EXAMPLE 1 Calculate the difference in temperature between the freezing point of water and the normal boiling point of water on the Celsius scale and on the Kelvin scale.

EXAMPLE 2 Calculate the quantity of heat required to raise the temperature of 2.00 g of water 4.00°C.

EXAMPLE 3 Calculate the quantity of heat required to raise the temperature of 2.00 g of water from 21.00°C to 25.00°C.

EXAMPLE 4 Calculate the quantity of heat required to change the temperature of 2.00 g of water from 25.00°C to 21.00°C.

EXAMPLE 5 (*a*) Calculate the temperature change when 55.7 J of heat is added to 12.0 g of water at 22.0°C. (*b*) What is the final temperature?

EXAMPLE 6 What mass of water is heated 2.30°C when 87.4 J of heat is added to it?

EXAMPLE 7 Calculate the heat capacity of a metal if 157 J raises the temperature of a 53.1-g sample of the metal from 15.7°C to 21.8°C.

EXAMPLE 8 Calculate its specific heat if a 35.9-g sample of a metal at 58.0°C is immersed in 52.1 g of water at 16.3°C, warming the water to 20.7°C.