

### Practice Problems: Heat Capacity

1. Why is the climate more constant (not as hot in the summer and not as cold in the winter) for places near the ocean?

2. When you turn on hot water to wash dishes, the water pipes have to heat up. How much heat is absorbed by a copper water pipe with a mass of 2.3 kg when the temperature is raised from 20.0°C to 80.0°C?

3. How much heat, in kilojoules, has to be removed from 225 g of methanol to lower its temperature from 25.0°C to 10.0°C?

4. What is the specific heat of silicon if it takes 192 J to raise the temperature of 45.0 g of Si by 6.0°C?

5. The cooling system of a car engine contains 20.0 L of water (1 L of water has a mass of 1 kg). What is the change in the temperature of water if the engine operates until 836.0 kJ are added?

6. Assuming that Coca Cola has the same specific heat as water, calculate the amount of heat in kJ transferred when one can (about 355 g) is cooled from 25°C to 3°C.