

6. The specific heat capacity of graphite is $0.71 \text{ J}/(\text{g}\cdot^\circ\text{C})$. Calculate the energy required to raise the temperature of 750 g of graphite by 160°C .
7. The specific heat capacity of an unknown metal is $0.343 \text{ J}/(\text{g}\cdot^\circ\text{C})$. Calculate the energy required to raise the temperature of 224 g of this metal by 71°C .
8. When 435 J of heat is added to 3.4 g of olive oil at 21°C , the temperature increases to 85°C . What is the specific heat of olive oil?
9. Consider the following table of elemental specific heat capacities:

Element	Specific Heat Capacity ($\text{J}/\text{g}\cdot^\circ\text{C}$)
lithium	3.56
sodium	1.23
magnesium	1.02
aluminum	0.90
potassium	0.75
calcium	0.65
iron	0.44
nickel	0.44
zinc	0.39
silver	0.24
tin	0.21
lead	0.16
mercury	0.14
gold	0.13

Which element's temperature will increase the least when a known amount of heat is applied? Support your answer with calculations (assume a mass of one gram and 1000 Joules of heat).