



# Rio Grande Educational Collaborative

## Before and After School Program Lesson Plan

**TITLE OF LESSON:** Density Tower

**DATE:**

**SITE NAME:**

**CLASS SIZE:**

**NAME(S) OF INSTRUCTOR:**

**DURATION OF LESSON:**

**CREDIT (website used/name of author):**

<https://www.stevespanglerscience.com/lab/experiments/seven-layer-density-column/>

**COMMON CORE STANDARDS:** SL.K.2, SL.3.1.B, SL.5.2

### LEARNING OBJECTIVES:

**Students will understand the following:**

- Recreate an experiment after being given a demonstration by the teacher

### ACTIVITY:

#### Instructional Sequence:

(Step by step instructions, should another instructor pick up and teach the lesson successfully)

Distribute the cups, or other containers, amongst the students.

Have the students watch a demonstration using the large glass vase, then have them repeat this process with their own large cups:

1. Pour the first layer of honey, being careful not to touch the sides (this is the case for the first three layers)
2. Slowly pour the corn syrup on top
3. Now, use the pipette to slowly layer the dish soap on top of the corn syrup
4. Use the pipette to pour the water along the edge of the glass, as close to the layer of dish soap as possible
5. Do the same with the vegetable oil
6. Repeat with the rubbing alcohol

During the demo, ask students what density is. Explain the difference between density and weight, using a rock and a tree as an example. A tree is less dense than water, so it will float, even if it weighs thousands of times more than a small pebble.

Circulate around the classroom, and ask students who are done to do the same, especially for those who are struggling to remember what order the layers are supposed to be in (if they mix them up).

### MATERIALS:

**The following materials or equipment needed for this lesson:**

(Include special equipment request)

- Plastic cups (clear)
- Large Plastic cups
- Pipettes
- Large glass vase
- Honey, corn syrup, dish soap, vegetable oil, water, rubbing alcohol

**SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**SITE SUPERVISOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**INSTRUCTOR'S REFLECTION:**

**Reflection on the lesson given:**

1. How many students participated in the lesson given? \_\_\_\_\_
2. Name(s) of instructors participated. \_\_\_\_\_
3. How long did your lesson take? (Amount of time) \_\_\_\_\_
4. How did the students feel about the lesson? \_\_\_\_\_
5. Did the students like the lesson? \_\_\_\_\_
6. What part of the lesson did the students like? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. What part of the lesson did the students not like? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Were the students interested in the topic of the lesson? \_\_\_\_\_
9. Was the content of the lesson difficult for the students? \_\_\_\_\_
10. What could you have changed to make the lesson interesting? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
11. Did you have any trouble getting your lesson together? (Idea & Materials) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
12. How do you rate your lesson? (1-10) Why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SITE SUPERVISOR'S REFLECTION:**

**Reflection on the instructor's lesson:**

1. How many students participated in lesson? \_\_\_\_\_
2. How many instructors participated in lesson? \_\_\_\_\_
3. Did the students enjoy the lesson? \_\_\_\_\_
4. What part did the students enjoy? \_\_\_\_\_  
\_\_\_\_\_
5. What part did the students NOT enjoy? \_\_\_\_\_  
\_\_\_\_\_
6. What could have been changed to make the lesson interesting? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Was the content of this lesson difficult for students to understand? Why? \_\_\_\_\_  
\_\_\_\_\_
8. What part of STEAM or literacy was used? (Science, Technology, Engineering, Art, Mathematics or Literacy)  
\_\_\_\_\_  
\_\_\_\_\_
9. Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_