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a) Gold: 256 J needed to change 1 kg of gold by 2 °C

$$0.128 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times 2^\circ\text{C} = 256 \frac{\text{J}}{\text{kg}}$$

b) Concrete: 1760 J needed to change 1 kg of concrete by 2 °C

$$0.880 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times 2^\circ\text{C} = 1760 \frac{\text{J}}{\text{kg}}$$

c) Ethanol: 4920 J needed to change 1 kg of ethanol by 2 °C

$$2.46 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times 2^\circ\text{C} = 4920 \frac{\text{J}}{\text{kg}}$$