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| **PROCEDURE**  After we drew up the basis for our experiment, Dan and I got together to specify the details. Our first task was to determine where we would place the plants. We decided upon keeping the plants at Dan's house as his backyard possessed plenty of shaded area and so a cooler climate. From there, we set out to determine which plant would be a proper model for our experiment. After consulting with Phil Morgan, a botanist at Navlet's Nursery in Fremont, we concluded that the Huechera Northern fire would be an adequate plant. According to Mr. Morgan, the hardy plant could be found in colder climates as well as more temperate areas. This was perfect for our experiment as we were unable to mimic the cold temperatures of icy regions. Another important factor about the plant was that it is highly common alongside roads. Mr. Morgan stated that the plant spreads rather quickly and so it is often times common near salted areas.  We put each set of 6 plants together in one planter box. All of the planter boxes were identical, as they were 48" long, 8" wide, and 10" deep, with two holes in the bottom for drainage. We put about 1 and 1/3 cubic feet of soil in each planter, as we filled them with soil to about four inches from the top. The soil we used was Nursery Man's Gardener�s Gold. It contains all natural ingredients, including fir bark, worm castings, topsoil, redwood, peat moss, perlite, chicken manure, bat guano, kelp meal, oyster shell, and dolomite lime (because it did not give specific amounts of the ingredients, we recommend using this same brand to exactly replicate the experiment.) We selected this soil because it was all natural and contained no chemicals, which might have upset our data. The planters themselves were placed outdoors in direct sunlight. The daily high temperatures ranged from 53 degrees Fahrenheit to 76 degrees Fahrenheit over the course of the experiment and the planters were always left outside. They were all placed close together and they all received the same amount of sunlight, as there were no nearby objects that would put some plants in shadows but not others. They were all watered daily at around 4:00 PM, as this would be when the sun would melt the most snow and runoff would likely be at it's highest.  The concentrations of the saltwater we used were 0%, 2%, 4%, 6%, and 8%, and the concentration of the sand was 8%. We decided that it would take approximately 16 cups of water to properly saturate each of the 6 planters, each holding a set of six plants that would be tested at the same concentration level. We calculated that to achieve these percentages, we would have to have 2.56 ounces of pure salt in the 128 ounces of 2% salt water. For 4%, we used 5.12 ounces. The 6% salt water needed 7.68 ounces of salt and the 8% needed 10.24 ounces of salt. When measuring the salt, we used water displacement to ensure accurate water percentages. To accomplish this, we would fill a 40 ounce graduated cylinder to the 20ounce mark. We would then add salt until the water level reached the appropriate level, depending on the concentration we were going for. For example, to measure out the 2% concentration of salt, we filled the graduated cylinder to the twenty-ounce mark with pure water and then added salt until the water level reached 22.56. We would then add these 22.56 ounces to 105.44 more ounces of pure water to have a total of 2.56 ounces of salt 125.44 ounces of water. We would then stir until all of the salt was completely dissolved in the water. Finally, we would pour this water in the appropriate planter, being sure to pour evenly across the whole surface of the planter. For the sand, we would follow the same procedure as the highest concentration of salt, but the sand would not dissolve because it is not polar. For the control (0% salt), we just poured 16 cups of water evenly across the entire surface.  To measure growth, we measured the lengths of the stalks of individual plants and average them. We did this with each plant in each test group and so the time it took to measure was very long.  **MATERIALS USED**  1. Thirty Six Huechera *Northern Fire* Plants  2. 6 rectangular planter boxes  3. Two large bags of Nursery Man's Gardener's Gold  4. Ten Boxes of rock ice  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |