

**Title:** Jobs at the Hospital: Laboratory Scientist

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**Externship Business:** [HSHS St. Clare Memorial Hospital](#)

**Overview / Description:**

A specific skill that was shared by the Laboratory Scientist during the teacher externship experience at HSHS St. Clare Memorial Hospital was the ability to use a bulb pipette accurately. In this lesson, students will gain experience in problem solving and teamwork as they practice reading graduated marks on the side of a pipette and filling a pipette to several different requested levels.

**Subject(s):**

Health Education; Science Education

**Grade Level(s):**

Grades 6 - 8

**Learning goals/objectives:**

*After completing this activity, students should be able to:*

- \*List 3 pros and 3 cons of a career as a Lab Scientists / Lab Technician
- \*Demonstrate the ability to use a bulb pipette with 100% accuracy.

**Type of Activity (check all that apply):**

- X Individual
- X Small Group
- X Whole Class

**Teaching Strategies (check all that apply or include new strategies):**

- X Partner work
- X Use of Technology
- X Simulation

## **Content Standards:**

### Wisconsin Standards for Health Education

**Standard 1:** Students will comprehend concepts related to health promotion and disease prevention to enhance health.

**Standard 4:** Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

**Standard 7:** Students will demonstrate the ability to use health-enhancing behaviors and avoid or reduce health risks.

### CCSS Literacy in Science and Technical Subjects

CCSS.ELA-LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

CCSS.ELA-LITERACY.RST.6-8.5

Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

CCSS.ELA-LITERACY.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

### Model Academic Standards for School Counseling

#### Academic Development Domain

Content Standard C: Students will understand the relationship of academics to the world of work, and to life at home and in the community.

- Core Performance Standard 1: Understand how to relate school to life experiences.

### **Length of Time and length of class periods:**

35 - 40 minutes

### **Materials List (linked if online resource please):**

- Computer with Internet Access, LCD projector
- 10 mL Bulb Pipettes (1 for every 2 students) - 10 mL Bulb Pipettes can be purchased through Amazon.com for \$6.50/12 pieces
- 4 - 5 basins of water
- Pipette Lab Instructions (4 or 5 copies depending on number of stations)

### **Directions (Step-by-Step):**

Prior to class: Setup 4 to 5 stations for the Pipette Lab. Each station should have a basin of water, Lab Instruction sheet, and enough bulb pipettes for each pair of students.

1. Watch youtube about lab scientist (7:00+) <https://www.youtube.com/watch?v=6eZnK5YTvt0>

2. Discuss what I learned at HSHS St. Clare Memorial Hospital
  - a. Education required for Lab Technician = 2 years
  - b. Education required for Lab Scientist = 4 year bachelor's degree
  - c. Most Lab Scientists also get their masters
  - d. HSHS Memorial Oconto Falls: Lab staff works 12 hour shifts; never the same days; includes 2 major holidays that rotate each year.
  - e. Most larger hospitals work 8 hour shifts
  - f. Average pay range is \$25K - \$85K per year
  - g. Job outlook is excellent
  - h. Anyone interested in biology, chemistry, and technology would love this career!
3. Ask the students: What are some pros of this job? (Possible answers: good pay & benefits, don't have to work directly with patients, great job outlook, ability to be certified in 2-4 years, importance of tests in helping patients)
4. Ask the students: What are some cons of this job? (Possible answers: long hours, working holidays, not always working the same days, limited contact with patients, not a lot of variety)
5. Tell the students: One of the skills a laboratory scientist uses everyday is working with a bulb pipette. Not only do you have to know how to read the graduated markings, but you also have to be able to fill the pipette properly.
6. Demonstrate using pipette
  - a. Place bulb on the end of the pipette
  - b. Place pipette into water
  - c. Squeeze bulb while tip of pipette is under water
  - d. Keeping the tip of the pipette under water, release the pressure on the bulb (this allows the water to be drawn into the tube)
  - e. Keeping the tip of the pipette under water, remove bulb from the end of the pipette and quickly place thumb on the end to maintain suction.
  - f. Hold pipette above the water, remove thumb from the end of the pipette slightly (only enough to allow slow stream of liquid to escape).
  - g. When the level of the the liquid reaches the desired level, place thumb back over the end of the pipette.
7. Practice using pipette
  - a. Choose a partner and report to one of the 5 workstations.
  - b. Following the Lab Instructions, each partner will take turns practicing using the pipette according to the demonstration.
  - c. Have your partner check your work. (Did you get the desired level of liquid? If not, repeat the process)
  - d. Return all water to the basin.

**Wrap-Up:**

After seeing a demonstration on using a pipette correctly, students will demonstrate their ability to use a pipette with accuracy by taking part in the Pipette Lab.

### **Formative/Summative Assessment:**

Pipette Lab Instruction Sheet

[https://drive.google.com/a/cesa8.org/file/d/1mhesKEz6tSwyPVhKHBjXr6\\_prEUHqNpw/view?usp=sharing](https://drive.google.com/a/cesa8.org/file/d/1mhesKEz6tSwyPVhKHBjXr6_prEUHqNpw/view?usp=sharing)

Formative Assessment - Ticket to Leave: Use at least three sentences to respond to the following writing prompt:

“Describe your experience using the bulb pipette. (What challenges did you face? Is this something you could see yourself doing as part of your career some day?)”

### **Extension Activity for differentiation:**

Students may draw upon their understanding of using a pipette by creating challenge questions for group members and/or other members of the class.

Students with special education needs may use the Alternate Pipette Lab Instruction Sheet if necessary.

<https://drive.google.com/a/cesa8.org/file/d/1NmCNYFd4qvaOy74p45bMcOID1Rr2S3e1/view?usp=sharing>

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