| Primary Topic | Term | Definition | Other Notes |
|---|---|---|---|
| 1 | absolute uncertainty | The uncertainty (the measure of precision) of a measurement expressed in the same units as the measurement | eg. 3.0 m +/- .1m or 55 kg +/- 1kg |
| 1 | accuracy | The level of agreement with the correct/standard/accepted value. | So how close the measurement(s) is to the correct value. Low systematic error = high accuracy |
| 1 | calibration error | A systematic error that resulting from inaccurate settings of the scale of measurement used by an instrument | This can be a zero offset error or it can be a error in which the space between markings has been increased or decreased; eg. photocopying a ruler at 95% instead of 100% |
| 1 | derived units (in the SI system) | Units that are a combination of one or more fundamental units. | |
| 1 | experimental error | Any error, random or systematic that is associated with the experimental method. | It does not include human error or blatant mistakes. |
| 1 | fundamental units (in the SI system) | The official units in the SI system upon which all other units are are based. They are the kilogram (kg), meter (m), second (s), ampere (A), mole (mol), and Kelvin (K). | |
| 1 | instrumental error | The error associated with the tool being used to measurement | For digital readouts it is equal to the smallest demarkation; for analogue readouts it is usually equal to the 1/2 of the smallest demarkation. |
| 1 | magnitude | The quantitative/numerical size of measurement. | Includes units |
| 1 | order of magnitude | The power of 10 closest to a number | Practically speaking, take the log of the number & then round to the nearest whole number |
| 1 | percentage uncertainty | The uncertainty (the measure of precision) of a measurement expressed as a percentage of the measurement. It is the relative uncertainty multiplied by 100 and expressed as a percentage. | |
| 1 | precision | The level of agreement between multiple measurements. | So how close multiple measurements are to each other; low random error = high precision. For a single measurement, it is specificity or level of detail of the measurement, so the number of decimals. P |
| 1 | qualitative | Something that is non-numerical in nature and focuses non-numerical descriptors or evidence. | |
| 1 | quantitative | Something that is numerical in nature and focuses on assigning numerical values | |
| 1 | random error | Errors in measuremnt caused by factors that vary from one measurement to another. | Affects precision because it causes a greater spread between multiple measurements, but does not affect the average value. |
| 1 | relative uncertainty (fractional uncertainty) | The uncertainty (the measure of precision) of a measurement with respect to the measurement itself. It is the absolute uncertainty divided by the measurement. It has no units | |
| 1 | resolve a vector | To break a vector aprart into its component along each axis. | |
| 1 | resultant vector | The sum of one or more vectors | |
| 1 | scalar | A quantity that has only magnitude. | |
| 1 | significant figures | The digits in a number used to express the degree of precision of a single measurement. | |
| 1 | systematic error | Erros in measurement cause by factors that shift the measurements consistently in one direction. | Affects accuracy because it shifts the average of multiple measurements |
| 1 | uncertainty | The measure of the random error or precision. | |
| 1 | vector | A quantity that has both magnitude and direction. | |
| 1 | vector resolution | The process of breaking a vector apart into its components along each axis. | |
| 1 | zero offset error | An error such that the zero-point is set at something other than zero. | |

| Primary Topic | Term | Definition | Other Notes |
|---|---|---|---|
| 2 | acceleration | The rate of change in velocity per unit time | |
| 2 | air resistance | Also known as drag; it is the force that opposes the motion of an object due to the fact that it is moving through air due to the fact that it is colliding with air particles. | |
| 2 | average acceleration | The averaged value of the acceleration over a period of time (time weighted). It is the acceleration value that if constantly maintained for the period of time would have given the same result. | |
| 2 | average speed | The averaged value of the speed over a period of time (time weighted). It is the speed value that if constantly maintained for the period of time would have given the same result. | |
