Twin Lakes
Sixth Grade
Science Fair
Handbook

December 3, 2026



This handbook contains directions and responsibilities for Sixth Grade student participation. For further information and clarification, please reach out to Ms. Brockschmitt. Please read all of this before beginning the Science Fair project.

Student Responsibilities

All Sixth Grade students are required to participate in the Twin Lakes Science Fair.

Here is the list of student responsibilities:

1. Turn in the Science Fair permission slip by October 23.
2. Design the experiment.
3. Fill out the Project Plan.
4. Return the Project Plan to Ms. Brockschmitt by the week of October 26. You can submit it earlier if you would like.
5. Start on the project after Ms. Brockschmitt has approved the plan.
6. Work on the project at home.
7. Set up the completed project on December 2 between 3:30 and 4:30 PM.
8. Attend the Science Fair on December 3.
    a. All students are required to stand by their project for the first 20 minutes to share their work and answer questions as visitors stop by.
9. Take the project home after the Science Fair on December 3.

*The Science Fair Project will make up 25% of the Trimester 2 Science grade.



Science Fair Project Steps

Doing a science project will help you put into practice some of the science and math that you have learned. A science project will help you learn much more about a subject that interests you. You will also have the opportunity to share your discoveries.

Participation and preparation for the science fair will develop some valuable skills. You will learn about science, how to research, how to develop a display, improve your communication skills, and you will gain confidence in presenting your ideas to people.

Selecting a Topic:

The first step in preparing a good science fair project is to select a topic for your project. Choosing a good project is very important because it can make the difference between an ordinary and an excellent project. You should pick a project that you are interested in. It does not have to be complicated. A simpler concept done well is better than a complicated project that is done poorly.

Research the Topic:

Learn everything you can about your topic. Use books from the library or a bookstore. You can also use the Internet. You can use many search engines to find information.

WARNING: Use the Internet search engines only with your parents' permission and supervision.

Make a Plan:

Once you consider yourself an 'expert' on your topic, make a plan to show how you will conduct your experiment. Refer to the pages on the Scientific Method for more directions.

Conduct Your Experiment

Now you have to follow the plan that you have written. While experimenting, make sure you keep detailed notes on everything you observe. Take pictures or make sketches of your observations. Record data. These will be helpful when you do your report and make your display.

Analyze Your Results:

When you are done, organize your notes. You may want to recopy your notes so that they are more organized and can be easily understood by others. Then, analyze them. Ask yourself what happened, did the results agree with your hypothesis, and so on. Make graphs and charts to represent the data and to help you analyze it.

Make Your Display:

The display is significant because it tells about your project. It must be neat and well-organized. It should show what you did and why. It should clearly show what you learned. Be sure to include any notes, photographs, or drawings that you have.

Do Your Best!

When it is time to present your science fair project, try to be as calm and professional as possible. Know what you are talking about and be confident.

Experiment Format

As a final part of your Science Fair project, you are required to write a summary of your work. This summary will be displayed with the final project. It should be written in paragraph form and include the following information:

1. **INVESTIGATION QUESTION:** Include any changes or revisions you made to your question. Explain why this question was important to you to answer.

2. **HYPOTHESIS STATEMENT:** Explain your prediction, what you thought would happen.

3. **MATERIALS:** List the materials that you used for this experiment.

4. **PROCEDURE:** Tell what procedure you followed when you did your experiment. Include detailed information on the materials used, which variables were tested, and step-by-step directions for these procedures. Include the information you found when you were doing research for your project.

5. **RESULTS:** Tell about the data or information collected during the investigation. Include charts, graphs, drawings, pictures, mathematical calculations, etc.

6. **CONCLUSIONS:** Tell if your original hypothesis was correct or not based on your observations. Explain any problems or unusual events that occurred during your investigation. Did these events affect your outcome? What would you do differently next time? Develop a new hypothesis if your investigation did not support your original hypothesis.

Science Fair Project Plan

Name:_____ Science Period: _____

Group Members' names (first and last):

_____

(If you are in a group, please turn in all forms together. Please staple.)

Investigation Question: _____

_____

_____

Hypothesis: _____

_____

_____

Procedure: _____

_____

_____

_____

_____

How will you present your data? _____

_____

_____

Will you need an electrical outlet for your project? Circle one: Yes No

I have read the Twin Lakes 6th Grade Science Fair Handbook. I understand the rules and procedures and agree to follow them.

Parent Signature:_____ Student Signature: _____ Date: _____

Science Fair Display Requirements

1. All projects should be clearly labeled with student name, teacher name, and grade level. Group projects must include this information for all members.

2. All projects will comply with the "Safety and Other Regulations."

3. Projects must be able to fit in a space of 60 cm wide, 60 cm deep, and 120 cm high. See the display examples in your child's Google Classroom for more details.

4. All projects should communicate to the viewer the information on the project summary page. You may write a report or use a display like that shown on the following page.

5. All projects must be delivered to school and set up on December 2. Look in the school bulletin for more information.

6. Exhibitors should attend the Science Fair on December 3, stand by their projects for the first 20 minutes and be ready to answer questions. Exhibitors will be given a chance to view other projects in the fair during the school day and after their 20 minute block of time.

