

Science Fair Project Proposal Form

Student Name: _____

The problem or question I plan to investigate or solve in my experiment: *(please phrase as a question)*

Science Project Question List	
1. Have you met your teacher's requirements?	Yes / No
2. Is your topic interesting enough to read about, and then work on for the next few weeks?	Yes / No
3. Can you find at least 3 sources of written information on your subject? <i>(At least one written source can not be from the internet).</i>	Yes / No
4. Can you measure changes to the important factors (variables) using a number that represents quantity such as count, percentage, length, width, weight, voltage, velocity, energy, time etc.? OR, just as good, are you measuring a factor (variable) that is simply present or not present? For example, <ul style="list-style-type: none"> • Lights ON in one trail, then lights OFF in another trail. 	Yes / No
5. Can you design a "fair test" to answer your question? In other words, will you experiment or invention test only one variable at a time?	Yes / No
6. Is your experiment or invention safe or safe to perform?	Yes / No
7. Do you have all the materials and equipment you need for your project, or will you be able to obtain them quickly and at a very low cost?	Yes / No
8. Do you have enough time to do your experiment or use your invention more than once before the due date?	Yes / No

I have discussed the project idea and the checklist with my parent(s) or guardian and I am willing to commit to following through on this project.

Student Signature

Date

I have discussed the project idea and the checklist with my student and I believe he or she can follow through with this project. I agree to supervise the safety of the project steps that my student performs at home.

Parent Signature

Date

Background Research Plan Worksheet

Student Name: _____

1. What is the **question** you are going to try and answer with an experiment?

2. List the **keywords** and phrased from your question and the topic in general.

3. Now use your keywords to build some **questions to guide your background research**. Develop at least two or three from each “question word.” Do not worry about whether you already know the answer to the question; you’ll find the answers when you do your background research. Make sure that you ask for help from knowledgeable adults who can help guide you.

Question Word	Possible Questions <i>(please try and think of others)</i>	Substitute your keywords (or variations of your keywords) for the blanks in the “possible questions” column. Write down the relevant questions and use them to guide your background research.
Why	Why does _____ happen? Why does _____ _____? Why _____?	
How	How does _____ happen? How does _____ work? How does _____ detect? How does one measure _____? How do we use _____? How _____?	

Question Word	Possible Questions <i>(please try and think of others)</i>	Substitute your keywords (or variations of your keywords) for the blanks in the “possible questions” column. Write down the relevant questions and use them to guide your background research.
Who	Who needs _____? Who discovered _____? Who invented _____? Who _____?	
What	What causes _____ to increase/decrease? What is it made of _____? What are the properties of _____? What do we use _____ for? What _____?	
When	When does _____ cause _____? When was _____ discovered? When _____?	
Where	Where does _____ occur? Where does _____ get used? Where _____?	

4. To analyze the results from the experiments, you might need to know some **key formulas** or **equations**. Thinking about your experiment and write down any step or task that requires a formula or equation. Do not worry about whether you already know what the formulas or equation is; you'll find the actual equations when you do your background research.

List steps or tasks that may require a formula or equation:

Research Paper Checklist

Student Name: _____

<input type="checkbox"/>	Have you defined all important terms?
<input type="checkbox"/>	Have you clearly answered all of your research questions?
<input type="checkbox"/>	Does your background research enable you to make a prediction of what will occur in your experiment?
<input type="checkbox"/>	Will you have the knowledge to understand what causes the behavior or action that you observe?
	Does your research include the following:
<input type="checkbox"/>	--Currently accepted theories, facts, and data?
<input type="checkbox"/>	--Relevant mathematics/equations (if applicable)
<input type="checkbox"/>	--Key discoveries and early researchers
<input type="checkbox"/>	Have you referenced all information copied from another source and put any phrases, sentences, or paragraphs you copied in quotation marks?
<input type="checkbox"/>	Is every fact or picture in your research paper followed by a citation telling the reader where you found the information?
	Does your research paper include:
<input type="checkbox"/>	--A title page
<input type="checkbox"/>	--Your report
<input type="checkbox"/>	--Bibliography
<input type="checkbox"/>	Have you used the proper capitalization and punctuation?
<input type="checkbox"/>	Have you checked your grammar and spelling?

Variables and Hypothesis Worksheet

Student Name: _____

Variables <i>(Fill in the table with the appropriate information from your own experiment)</i>		
Independent Variable (What will you be changing in the experiment? Note: There should only be one item listed here)	Dependent Variable (What will you be measuring or observing)	Controlled Variable (What will you be keeping the same during the experiment)

Your Hypothesis <i>(Fill in the blanks with the appropriate information from your own experiment)</i>	
If (I do this) _____	

Then this will happen _____	

Final Report Checklist

Student Name: _____

<input type="checkbox"/>	Does your abstract include a short summary of the hypothesis, materials & procedures, results, and conclusions?
<input type="checkbox"/>	Have you used the proper capitalization and punctuation?
<input type="checkbox"/>	Have you checked your grammar and spelling?
	Does your final report include the following key sections:
<input type="checkbox"/>	--A title page
<input type="checkbox"/>	--An abstract
<input type="checkbox"/>	--A table of contents
<input type="checkbox"/>	--Questions, variables, and hypothesis
<input type="checkbox"/>	--Background research (your research paper)
<input type="checkbox"/>	--Materials list
<input type="checkbox"/>	--A title page
<input type="checkbox"/>	--Experimental procedures
<input type="checkbox"/>	--Data analysis and discussion (including data tables and graphs)
<input type="checkbox"/>	--Conclusions
<input type="checkbox"/>	--Acknowledgements
<input type="checkbox"/>	--Bibliography