



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

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Project Title Efficiency of Homemade Desalination Stills	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals For our science fair project, we will be testing two homemade desalination stills to see which one will produce water with the least amount of salt in the least amount of time while also using the least amount of resources. One still will be thermal powered and one will be solar powered. We will test the salinity of the water using Aquacheck strips and time the processes while also taking into account the number of materials used to build each still.</p> <p>Methods/Materials The materials needed for our project were Aquacheck strips, seawater, a teapot, copper pipe, a cork, two 2 liter bottles black paint, a U-Fizz, sunlight, and a stove. For the thermal still boil sea water in teapot and allow steam to cool while rising through the copper tubing. Cool the tube with ice water. For the solar still paint one 2 liter bottle black and fill with sea water. Attach it to the other empty bottle with the U-Fizz. The U-Fizz is a tube that screws onto both bottle tops connecting them. Place the bottles in the sun.</p> <p>Results The thermal still produced 47 milliliters of water. The solar still only produced 1 milliliter. The lines indicate that the thermal still is more time efficient in producing volume of water. The solar still used less resources but did not produce as much water. We tested the resulting water from each still with the Aquacheck strips for the level of salt. The thermal still produced salt free water. The solar still had residual salt in it.</p> <p>Conclusions/Discussion We accept our conclusion that the thermal still is more efficient than the solar still. In the end the results conclusively showed that the thermal still is more time productive and better at removing salt. Although the solar still used fewer resources that did not make up for its lack in time production. The thermal still produced 46 more milliliters of salt free water. This is reasonable evidence to say that our hypothesis was correct for what we were testing. After trial and error with the design for the thermal still we finally came up with something that worked. If we were ever to experiment further we would do more tests on the solar still in different temperatures and different levels of direct sunlight.</p>	
Summary Statement We tested which homemade desalination still worked more efficiently to our standards.	
Help Received Father helped troubleshoot design.	