| 2 | average velocity | The averaged value of the velocity over a period of time (time weighted). It is the velocity value that if constantly maintained for the period of time would have given the same result. | |
| 2 | centripetal force | | |
| 2 | Conservation of (linear) Momentum | The momentum of a closed system is constant. OR If the total external force acting on a system is zero, then the momentum of the system remains constant | |
| 2 | conservation of energy | The total amount of energy in a closed system will remain constant. OR Energy cannot be created or destroyed, it can only be transformed into different forms. | |
| 2 | displacement | The measured distance in a given (single) direction. | |
| 2 | distance | The length traveled by an object. | |
| 2 | drag | Also known as air resistance; it is a force that opposes the motion of an object as it moves through air due to the fact that it is colliding with air particles. | |
| 2 | dynamic equilibrium | The state of moving at a constant non-zero velocity (any velocity other than zero). It ony occurs when the vector sum of the forces acting on an object is zero; in other words, when the net force in each direction is zero. | |
| 2 | efficiency | The ratio of useful energy output to total energy input. It is usually expressed as a percentage. | |
| 2 | elastic collision | A collision in which total mechanical energy (primarily kinetic energy) is conserved. OR A collision in which no energy is gained or lost. | These are generally "bouncing collisions," however, keep in mind that no collision is perfectly elastic. |
| 2 | energy | The ability to do work. OR The energy transferred to a body is the work that has been done on that body. | It is often a circular defintion with work and is rarely formally defined. |
| 2 | fluid resistance | It is a force that opposes the motion of an object as it moves through a fluid (any liquid or gas; eg. air, water, oil) due to the fact that it colliding with the fluid particles. | |
| 2 | force | An interaction that causes acceleration, pressure, or deformation on an object. | It is usually thought of as a push or a pull. |
| 2 | Free-Body Diagram | A simplified drawing of an object in which only the forces acting on the object are shown using arrows to represent the magnitude and direction of each force. | |
| 2 | friction | It is a force that opposes the motion of an object that is contacting another surface due to forces that arise from its contact with that surface. | |
| 2 | gravitational potential energy | The (stored) energy an object has due to its position in a gravitational field. The change in gravitational potential energy is equal to $m \cdot g \cdot \Delta h$. It is a scalar quantity. | |
| 2 | Hooke's Law | The force applied by a spring or similarly behaving object is proportional to the displacement from the springs equilibrium, but is in the opposite direction. $F = -kx$ where x is displacement from equilibrium | |

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| 2 | impulse | The change in momentum of an object. OR The product of the resultant force (net force) and the time for which that force is applied. | |
| 2 | inelastic collision | A collision in which the total mechanical energy (primarily kinetic energy) decreases. OR A collision in which energy is "lost" (transformed into thermal energy or sound). | These are generally though of as "sticking collisions," however, technically every collision in a lab or experiment is partly inelastic. On the most strict defintion of elastic & inelastic, all experimental collisions are inelastic since some energy is lost. |
| 2 | instantaneous acceleration | The acceleration a single instant/moment in time. | Often thought of as the acceleration in which the time the speed is measured for approaches zero. |
| 2 | instantaneous speed | The speed a single instant/moment in time. | Often thought of as the speed in which the time the speed is measured for approaches zero. |
| 2 | instantaneous velocity | The velocity a single instant/moment in time. | Often thought of as the velocity in which the time the speed is measured for approaches zero. |
| 2 | kinetic energy | The energy an object has due to its motion (or momentum). It is a scalar quantity. | |
| 2 | momentum (linear) | The product of mass and velocity. | Often thought of as "the quantity of motion." |
| 2 | Newton's 1st Law | Every object continues in a state of rest or of uniform motion in a straight line unless acted upon by an external force. | |
