

Skill Practice 5

Specific Heat Practice

Name: _____

Date: _____

Hour: _____

1. Heated blocks of iron used to be used to warm beds. A 1600 g brick of iron heated to 155°C would release how many joules of heat energy as it cooled to 25°C ? Note: the specific heat of iron is $0.4494 \text{ J/g}^{\circ}\text{C}$.

93,000 J

2. How many joules of heat are required to heat 100.0 g of room temperature water (22°C) to the boiling point?

33,000 J

3. How many joules of heat are required to heat 20.5 g of tin from 30°C to 230°C ? The specific heat of tin is $0.2274 \text{ J/g}^{\circ}\text{C}$.

930 J

4. If it takes 24,500 J to heat 1.05 g of a substance from 25°C to 49°C , what is the specific heat of the substance?

970 J

5. If 24,500 J is applied to 125 g of water at 35°C , what will the final temperature of the water be?

82°C

6. A reactor core needs to stay at or below 95°C to remain in good condition. Cool water at a temperature of 10°C is used to cool the reactor. If the reactor emits 210,000 kJ of energy each hour, how many grams of water need to be circulating each hour in order to keep the reactor at or below 95°C ?

590,000g