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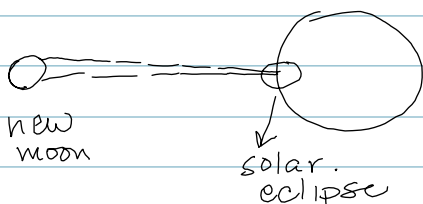
Viggo, Clay, Max, Bella - see me

WKBC p.192

1) New moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning gibbous, third quarter, waning crescent

2) Because moon doesn't spin on its axis

3) —
—
—
—



(not to scale)

only when Moons
5° tilt

4) annular solar eclipse - moon is far away and its shadow doesn't fully cover sun

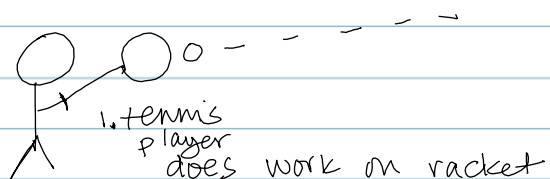
total solar eclipse - moon is closer and covers sun more completely - still has a ring (corona) around the sun / moon covering.

5) p189 It appears to change because we're moving.

Ch 12.1 p. 344-353

Energy - the ability to do work.

Work occurs when a force cause an object to move in the same direction as the force.



1. tennis player does work on racket
2. racket does work on tennis ball
3. ball does work on the net

Energy is transferred from player, to racket, to ball, to net

measure the work amount in Joules (J)
newton-meters

Kinetic energy - motion energy
potential energy - stored energy (~~height~~ position)

Law of Conservation of Energy - can't create or destroy energy. It just converts to other forms.

tennis ball (pot. energy) - work is done on the ball with racket

Types - potential (roller coaster seat) sitting
kinetic (roller coaster seat) rolling
elastic (rubber band)
gravitational (Block #8447)

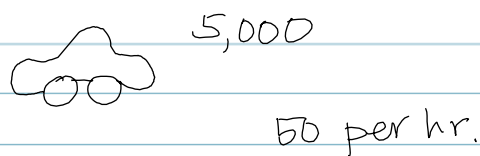
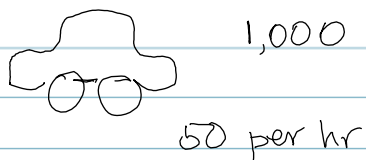
Forms

- Thermal (heat) (friction)
- Chemical
- geo-thermal (Earth's insides)
- Mechanical
- Sound
- light
- nuclear
- electrical
- wave
- wind
- solar
- = hydro (water) hydro-electric
- bio

p.347 Kinetic energy

- Kinetic energy is caused by motion
- all moving objects have kinetic energy
- M (mass)

$$K = \frac{mv^2}{2}$$



K is affected by amount of mass
by amount of work (force)
by direction (V) + speed

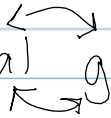
Energy video - B Nye

electrical energy moves machines

- almost all ~~the~~ things we do uses energy
- Potential energy - energy that is stored
- Kinetic energy - movement
- baking soda and vinegar make chemical energy
- yelling is sound energy
- it only gets ^{the} amount of energy you give it
- falling water spins giant turbines which make electricity
- rushing water creates energy
- batteries store energy
- oil is energy / fossil fuel
- energy in wood when lit becomes heat and light energy
- we get energy from our food
- energy makes things grow
- when energy converted some becomes heat
- energy is measured in Newtons

Thanks! Viggo!

Science Quiz #6 (Ch 12.1)

- 1) What is energy?
- 2) Stored energy of position is _____.
- 3) Energy of motion/movement is _____.
- 4) Heat energy is called _____.
- 5) True False All energy with mass has friction.
- 6) What is the Law of Conservation of Energy?
- 7) Your body converts _____ energy to do work (exercise, move, breathe, etc)
- 8) Why is nuclear energy so powerful?
- 9) A rubber band has _____.
- 10) Why does Block #8747 have potential  gravitational energy?