



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title Water Break: Is Tap Water Toxic to Planaria's Regeneration?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Are the chemicals and impurities in tap water toxic to living things? From previous research I have found that Vitamins help Planarias regeneration. This year I want to see if the chemicals in tap water will effect the regeneration process.</p> <p>Methods/Materials Planaria,Petri dishes,brushes,pipettes,Boiled Egg,Tap water,Fresh spring water,Water test kit,Magnifying glasses,Dissecting Microscope,Razor blades,Ruler,Stove. METHOD: Obtained Planaria.Defined 4 groups and label Petri dishes: Water solutions are X2(200ml)X5(500ml)X10(1000ml)and X50(5,000 ml)Control(spring water and regular tap water) Boiled tap waters down to various concentrations as assigned groups accordingly. Took water samples and measured for pH, alkalinity, hardness, nitrate,nitrite,chlorine,copper and iron. I put the Planaria on an ice cube to help freeze the specimen and used razor blade to bisect the Planaria. Using a brush, I placed both the head and tail in a petri dish with the water solutions described above. Measured and recorded data on Planaria regeneration growth weekly for the next 3 weeks.</p> <p>Results Once the water evaporated, all the chemicals increased. The increases for each of the chemicals were different.The most abrupt changes were at X5. The concentrations after X5 increased significantly. Copper and iron had the largest increases in chemicals change. The Planaria had a regenerative growth in control (spring water). In tap water and tap waterX2 all Planaria lived and regenerated like the control (spring water). At tap waterX5 the tails died but the heads lived and regenerated. In concentrations greater than X5, all of the Planaria died.</p> <p>Conclusions/Discussion The Planaria that were in groups of less than tap waterX5 lived and regenerated. All the groups after X5 died because the increase in chemicals was too harsh. The increases in concentration made it more difficult for the Planaria to live or regenerate as the water evaporated and left the chemicals behind. Therefore, my hypothesis is partially correct. I thought that the highest concentration of chemicals in the water (tap waterX50) would kill or stunt the Planarias growth. This was correct except for the tap waterX10 also killed the Planaria and tap waterX5 killed the tails of the Planaria. In conclusion, concentrated water is toxic to Planaria.</p>	
Summary Statement I wanted to see if Planaria's regeneration is effected by various tap water concentrations	
Help Received Myoma Dunes Water Company, Bermuda Dunes; Mrs. Colleen Ferguson, my Science teacher, My dad, Dr. Richard Fausel for helping with questions.	