

Steps in Planning a Good Science Fair Project 2019-2020

1. Generate a Topic; Write a Title
2. Objective: Question/Hypothesis
3. Materials
4. Procedure
5. Data/Observations/Results
6. Conclusion & Discussion

1. What is a subject area or general category you'd like to discover more about. Then pick a science topic within that area. Choose a topic that interests you. What would you like to investigate? A topic is the narrow area within the broad subject area. If you do not have any ideas or know where to start, look at Science Fair books or online.

2. Research your topic. Find out more about your topic; use at least 3-5 sources to get an understanding of what question you may have.

3. Write a working title for your project. This is the project's name and will allow your audience (and you) to begin to understand the direction of your project or what it will be about. If the title is "Discovering new planets in our Solar System" but your project is all about growing sunflowers in different soils, then your title and project do not match.

4. Design your project's Objective. This is the most important aspect of your Science Fair Project: this is the purpose of the project. The objective is usually either an answer to a question or testing a hypothesis. The following is an example of each type of objective:

- How do erosion and deposition take place along a riverbed?
(question)
- Erosion and deposition along a riverbed are predominantly caused by water (hypothesis—declarative statement)

The best questions make a comparison that will allow the scientist (you) to control changes and observe the result of those changes. Be specific. EX. Which marble will travel farther down an incline plane, a marble with a mass of 10 grams or a mass of 30 grams? When designing your question think about how you will measure your results. How will you measure how far a marble traveled?

Perhaps, through your research, you want your project to prove an idea you have: a hypothesis. Your hypothesis is your answer to a question. It is not a random guess. Based on your research you should have formulated an educated idea about what might happen. Write your answer out and be sure to explain why you think your answer is correct.

5. Gather your **MATERIALS** and plan a **PROCEDURE**—this is the “recipe” of your investigation. What will you need to complete this experiment? The materials section is a list in the order they are used, and includes all the equipment, chemicals, or specimens needed to complete your project. The procedure is the step-by-step instructions for doing the experiment. Your procedure should be written out in a series of steps that are numbered.

6. Conduct your investigation. Carefully observe and keep notes of your investigation in your notebook. Take pictures of your investigation or draw sketches of what you observe. If possible, conduct your experiment at least three times to test your hypothesis or answer your question. Do you get the same results each time? If not, can you explain why you did not?

7. Organize your **RESULTS**. Write down your results. Use tables and graphs to display your results.

8. Analyze your results and draw a **CONCLUSION** and write your **DISCUSSION**. Were you able to answer your question? Was your hypothesis correct? If not, don't worry! A scientific investigation is not about “getting the right answer.” In your conclusion, explain your results and observations, and describe what you think your data mean or prove. Use your data and observation to make inferences (a logical conclusion reached on the basis of evidence and reasoning). Would you conduct this experiment differently if you had it to do over again?

10. Organize your Science Fair Display Board and Prepare your oral presentation.