| 2 | Newton's 2nd Law | The rate of change of momentum of a body is proportional to the resultant force acting on the body. OR F = ma where F is the resultant/net force. OR T accelaration produced by a force is directly proportional to the force acting on it. | Be careful to either that it is the net/resultant force that produces acceleration or to explicitly refer to the "acceleration produced by the force" |
| 2 | Newton's 3rd Law | When two bodies (objects) A and B interact, the force that A exerts on B is equal and opposite to the force that B exerts on A. | You must make explicit reference to force. |
| 2 | power | The rate of work done per unit time. It is a scalar quantity | |
| 2 | principle of conservation of energy | The total amount of energy in a closed system will remain constant. OR Energy cannot be created or destroyed, it can only be transformed into different forms. | |
| 2 | relative motion | It is the speed, velocity, or motion of an object as compared to another object or point that is assumed to be not moving. | |
| 2 | resultant force | The net force or vector sum of the forces. | |
| 2 | speed | For an object it is the rate of distance traveled per unit time | Most rate defintions follow the general format of "____________ per unit __________" |
| 2 | spring constant (k) | The coefficient in Hooke's law that describes the force per unit displacement of a spring or similarly behaving object that has not reached its elastic limit and is following Hooke's Law | |
| 2 | static equilibrium | The state of being at rest or not moving. It ony occurs when the vector sum of the forces acting on an object is zero; in other words, when the net force in each direction is zero. | |
| 2 | translational equilibrium | The state of being in static or dynamic equilibrium; that is, the state of being at rest or of moving at a constant velocity. It ony occurs when the vector sum of the forces acting on an object is zero; in other words, when the net force in each direction is zero. | |
| 2 | velocity | For an object it is rate of the displacement traveled in a particlualr direction per unit time | Speed in a given direction is a subpar definition. Most rate defintions follow the general format of "____________ per unit __________." |
| 2 | weight | The force of gravity on an object that is usually near the surface of the planet providing the gravitational force. | |
| 2 | work | The product of the force acting an object and the displacement in the direction of that force. It is a scalar quantity. | More easily thought of as a change in energy ($\Delta E$) |

| Primary Topic | Term | Definition | Other Notes |
|---|---|---|---|
| 3 | Admonton's Law of Gases | When an ideal gas is held at constant volume, the pressure of the gas is proportional to its temperature; also known as the Pressure Law of Gases | |
| 3 | boiling | A change from the liquid state to the gaseous state that occurs at the boiling point. | |
| 3 | boiling point | The temperature at which a liquid will vaporize into a gas. It is the same temperature as the condensation point. | |
| 3 | Boyle's Law of Gases (pressure-volume) | When an ideal gas is held at constant temperature, the volume fo the gas is inversely proportional to itstemperature. | |
| 3 | Charles' Law of Gases (volume-temperature) | When the pressure of an ideal gas is held constant, the volume of the gas is directly proportional to its temperature; it is also known as the law of volumes | |
| 3 | condensation point | The temperature at which a gas will turn into a liquid. It is the same temperature as boiling point. | |
| 3 | evaporation | A change from the liquid state to the gaseous state that occurs at a temperature below the boiling point. | This is due to the natural variation in the kinetic energy of each particle even at a given temperature. |
| 3 | evaporative cooling | A drop in temperature or thermal energy of a substance due to the particles with the most energy leaving the substance through evaporation. | |
| 3 | freezing point | The temperature at which a liquid will turn into a solid. It is the same temperature as the melting point. | |
| 3 | heat | The change in internal energy. The thermal energy that is absorbed, given up or transferred from one object to another. | |
| 3 | heat capacity | The thermal eneryg required to raise the temperature of an object by one Kelvin | |
| 3 | ideal gas | a theoretical gas that obeys the equation pV = nRT; at all temperatures, pressures, and volumes the gas molecules occupy negligible space and do not interact (there are no forces between them) | |
| 3 | Ideal Gas Law | Gases can be approximated as ideal gases that follow the equation of state; pV = nRT | |
