

ELECTRIC CHARGE AND COLLOMB'S LAW

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

ANNOUNCEMENTS

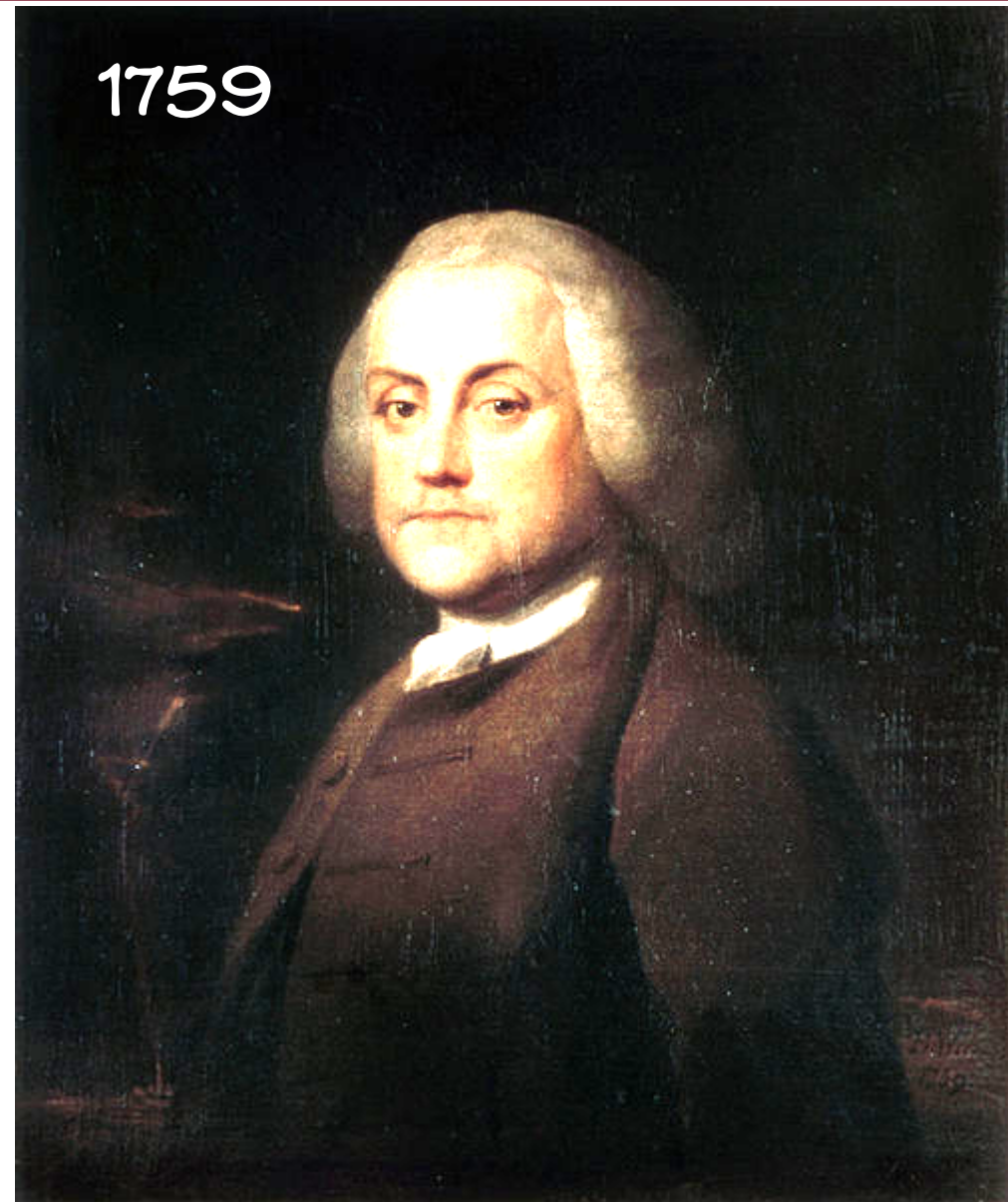
- Homework 001:
 - Assigned Monday, due next Monday by 9am (start of class)
- First official in-class Quiz
 - One week from Friday
 - Bring pens/pencils and calculator
- Clarifications
 - Homework policy now makes clearer that you don't have to submit homework electronically

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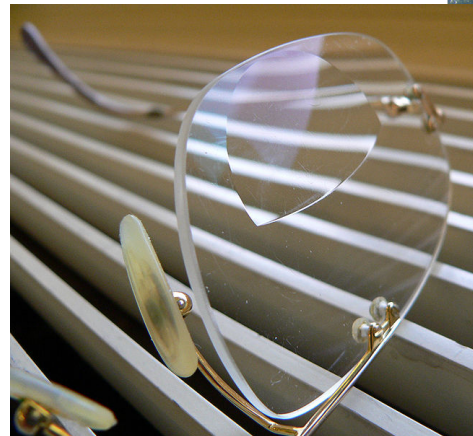
BENJAMIN FRANKLIN

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."

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=-Qq7L7tFsvQ>



<http://www.youtube.com/watch?v=tJ7tqVXa-PQ>

CHARLES-AUGUSTIN DE CULOMB



Born/Died in France
1736-1806

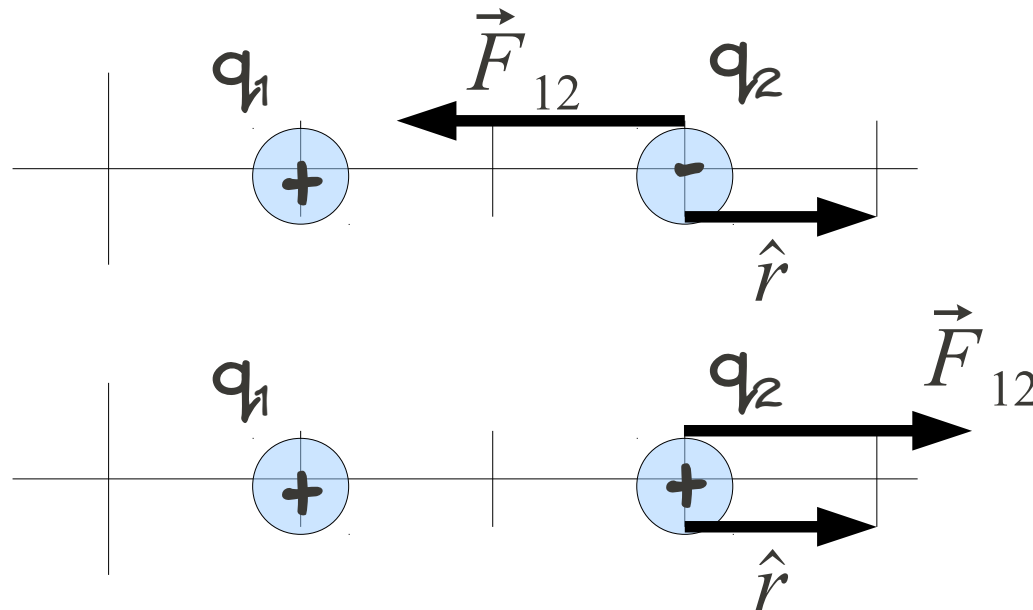
First presented his work
on electricity and
magnetism in 1785

*(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:



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