

1a. Draw a graph of the change in temperature when equal amounts of thermal energy are added at the same rate to equal masses of water (sp ht $4.18 \text{ J/g } ^\circ\text{C}$), ethanol (sp ht $2.44 \text{ J/g } ^\circ\text{C}$). Assume they both start at the same temperature (10°C) and the ethanol ends up at 50°C .

b. Does each sample reach the same temperature? Why or why not?

2a. Plot the temperature change vs time as a sample of water moves from a temperature of 90°C to 110°C as you add heat at a constant rate.

Explain what is happening at each different part of your graph.

b. Draw a molecular level picture of what the sample looks like at 90°C and 110°C