

You need to ask yourself the following questions before filling out the Experimental Design.

1. Do I already know what the answer is to my question or do I already know what will happen?
If you say yes, then: Choose a different question or change the variable so you don't know the answer.
2. Am I doing a product comparison like strongest paper towels or amount of popped popcorn kernels?
If you say yes, then: Choose a different project.
3. Has this exact project been done before?
If you say yes then: Choose a different question or change one of the variables to make it your own.
4. Could my 1st or 2nd grade sibling do this project?
If you say yes then: Choose a different question. Don't do something too easy. That is just plain boring.
5. Do I have enough time to do the project?
If you say no then: Choose a different question if it will taken longer than 2 months.
6. Am I really interested in this topic? Does it sound fun?
If you say no then: Choose a different topic. If you love the topic, you will love doing your project.
7. Do I have all the materials required to the the project?
If you say no: If you don't have the materials or they cost too much, choose a different project.
8. Are the tools and materials safe for you to use? Do you have an adult that can supervise?
If you say no then: Choose another project.
9. Will any people or animals be harmed in this project?
If you say yes: You cannot cause harm to people or animals. Choose a new project.
10. Will finding out the answer to my question really benefit anyone? Is it applicable to real life?
If you say no: Choose a new project. If you can't use the information you learned for anything, why do it?

1. What are you trying to figure out in your by doing your project? What is the purpose or question? Do NOT do a project you already know the answer to or that tells you the answer.

2. Hypothesis or Prediction: If you are question with your project, you should write your hypothesis with an IF...THEN... statement.

For example- " I think that if I..... then will happen because....."

If you are inventing or building something, then you can describe what your prototype will hopefully look like and do.

3. Variables: "How does the independent variable affect the dependent variable?"

Independent Variable: The thing that you will be changing and/or testing. You can only test one variable at a time.

Dependent Variable: Identify what variable you will be measuring. What will the independent variable affect?

Constant Variables: These are the variables that must be the same in every trial to have a fair test.

Control (if needed): This is what you compare your data against. It is often times the one that naturally happens. Not all experiments will have a control. If you are not sure, ask your teacher.

Independent:

Dependent:

Constants:

Control:

4. What will you be doing in your investigation to test your question: This part explains what you will do to test your hypothesis

5. How many times will you run your experiment? Remember you will have to do your investigation at least 3 times and/or have a large sample size (25 items or more to test)

6. How long will it take to do the project: How long do you think it will take to do your project, start to finish?

Teacher Comment: (This must be included on your paper)

- This project is APPROVED.
- This project is APPROVED with the following changes:
- This project is REJECTED because:

THIS IS AN EXAMPLE.

Experimental Design Worksheet

Name: Sunny McFlorist

Per: 8

1. What question are you trying to figure out?

What is the optimal temperature for the sunflower seeds to germinate?

2. Hypothesis or Prediction:

I think that if I use temperatures between 50 and 70 degrees (Spring time temperatures), then more seeds will germinate because temperatures above and below this range are too extreme for seed growth.

3. Variables:

Independent: *soil temperature*

Dependent: *number of seeds that germinate*

Constant: *same amount of light, type and amount of soil, same seeds, amount of water*

Control: *Soil at room temperature*

4. What will you be doing in your investigation to test your question:

I will put seeds in different temperatures then germinate them.

5. How many times will you run your experiment?

I will germinate 10 seeds at each of the 4 temperatures and will repeat if more data is needed.

6. Time:

It will probably take me a day to get the materials and setup the experiment. Then at least 5 days to let the seeds germinate and collect data. Then it will take about 2-6 hours to put the project together.