

Scientific method

Science



Scientific Method Study of Plants ***** Biology 100 ***** ***** The Scientific Method is a series of steps used to basically form an opinion and test that opinion. The method steps include, observation, research, creating an educated guess, or hypothesis, testing that hypothesis, analyzing the test results, and recording the results as true or untrue. If testing of the hypothesis results in disproving it, the steps will begin again with a new hypothesis (Science Buddies, 2002-2012). One can easily follow the steps of the Scientific Method with a study of how plants respond to light. To conduct an experiment regarding plants' response to light one would first see that a plant is leaning one way or the other and make a guess as to why that is happening. My hypothesis is that the plant is leaning toward the light because it needs the light to grow. To test this theory I would buy twelve plants. I would place a group of three plants in the center of a closet with a grow light directly above them. I would place another three plants in a closet with a grow light to the left of them, and an additional group of three plants with a grow light to the right of them. I would place the final group of three plants in a closet with no light. Prior to placing the plants I would label and take pictures of each plant. I would record the length of each plant and its state of erectness. I would compare these measurements with the final measurements once the testing was complete after a period of one month. During the testing period I would give each plant the same measured amount of water and take additional pictures and measurements. I would be careful to not move the plants though, to insure integrity and accuracy of the final results. I would keep a log for each plant to record growth, any changes in the erectness of the plant, any new growth, or any dying or decaying. Once the month of testing is complete I would take a final set of pictures and <https://assignbuster.com/scientific-method/>

measurements. I would compare all of my pictures and recordings of grown, leaning, decaying or death. I would determine if the result support my hypothesis that plants lean toward light because it is essential to their growth. Since all the plants without any light source died, this is in support of a large part of my hypothesis. However, I need to determine if the light caused the plants to lean toward it. All plants with the light directly above it grew pretty straight. When there was some leaning it was in the lower portion of the plant that had become shadowed by the fuller, upper portion of the plant. Once the lower portion of the plant was tall enough to no longer be in the shadows, it maintained an upright position in growth. This supports my hypothesis. The plants with light on their left side did lean to the left. The right side of the plant was neither as full nor as long as the left side because it was in the shadow of the remainder of the plant the entire experiment period. The plants with a light to the right leaned to the right and had shorter, less dense growth on the left, shadowed side of the plant. These also support my theory that plants lean toward light because they need light to grow. Because each plant received the exact same care for the duration of the experiment, the overall growth of each plant, or plant group, was within just a few centimeters of each other, and the plant group without any light died, my hypothesis has been proven and I would record that. The scientific method is used in everyday life without people realizing that is what they are doing. I love to cook. I try new recipes as written and then often experiment. Sometimes I combine recipes to create a new recipe. I do this using the scientific method. I may have a recipe that I like but feel it needs something extra. I call these “ base recipes. ” Sometimes I have another recipe that I really enjoy and will take parts of that recipe and combine them with the <https://assignbuster.com/scientific-method/>

base recipe. I do this because I reason, or hypothesize, that if this base recipe is good but needs something more and the second recipe has those ingredients I think will allow the base to blossom, it stands to reason the combining of the two will be a nice tasting new recipe. Usually this works out and I have a new recipe that we enjoy. In those instances my hypothesis has been proven to be true and I save the new recipe. However, there are times when I test my hypothesis and the new recipe is not very tasty or doesn't blend well. In science one would record those findings. I do not. Instead I throw the newly created recipe out. However, the testing of my hypothesis has afforded me a greater knowledge of how well various spices blend with each other and with various meats or vegetables. It is through testing my hypotheses that I learned that cinnamon, brown sugar, and cumin blend extremely well together and with pork tenderloin to make a scrumptious meal. Though the scientific method may be used in a multitude of ways, from cooking to driving to doing laundry, cooking is the way I use it in a way that I really enjoy and usually bring culinary delight to my family.

References
Science Buddies. (2002-2012). Retrieved from http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml