$$Q = mC\Delta T \quad \text{or} \quad Q = mC(T_f - T_i)$$

Material	Specific Heat $\left(\frac{J}{kg\,°C}\right)$
water	4,184
oxygen	918
aluminum	900
argon	520
steel	470
zinc	388
bronze	370
Platinum	133
gold	129

1. I have an unknown mass of gold. I heat it from 20°C to 340°C by adding 2064 Joules of heat energy. What is the mass of the gold?

Looking For	Formula	
Already Know		
Answer as equation *with unit*:		

2. I have an unknown substance. I have a mass of 0.05 kg. I heat it from 20°C to 23°C when adding 19.95 Joules of heat energy. What is the specific heat of my mystery substance? What substance is it?

Looking For	Formula	
Already Know		
Answer as equation *with unit*:		

3. I have an unknown mass of steel. I heat it from room temperature (20°C) to its boiling point (1510°C) by adding 4.2 million Joules of heat energy. What is the mass of my steel?

Looking For	Formula	
Already Know		
Answer as equation *with unit*:		

4. I have a container of of 23 kg of an unknown gas. I heat it from 15°C to 24°C by adding 107,640 Joules of heat energy. What is the specific heat of my gas, and what kind of gas is it?

Looking For	Formula	
Already Know		
Answer as equation *with unit*:		