



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Christina Y. Cho	Project Number 31504
Project Title Fresh Water Galore: Greywater Recycling	
Objectives/Goals Currently, California and many other places are experiencing fresh water shortage crises. A major portion of this fresh water shortage comes from excess use of water in homes, especially from watering gardens and lawns. Greywater recycling is one method to reduce fresh water usage in homes. My objective was to find out whether greywater is efficient and economical. Abstract Methods/Materials For my project, greywater was used in the form of kitchen sink water. The heights of the sunflowers were measured with a ruler to test the efficiency of greywater. Three types of water were used to water the sunflowers: sink water, recycled sink water, and tap water. A home-made greywater recycling system was constructed using sand, gravel, and activated carbon to obtain the recycled sink water. Ten sunflowers of each type of water were watered for a period of 50 days. A water bill was used to determine the amount of water and monetary value that would be saved, assuming that 50% of indoor water would be saved. Results The final average heights of ten plants for tap water, recycled sink water, and sink water were 15.06 cm, 12.73 cm, and 9.68 cm respectively. Economically, we would be able to save 935 gallons and \$2.55 per person per month if greywater recycling is applied. Conclusions/Discussion Greywater, recycled and non-recycled, had similar effects on plants as tap water. With the results, I can conclude that our society can use greywater in the lawns and gardens to reduce fresh water usage. Using greywater will also have great impacts on economy today.	
Summary Statement My project is about whether greywater is efficient and economical while constructing a homemade recycling system to reduce fresh water usage in homes.	
Help Received Father helped drill holes in the cans. Parents helped in supplying materials.	