

OJR SAMPLE RESEARCH PLAN

My Science Research Plan

NAME _____

A. Rationale Statement:

Why is your research important?

One example of why this research is important is so farmers can maximize their harvest output, and thus profit, by using fertilizers that will have the most positive growth effect on their crops.

B. Components: (concise)

1. Problem/Question/Purpose

What brand of fertilizer will make plants grow the tallest?

2. Hypothesis (identify independent variable)

If Miracle Grow, Target, and Frank's fertilizers are used, then Miracle Grow will make the plants grow the tallest based on its ratio of Nitrogen as compared to the Phosphorus and Potassium amounts found in this fertilizer.

The variables for this experiment are:

Independent: the brand of fertilizer

Dependent: the height of the plants

Controls: the amount of fertilizer used, where the plants are stored, the amount of water, and the type of plant.

3. List of Materials

- 3 brands of fertilizer (Miracle Grow, Target, and Frank's)
- 40 ferns and plant containers
- 1 Heat lamps
- 20 lbs of soil
- 1 watering can
- 1 dropper

4. Detailed Procedure (include method for data collection)

Step 1: Plant the 40 ferns in the containers and store in a shaded location with morning sun.

Step 2: Divide the plants into 4 groups of 10 ferns each. Label each plant accordingly: (A) Miracle Grow Group, (B) Target Fertilizer Group, (C) Frank's Fertilizer Group, and (D) Control Group (no fertilizer is added)

Step 3: Give each group 20 mL of water and 5 mL of the right type of Fertilizer every 2 days and growth recorded every two days.

Step 4: After 2 days of growth, record the height of each plant in centimeters.

Step 5: After 2 more days, add 5 more ML of fertilizer

Step 6: After 2 more days of growth, record the height in centimeters.

Step 7: Repeat

5. Bibliography (list major references e.g. science journal articles, books, internet sites...etc)

www.sciencebuddies.com

The Fertilizer Handbook

Binkie, Bartholemew. "Plant Growth," World Book Encyclopedia, 1997.

DiStephano, Vance, Guidelines for Better Plant Growth, [Online] Available [http://www.usa.net/~vanced/home/better-plant growth.html](http://www.usa.net/~vanced/home/better-plant%20growth.html), January 9,1997

C. Additional Details:

1. Identify any potential risks and safety precautions needed (state, "none" if there are no risks).

"NONE, I will be supervised by my parents to assist with the fertilizer; I do not expect any other risks.

2. Describe the procedures you will use to analyze the data/results.

I expect the results of my experiment to show that the group of plants that were fertilized with Miracle Grow grew taller than any of the groups that were not fertilized with Miracle Grow. I plan to show this by comparing the heights of the different groups of plants in a table and also creating a graph to display the growth over the period of time.

3. (Any additional details prescribed by the teacher).