Electric Fields Flipped Lesson



Does the electric field even exist?

Can we see an electric field? How can a force be exerted over empty space?



Electric field

Any charged particle will create an electric field. Another charged particle placed in the electric field will feel a force.



Putting particles together



Two charged plates



Electric field strength



Electric field strength equation

F = force (N) q = charge (C) E = electric field (N/C)

Example problem

A positive charge of magnitude 2.4E-8 C experiences a force of 1.5E-3 N. What is the strength of the electric field at that position?

Millikan's Oil Drop Experiment





Freebody Diagram of Experiment



Practice Problem

A balloon with a charge of q = 4.8E-7 C is suspended in an electric field with a strength of 400 N/C. What is the mass of the balloon?