Temperature and Heat

Overview Sheet

**Essential Question**

How are temperature and heat related?

**Vocabulary**

<table>
<thead>
<tr>
<th>kinetic theory of matter</th>
<th>temperature</th>
<th>thermometer</th>
<th>Fahrenheit</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td>Kelvin</td>
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<tr>
<td>thermal energy</td>
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<td></td>
<td>calorie</td>
<td>joule</td>
<td>heat</td>
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<tr>
<td>conduction</td>
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<tr>
<td>radiation</td>
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</tbody>
</table>

**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/thermal_energy.htm](http://www.school-for-champions.com/science/thermal_energy.htm) (heat overview)
- [http://www.powermasters.com/heat_energy.html](http://www.powermasters.com/heat_energy.html) (heat overview)
- [http://www.physicsclassroom.com/class/thermalP/u18l1a.cfm](http://www.physicsclassroom.com/class/thermalP/u18l1a.cfm) (heat and temperature overview)
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.vtaide.com/png/heat2.htm (heat transfer overview)
http://www.sciencekids.co.nz/gamesactivities/keepingwarm.html (conductors + insulators + interactive game)