| 3 | internal energy | The sum of all kinetic and potential energies of the particles in an object. | |
| 3 | kinetic theory for gases | When the moving particle theory is applied to gases. | |
| 3 | latent heat | The quantity of thermal energy required to change the state of a substance. | |
| 3 | latent heat of fusion | The quantity of thermal energy required to change the a substance from a solid state to a liquid state. The reverse process requires removing that same amount of energy. | Temperature does not change during this process; it will remain at the melting point until the phase changeis complete. |
| 3 | latent heat of vaporization | The quantity of thermal energy required to change the a substance from a liquid state to a gaseous state. The reverse process requires removing that same amount of energy. | Temperature does not change during this process; it will remain at the boiling point until the phase changeis complete. |
| 3 | melting point | The temperature at which a solid will melt into a liquid. It is the same temperature as the freezing point. | |
| 3 | mole | The basic SI unit for the amount of a substance. It is the amount of a substance that contains the same number of elementary particles as .012 kg of Carbon-12. | |
| 3 | moving particle theory for gases | A theory that sets forth a basic list of assumptions for gas particles including the following: | |
| 3 | pressure | the force exerted per unit area. | |

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|---|---|---|---|
| 3 | Pressure Law of Gases (pressure-temperature) | When an ideal gas is held at constant volume, the pressure of the gas is proportional to its temperature; also known as Admonton's Law of Gases | |
| 3 | specific heat capacity | It is the heat capacity per unit mass. OR The thermal energy required to raise a unit mass of an object by one Kelvin. OR The thermal energy required to raise one kilogram of an object by one Kelvin. | |
| 3 | temperature | It is a measure of the average kinetic energy of the particles in an object. | |

| Primary Topic | Term | Definition | Other Notes |
|---|---|---|---|
| 4 | amplitude | the maximum displacement from equilibrium achieved by a particle undergoing simple harmonic motion (SHM) | |
| 4 | angular frequency | radians (of oscillation) per unit time; it is 2pi * f; (w) | |
| 4 | compression | the region of maximum pressure for a sound wave or maximum particle density for a longitudinal wave | |
| 4 | crest | the point of maximum positive displacement of the medium in a wave | |
| 4 | damping | a decrease in the amplitude of oscillation due to friction or some other resistive force removing energy from the system | |
| 4 | diffraction | the spreading out of a wave after going through an aperature or around a barrier/obstacle | diffraction examples |
| 4 | displacement (SHM) | the distance from equilibrium of a particle undergoing simple harmonic motion (SHM) | |
| 4 | forced oscillation | oscilations resulting from the application of an external force; it is usually periodic | |
| 4 | frequency | (linear) frequency is the number of complete oscillations per unit time (f) | |
| 4 | longitudinal wave | a wave in which the particles/medium of the wave oscillate/vibrate at along the same axis as the direction of propogation (direction of travel) | |
| 4 | natural frequency of vibration | the frequency of oscillation of a system that is not subjected to a periodic external force | Ignore the initial force required to get the vibration started |
| 4 | oscillation | Movement back and forth in a consistent manner. Similar to and in many cases is the same thing as a vibration. | |
| 4 | period | the time per a complete oscillation | |
| 4 | phase difference | the time interval or phase angle by which one wave leads or trails another | |
| 4 | rarefaction | the region of minimum pressure for a sound wave or minimum particle density for a longitudinal wave | |
| 4 | reflection | the bouncing or throwing back of a wave off of a suface or barrier | reflection example |
| 4 | refraction | the change in the direction of propogation of a wavefront caused by changes in wavespeed when entering a new or changing medium. | refraction example |
| 4 | resonance | a phenomenon that occurs when the frequency of forced oscillations is equal to the natural frequency of the system. It results in the constructive interference of waves/vibrations in the system. | |
| 4 | simple harmonic motion (SHM) | Oscillating motion in which the force acting on the system is towards the equilibrium and proportional to the displacement from the equilibrium | |
