

Science Fair Research Paper 09

1. **TITLE PAGE** Topic, your name, school's name, grade, sponsor, city, state, and zip code)
2. **TABLE OF CONTENTS**
3. **ABSTRACT**

After finishing research and experimentation, you need to write a (maximum) 250-word, one-page abstract. An abstract should include the (a) purpose of the experiment, (b) procedures used, (c) data, and (d) conclusions. It also may include any possible research applications. Only minimal reference to previous work may be included. The abstract must focus on work done since the last fair and should not include: a) acknowledgements, or b) work or procedures done by the mentor.
4. **ACKNOWLEDGEMENTS** (Thank the people who helped you and those whom you contacted for interviews or research information)
5. **INTRODUCTION** (Explain your topic. What is it about?)
6. **PURPOSE** (The purpose of a statement of what you intend to do. What is your goal? What idea are you trying to test?)
7. **PROBLEM** (What is the scientific question you are trying to answer?)
8. **HYPOTHESIS** (Explain how you think your project demonstrate your purpose. Make a prediction regarding the outcome of your experiment. State the results you are predicting in measurable terms.)
9. **VARIABLES** (Independent, dependent, constants, and control group. Be clear about the variables (elements of the experiment that change to test your hypothesis) versus your controls (elements of the experiment that do not change).)
10. **MATERIALS** (List all materials and equipment that were used. Your list of materials should include all of the ingredients of the procedure recipe.)
11. **PROCEDURE** (In steps not in paragraphs), if possible, with pictures. Give a detailed explanation of how you will conduct the experiment to test your hypothesis. Be very specific about how you will measure results to prove or disprove your hypothesis. You should include a regular timetable for measuring results or observing the projects (for example, every hour, every day, and every week). Your procedure should be like a recipe – Another person should be able to perform your experiment following your procedure. Test this with a friend or parent to be sure you have not forgotten anything.)
12. **PICTURES** (Include pictures of the experiment, not your picture)
13. **DATA TABLES** (All of your data in tables)
14. **GRAPHS!** (Don't forget to put a title for the graph. Also, label x-axis & y-axis and use unit when appropriate)
15. **ANALYSIS** (Explain your observations, data and results. This is a summary of what your data has shown you. List the main points that you have learned. Why did the results occur? What did your experiment prove? Was your hypothesis correct? Did your experiment prove or disprove your hypothesis? This should be explained thoroughly.)
16. **CONCLUSION** (Answer your problem/purpose statement. What does it all add up to? What is the value of your project?)
17. **APPLICATIONS & FURTHER RESEARCH** (What is the application of your project in daily life/economy? What further study do you recommend given the results of your experiment? What would be the next question to ask? If you repeated this project, what would you change?)
18. **BIBLIOGRAPHY** List the books, magazines, or other communications you used to research your topic. (Must be at least 5 resources. 2 of which should be book & other can be scientific Journal, reviews, news article, etc.)

Write in complete sentences. Add titles, units and labels where necessary.