

A student heated 235 g of water in a beaker until the water reached 100°C. The student removed the beaker from the heat and placed the beaker on a counter in a 23°C room. The student recorded the temperature of the water every 4 minutes for 20 minutes. The data are shown in the table.

<b>Time (min)</b>	<b>Water Temperature (°C)</b>
0	100.0
4	86.1
8	77.8
12	70.6
16	65.6
20	61.7

- Did heat flow from the air to the water or from the water to the air? Include data from the table to support your answer.
- Identify the average temperature of the air in the room at 20 min.
- Were the water and the air in thermal equilibrium at 20 min? Explain your answer.

The specific heat of water is 4.19 J/g • °C.

- Calculate the change in thermal energy of the water from 0 min to 20 min. Show your calculations and include units in your answer.