| 4 | Snell's Law | the ratio of sines of the angles of incidence is constant for all incidences in any pair of media. | Just look at the equation |
| 4 | transverse wave | a wave in which the particles/medium of the wave oscillate/vibrate at right angles to the direction of propogation (direction of travel) | |
| 4 | trough | the point of maximum negative displacement of the medium in a wave | |
| 4 | wave speed | the distance per unit time traveled by the wave front or energy of a wave | |

| Primary Topic | Term | Definition | Other Notes |
|---|---|---|---|
| 5 | electric current | the amount of charge per unit time flowing through a cross sectional area | |
| 5 | electrical potential difference | energy released per unit charge between two points | Often just called voltage |
| 5 | electromotive force (EMF) | the energy per unit charge supplied by a power source | |
| 5 | electronvolt (eV) | the energy acquired by an electron by moving through a potential difference of one volt. | It is a unit of energy equal to 1.6 x 10^-19 J |
| 5 | ideal ammeter | a device to measure current that has 0 reistance and is attached in series | |
| 5 | ideal voltmeter | a device to measure voltage that has infinite resistance and is attached in parallel | |
| 5 | internal resistance | aspects of a power source that cause power to be dissipated before electricity leaves the power source | behaves like a resistor in series with the battery and the rest of the circuit |
| 5 | Kirchoff's Current Law | The sum of currents flowing into a point in a circuit equals the sum of currents flowing out of that point | It is an extension of conservation of charge and says that (total current in) = (total current out) |
| 5 | Kirchoff's Junction Rule | another name for Kirchoff's Current Law | |
| 5 | Kirchoff's Loop Rule | another name for Kirchoff's Voltage Law | |
| 5 | Kirchoff's Voltage Law | In any closed loop (complete loop in a circuit), the sum of EMFs equals the sum of potential drops | It is an extension of conservation of energy and says for any complete path/loop through a circuit (there can be multiple) the (total energy supplied) = (total energy dissipated) |
| 5 | non-ohmic behavior | something that does not have a constant proportion between voltage and current (ie. it does not follow ohm's law) | |
| 5 | Ohm's Law | the ratio between voltage and current for a device remains constant over a wide range of voltage provided that temperature  and other physical conditions are kept constant. | This results in a linear I-V curve, but keep in mind it requires constant temperature, among other things |
| 5 | ohmic behavior | something that has constant proportion betweeen voltage and current over a wide range of voltages (ie. it follows ohm's law) | |
| 5 | parallel circuit | there are multiple current pathways; all components have the same potential difference; (sum of currents flowing in) = (sum of currents flowing out); | Series vs parallel diagram |
| 5 | resistance | the voltage required per unit current flow through an object | Often thought of as how hard it is for electricity to flow to an object. |
| 5 | series circuit | all components have only one currrent pathway; therefore all components have the same current; the (sum of voltage drops) = (sum of EMFs) | Series vs parallel diagram |
| 5 | terminal voltage | the energy per charge supplied by a power source minus the voltage drop due to any internal resistance | I like to think of it as the effective voltage of a power source or the voltage you get at its terminals (output posts) |

| Primary Topic | Term | Definition | Other Notes |
| --- | --- | --- | --- |
| 6 | conductor | a material in which electrons of atoms can move relatively freely between diffrent atoms in the conductor | |
| 6 | electric field strength | the electrostatic (coulombic) force per unit charge on a small positive test charge placed at that point | |
| 6 | gravitational field strength | the gravitational force per unit mass on a small mass placed at that point | |
| 6 | insulator | a material in which electrons of atoms are held tightly by the atomic nuclei | |
| 6 | Law of Conservation of Charge | In a closed system, the amount of charge is constant. | |
| 6 | types of electric charge | positive and negative | neutral is usually just a balance of positive and negative; no charge is not a type of charge; just like how having "no color" is not a type of color |

| Primary Topic | Term | Definition | Other Notes |
| --- | --- | --- | --- |
