Physics 131 10/12/11

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Physics 131 Prof. E. F. Redish

■ Theme Music:
Moby

Electricity

■ <u>Cartoon:</u> Gary Larson *The Far Side* 



Late at night, and without permission, Reuben would often enter the nursery and conduct experiments in static electricity.

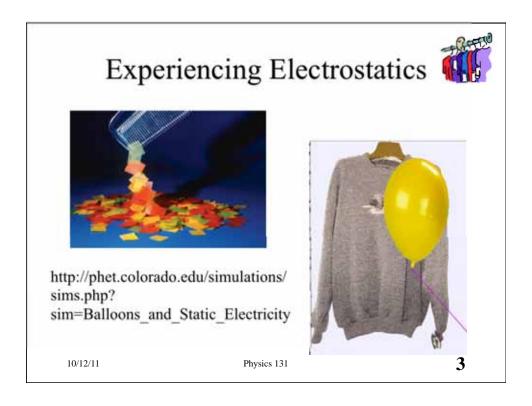
## Outline

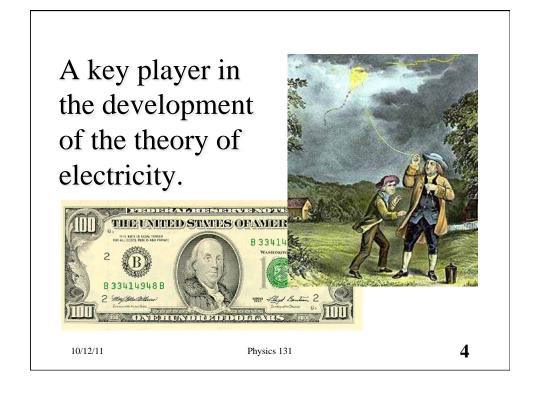
- Foothold ideas: Electric phenomena
- Model of Matter
  - Conductors and Insulators
  - Polarization

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## Model: Charge A hidden property of matter



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Matter is made up of two kinds of electric matter (positive and negative) that cancel when they are together and hid matter's electrical nature.

- Matter with an equal balance is called neutral.
- Like charges repel, unlike charges attract.

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## Conductors and Insulators



- In some matter, the charges they contain are bound and cannot move around freely.
- Excess charge put onto this kind of matter tends to just sit there.

## Conductors

- In some matter, charges in it can move around throughout the object.
- Excess charge put onto this kind of matter redistributes itself or flows off (if there is a conducting path to ground).
- Unbalanced charges attract neutral matter (polarization)

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