

## **Mythbusters : A Watched Pot Never Boils?**

**Overview:** Through this lesson, students will conduct a scientific investigation that will provide them with the opportunity to demonstrate an understanding of scientific reasoning and logic through the measurement of elapsed time. Understanding elapsed time is a particularly valuable academic and functional skill for students that access the ASOLs. It moves them beyond simply being able to identify the time displayed on a clock to the higher-order understanding of the passage of time, which applies to many facets of life: cooking, travel, etc.

**Procedure:** Begin class with movie or video clips from the Discovery Channel's *Mythbusters* that would capture the attention of the students (these can be found for free on YouTube, Discovery Education Streaming, and other Web resources). Propose to your students that today you will be performing your own "mythbusting" experiment, investigating the old idiom "a watched pot never boils".

Gather students in a group and pour tap water into a small pot (do not use more than a cup or so, otherwise the experiment will last too long and the students' interest will wane). Place this pot onto a stove or hotplate and turn on the heat (make sure students are at a safe distance).

Once the heat has been turned on use a stopwatch (or classroom clock with a second hand) to time the elapsed time between the time the heat was turned on and the water begins to boil. Have students observe the water in the pot and alert you when it begins to boil (and then stop the stopwatch). Write down the amount of time it took for the water to begin boiling (usually less than five minutes with a cup of water or less). Myth busted!

Have students repeat the experiment (with adult supervision and support). Be sure to have students identify the materials and equipment needed to perform the experiment and the tool needed to measure elapsed time. This will cover both the requirements of the bullet and the stem of the ASOL.

### **ASOL Covered in this Activity:**

**5S-SI1:** The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which:

d) appropriate instruments are selected and used to measure elapsed time.

### **Materials Needed:**

- Water
- Small pot

- Stove or hot plate
- Stopwatch/Timer/Time Timer

**Instructional Setting:** Classroom or Kitchen

**Community Connections and/or Peer Interaction:**

Have students pair with a peer and perform races, either on foot or using wheelchairs. While one student walks/runs/propels have their peer time how long it takes them to cover the distance/span.

Organize a class field trip on your community transit/bus system. Have students measure the elapsed time between different stops.

**Functional Activity/Routine:**

Students can measure the elapsed time it takes them to transition from place to place during their school day. Use this information to help build a daily schedule.

Students can compare the elapsed time that it takes to cook various foods in a microwave.

Students can practice washing hands/brushing teeth for a given amount of time.

**Strategies to Collect Evidence:**

Present student with a set of measurement tools (ruler, stopwatch, scale, etc.) Ask the student to select the tool needed to measure elapsed time.

Have students perform elapsed time experiments such as boiling water, melting an ice cube or popping popcorn and identify the elapsed time that is needed. Students can identify the time needed independently or from a set of provided answers following the experiment.

**Specific Options for Differentiating this Activity:**

Use an hourglass or other visual timer on an iPad, iPod or SmartBoard to give students a visual, concrete representation of the passage of time.

**Extension Ideas:**

Have students compare the elapsed time needed to boil larger amounts of water, with increased/decreased heat, etc.