

Item #: _____ Thermal and Chemical Energy Study Guide Name: _____

What are the three types of heat transfers? _____

- Explain each type of heat transfer AND give an example (can be a picture) of each:
- 1) _____
 - 2) _____
 - 3) _____

What is a conductor?

What materials conduct heat quickly? Why?

What is an insulator?

What materials do not conduct heat well (aka good insulators)?

Heat ALWAYS flows from a _____ object/substance to a _____ object/substance.

Define thermal energy:

List 3 factors of thermal energy:

Define temperature:

What instrument measures temperature? _____

List the 2 common types of temperature scales:

- 1) Freezing Point of water: _____ Boiling point of water: _____
- 2) Freezing Point of water: _____ Boiling point of water: _____
- 3) Kelvin Absolute zero: 0 K

How is thermal energy and temperature related? How are they different?

Explain an exothermic process:

Explain an endothermic process:

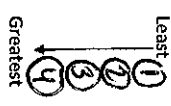
What is specific heat?

How do you know a substance has a high specific heat?

Use the table below to list the substances/materials from the LOWEST specific heat to the HIGHEST specific heat.

Material/Substance	Specific Heat (J/g x °C)
Diamond	0.510
Water	4.186
Copper	0.386
Air (Nitrogen)	1.03

What does this mean about the substances' thermal energy? (Does it hold a lot? Does it heat up fast/slow? Etc...) Explain each one.



Explain thermal expansion and thermal contraction (use pictures and examples to help your explanation):

Define chemical energy:

What is a chemical reaction? List 3 indicators of chemical energy

- List 3 examples of when chemical energy is present (chemical reaction occurs) Examples (with picture):
- 1) _____
 - 2) _____
 - 3) _____