# Science Fair Project Planner

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# Science Fair Project Planning Packet

Group Members: _____

| ✓ | Due Dates | Things To Do |
|---|---|---|
| | | Choose topic and write project question. |
| | | Get approval from your teacher. |
| | | Research your topic and write key words and paragraph. |
| | | Write a hypothesis. |
| | | Design an experiment; list variables and write procedure. |
| | | List and gather your materials. |
| | | Conduct experiment and record data and observations. |
| | | Create a table, chart, or graph of the data. |
| | | Draw conclusions. |
| | | Make the project display. |
| | | Write and print abstract |
| | | Turn in planning packet to teacher. |
| | | Present your project at the science fair. |

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. You may use the project question for your project title.

**Project Question**

_____

_____

_____

2. Research Your Topic - spend some time with your group 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.
    1. *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. Provide a definition of each key word IN YOUR OWN WORDS.
    2. *A paragraph describing the science behind your project* - after you have completed your research give us, your 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. You will edit a final copy to place on your display board.

## Key Words

| Key word | Definition |
| --- | --- |
| | |
| | |
| | |
| | |
| | |

## Research Description

3. State Your Hypothesis - In your group 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 that 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 (independent variable). There are three variables in a scientific experiment: independent, dependent, and controlled.
    1. The *dependent variables* are the ones that you will keep the same throughout the experiment.
    2. The *independent variable* is the one, and only one, variable you will change.
    3. The *controlled (or constant) variable* helps you, the scientist, understand how the experiment would react under normal circumstances.

**Variables**

1. Dependent variables:_____

_____

_____

_____

2. Independent Variable:_____

3. Controlled (or constant) Variable: _____

## Procedure

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

**Materials**

6. Conduct experiment – when you do your experiment you need to collect data and make observations. You will complete these in your Experiment Log. After you have completed the experiment use your log to write down the data and observations below. In your log you will need to:
    1. *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.
    2. *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 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 a 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.

## Results (graph or chart)

Use this space, or a separate sheet in your notebook, to sketch 1 or more tables, charts, or graphs to analyze your data.

## Results (paragraph)

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:

Is your hypothesis correct or incorrect? If incorrect, why?

If you were to complete this experiment again, what changes would you make? How would you improve this experiment?_____

_____

_____

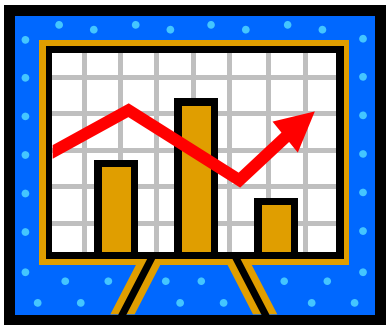
_____

_____

_____

9. Display board - Now that you have completed your experiment you will begin setting up your display board to communicate the results of your experiment to others. Remember, the board is graded on the information not how colorful or pretty it looks. Your display board must have ALL of the following components located in the same places. Other board guidelines:
   - Font should be easy to read and at least a size of 16pt or greater.
   - Photos should not include faces of students
   - Information on the board can be typed or written neatly by hand.

**Display Board**

| | | |
|---|---|---|
| **Hypothesis**<br><br>**Key Words and Research**<br><br>**Procedure and Materials** | **Question/Title**<br><br>**Photos or Drawings**<br><br>**Graphs**<br>  | **Results**<br><br>**Conclusion** |

10. Abstract – The abstract is a short version of your science fair final report. It should be no more than 250 words. Most of the information you will put in your abstract is already written, you will just need to copy it over. You must have the following five components in your abstract:
    - Introduction
    - Project Question
    - Procedures
    - Results
    - Conclusions

    The only new thing you will need to write is the **Introduction**. This is where you describe the purpose for doing this experiment or project. Tell why people should care about the work you did. How does your experiment give us new science information? Can this information be used to improve our lives? If so, how? This is where you want to interest the reader in your project and motivate them to read the rest of it.

**Abstract Introduction**

Finally, you will type up the abstract, revise and edit it, and then print it. Make sure that your abstract is written in Times New Roman or Arial font at size 12pt.

# Science Fair Grading Rubrics

## Group Members: _____

**Science Fair Project Components**

| Component | Points Possible | Points Received |
|---|---|---|
| Science Fair Project Planning Packet | 10 pts | |
| Display Board with:<br>• Question/Title<br>• Hypothesis<br>• Key Words<br>• Research<br>• Procedure and Materials<br>• Photos/Drawings<br>• Chart or Diagram<br>• Results<br>• Conclusion | 10 pts | |
| Experiment Log | 10 pts | |
| Abstract | 10 pts | |
| TOTAL → | 40 pts | |

**Science Fair Project Content**

| Content | Points Possible | Points Received |
|---|---|---|
| Question<br>* Question is relevant and testable through experimentation | 5 pts | 0 1 2 3 4 5 |
| Hypothesis<br>* Hypothesis is based on observations | 5 pts | 0 1 2 3 4 5 |
| Research<br>* Key words and research are relevant to the question being tested | 5 pts | 0 1 2 3 4 5 |
| Procedure<br>* Procedure is clearly outlined and presents a controlled experiment | 5 pts | 0 1 2 3 4 5 |
| Results<br>* Results are communicated clearly through graph/chart and well written explanation | 5 pts | 0 1 2 3 4 5 |
| Conclusion<br>* Conclusion includes appropriate evaluation of data and proves or disproves the hypothesis | 5 pts | 0 1 2 3 4 5 |
| TOTAL → | 30 pts | |

| | | | | | |
|---|---|---|---|---|---|
| 0 = Not Presented | 1 = Below Standard | 2 = Minimum Standard | 3 = Average Standard | 4 = Above Standard | 5 = Exceptional/Outstanding |

**Name: _____ #: _____**

## Science Fair Reflection

1. What went well with your science fair project?

2. What didn't go so well with your science fair project?

3. How well did your group stay on task to meet deadlines?

4. How well did your group work together during the science fair?

5. What would you do differently if you were to do the science fair project over?

6. Please use the rubrics on the back to score yourself and your partner(s). 1 is the lowest score and 5 is the highest.

## Science Fair Self and Peer Score

Name: ME

| | |
|---|---|
| Ability to work as a group, share responsibility, and solve problems appropriately. | **1 2 3 4 5** |
| Ability to stay focused and on task during science fair time. | **1 2 3 4 5** |
| Comments: | |

Name: _____

| | |
|---|---|
| Ability to work as a group, share responsibility, and solve problems appropriately. | **1 2 3 4 5** |
| Ability to stay focused and on task during science fair time. | 1 2 3 4 5 |
| Comments: | |

Name: _____

| | |
|---|---|
| Ability to work as a group, share responsibility, and solve problems appropriately. | **1 2 3 4 5** |
| Ability to stay focused and on task during science fair time. | **1 2 3 4 5** |
| Comments: | |