

# Unit 2: Heat and Energy in the Earth's Systems

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L2: Icy Tiles

**Guiding Question:** Develop a model to explain why substances transfer energy (heat) differently.

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- **Do Now:** Why do you think a puffy jacket keeps you warmer than a raincoat?



# Notes

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- Heat: a form of energy associated with the movement of atoms and molecules in any material.
- Thermal Energy: energy that is generated and measured by heat
- Temperature: a macroscopic measure of the **average kinetic energy** of the particles in a substance; a numerical measure of how hot or cold something is.

# Notes

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- Kinetic Energy: the energy an object (or particle) possesses due to its motion.
- Chemical Potential Energy: energy that can be absorbed or released during a chemical reaction or phase transition like melting, freezing, boiling or condensing.



# Notes

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After the experiment:

- A **conductor** is a material that allows energy in the form of heat, to be transferred within the material, without any movement of the material itself. These substances have low specific heat capacities.
- An **insulator** is something that prevents heat from moving from one place to another. These substances have high specific heat capacities.

# Closure

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- Homework 4 Due Friday
- Socratic Seminar Writing Assignment Due Friday
  - See “Written Reflection” portion of rubric (back page of Workbook 1.2)
- Achieve 3000: High Power, Low Cost due Friday at 11:59pm
  - Only activity and thought question