Experimental Design Practice

Objective: In preparation for our Oil Spill lab, you will need to develop your experimental design skills.

Instructions: For each of the scenarios below, fill in an Experimental Design Diagram Format. You’ll need to identify the:

* Independent variable (the things you change)
* Dependent variable (the things you measure)
* Controlled variable (the thing you compare everything else to)
* Levels of independent variable (the specific things you change)

1. Ten seeds were planted in each of the 5 pots found around the house that contained 500g of “Pete’s Potting Soil.” The pots were given the following amounts of distilled water each day for 40 days; Pot 1- 50mL; Pot 2- 100mL; Pot 3- 150mL; Pot 4- 200 mL; Pot 5- 250mL. Because Pot 3 received the recommended amount of water, it was used as a control (to compare the other pots to). The height of each plant was measured at the end of the experiment.
2. Caitlyn wanted to find out if the color of food would affect whether kindergarten children would select it for lunch. She put food coloring into 4 identical bowl of mashed potatoes. The colors were red, green, yellow and blue. Each child chose a scoop of potatoes of the color of their choice. Caitlyn did this experiment using 100 students. She recorded the number of students that chose each color.
3. Austin heard that plants compete for space. He decided to test this idea. He bought a mixture of flower seeds and some potting soil. Into each of 5 plastic cups he put the same among of soil. In the first cup he planted 2 seeds, in the second cup he planted 4 seeds, in the third cup 8 seeds, and in the fourth cup he planted 16 seeds. In the last cup, he planted 32 seeds. After 25 days, he determined which set of plants looked the best.

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