

5. A 345 g chunk of gold at 98.5°C is dropped into 656 g of H₂O at 22.5°. (a) What will the final temperature of the gold be after the system reaches equilibrium ($c_{\text{gold}} = 0.13 \text{ J/g}\cdot\text{K}$)? (b) What is the apparent weight of the gold in the water?
6. Buffy the Vampire slayer is, as a change of pace, after a werewolf. Her weapon? A 9 mm Glock firing silver bullets! Anyway she spots one of the fearsome beasts and fires off a round, but misses! The bullet drills into a thick slab of insulating material. If the bullet has a mass of 3.50 g and a speed of 225 m/s, what is its final temperature when it comes to rest ($c_{\text{silver}} = 0.23 \text{ J/g}\cdot\text{K}$)?
7. How much heat is required to melt 455 g of silver that is at a temperature of 25.9°C (melting point for silver: 961 °C, H_f for silver: 88.0 J/g)?

8. You have two samples of water at different temperatures. The 265 g sample is at 22.5°C. It is mixed with 385 g of water at 87.0°C. What is the final equilibrium temperature of the system after it is mixed?