| 7 | absorption spectra | the specific frequencies of light absobed by a gas when light is allowed to pass through it | It is the same as the emission spectra; electrons can absorb energy (light w/ that energy level) in the exact quatity needed to jump to another energy level. |
| 7 | alpha particle | a radioactive particle that is composed of 2 protons & 2 neutrons (essentially a helium-4 nucleus) | It can travel about 4 cm in air and is easily stopped by a couple sheets of computer paper |
| 7 | artificial (induced) transmutation | the process of causing one element to change into another by means other than natural (spontaneous) radioactive decay | |
| 7 | atomic mass unit | 1/12 the mass of an atom of carbon-12 | |
| 7 | beta particle | a radioactive particle; it is an electron or a positron. | It can travel several meters in air and can penetrate thin sheets of aluminum |
| 7 | binding energy (1) | the energy released (mass defect) when a nucleus is assembled from its indiivdual nucleons. | same as definition (2), just a different way of thinking about it |
| 7 | binding energy (2) | the energy required to to separate a nucleus into its individual nucleons | same as definition (1), just a different way of thinking about it; I like to think of it as "separation" energy instead of binding energy |
| 7 | binding energy per nucleon | the binding energy per a nucleon in a nucleus | this gives a way of comparing different atoms and isotopes even though the total energy will increase with each nucleon |
| 7 | emission spectra | the specific frequencies of light emitted by a gas or other source when excited | It results from the fact that each type of atom has different energy levels for its electrons. The different colors from the the difference in energy as an electron goes from one level to another |
| 7 | fission | the process of causing a nucleus to split into two smaller nuclei | usually triggered by hitting a nuclues with a neutron or some other particle of significant size; releases energy; main source of energy for nuclear power plants and most nuclear bombs; ususally involves plutonium or uranium, but can be done with thorium and other elements |
| 7 | fusion | the proces of causing two nuclei to merge into a single nucleus | usually done between hydrogen isotopes and/or helium isotopes. main source of energy in the sun and other stars |
| 7 | gamma ray | a form of high energy electromagnetic radiation. | It is not generally stopped by air and it can penetrate significant thicknesses of lead |
| 7 | half-life | the time it takes for a quantity of a (radioactive) material to reach half of its original value. | For radioactive materials it is not affected by temperature, pressure or chemical combination |
| 7 | ionizing radiation | radiation that has the capability of freeing an electron from an atom (ionizing it). | Primarily dangerous because it can affect genetic material (DNA) which can lead with replication of mutated cells |
| 7 | isotope | atoms of the same element that are chemically identical (interact the same in chemical reactions), but they have different masses. | |
| 7 | mass defect | the difference in mass between the reagents (reactants) and the products. | The "missing" mass has been converted into energy. |
| 7 | natural radioactive decay | when an element spontaneously emits radiation; there is no external cause or excititaion that triggers this | |
| 7 | nucleon | particles in the nucleus. Always either a proton or a neutron. | |
| 7 | nuclide | a distinct type of atom or nucleus characterized by its number of protons and neutrons | |
| 7 | Rutherford experiment | alpha particles (+ charge) were fired at a sheet of gold foil. Most went through showing atoms are mostly empty space. A few deflected and/or rebounded. This served as evidence that there was a dense positively charged center of each atom (a nucleus). This experiment gave rise to the simple nuclear model (+) nucleus & (-) electrons around it, no neutrons yet. | |
| 7 | strong nuclear reaction | a force between nucleons (protons or neutrons) that is always attractive. It drops quickly to 0 for distances greater than 1.3 fm | It is essentially what keeps protons and neutrons in the nucleus |

| Primary Topic | Term | Definition | Other Notes |
|---|---|---|---|
| 8 | albedo | the ratio between incoming radiation and the amount reflected by a surface | |
| 8 | black-body radiation | the radiation emitted by a perfect emitter | |
| 8 | climate | the average weather over the course of a long term (years); in other words, long term weather patterns for a region | Neil deGrasse Tyson explains the difference between climate & weather |
