsvQ

CHARLES-AUGUSTIN DE COULOMB

Born/Died in France 1736-1806

First presented his work on electricity and magnetism in 1785

(this work was ongoing just a few years after the end of the American Revolution and a few years before the start of the French Revolution)

COULOMB'S LAW

$$\vec{F}_{12} = \frac{k \cdot q_1 \cdot q_2}{r^2} \hat{r}$$

Tells you the force that charge 1 (the "source charge") exerts on charge 2: