

EXPLANATION :

Experimental Design Diagram for Scientific Method

Title:

Question:

Hypothesis- *A simple statement describing the experiment and the expected outcome.*

Independent Variable (IV):- *the factor that the experimenter actively changes in the experiment*

Level of Independent Variable*: (experimental groups)	Number of Trials**
Control***	

* Level of Independent Variable = the variations of the independent variable used in the experiment

**Number of Trials = Number of participants, plants, etc used for each level of independent variable. (Human participants may appear in more than one experimental group)

***Control= Set up in which there is **no** Independent Variable or the Ind Variable is held at a "normal" or "standard" level

Dependent Variable(DV) (specify units of measure) : *the measured outcome recorded as "data" (with units)*

Is this a Qualitative measure
Or Quantitative measure? (Check one box)

Constants: *the potential variables that are not allowed to change*

Safety Concerns: *Mention any factors that may impact safety of investigator or others*

Forms needed for this project:

- Seton Entry Form, Forms 1,1A+ Research Plan, 1B } Every student needs to complete these forms

Special Conditions:

- Form 2 (Qualified Scientist)
 - Form 3 (Risk Assessment)
 - Form 4 (Human Participants)
 - Sample Informed Consent for Human Participants
 - Form 5A (Vertebrate Animals)
 - Form 6A (Microbiology)
- } Only students who elect to do projects with special conditions need to complete the forms that apply to their project

SAMPLE:

Experimental Design Diagram

Project Category: Plant Science Project Number: 1

Title: Plant Light

Question: Under which type of light do geraniums grow best?

Hypothesis: Geraniums will grow best when placed under natural sunlight.

Independent Variable : Light Source

Level of Independent Variable: (experimental groups)	Number of Trials*
Sunlight	10
Fluorescent Bulb	10
Incandescent Blub	10
Control: Dark Room	10

* Note: Minimum Number of Trials

Plants – at least 5 plants per experimental group

Human Participants – at least 30 subjects per
experimental group

General – at least 3 trials per experimental group

Dependent Variable (specify units of measure): Height of plant growth (cm)

Is this a Qualitative measure

Or Quantitative measure? (Check one box)

Constants: Amount of water and fertilizer given to each plant, temperature and humidity of the room, time of growth, type of plant used (geranium) and type of soil used.

Safety Concerns: Hand Washing

Forms needed for this project:

Seton Entry Form, Forms 1,1A+ Research Plan, 1B

Special Conditions:

- Form 2 (Qualified Scientist)
- Form 3 (Risk Assessment)
- Form 4 (Human Participants)
- Sample Informed Consent for Human Participants
- Form 5A (Vertebrate Animals)
- Form 6A (Microbiology)