7. Projects are to be taken home the night of the Science Fair. Projects that are left behind will be thrown away.

Twin Lakes Science Fair
Safety and Other Regulations

Safety is the top priority for all participants. Any materials or displays that could be hazardous to the public are strictly prohibited. Fair Officials reserve the right to remove any exhibit that is deemed objectionable or hazardous. Participants are expected to follow all safety guidelines below.

Living Organisms

- No live vertebrate animals may be displayed. Use pictures, graphs, or drawings instead.
- No harm is to be done to animals when conducting experiments.
- No preserved animals or animal parts (including dissection specimens) may be exhibited. Use photographs instead.
- No human tissues, including teeth, may be displayed.
- No human subjects may be used in studies.
- Behavioral studies with living subjects are acceptable only if no harm is done.
- Live insects may not be displayed.
- Live disease-causing organisms (pathogenic to humans or other vertebrates) are prohibited.

Microbes, Fungi, and Mold

- Microbial cultures and fungi (live or dead) are not allowed.
- Any experiments involving mold must be shown through photographs, not live samples.

Chemicals and Substances

- Dangerous chemicals, including caustics, acids, and highly flammable materials, are prohibited.
- Highly combustible solids, fluids, or gases are not allowed. Use inert substitutes for display purposes.
- Tanks that have contained combustible gases (e.g., butane, propane) are prohibited unless purged with carbon dioxide.
- Drugs, alcohol, tobacco, or controlled substances may not be displayed.
- All chemical safety procedures in the *American Chemical Society's "Safety in Academic Chemistry Laboratories"* booklet must be followed.

Fire, Heat, and Temperature

- No flames, open or concealed, are allowed.
- Exhibits producing temperatures over 100°C must be properly insulated and safe for surrounding materials.

Electrical Safety

- Batteries with open-top cells are not permitted.
- High-voltage equipment must be enclosed in a grounded metal box or cage to prevent contact. Consult the Science Fair Coordinator before including any high-voltage components.
- Large vacuum tubes or ray-generating devices must be properly shielded.
- High-voltage wiring, switches, and metal parts must be out of reach of observers and designed with an adequate overload factor.
- All wiring must be properly insulated—do not use nails, tacks, or non-insulated staples to fasten wires.
- Do not modify electrical cords or equipment that plug into standard outlets.
- Bare wire and exposed knife switches may only be used on circuits of 12 volts or less; otherwise, enclosed switches are required.
- Electrical connections in 110-volt circuits must be soldered or secured using approved connectors, with proper insulation.

Food and Consumption

- No food products may be displayed.
- No tasting or consumption of any materials is allowed.

Steps of the Scientific Method

INVESTIGATION OR TOPIC QUESTION: State your idea as a question. Be sure to make it testable.

- Good Example: Do blackbirds in my backyard prefer white or wheat bread?
- Bad Example: Do birds like bread?

HYPOTHESIS: Make a prediction: "I predict _____ will happen." This is an educated guess. It is OK to be wrong. It gives you a place to start.

RESEARCH: Become an informed researcher. Use many resources to learn about your topic including: books, tapes, magazines, television, encyclopedias, films, or the internet (with parent permission). Talk to experts in the field, parents, or teachers.

MATERIALS: List everything you use in your experiment. List exact quantities and measurements.

PROCEDURE: Test your hypothesis with an experiment. List all the steps you use in the correct sequence when experimenting. Don't leave anything out.

The following are terms you may be using:

VARIABLE: A condition that can be changed in an experiment. You can only change one variable at a time. Examples: time, speed, temperature, distance, amount of food or water, kind of dirt, light, etc.
CONTROL: This is what you use as a comparison for your experiment.

SOME IDEAS:

- ✓ Do two identical experiments, but change a variable in one set. The one where the variable is changed is called the experimental set. The one where the variable is not changed is called the control set.
- ✓ Test only one variable at a time.
- ✓ Test as many subjects as possible to eliminate fluke results.

OBSERVATIONS/RESULTS: Make accurate observations, recording what happened and not what you "hoped" would happen. Make a written record. Do not rely on memory. Maintain a written record, journal, draw pictures, take photographs, videotape or audio record your results regularly. Remember to measure. Look for information you can graph to show your results.

CONCLUSIONS: Based on your observations, state whether your hypothesis is correct of not. Use only conclusions you can support with your data from the experiment.

NOTE: The topic question, hypothesis, and conclusion should have the same wording:

Do geraniums require light for growth?
I predict geraniums require light for growth.
My experiment tends to show that geraniums require light to grow.



Ten Ways For Parents To Help

1. Read over all materials with your child before beginning the project.

2. Help your child select a project that is interesting and challenging, but within his/her ability range.

3. Discuss the plan for the project. Help your child understand all procedures he/she will need to follow.

4. Assist in providing required materials and supplies and maintaining the schedule. Help your child follow the timeline.

5. Take your child to the library or help provide any needed resources.

6. Point out the importance of accurate observations and careful record keeping.

7. Supervise the use of tools, chemicals, or other hazardous/dangerous materials.

8. Provide support, encouragement, and enthusiasm along the way.

9. Discuss ways to display the project.

10. Encourage your child to make a clear, neat, easily understood display.

We hope that you will not only enjoy this time with your child, but also that you will help to spark and nurture his/her love of science.