



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Danie C. Diamond	Project Number J0510
Project Title It's Crystal-Clear, Or Is It?	
Objectives/Goals Problem statement: Does the type of water affect the growth of crystals? Hypothesis: The type of water does influence the crystals# growth.	
Abstract Methods/Materials Materials: Jar, alum powder, hot water (variable), temperature probe, magnifying glass, small scale, digital camera, coffee filter, tape, stirring spoon, container, string (half of experiments), paper clip (half of experiments) Procedure: A. Major steps: # Pour two cups of solution into a container; # Heat it; # Let it cool for 7 minutes; # Measure 80 grams of alum; # Pour into container; # Mix with stirring spoon; # Once dissolved, divide solution into two jars (each one cup); # Rinse utensils thoroughly; # Repeat process for next type of water. B. Variable: type of water (distilled, ocean, fresh, tap, mineral) C. Sample size: six jars (each containing one type of water) Number of trials: four trials D. Measured the weight of crystals (in grams) over a certain period of time	
Results Results: Experiment one (with string): Distilled best, Mineral, Fresh, Ocean, Tap Experiment two (with string): Distilled best, Mineral, Fresh, Tap, Ocean Experiment three (without string): Fresh best, Tap, Distilled, Mineral, Ocean Experiment four (without string): Fresh best, Tap, Distilled, Mineral, Ocean	
Conclusions/Discussion Conclusion: Water type does affect growth of crystals Every crystal needs a seed, but ocean has so much that it reduces space for crystal growth. If there are strings placed in the solution (1st and 2nd experiments) distilled will grow the best because the string will serve as a string. If there are no strings placed in the solution (2nd and 3rd experiments) fresh water will grow the best because of the moderate amount of seeds it has. This proves that with no extra materials added into the solutions, alum crystals will grow the best in fresh water. My hypothesis was proved wrong because ocean grew the worst and fresh grew the best.	
Summary Statement Crystal grow influenced by fluids they are grown in.	
Help Received Mom helped glue/tape board; John Gregg (geologist) helped understand results	