

## Science Fair Project Planning Guide

(May work with only 1 other student from your science hour)

Student Names \_\_\_\_\_

	Due Dates	Things To Do
	<b>2/9/15</b>	Choose topic and write project question.
	<b>2/9/15</b>	Get approval from your teacher.
	<b>2/11/15</b>	Research your topic and write a background paragraph.
	<b>2/11/15</b>	Define key words.
	<b>2/11/15</b>	Write a hypothesis.
	<b>2/17/15</b>	Design an experiment, list variables and write procedure.
	<b>2/24/15</b>	List and gather materials.
	<b>3/2/15 - 3/27/15</b>	Conduct experiment and record data and observations.
	<b>3/31/15</b>	Create a table, chart, or graph of the data.
	<b>4/2/15</b>	Draw conclusions from your data.
	<b>4/13/15 - 4/15/15</b>	Make the project display board.
	<b>4/16/15</b>	Turn in Planning Guide to teacher.

1. Think of a Question - Your question will drive your entire project. Make sure that your question is something that can be measured and answered by following the scientific process. Your question will also be the title of your project.

### Project Question

---

---

---

2. Research Your Topic - spend some time learning more about your topic. Use reliable Internet sources, books from the library, your science book, or other resources. Not only do you want to be an expert on your topic, but you want to teach others about your topic.
  - a. *Background Research* - after you have completed your research, give us (the audience) some background information on your topic in a complete and well-written paragraph (5-7 sentences). Give us specific, rather than general information. Use the space provided to write a draft, a final copy will be placed on your display.
  - b. *Key Words* - locate at least 3 key science words related to your topic. Your science book is an excellent place to find these. Make sure that the words you choose are directly related to your topic.

## Background Research

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

## Key Terms

Key Word	Definition

3. State Your Hypothesis - Decide what you think the outcome of the project will be and make a good guess as to what you think the answer to your question will be. **Also explain WHY you think that will be the outcome.** Remember, it is ok if you don't have the right answer; that is how scientists make discoveries. Make sure your hypothesis is written in a complete sentence.

## Hypothesis

---

---

---

---

---

---

---

---

4. Design Your Experiment - Clearly write out the procedure you are going to follow. Remember that your experiment needs to follow the scientific process and that you need to have one variable that you are going to change.
- a. *Variables* - List the variables that you are going to keep the same and the one variable that you are going to change. You need to have at least one control (the one you change) and at least two or three other variables that remain the same.
  - b. *Write Your Procedure* - Think through each step of the experiment very carefully and list them in numbered order.

## Variables

**Control or Independent Variable** (the one you are changing): \_\_\_\_\_

---

**Dependent Variables** (the ones to keep the same): \_\_\_\_\_

---

---

---

---



5. Gather materials - list all the materials that you will need to complete your experiment.

### Materials

---

---

---

---

---

---

---

---

---

---

6. Conduct the Experiment - when you do your experiment you need to collect data and make observations. You will write these down in the spaces provided in this planning guide.

- a. *Collect Data* - you will need to collect numerical data; that means you need to take measurements during the experiment. It can be temperature, distance, height, etc. You will analyze the data later to determine the results of your experiment.
- b. *Make Observations* - as you conduct your experiment you will use your senses (sight, smell, touch, etc.) and write down any observations you make during the process.

### Data

---

---

---

---

---

---

---

---

---

---

## Observations

---

---

---

---

---

---

---

---

---

---

7. Determine the Results - Now it is the time to review your data and observations to find out what happened. Think about the best way to show your data: bar graph, line graph, chart, etc. and then create a table or graph using your data. Write out the results of each test in the experiment in paragraph form using complete sentences. Make sure that you include the numerical data (measurements) as well as any other important observations that you made.

### Graph or Chart of Data Collected



## Results in Paragraph form

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

8. Draw Conclusions - After you have determined the results it is time to decide the answer to your original question. **Write your answer in a complete sentence using the question to begin your answer.** You also need to **tell whether your hypothesis was correct or incorrect.** If it was incorrect, explain why you think so. End this paragraph by saying how you could change or improve your experiment in the future.

### Conclusions

Answer to your original question: \_\_\_\_\_

---

---

Was your hypothesis correct or incorrect? If incorrect, why? \_\_\_\_\_

---

---

---

---

## Science Fair Grading Rubric

Student Names \_\_\_\_\_

### Science Fair Project Components

Component	Points Possible	Points Received
Science Fair Project Planning Packet (one per group)	20	
Display board with: <ul style="list-style-type: none"> <li>•Question and Title</li> <li>•Hypothesis</li> <li>•Key Words with Definitions</li> <li>•Background Research</li> <li>•Procedure</li> <li>•Materials List</li> <li>•Photos or Drawings</li> <li>•Graph or Chart</li> <li>•Written Results</li> <li>•Written Conclusion</li> </ul>	20	
Total Points -->	40	

### Science Fair Project Content

Content	Points Possible	Points Received
Question - is it testable through experimentation & is it at grade level?	5	0 1 2 3 4 5
Hypothesis - is it based on observations and logic with reasons provided?	5	0 1 2 3 4 5
Background Research - is the background and key terms relevant to the question being tested?	5	0 1 2 3 4 5
Procedure - is it clearly outlined and does it represent a controlled experiment?	5	0 1 2 3 4 5
Results - are they communicated clearly through a graph or chart and is the written explanation concise?	5	0 1 2 3 4 5
Conclusion - does it include appropriate evaluation of the data? do you state if the hypothesis is correct or incorrect? do you include any changes you'd make?	5	0 1 2 3 4 5
Total Points -->	30	

0 = Not Present    1 = Far Below Minimum    2 = Below Minimum    3 = Minimum    4 = Average    5 = Above Average