Twin Lakes

Science Fair

Handbook

Kindergarten - Grade 5

December 3, 2026



This handbook contains directions and responsibilities for student participation. For further information and clarification, please ask your child's teacher. Please read all of this before beginning the science project or experiment.

STUDENT RESPONSIBILITIES FOR THE SCIENCE FAIR

1. Listen to the explanation of the science fair.
    a. Decide what you want to do.
    b. Get a permission slip from your teacher. Have your parents sign.
    c. Return slip to teacher by the week of Oct. 23.
    d. Access Student Science Handbook on TL Website
    e. Read the Science Fair Handbook.
    f. Design your experiment or plan your model.
    g. Fill out Project Plan.
    h. Return Project Form to your teacher the week of Nov. 2.
    i. Start on your project *after* your plan is returned to you.

2. Work on your project at home. If you have questions, see your classroom teacher.

3. **Set up your completed project on December 2 from 3:30 to 4:30.**

4. Attend the Science Fair on December 3.

5. Take your project home after the Science Fair on December 3.





TEN WAYS FOR PARENTS TO HELP

1. Read over all materials with your child prior to 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 to 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.

Science Fair Project Steps

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

Participation and preparation for the science fair will develop some valuable skills. You will learn about science, how to use the library, 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 you 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. There are ideas included in this packet.

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 the many search engines to find information.
WARNING: Use the Internet search engines only with your parent's 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 or build your model. Refer to the pages on the Scientific Method and Model Projects for more directions.

Conduct Your Experiment or Build Your Model

Now you have to follow the plan that you have written. While doing the experiment make sure you keep detailed notes on everything you observe. Take pictures or make sketches of your observations. 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 very important 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. For more information on creating your display, see the Display Hints section of this document.

DO YOUR BEST!

If you have an opportunity to present your science fair project in class, try to be as calm and professional as possible. Know what you are talking about and be confident, you will do fine.

SCIENCE FAIR MODEL PROJECT

(Kindergarten – Grade 5)

You may decide to do a model project rather than an experiment-based project. You will start with a question, but instead of doing an experiment to find the answer you will do research. You may be interested in finding out why volcanoes erupt. It would be very difficult to design an experiment that shows all of the processes that occur, but it is possible to explain why volcanoes erupt by making a model of a volcano, drawing pictures, or writing about it.



MODEL FORMAT:

1. **INVESTIGATION QUESTION:** Tell what you decided to study and why.

2. **HYPOTHESIS:** Tell what you think you will learn about your model topic.

3. **MATERIALS:** List all materials used for your project.

4. **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.

5. **PROCEDURE:** Explain how you made your model.

6. **RESULTS:** Display your model, including any plans, pictures, drawings, or other materials you used to make your model.

7. **CONCLUSIONS:** Describe what you learned from building your model.

STEPS OF THE SCIENTIFIC METHOD

(Kindergarten – Grade 5)

INVESTIGATION OR TOPIC QUESTION: State your idea as a question. Be sure to make it testable. Good: Do blackbirds in my backyard prefer white or wheat bread? Bad: Do birds like bread?

HYPOTHESIS: Make a prediction: "I predict _____ will happen." This is an educated guess. It is OK to be wrong, and 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 performing an experiment. 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.

SAFETY AND OTHER REGULATIONS

Anything that could be hazardous to the public is prohibited. **Proper attention to safety is expected of all Science Fair participants, including compliance with the following requirements for all operation exhibits:**

*Live insects
*Live disease-causing organisms that are pathogenic to man or other vertebrates
*Microbial cultures and fungi, live or dead; any experiments with mold should be photographed.
*Any flames, open or concealed
*Dangerous chemicals including caustics or acids
*Highly flammable display materials
*Highly combustible solids, fluids, or gases. Inert substances must be used if such materials are required for display.
*Tanks that have contained combustible gases, including butane and propane, unless they have been purged with carbon dioxide
*Any drug or controlled substance
*Alcohol or tobacco products
*Any exhibit producing temperatures exceeding 100 degrees C. must be adequately insulated for its surroundings.
*Batteries with open top cells are not permitted.
*High voltage equipment must be shielded with a grounded metal box or cage to prevent accidental contact. Check with Science Fair Coordinator prior to Science Fair
*Large vacuum tubes or dangerous ray-generating devices must be properly shielded.
*High voltage wiring, switches, and metal parts must be located out of reach of observers and designed with an adequate overload factor.
*All wiring must be properly insulated. Nails, tacks, or non-insulated staples must not be used to fasten wiring. There is to be no modification of electrical wires or equipment that will be connected to an electrical outlet.
*Bare wire and exposed knife switches may be used only on circuits 12 volts or less; otherwise standard enclosed switches are required.
*Electrical connections in 110-volt circuits must be soldered or fixed under approved connections and connecting wires properly insulated.
*"Safety precautions for substances" – see American Chemical Society booklet entitled Safety in Academic Chemistry Laboratories – must be followed.
*No live vertebrate animal will be displayed. Use pictures, graphs, drawings or the like to display your results. No harm is to be done to animals when conducting experiments.
*No preserved animals or parts may be exhibited. Use photographs.
*The exhibition of human tissues including teeth is prohibited.
*There is to be no use of human subjects in biomedical studies.
*Behavioral studies with living subjects are acceptable as long as no harm is done to the subject.
*No food products or tasting of materials is allowed.

FAIR OFFICIALS RESERVE THE RIGHT TO REMOVE ANY EXHIBIT THAT IS DEEMED OBJECTIONABLE OR HAZARDOUS.

SCIENCE FAIR PROJECT SUMMARY

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.

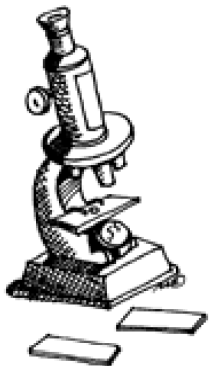
2. **HYPOTHESIS STATEMENT:** Explain your prediction, what you thought would happen.

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

4. **PROCEDURE:** Tell what procedure you followed when you did your experiment or made your model. Include detailed information of the materials used, which variables were tested, and step-by-step directions of 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 final outcome? What would you do differently next time? Develop a new hypothesis if your investigation did not support your original hypothesis.



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."

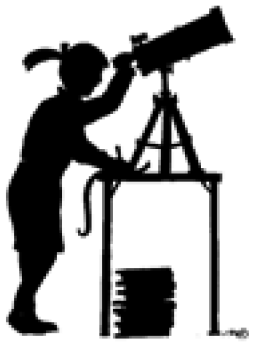
3. Projects must be able to fit in a space of 60 cm wide, 60 cm deep, and 120 cm high. See the following page for display suggestions.

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.

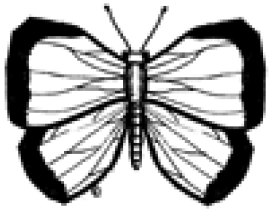
5. **All projects must be delivered to school and set up on December 2.** Look in the school bulletin for more information.

6. Exhibitors should attend the Science Fair to stand by their projects and be ready to answer questions. Exhibitors will be given a chance to view other projects in the fair during the school day.

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



SCIENCE PROJECT PLAN



Print this page to turn in.

Note: Return this form by the week of November 2 or before.

Name: _____ Teacher's Name: _____

Group Members' names (first and last) with Teacher Name:

_____

_____

(If you are in a group, turn in all forms together – stapled.)

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 Science Fair Handbook with my child. We understand the rules and procedures and agree to follow them.

_____

Student Signature Parent Signature Date

_____

Teacher