**Thermal Energy**

**Solar Energy**

 \* heat or energy from the sun

 \* works best in areas that have a regular supply of sun

**Heat**

 \*the energy of moving molecules

 \* travels best by conduction, convection and radiation

**Thermal Energy**

\*the scientific name for heat energy

**Geothermal Energy**

 \*heat that occurs naturally from under the earth’s surface

\*volcanoes, hot springs, geysers

**Expansion**

 \*the enlargement of a substance because of the faster motion of molecules

 \*caused by increased temperatures

**Contraction**

 \*the shrinking of a substance because of the slower motion of molecules

 \*caused by decreased temperatures

**Temperatures**

\*degree of hotness of coldness

**Thermometer**

 \*used to measure temperatures

 \***alcohol** used for very **LOW** temperatures

 \***mercury** used for very **HIGH** temperatures

**Degree**

\*unit of measurement for temperature

\*lines on the thermometer

**Celsius Scale**

 \*water freezes at 0 and boils at 100

 \*body temperature is 37

 \*room temperature is around 20

**Fahrenheit Scale**

 \*water freezes at 32 and boils at 212

 \*body temperature is at 98.6

 \*room temp is around 70

**Melting Point**

 \*the point (temperature) when a solid changes to a liquid

**Boiling Point**

 \*the point (temperature) when a liquid changes into a gas

**Freezing Point**

 \*the point (temperature) when a liquid changes into a solid

**Evaporation**

 \*process by which fast moving molecules escape from a liquid and become a gas

**Condensation**

 \*changing of a gas to a liquid

 \*happens when warm air touches a cold surface

 \*EX: shower – mirror - oven – glasses – freezer - jet flying

**Calorie (Joule)**

 \*unit of measurement of heat

**Insulation**

 \*material used to slow the transfer of heat

 \*wood, plastic, trapped, vacuum, insulation

**Conduction**

 \*the transfer of energy by direct contact between atoms ormolecules of a substance

 \*must have amedium to travel through

 \* examples: metal frying pan baking

**Convection**

 \*heat transfer in liquids and gases as molecules circulate in currents

 \*examples: heating homes, heating hot chocolate, hot air balloons

**Radiation**

\*heat transfer in the form of infrared waves which strike and excite molecules. Only way for heat to travel through space (a vacuum)

 \*examples: ice cream melting, feeling the sun, body heat

**Thermostat**

 \*an instrument that maintains a constant temp in a room by turning heat on and off

**Thermogram**

 \*an image of an object made by measuring the infrared (heat) it gives off

**Using Heat Efficiently**

 \*Insulate attic and walls

 \*Use double pane windows

 \*Turn down thermostat

 \*Use caulk or weather stripping

 \*Wash full loads of clothes/dishes

 \*cover pans when cooking