

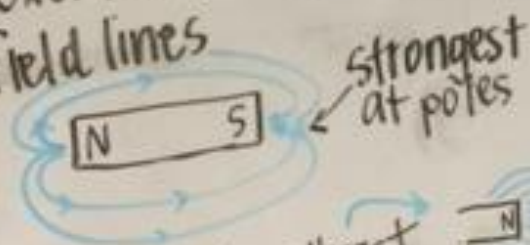
## Unit 6

### Gravity

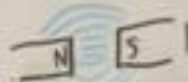
- measured as weight
- strength is determined by mass + distance
- everything exerts a gravitational force

### Magnetism

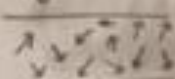
- Contain or attract iron
- Magnetic field - area magnetic force is exerted (push or pull)
- field lines



- opposite poles attract
- like poles repel



### • magnetic domain



unmagnetized

- ferromagnetic material (iron (Fe)) behaves like iron in a magnetic field

### • magnets

- temporary - effect
- permanent - long
- cut magnet - two
- hitting hard, heat magnetic properties

### Electricity

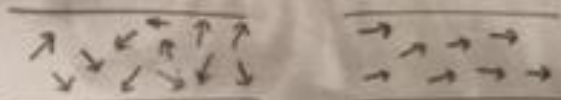
- charges -  $p^+$ ,  $e^-$  like repel, opposite attract
- build up of charges
- charges can be transferred
  - friction (shuffling)
  - conduction (touch)
  - induction (come near)

### • current

$e^-$   $e^-$   $e^-$

- Conductor vs. insulator

## • magnetic domains -



unmagnetized      magnetized

## • ferromagnetic material

iron (Fe)

behaves like iron in a magnetic field

## • magnets -

- temporary - effects short-lived
- permanent - long term
- cut magnet - two, each w/ NP & SP
- hitting hard, heating destroys magnetic properties

## Electricity

• charges -  $p^+$ ,  $e^-$

like repel, opposite attract

• build up of charges is static

• charges can be transferred

- friction (shuffle feet)
- conduction (touch - zap, ouch!!)
- induction (come near it)

• current  $e^- e^- e^- e^- e^- e^-$

• conductor vs. insulator  
metals nonmetals

## • circuits

energy

resistor/

wire

\* switch

series vs



dim

## • batteries

→ wet

→ dry

## Electrom

• electric

a magn

• Right!

• an elec




strong m



turned

• electric

energy

## • Circuits

energy source  $\pm$    
resistor/load  

wire   
\* switch 

series vs parallel



• batteries (chemical potential energy)

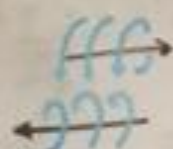
→ wet cell - liquid (car battery)

→ dry cell - paste (Duracell)

## Electromagnetism

• electric current produces a magnetic field

• Right hand rule



• an electromagnet is a strong magnet that can be turned on and off

• electric motor - transforms electrical energy into mechanical energy

• AC/DC - not just band!

AC - alternating current (repeatedly changes which changes field)

DC - direct current (flows in a given direction only)

• electric generators transform mechanical energy to electrical energy

FYI - gas generators utilize chemical energy (fuel)

• a transformer (Optimus Prime) increases or decreases the voltage of a power source. They are the giant in the corner of people's front.



• AC/DC - not just a rock band!

AC - alternating current  
(repeatedly changes directions which changes the magnetic field)

DC - direct current (current flows in a single direction only)

• electric generator - transforms mechanical energy to electrical energy.

FYI - \* gas generators utilize chemical energy (fuel) to do this)

• a transformer (no, not Optimus Prime) either increases or decreases the voltage coming from a power source (these are the gigantic boxes in the corner of some people's front yards)

essentials

- Lori  
- Tashawn

Kersten

← Kashia

Remind

8/10

Battery

60