Temperature and Heat

Overview Sheet

Essential Question

How are temperature and heat related?

Vocabulary

kinetic theory of matter	temperature	thermometer	Celsius
Fahrenheit	Kelvin	thermal expansion	contraction
thermal energy	calorie	joule	heat
conduction	conductors	insulators	specific heat
	radiation	convection	

Learning Targets

(Objectives)

1. Describe the kinetic theory of matter
2. Compare and contrast temperature, heat, and thermal energy
3. Differentiate between the different temperature scales (Celsius, Fahrenheit, Kelvin)
4. Compare and contrast thermal expansion and contraction
5. Explain specific heat and its connection to mass
6. Compare and contrast conductors and insulators
7. Compare and contrast the three types of heat transfer (conduction, convection, radiation)

Helpful Websites

- http://www.school-for-champions.com/science/matter_kinetic_theory.htm (kinetic theory of matter overview)
- http://www.physics4kids.com/files/thermo_intro.html (heat overview)
- http://www.school-for-champions.com/science/thermal_energy.htm (heat overview)
- http://studyjams.scholastic.com/studyjams/jams/science/energy-light-sound/heat.htm (heat overview)
- http://www.globio.org/glossopedia/article.aspx?art_id=68&art_nm=Heat (heat overview)
- http://www.powermasters.com/heat_energy.html (heat overview)
- http://zonalandeducation.com/mstm/physics/mechanics/energy/heatAndTemperature/heatAndTemperature.html (heat and temperature overview)
- http://www.physicsclassroom.com/class/thermalP/u18l1a.cfm (heat and temperature overview)
- http://www.bbc.co.uk/bitesize/ks3/science/energy_electricity_forces/energy_transfer_storage/revision/4/ (heat and temperature overview)

More on back ➡

- http://coolcosmos.ipac.caltech.edu/cosmic_classroom/light_lessons/thermal/ (heat and temperature overview)
- http://zonalandeducation.com/mstm/physics/mechanics/energy/heatAndTemperature/heatAndTemperature.html (heat and temperature overview)
- http://www.sparknotes.com/testprep/books/sat2/physics/chapter12section1.rhtml (heat and temperature overview)
- http://www.windows2universe.org/earth/Atmosphere/temperature/temp_scales.html (temperature overview)
- http://www.bbc.co.uk/bitesize/ks3/science/energy_electricity_forces/energy_transfer_storage/revision/5/ (heat transfer overview)
- http://www.wisc-online.com/Objects/ViewObject.aspx?ID=sce304 (heat transfer overview + interactive)
- http://www.vtaide.com/png/heat2.htm (heat transfer overview)
- http://sciencereviewgames.com/srg/games/hs.php?id=27 (heat transfer + interactive game)
- http://www.sciencekids.co.nz/gamesactivities/keepingwarm.html (conductors + insulators + interactive game)