

Gilbert Linkous Elementary School Science Fair Exhibit Guidelines:

Note: Please check for errors on the information above in the upper right. This information represents how the student's name appears in the Science Fair list, which will be used when we make the certificates of participation. Let us know if any changes are needed so we can ensure that the participant's name will appear correctly on the certificate.

If you decide for any reason to NOT present your project on March 16 or you change your partners please Email us to change your registration.

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One major focus of the science fair is to have to students conduct their projects consistent with the scientific method and of course, have fun with their project at the same time. Given that the level of knowledge and aptitude of the student will vary according to his or her age level, we have created objectives that should be appropriate for your child.

Kindergarten- Grade 2

For children in Kindergarten through Grade 2, we would like each child or groups of up to three children to generate a hypothesis pertaining to a science topic (e.g. *Plants grow better in moist soil compared to dry soil*). Next, work with your child to devise an experiment to test his/her hypothesis. It would be highly beneficial to your child to be able to bring his/her project to the fair for display. We would like for your child to be able to define his/her hypothesis and be able explain if their experiment supported their hypothesis or not. The method of presentation of the science project is at the discretion of the parent(s), but many people prefer the tri-fold poster boards used by the older children. Judges will be on hand during the fair to interact with your child and ask questions.

Grades 3- 5

For children in Grades 3-5, we would like your child to conduct a science project according to the scientific method. This entails:

- i.* generation of a hypothesis.
- ii.* generation of an experimental design or procedure.
- iii.* collection and analysis of data.
- iv.* generation of a conclusion.

A more detailed description of the scientific method is provided below. The most convenient method for presentation of your child's science project is through the use of a tri-fold poster board. These poster boards are available at art and supply stores/departments (i.e. Mish Mish, Michael's, Walmart, Target etc.). We would like the poster to have a **title, written hypothesis, description of the procedure or experimental design, presentation of data in a tabular or graph format** and a **written conclusion**. Also, please include your child's name and grade on the poster. Additional visual aids in the form of samples of the experiment etc are welcome. Judges will be on hand during the fair to interact with your child and ask questions.

A **checklist** is provided below to help you and your child on the science project. Good Luck!

Scientific Method:

The *scientific method* is the tool that scientists utilize to investigate an idea, problem or question that they have about a particular topic. They develop a plan to test their hypothesis they have. This plan is commonly called a procedure. During the procedure, the scientist collects the results or data from his or her experiments. After studying the data, the scientist then makes a conclusion.

I. Hypothesis

Choose a problem or idea you would like to explore. Frequently, the problem starts off with a question, such as "How much water do plants need to grow?" Once you have a question that you would like to explore, you need to restate it in the form of a hypothesis.

For example, if I give my tomato plants enriched plant food once a day, then they will grow faster than without it. Your hypothesis should be very clear so that you can test it.

II. Procedure

In this section, you need to describe how you will conduct your experiment. List all the materials that are to be used in the experiment. Then list each step you will use, in order, as you complete your experiment. It is advisable that you number each step and write down everything you will do.

III. Data Collection

As you perform the steps described in the procedure, you need to write down your observations. These observations are called the data and should be both honest and complete. Report what you actually see, not what you think you should see. After you have finished recording your data, you can organize it and present it in a table or graph format.

IV. Conclusion

Carefully review your data. Do your data support or not support your hypothesis? You may decide at this point that you need to revise your hypothesis and think about alternative experiments. Regardless, you need to comment on how your data relates to your hypothesis.

Frequently scientists will communicate their results of their experiments with other members of the science community through submitting an article to a scientific journal.

Science Fair Checklist (Kindergarten-Grade 2): [Note: This is a general guideline. Please do what you feel your child is comfortable with.]

- ❑ Choose a subject that you like.
- ❑ Gather information on the subject (i.e. library or internet).
- ❑ Ask a general question about the subject.
- ❑ Generate a hypothesis or possible answer.
- ❑ Make a plan (i.e. experiment) to test your hypothesis.
- ❑ Show your results or take photos.
- ❑ Analyze your data and be ready to discuss it with the judge.

Science Fair Checklist (Grades 3-5): [The use of a journal to document your science project is encouraged but not required.]

- ❑ Choose a subject that you like.
- ❑ Gather information on the subject (i.e library or internet).
- ❑ Ask a general question about the subject.
- ❑ Generate a hypothesis or possible answer to your question.
- ❑ Make a plan (i.e. experiment) to test your hypothesis.
- ❑ Keep notes (i.e. data or results) of your observations. Take photos and/or plot your data.
- ❑ Analyze your data to assess whether it does or does not support your hypothesis.
- ❑ Write your report including a:

TITLE, HYPOTHESIS, METHODS SECTION (describing your experimental approach and materials used), RESULTS and CONCLUSION (your interpretation of your results).

- ❑ Use a tri-fold poster board to present your report.
- ❑ Use plenty of colorful images, graphs, photos etc.
- ❑ Make sure your text (written part of your poster) is large enough to read from a distance of about 12 inches from your poster.
- ❑ Practice presenting your science project to your family.
- ❑ On the day of the science fair, introduce your self to the judge(s) in a clear and friendly voice.
- ❑ Try your best to answer the questions asked by the judges or visitors.
- ❑ Finally, don't forget to have fun and visit other science posters too!

Additional Guidelines and Safety Issues:

1. The project needs to be able to fit on a student's desk for display (approx 30" x 21.5").
2. The project presentation needs to be self-sustaining. Electrical hookups and/or running water will not be available.
3. No sharp objects are allowed.
4. No toxic chemicals (i.e. poisons, irritants or flammables) are allowed.
5. No open flames are allowed.
6. No live or previously living animals are allowed.
7. Bacterial, viral, fungal or parasitic cultures should be in sealed containers.
8. All liquids need to be sealed.

NEED PROJECT IDEAS? There are plenty of sites on the internet found just by typing "Science Fair" or "Science Fair Projects". The public library also has a collection of relevant books.

Here are a few websites to get you started:

<http://www.all-science-fair-projects.com/>

<http://faculty.washington.edu/chudler/fair.html>

http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml

<http://school.discoveryeducation.com/sciencefaircentral/>