



# GUIDE FOR STUDENTS

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## STEM WIZARD SCIENCE FAIR REFERENCE

Science is not a spectator sport; it's an activity that you should embrace with your mind and body. A science fair project gives you the opportunity to explore ideas and topics on your own. Instead of just reading about a subject, you get to "DO" science. Experimenting and coming up with your own creative solutions to answer questions or solve problems should be exciting and challenging.

## BRAINSTORMING

Brainstorming can be very helpful when trying to come up with a topic. Try to come up with as many ideas as you can and write them down in a list, then narrow-down the list to those ideas that interest you the most.

## QUESTIONS TO CONSIDER

Some questions to consider as you try to find a project:

- » What is something that **interests you**? Sports? Nature? Astronomy? Robotics?
- » How can you **measure** some aspect of the subject that interests you?
- » What can you **vary** to see how that affects the things you can measure?
- » How would you **expect those changes** to affect the things you measure?

## HOW DO YOU EAT AN ELEPHANT?

One bite at a time. What seems too hard at first is much easier when broken down into smaller pieces.

Science fair projects need to be broken down into manageable sections. While the project can be overwhelming as a whole, breaking it down makes it easier to complete.

If you don't have school-imposed deadlines for the following steps, set and keep your own deadlines to help you prepare for the fair.

- » **Purpose** – Generally-speaking, what interests you and why?
- » **Research** – Do some background reading about your topic to see what you might want to explore. What is well-known already? What can you discover?
- » **Hypothesis** – What do you expect to happen given the things you will measure and what you will vary?
- » **Experiment** – The "doing" of science! Doing the things you picked from your research and your hypothesis. Measuring the things you've changed and the outcomes. Always remember – safety first!
- » **Analysis** – Calculate using the measurements you made.
- » **Conclusion** – Think about how your hypothesis and analysis relate to each other. What have you learned?
- » **Communicating the results** – Now that you've learned something new, it's important to share that knowledge with the world! How can you present your entire process, from start-to-finish, with your friends and teachers?

## HUNG UP ON BEAUTY

Try not to get delayed on creating a beautiful display. **An effective display is a good display!** You want the project to be featured in a simple, logical format.

## MENTION YOUR SOURCES

Be sure to mention the sources you use in your research – **you only want to take credit for the work that you do.** If you are unsure as to whether something should be cited, or if you are unsure as to what to include in your reference list, check with your teacher.

## PRACTICE, PRACTICE, PRACTICE

Make sure you **practice your presentation** before you present to the judges.

Here are a few tips that may help during your presentation:

- » **Make index cards** with the ideas you want to talk about. Just remember key points – don't try to memorize the whole thing!
- » You can refer to your cards, but try not to read directly from your cards when making your presentation. **Eye contact** is very important.
- » Try to **stay calm** if a judge asks you a question that you do not know. Simply let them know that you do not know the answer to the question they are asking and then explain a part of your project that you are comfortable talking about.
- » If a judge says something critical about your project, **try to remember that they are trying to help you** learn and grow. Judges are very busy, so they may not have time to explain themselves very well.
- » It is **okay to be nervous!** Everyone gets nervous sometimes. Just take a deep breath and keep going.

## FILL-OUT AND SIGN ANY REQUIRED FORMS

Examples of forms that may be required by your fair include ISEF forms, photo release forms, permission forms, and code of conduct forms. Check with your teacher to see if you have all of the forms filled-out.