

Name:

Date:

Period:

Homework: Thermal Energy

CHANGE IN TEMPERATURE = FINAL TEMPERATURE - INITIAL TEMPERATURE.

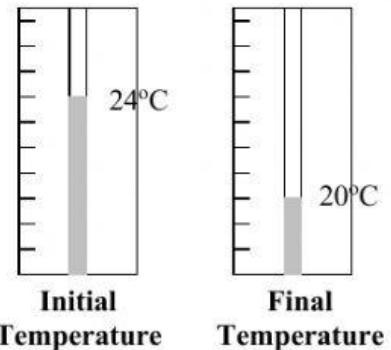
Positive ΔT means the substance absorbed energy and heated up.

Negative ΔT means the substance lost energy and cooled down.

Use the table of specific heats below to answer questions 1-5:

Substance	Specific Heat [J/g \cdot °C]
Water	4.184
Wood	1.760
Carbon (graphite)	0.710
Glass	0.664
Iron	0.450

1. How much heat is gained by a 20 gram piece of iron that changes from an initial temperature of 21°C to a final temperature of 66°C? (Show your work.)



2. About how much heat is lost by a 10.0 gram piece of glass that undergoes the temperature change shown? (Show your work.)

3. When 5 g of graphite changes from an initial temperature of 20°C to a final temperature of 27°C, what is the change in thermal energy? (Show your work.)

Remember:

Heat can only travel through SOLIDS by conduction.

Heat is carried in FLUIDS by convection.

A FLUID is a _____ or a _____.

Decide if the following heat movement was completed through conduction or convection.

Hot air moving to second floor of a house _____

Heat passing from an electric stove to a pot directly on top of it _____

Hot cooking oil rising to the top of a pot _____

Hot branding irons mark a cow _____

Pizza pan transferring heat to a cooking pizza _____

Steam rises from a cup of boiling water _____

Heat moves through a metal fire poker so that the handle is warm _____

Liquid iron moves to the top of a vat of iron _____

Heat moves through a metal spoon that is placed in hot food _____

Warm "lava" moves to the top of a lava lamp _____

Hot copper pots transfer heat to the water inside _____

Heat travels from a persons hand to the desk they are touching _____