Energy Review Sheet

Topics

* Electromagnetic Energy
* Know how to use the diagram titled “Electromagnetic Spectrum” on pg. 14 of the ESRT.
* Temperature that all matter ceases to move.
* Waves travel as transverse waves.
* Which type of wave will have a long or short wavelength?
* Electromagnetic Energy Interacting with the Environment
* Understand the five ways electromagnetic energy can interact with the environment (refraction, reflection, scattered, etc.)
* What are the best absorbers or reflectors with color and texture?
* Heat Transfer
* Know the three types of heat transfer (conduction, convection, and radiation).
* Which phase of matter is best suited for each type of heat transfer (example: solids = conduction).
* How does heat usually flow? (Source to a sink or sink to a source?)
* Difference between a closed- and open-system.
* Properties of Water
* Know the phase changes for water (Example: solid to a gas is melting).
* Which phase changes gain or lose heat?
* Use the chart titled “Properties of Water” on pg. 1 of the ESRT. How much energy is needed to change each phase.
* Understand how to read and use the heating and cooling curve diagrams.
* Specific Heat
* How to use the chart titled “Specific Heats of Common Materials” on pg. 1 of the ESRT.
* Which material takes the longest time to raise it one degree Celsius per gram? Why?
* Which material takes the shortest time to raise it one degree Celsius per gram? Why?
* What are the units used for heat? Temperature?
* Insolation
* Which type of short-waves can strike the Earth’s surface?
* Understand the definition of insolation.
* Where does most of the UV radiation get absorbed before it reaches Earth’s surface?
* Which gases absorb most of the sun’s infrared radiation before it strikes Earth’s surface?
* Understand the greenhouse effect and how Earth absorbs short-wave and radiates long-wave radiation.
* The greater the angle of insolation =
* The smaller the angle of insolation =
* Where does the greatest intensity of insolation occur on Earth’s surface on 3/21, 6/21, 9/23, and 12/21?
* Where does the greatest intensity of insolation occur for Syosset, New York?
* Where does the greatest intensity of insolation occur on any typical day?
* How does duration affect the amount of insolation absorbed by Earth’s surface?