

## Mini Desalination Plant Activity

As you know the state of California is in a drought and is in need of purified water. Given the following materials, design an apparatus for which you can use to separate salt and water from a salt-water mixture. The purity of your water will be tested, so make sure that you design an apparatus in which you can capture the pure water. **In addition, your goal is get the maximum amount of pure water.**



**Materials Provided:**

- 100 mL of salt water mixture
- 250 mL beaker
- 100 mL beaker
- (2) watch glasses
- (4) small square glass pieces
- hot plate

**Objective:** In your own words write the purpose of this experiment/activity. Why are you doing this experiment/activity, and what are you trying to test?

With your group Brainstorm a list of 3-5 different ideas of how you could solve this problem using the materials above. Include a brief description of each.

	Potential Solution Description	Materials Used
1		
2		
3		
4		
5		

Name: \_\_\_\_\_ Per \_\_\_\_\_

*As a group decide on the best solution (from above) and elaborate on this solution below.*

**Diagram of Experimental Set-up:** Draw how you think your objective could be achieved using the materials listed above. If you think other materials are necessary you may include them in your drawing. Clearly label all parts in your diagram.

**Procedure:** Write simple and clear step-by-step instructions that someone can use to repeat this experiment. Be specific and make sure to include the names of the materials that you will be using. Your teacher will perform this experiment for the class so make sure that she can follow your steps.

**Compare and Contrast your Design Set-up # 1**

<b>Pros-</b> List 3 positive factors about your design above.	<b>Cons-</b> List 3 potential problems that you think might arise from your Design from above.

Name: \_\_\_\_\_ Per \_\_\_\_\_

**Observations and Results:**

**Conclusion:** Write 1-2 sentences summarizing your observations/ results and what they mean. (The following sentence frame can be used to help write a conclusion.)

We can conclude \_\_\_\_\_ because of \_\_\_\_\_.  
claim data

**Additional Questions:** Answer each of the following questions.

1. What adjustments/improvements would you make to your design? Are there any additional materials that you wish you could have had access to?
2. *Opinion:* Did you like this activity? Explain why or why not?

Name: \_\_\_\_\_ Per \_\_\_\_\_

Answer the following questions after reading *Tapping Saltwater for a Thirsty World*

3. How long can a person live without water?
4. By 2025 what percentage of the world's population is estimated to have access to clean water?
5. What is desalination?
6. How many desalination plants are there worldwide, and how much of the total water supply do they contribute to?
7. What is reverse osmosis? And how is it different than how other desalination plants work?
8. List at least two pro's of a desalination plant?
9. List at least two con's of a desalination plant?
10. Is there any part of a desalination plant that is similar to what you did in your experiment? Explain.
11. Would you support the production of more desalination plants? Why or why not?