Electric Potential Energy and Voltage

Some terms to know:

Battery - a combination of electrochemical cells

Electrochemical cell - coverts chemical energy into electrical energy sotred in charges (commonly called cells or batteries)

Energy - the ability to do work

Kinetic energy - energy in a moving object

Potential energy - energy stored in an object

Electric potential energy - electrical energy stored in a battery. Consists of:

Potential difference (measured in volts)

- amount of potential energy per coulomb of charge

- in our analogy... the height of the textbooks off the floor (in a battery this depends on material battery is made of)

Amount of charge separated (measured in coulombs)

- in our analogy .... the number of books

A note about batteries:

- Batteries have 2 terminals called electrodes (the positively charged electrode has a deficiency in electrons, the negatively charged electrode has an excess)
- Electrodes are in an electrolyte (a substance that conducts electricity)
- When a battery is connected to a device, the electric potential energy is "released" as the electrons move through the wire and converted to useable energy at the load (ex: lightbulb)