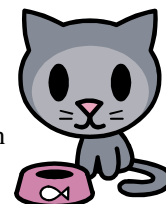


Specific Heat Worksheet #1



Directions: Calculate the following showing ALL work to receive credit.

Formula $Q = mc\Delta T$, where Q is heat in joules, c is specific heat capacity in $J/g^{\circ}C$, m is the mass in grams, and ΔT is the change in temperature in $^{\circ}C$.

- For #1-4 circle the variables it gives you and underline what you are trying to find. You can use two colors of highlighters if you like instead.

Q	Work	Answer with Units!
1	Find the amount of heat (Q) needed to raise the temperature of 5.00 g of a substance from $20.0^{\circ}C$ to $30.0^{\circ}C$ if the specific heat of the substance is $2.01 J/g^{\circ}C$. 100.5 J	
2	A metal with a specific heat of $0.780 J/g^{\circ}C$ requires 45.0 J of heat to raise the temperature by $2.00^{\circ}C$. What is the mass of the metal? 28.8 g	
3	A substance requires 50.0 J of heat to raise its temperature by $6.00^{\circ}C$. If the mass of the substance is 5.00 g, what is the specific heat of the substance? 1.67 $J/g^{\circ}C$	
4	A metal with a specific heat of $0.70 J/g^{\circ}C$ and a mass of 8.00 g absorbs 48.0 J of heat. What will be the temperature change of the metal? 8.57 $^{\circ}C$	

The table below shows the specific heats of some common substances.

Use the table to answer questions 5-9

Substances	Specific Heat ($J/g^{\circ}C$)	Substances	Specific Heat ($J/g^{\circ}C$)
Aluminum	0.90	Iron	0.450
Copper	0.38	Lead	0.130
Gold	0.13	Steam	2.06
Ice	2.06	Water	4.18

Q	Work	Answer with Units!
5	How much heat (Q) is needed to raise the temperature of 8.00 g of lead by 10.0°C? 10.4 J	
6	The temperature of a 250.0-g ball of Iron increases from 19.0°C to 32.0°C. How much heat did the iron ball gain? 1462.5 J	
7	The temperature of a 100.0-g block of ice increases by 3.00°C. How much heat does the ice receive? 618 J	
8	Ten grams of steam absorbs 60.0 J of heat. What is the temperature increase of the steam? 3°C	
9	A piece of lead loses 78.0 J of heat and experiences a decrease in temperature of 9.0°C. What is the mass of the piece of lead? 66.7 g	