

Specific Heat Drill (S.H. H₂O = 4.184 J/g°)

Find:

	answers ↓
joules of energy required to heat 8.6 grams of water 14°C	
mass of aluminum that can be heated 8.5°C by 45.7 J (S.H. Al=0.900 J/g°)	5.0E2 J
specific heat of iron if 377.4 joules are used to heat 85.0grams by 10.0°C	6.0 g
temperature change that occurs when 47.8 J are used to heat 5.00 g of copper (S.H. Cu=0.385 J/g°)	0.444 J/g°
S.H. of gold if 400.0 J are needed to heat 95 g by 32.6°C	24.8°C
joules required to heat 100.0 grams of water by 75.0 °C	0.13 J/g°
joules required to heat 56.0 g nickel by 30.0 °C (S.H. Ni=0.440 J/g°)	31.4kJ
S.H. of zinc if it takes 95.0 J to heat 25.0 g by 9.74°C	739J
final temperature of tin initially at 25°C if 200.0 J are applied to 8.0 grams (S.H. Sn=0.21 J/g°)	0.390 J/g°
mass of silver that can be heated 20.0 °C by 250.0 J (S.H. Ag=0.240 J/g°)	144°C
initial temperature if the final temperature is 97.0 degrees after using 300.0J to heat 72.0 grams of vegetable oil (S.H. vege oil=0.200 J/g°)	52.1 g
joules required to heat 44.0 g brass by 42.2°C (S.H. brass=0.380 J/g°)	76.2°C
S.H. of magnesium if 750.0 J are used to heat 15.0 g by 49.0°C	706J
mass of sulfur that can be heated to 60.0°C from 25.0°C using 29.2 kJ (S.H. S=0.73 J/g°)	1.02J/g°
	1140 g or 1.14kg

Answer the following questions:

Glass has a specific heat of 0.840 J/g°. Will it take more or less energy to heat a certain mass of glass compared to the same mass of water?

less energy is needed to heat the glass because it has a lower specific heat

If heat is applied at a constant rate to 50 grams of both copper and nickel - which metal will increase its temperature by 10.0 degrees first? Explain.

copper will change its temperature faster because it has a lower specific heat

The same mass of two substances - water and sand - are at the same temperature. Which substance will give off more heat energy as they both cool by 15°C? (S.H. sand=0.290 J/g°)

water will give off more heat because it has a higher specific heat and can store more energy per gram than sand