

Highland Science Fair Informational Packet

This packet is designed to get you started on your science fair project. It includes some general information, a description of each type of presentation, a timeline, as well as some other suggestions to help you get started. It also includes contact information if you have any questions or need additional help.

Basic Guidelines:

The most important part of this project is that it should be fun!! While parents/guardians are welcome to act as assistants (helping get supplies, supervising, etc.), this is really meant to be a kids' project. Students may either work alone or in pairs.

Presentation Types:

Presentations can be one of two types, an exhibit or an experiment. Details describing each type of presentation as well as some helpful hints are listed below.

Exhibits:

In this type of project, students create a presentation on a science topic. It can either be a topic that you already know about or one that you are interested in learning more about. A good idea is to pick something that you are really interested in.

After you select your topic, you can research it by using the Internet, reference books or other sources (if needed). Once you are an expert, you will design a presentation that will teach others about your topic. The format of the presentation is flexible, but try to keep in mind what you would enjoy if you were the one who was being taught. Presentations may include (but are not limited to):

- Poster presentations
- Demonstrations
- Interactive exhibits
- Poems, songs
- Models

As noted below in the **support** section, there will be support provided to help choose topics, plan and create the presentations (if needed).

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Experiments:

In this type of presentation, students design and execute a science experiment of their choice and present their results. The best way to start is to find a question that you are interested in exploring. While it may be tempting to look for a project idea online or from another source, this project will be more fun if the question comes from you!

Here are some things to consider when planning and executing your project

Picking your topic

- Think about what topics you are curious about
- Come up with a **testable** question about that topic
 - Some examples include:
 - Do store brand cereals which are often cheaper taste worse than name brands?
 - Do new tennis balls bounce higher than old ones?
 - Does talking to plants make them grow taller?
 - Is it harder to shoot a basket with one eye closed?
 - Does the shape of an object affect how fast it falls?

Planning your experiment:

Once you have your question, you need to figure out a plan to test it. Some things to consider are:

- *Controlling variables:*
 - Are you being careful that you are only investigating your target question? For example, if you are testing if new tennis balls bounce higher than older ones you need to use the same make of tennis balls or you won't know if any differences you find are due to a different brand and not just age.
- *Collecting enough data:*
 - You need to consider if your data is enough to make a convincing argument that your conclusion is valid. For example, testing the bounce heights of only one new and one old tennis ball are not as convincing as testing ten of each.

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Making conclusions based on your data:

- You need to make sure that you are reporting what the data shows not just what you think will happen. For example, let's say you think new tennis balls should bounce higher but in your tests, a few of the older balls bounced higher than some of the newer ones. You cannot ignore this data. You need to report the mixed result (and maybe speculate some reasons why you saw what you did).

Presenting your results:

- How you present your findings is flexible but it should include the following features
 - *Title*
 - A “catchy” phrase describing your experiment
 - *Question under investigation*
 - *Procedure*
 - A description of what you did. If you think it will help, you may use visual aids (pictures, sample set-ups etc.)
 - *Results*
 - Make sure you present your results in a way that they can easily be understood (such as a table, graph etc.)
 - *Conclusion*
 - How would you answer your question based on your data? Make sure you also include why you are making that conclusion

Support:

If at any time you have any questions or are in need of some help, you may contact Denise Novick at denisenovick@yahoo.com or (215) 657-2677.

Good general science links:

<http://www.exploratorium.edu/explore>

<http://www.learningscience.org/>

<https://www.sciencebuddies.org/science-fair-projects/project-ideas>

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Timeline:

The suggested timeline listed below is designed to provide a framework for your project and to help keep you on track.

<u>Date</u>	<u>Task</u>
December-January	Sign up
	Explore topics
January 1	Select final topic
	Plan approach and presentation/exhibit
January 14	Plan completed
	Execute plan and develop presentation/exhibit
February 1	Science Fair