| 8 | climate change | a change in long term weather patterns (climate) | Does not refer to changes in weather on any specific day, but refers to changes in the long term average weather pattern |
| 8 | control rods | used to absorb free neutrons and prevent further nuclear reactions; they are rods inserted in between fuel rods in a nuclear reactor that stop the chain reaction process | Metaphorically: if a chain reaction is fun; control rods are where fun goes to die |
| 8 | controlled nuclear fission | a nuclear fission process in which the chain reaction is moderated to produce a steady output of energy over a longer period of time | nuclear power plant (functioning normally) |
| 8 | critical mass | the smallest amount of fissionable material needed to sustain a chain reaction | |
| 8 | efficiency | the ratio of useful energy output to total energy output expressed as a percentage | |
| 8 | energy degradation | the transformation/conversion of energy from a more useful form to a less useful form | |
| 8 | enhanced greenhouse effect | the trapping of IR waves in the Earth's lower atomsphere above and beyond naturally occuring levels; usually caused directly or indirectly by humans | |
| 8 | fissionable material | a material/isotope that can create a self-sustaining chain reaction under the right conditions | |
| 8 | greenhouse effect | the trapping of IR waves in the Earth's lower atomsphere; can be natural or unnatural | |
| 8 | greenhouse gases | gases that are responsable for the trapping of IR waves in the Earth's lower atmosphere via the greenhouse effect | |
| 8 | heat exchanger | the device that transfers heat from the primary loop to the secondary loop | |
| 8 | hydroelectric schemes | different methods of harnessing power from water | (1) water storage in lakes [via damns]; (2) tidal water storage [from ocean tides]; (3) pump storage [pump water up to container, let it flow later] |
| 8 | moderator | a material that will slow down neutrons to speeds that can cause fission | Metaphorically: if a chain reaction is fun; these are the hosts/hostesses that come around and keep things in that optimal fun zone |
| 8 | non-renewable energy source | an energy source that is either depleted when used and is not quickly regenerated/replenished | (click for example image) NOTE: your textbook considers nuclear power to be renewable despite the fact athat most other sources would classify it as non-renewable |
| 8 | photovoltaic cell | an electrical device that captures sunlight or other sources of EM radiation and converts it into electrical energy (via photoelectric effect) | |
| 8 | plasma | a gas in which the atoms are ionized; that is the nuclei and electrons are separated from each other; largely considered to be the fourth state of matter | |
| 8 | primary loop | in nuclear powerplant, it is the loop in which the reactor heats up a liquid (coolant) that is then used to warm up the power producing loop (secondary loop) | |
| 8 | renewable energy source | an energy source that is easily and readily replenished (usually by natural processes) | (click for example image) NOTE: your textbook considers nuclear power to be renewable despite the fact athat most other sources would classify it as non-renewable |

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|---|---|---|---|
| 8 | Sankey diagram | a diagram used to show the allocation of a resource (see image); where the thickness of an arrow represents the amount of the resource allocated. Waste products have arrows that diverge up or down; useful products have arrows that go straight through | example of Sankey Diagram |
| 8 | secondary loop | in a nuclear powerplant, it is the loop in which water is turned to steam and used to drive a steam turbine to spin the generator and create power | |
| 8 | solar helating panels | panels that capture sunlight or other sources of EM radiation and convert them into thermal energy | water heaters |
| 8 | thermoelectric devices | devices that harness solar energy to produce electrical energy usually by heating water to drive a steam turbine | |
| 8 | uncontrolled nuclear fission | a nuclear fission process in which the chain reaction is not moderated and the energy is released in a relatively short time period | nuclear bomb or nuclear meltdown |
| 8 | weather | the state of the atomosphere with regards to dryness/humidity, wind speed, temperature, sun, cloud cover, etc | Neil deGrasse Tyson explains the difference between climate & weather |