

### BLM Mod.3.5#5: Boiling Water with or without a Lid

**Question**

- Does water boil sooner when there is a lid on the pot?

**Materials**

- pot with a see-through lid
- measuring cup
- stove
- watch (it needs to be able to measure seconds)
- Data-Recording Chart

**Method**

- Add a cup of water to the pot until it is about half full. Record how many cups of water were needed.
- Put the pot, without a lid, on a stove element that is about the same size as the bottom of the pot.
- Turn up the heat to high and immediately record the time, in minutes and seconds, on the Data-Recording Chart.
- As soon as the water comes to a rolling boil, record the time, in minutes and seconds, on the Data-Recording Chart.
- Empty the water in the sink and let the pot cool completely.
- Allow the element on the stove to cool completely.
- Using the same pot, add the same amount of water as in the first part of the test.
- Put the lid on the pot, place the pot on the same element as before, turn the heat to high, and immediately record the time, in minutes and seconds, on the Data-Recording Chart.
- As soon as the water comes to a rolling boil, record the time, in minutes and seconds, on the Data-Recording Chart.
- Repeat the test with a much larger pot.

#### Water Boiling: Data-Recording Chart

Diameter of pot used (cm) \_\_\_\_\_

	Time Element Turned On	Time Element Turned Off	Time Difference
Small Pot without Lid			
Small Pot with Lid			
Large Pot without Lid			
Large Pot with Lid			

Is the boiling time the same with and without the lid? Explain.
Is there a change in the boiling time difference for the small pot and the large pot? Explain.
What is your suggestion to people who cook?