

LAES Steam Fair Project Guidelines

FIRST, check with your teacher about requirements for your grade. In general, cooperative projects with two (or possibly more) people are encouraged. If you have created a project in class, you can showcase that project if you would like!

The following is a guide for an experimental project, but you'll also find it useful for projects on scientific models, demonstrations, collections, observations, and inventions.

1. Choose a topic that interests you

Think about things in science that you find interesting. To get ideas, try looking at: science resource books; library books; science Web sites; encyclopedias; science magazines; newspaper articles; and educational TV programs, museums, and films.

Suggested Internet sites include:

- www.sciencebuddies.org
- www.discoveryeducation.com
- www.education.com/science-fair

PLEASE NOTE: Students may not use the following in their projects: mold, bacteria, humans (including human surveys), and vertebrates.

2. Gather Information

Once you have selected a topic, you need to learn a little **before** you decide on a question you want to answer. Do some reading and speak with your parents and/ or teacher.

3. Identify a Problem or Ask a Question

Now that you know something about the topic you selected, it is time to choose a question you want to answer. When choosing a question:

- Be specific
- Choose a question you'll be able to answer. Remember you'll need to get materials and conduct an experiment.
- Choose a question you're really interested in answering!

4. Make a Hypothesis

A hypothesis is your guess about what the answer to your question will be. For example, if you are asking "Which cleanser cleans grease off floors the best?", your hypothesis might be "Hot soapy water cleans grease off floors better than vinegar, plain water, laundry soap, or soda water."

When you conduct your experiment, you will be **testing your hypothesis**. It doesn't really matter whether your hypothesis was correct. It **is** important to:

- Experiment carefully
- Keep good records
- Use your observations to check out your hypothesis

5. Experiment, Observe, and Keep Good Records

Before you start your experiment, there are a few things you need to do:

- Make a list of all the materials you will need
- Gather those materials
- Clear an area to work
- Set up a notebook to record procedures and observations. Prepare to take photographs and figure out exactly what you will be looking for.

6. Analyze Your Data

When your experiment is complete, it is time to go over your records. An easy way to do this is by making a chart. Use the chart or graphs to help you answer your hypothesis. Also, this is a good time to try to figure out why you got the answers you did. You may need to look up information, or discuss with someone, to help answer your questions. In some cases, you may need to repeat an experiment.

7. Draw Conclusions

Your conclusion should say whether your hypothesis was right or wrong. You may also want to tell why things **might** have happened the way they did. Your conclusions should be short, to the point, and supported by your data/ observations.

8. Prepare Your Presentation

Displays should be neat and attractive. Your display should also make it easy for people to see what you did. Some things you may want to think about are:

- Should the display stand up?
- Should I include graphs, drawings, charts, photographs, or pictures?
- Is the lettering neat?
- What part of my experiment should I show?

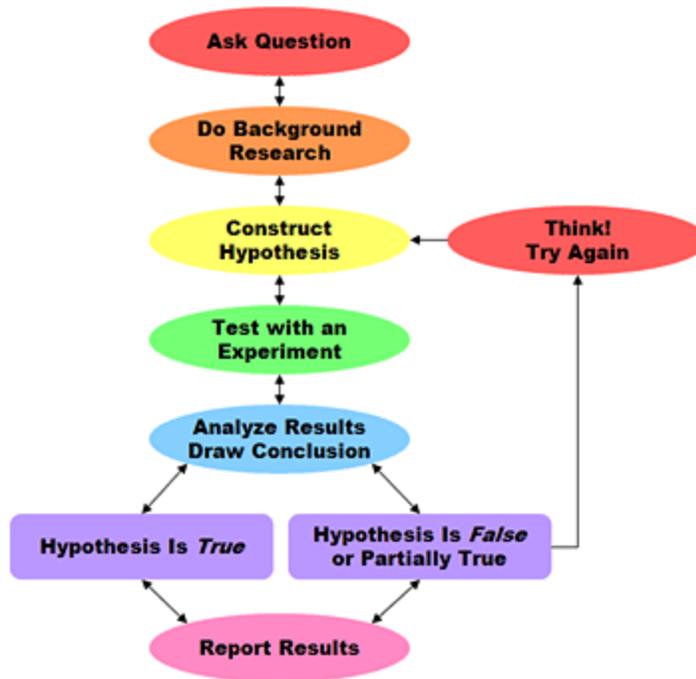
Your teacher may request a written report in addition to a display. The report can be short, but it should include:

- Your name, grade and teacher
- A title
- The problem
- Your hypothesis
- Materials used
- Your procedure
- Some data
- Your conclusion

Remember that this is **your** project and it is good to show your handwriting and work you did yourself. It is okay to have your parents help a little, but do most of it yourself.

Important: Even if your project didn't work out as you expected, make an exhibit for the Showcase. Share what you learned.

Steam Fair Project Process



Steam Fair Project Checklist

You should be able to answer “Yes” to each question.

1. Is the topic interesting enough to read about, then work on for the next couple months?
2. Can I find at least 3 sources of written information on the subject?
3. Can I measure changes to the important factors (variables) using a number that represents a quantity, such as a count, percentage, length, width, weight, voltage, velocity, energy, time, etc.?

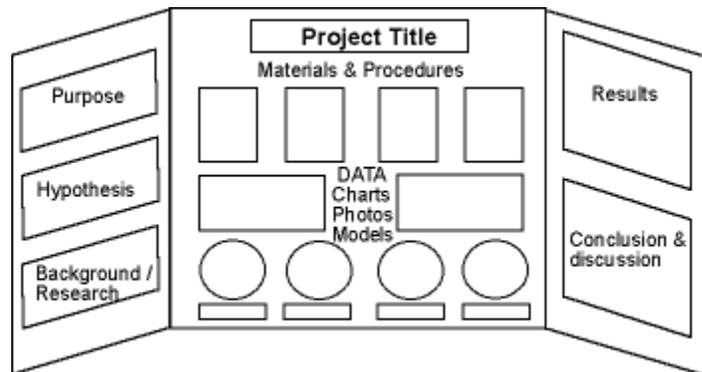
Or, just as good, can I measure a factor (variable) that is simply present or not present? For example:

- Lights are ON in one trial, then lights are OFF in another trial
 - USE fertilizer in one trial, then DON'T USE fertilizer in another trial
4. Can I design a “fair test” to answer my question? In other words, can I change only one factor (variable) at a time, and control other factors that might influence my experiment, so that they do not interfere?
 5. Is my experiment safe to perform?
 6. Do I have all the materials and equipment I need for my project, or will I be able to obtain them quickly and at a low cost?
 7. Do I have enough time to do my experiment more than once before the Fair?
 8. Does my project meet all the rules and requirements I agreed to on the registration form?

Presentation Format for Projects

Your display board needs to include:

- Title
- Question/ purpose
- Hypothesis
- Review of literature
- Materials list
- Procedure
- Data chart(s) and graph(s)
- Discussion of results
- Conclusion



Displaying a Science Fair Project

