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Calculating specific heat worksheet. Specific heat calculations worksheet answers. Specific heat worksheet answers 1-18. Worksheet calculations involving specific heat. Specific latent heat worksheet. Specific heat worksheet #1. Specific heat worksheet (m)(Δt)(csp)=q answer key. Specific heat and calorimetry worksheet. Worksheet specific heat capacity. Specific heat worksheet 1 answer key. Worksheet introduction to specific heat capacities. Specific heat problems worksheet. Specific heat worksheet pdf. Chemistry worksheet specific heat capacity answers. Specific heat chem worksheet 16-1.

SPECIFIC HEAT

Name _____ Date _____

Specific Heat Calculations

$q = m \cdot C_p \cdot \Delta T$

Directions: Read a given word, then determine if you require specific heat, and then solve a given problem.

Remember: Heat is energy being absorbed, and heat is energy being lost. If you need to find heat, you need specific heat, and then you need the temperature change.

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$q = m \cdot C_p \cdot \Delta T$

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Chemistry Worksheet

Specific Heat Worksheet Name (in ink): _____

$C = q/m\Delta T$, where q = heat energy, m = mass, and T = temperature
Remember: $\Delta T = (T_{\text{final}} - T_{\text{initial}})$. **Show all work and proper units.**
Answers are provided at the end of the worksheet without units.

1. A 15.75 g piece of iron absorbs 1086.75 joules of heat energy, and its temperature changes from 25°C to 175°C. Calculate the specific heat capacity of iron.

2. How many joules of heat are needed to raise the temperature of 10.0 g of aluminum from 22°C to 55°C, if the specific heat of aluminum is 0.90 J/g°C?

3. To what temperature will a 50.0 g piece of glass raise if it absorbs 5275 joules of heat and its specific heat capacity is 0.50 J/g°C? The initial temperature of the glass is 20.0°C.

4. Calculate the heat capacity of a piece of wood if 1500.0 g of the wood absorbs 6.75×10^3 joules of heat, and its temperature changes from 32°C to 57°C.

5. 100.0 mL of 4.0°C water is heated until its temperature is 37°C. If the specific heat of water is 4.18 J/g°C, calculate the amount of heat energy needed to cause

Specific Heat Practice Problems

Specific Heat Capacities of Various Materials		
DISTANCE	CAPACITY (J/°C)	[SPECIAL HEAT CAPACITIES (J/°C·g)]
Aluminum	900	0.900
Copper	385	0.385
Brass	380	0.380
Steel	450	0.450
Iron	450	0.450
Lead	128	0.128
Mercury	140	0.140
Water (liquid)	4184	4.184
Water (ice)	2093	2.093
Water (steam)	2010	2.010
Glass	840	0.840
Concrete	880	0.880
Earth (soil)	840	0.840
Earth (rock)	800	0.800
Earth (sand)	800	0.800

- When 24 kg of water is cooled from 80.0°C to 10.0°C, how much heat energy is lost?
- How much heat energy is added to a 45 kg piece of iron when 30.0°C to 100°C?

Calculate the temperature change when:

- 100 kJ of heat cools 25.0 kg of water.
- 1.0 MJ of heat are added to 300 kg of copper.

6. 2.25 x 10⁵ J of heat cools 24 kg of water to a final temperature of 10°C. What was the initial temperature of the water?

7. 4.00 x 10⁵ J of heat is added to 24 kg of water at 10.0°C. What is the final temperature of the water?

Heat Exchange Practice Problems

- 10.0 g of water at 10°C is mixed with 24 g of water at 30°C. What is the final temperature of the mixture?
- 10.0 g of ice at 0°C is mixed with 24 g of water at 10.0 g of steam at 100°C. What is the final temperature of the mixture?
- A 10.0 g piece of aluminum metal is added to 200 g of water at 20.0°C. What is the final temperature of the mixture?
- A 10.0 g piece of lead metal is added to 200 g of water at 20.0°C. What is the final temperature of the mixture?
- A 10.0 g piece of wood is added to 200 g of water at 20.0°C. What is the final temperature of the mixture?
- A 10.0 g piece of iron is added to 200 g of water at 20.0°C. What is the final temperature of the mixture?
- What is the specific heat capacity of a metal, when 200 g of metal, cooled at 100°C, is added to 200 g of water at 20°C?

Answers:
 1. 7.5 x 10⁵ J
 2. 4.5 x 10⁵ J
 3. 1.0 x 10⁵ J
 4. 1.0 x 10⁵ J
 5. 1.0 x 10⁵ J
 6. 2.0 x 10⁵ J
 7. 1.0 x 10⁵ J

[illegible]