

NAME_____

HEAT LAB 05:

PART ONE

PREDICT THE TEMPERATURE!!

Take an amount of Hot Water and half the amount of Cold Water.

Predict what you think the final temperature will be!

Mix Them!

OBJECT	MASS	StartingTemp	Final Temp	SpecificHeat
Hot Water				4187 J/kg/°C
Cold Water				4187 J/kg/°C

How much heat did the Hot Water lose?

$$\Delta Q = mC\Delta T$$

How much heat did the Cold Water gain?

$$\Delta Q = mC\Delta T$$

Are these the same? Should they be? What should've the final temperature been? What is your percent error? Why? Explain what happened in terms of the molecules and heat transfer.

PART TWO:

Determine the specific heat of aluminum!

Place an amount of HOT water in an aluminum calorimeter, along with an amount of an ice cube. When the ice melts, determine the final temperature and the specific heat of the calorimeter.

OBJECT	MASS	START TEMP	FINAL TEMP	SPECIFIC HEAT	Heat of Fusion
Al Cup				??	XXXXX
Water				4187 J/kg/°C	XXXX
ICE		0 °C		2090 J/kg/°C	3,335,000 J/kg

How much energy did the hot water lose?

How much energy did the ice gain by melting?

How much energy did the ice gain by heating up (as water)?

How much energy must've the Al cup gained?

What is the specific heat of Al according to your lab?

How does this compare with the real specific heat?

What is your percent error?

Why?

Explain what happened in terms of the molecules and heat transfer.