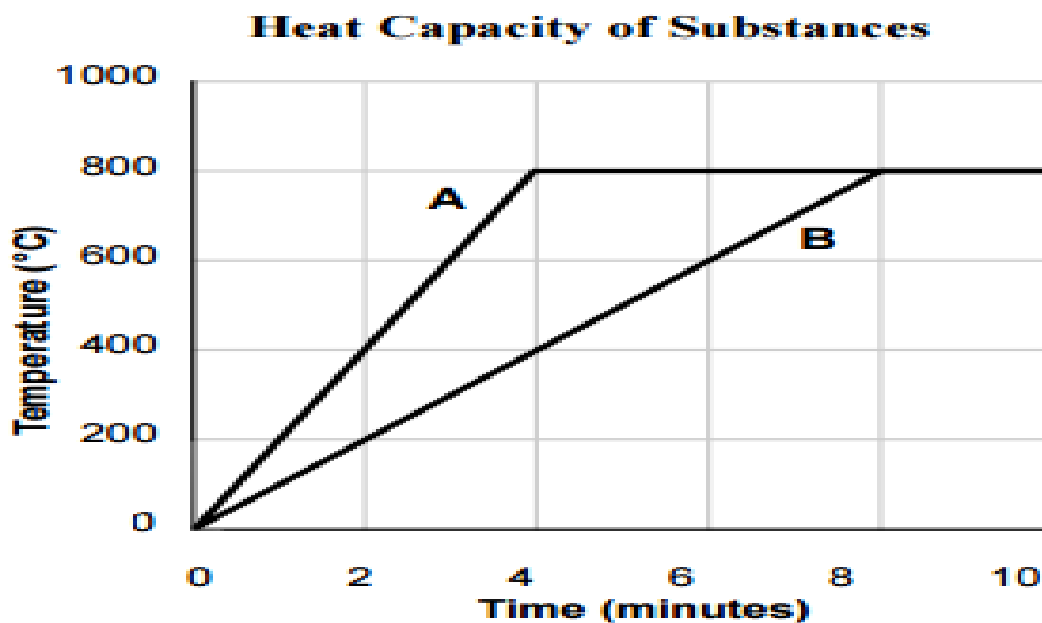


## Heat Capacity [NAME:]

\*\* Refer to the graph below to answer the following questions \*\*



Note: 1.0 kg of substance A and 1.0 kg of substance B were placed in an oven set at 800°C.

1. How long did it take for substance A to heat up to 800°C?
2. How long did it take for substance B?
3. Which substance needed more heat energy to reach 800°C?
4. Which variables were controlled in this experiment?
5. The heat capacity of an object indicates how much heat energy must be added to increase its temperature by 1° Celsius. If a substance has a large heat capacity, you must add a large amount of heat to increase its temperature just a little. You must also remove a large amount of heat to decrease its temperature just a little. High heat capacity often means a substance takes a long time to heat up or to cool down. Given this information, which substance has the higher heat capacity?

6. Imagine you are at the beach on a very hot day. You walk toward the water. The sand is extremely hot. When you reach the water, you find it is much cooler than the sand.
  - a. Using the term heat capacity, explain why the sand is hot and the water is cool.
  - b. Predict what the air temperature would be relative to the sand and water temperatures. Explain your thinking using the term heat capacity.

### Universal Solvent - Text Book

1. We rely on the fact that water is a universal solvent (dissolves numerous substances) in our day-to-day lives. Identify some ways in which water is useful to us as a universal solvent.
2. Sometimes we forget that water is able to dissolve substances. People add pollutants to soil, to the atmosphere, or to bodies of water without realizing the damage that could be done. Identify substances (all states of matter) that pollute water because of its trait as a universal solvent.