Understanding Heat & Temperature Through Infrared Radiation
These two pictures were taken at the same time off of the same part of the floor.

Photograph from http://coolcosmos.ipac.caltech.edu/
What is the difference between heat & temperature?
Heat is a form of energy and can move from place to place.
• A measure of the average kinetic energy

• Temperature is a measure of the level of heat

• Temperature is not energy
What is Infrared?

- Electromagnetic radiation with wavelengths lying outside the visible spectrum

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Infrared waves are thermal waves or heat.
• Color spectrum of visible light
• Infrared works by detecting wavelengths longer than visible light but shorter than radio waves

• It is detected as heat
Why do we use it?

- To obtain pictures of distant objects blocked by fog or haze
- Infrared radiation can be seen even when it is dark
- The camera takes pictures of heat
Visible light

Infrared

Works equally well in daylight

Sees in total darkness

Enhances vision through haze, fog and dust
Uses of Infrared Camera

- Arts and Sciences
  - Biology, Geology, Archeology
- Health and Safety
  - Medicine, Fire Fighting, Search in Rescue
- Commercial Applications
  - Mechanical, Food industry, Detecting heat loss