

Woodriver Elementary

Science Fair Packet 2021

Synopsis

Attached are the Science Fair handouts to participate in Woodriver's Science Fair and the Interior Alaska Science Fair. Please carefully review these handouts and register for both Science Fairs online. All links can be found at wolfpups.org/science-fair.html

The deadline to register for Woodriver's Science Fair is Friday, February 19th, and the deadline to register for the Interior Alaska Science Fair is Sunday, March 14th.

What is the Science Fair?

The Science Fair is an opportunity for students to explore a science topic of interest and share what they learned with other students, teachers, and the community.

All participants will share the results of their learning by creating a display board or PowerPoint or Google Slides presentation. Please see the attachments for details. Judges will carefully review each presentation; however, they will not interview students this year.

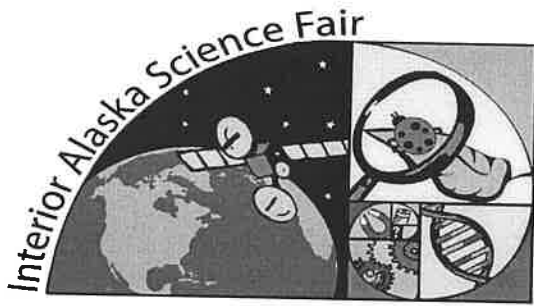
Who Can Enter?

All Woodriver students are encouraged to participate. They may enter as individuals, small groups, a whole class, or as a family, which is recommended for younger students.

All entries, except for the family option, should be primarily completed by the student(s), with minimal parental support. Small group projects should include two to four students. The students do not need to be in the same grade or class. This is an excellent way for siblings to create a project together. Teachers will decide if their entire class will complete a class Science Project together. The family option may include any number of family members, as long as at least one person is a Woodriver student.

What Are the Rules?

1. Participants may enter as many projects as they choose; however, each project should be separate and unique. Parents or teachers may assist, if necessary; however, the judges will be looking for what the students learned. The students are responsible for setting up their project before school, March 4th, and removing their project, after school, on March 5th. PowerPoint or Google Slide projects must be emailed to Mr. Kinder by Wednesday, March 3rd. rob.kinder@k12northstar.org
2. None of the projects may include any form of hazardous materials. Rocketry is permitted; however the model rocket must be non-working (i.e. no ignition system).
3. Electricity will be made available, as needed. Safety procedures must be followed.
4. Students should take precautions to use safety goggles and equipment, as necessary, to complete their experiments, under direct adult supervision.
5. Students must credit their sources of information through the creation of a bibliography, works cited, or references display. Plagiarism will not be tolerated.



Interior Alaska Science Fair

Traditional Board Display

Entry Guidelines & Information

Eligible students: Students in grades K-8, who are selected by a participating school, may display projects in the Interior Alaska Science Fair. Students may enter more than one project.

Eligible schools: Any school from Interior Alaska may participate. Participating schools are given a quota of projects, based upon total student enrollment.

Animals: No live vertebrate animals may be exhibited. Photos or illustrations are recommended instead.

Hazardous materials: Hazardous materials, such as bacteria, unsealed Petri dishes, open flames, or dangerous chemicals may not be exhibited. Photos or illustrations are recommended instead.

Potential hazards: Exhibits containing blades, batteries, motors, exposed electrical wire, or chemical mixtures must be checked by a display monitor for potential fire and safety hazards at the time of display setup.

Liquids: All containers of liquid (vases, jars, pools, etc) must be protected against leakage and spillage to the maximum extent possible. Where lids are not feasible, due to items that project from the top of a container (straws, stems, etc.), use plastic wrap to cover the opening.

Judging: Judges will be looking for student understanding of the project. The display should be easily understood and self-explanatory. **The project should use scientifically sound research, following the scientific method, if appropriate--hypothesis, procedures, observations, data, conclusions.** Creativity and neatness will also be considered. **Resources and help received from adults should be documented on the project.** Links to the actual judging forms can be found at www.northstar.k12.ak.us.

Repetition: Experiments should be repeated more than once. **To receive a blue ribbon, the experiment must be repeated three times.** Following the school fair, projects may be improved or modified.

Size requirements: Exhibits should be as compact as possible, not to exceed 2 ft. front to back, 3 ft. side to side, and 6 ft. top to bottom. Smaller is better.

Electricity: If a project requires electricity, an extension cord will be needed, labeled with the exhibitor's name.

Web Site: Additional information is available <http://www.k12northstar.org:Page:2969>

Group Projects: Group projects submitted by small groups (1-3 students), large groups (more than 3 students), classes, or families are eligible for entry. Each student in a small group project (1-3 students) will receive a certificate, a ribbon, and a T-shirt. Larger groups will receive pencils and a group certificate. Due to space considerations, only 2-3 students may attend the judging for class projects.

Community Awards: In addition to the awards presented by the Science Fair, awards will be presented by a variety of community organizations. These groups determine their own categories, judging, and means of recognition and their awards are presented at the Doug Schamel Awards Ceremony on Saturday.

Doug Schamel Awards Ceremony: Recipients of awards presented at the Doug Schamel Awards Ceremony will be notified by email the day before the ceremony. Be sure an email is on the entry form.

Alaska Science and Engineering Fair: Those wishing to enter projects in the Alaska Science and Engineering Fair in Anchorage may download the necessary forms and guidelines at www.alaskasciencefair.org.



Powerpoint/Google Slides Presentation Requirements

Must include all the required parts of Science Fair projects.

No more than 10 slides.

First slide

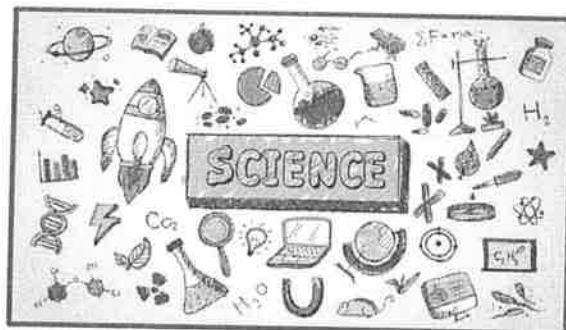
Introduction slide:

- Name, School, grade
- Title of project
- Photo of yourself/project (optional)

The other slides should include (doesn't have to be in this order)

- Materials
- Hypothesis (not needed on all projects ex. Scientific Report)
- Process: What you did/your steps etc.
- Help you received
- Resources

You can use 4 more slides if you want. Pictures/photos are encouraged.



PROJECT CATEGORIES

Once your child decides on a topic for a science fair project, the next step is to discuss which of the following categories is most appropriate for what he/she would like to do. It's important to decide this at the beginning, because there are specific requirements and judging for each category. Knowing these guidelines will help the student structure and organize the project for a successful science fair experience!

1. Scientific Experiment

- a way of answering a question using the "scientific method"
- ask a question
- state your hypothesis (a guess at the answer)
- design an experiment to test your hypothesis
- collect the data
- be sure to **replicate** at least 3 times
- present your results, usually in table and/or graph form
- state your conclusions - do the results support your hypothesis or not?

2. Demonstration of a Scientific Principle

- explore a scientific principle and share your knowledge with others
- best to focus on one principle and use several ways to illustrate it
- the best demonstrations include a model to demonstrate the principle
- should also include drawings, photos, and other visual aids

3. Scientific Collection

- collection of items of scientific interest, e.g. shells, minerals
- collection must be well organized and specimens correctly identified
- should include background research/information
- may include a logbook or journal for additional information

4. Original Computer Program

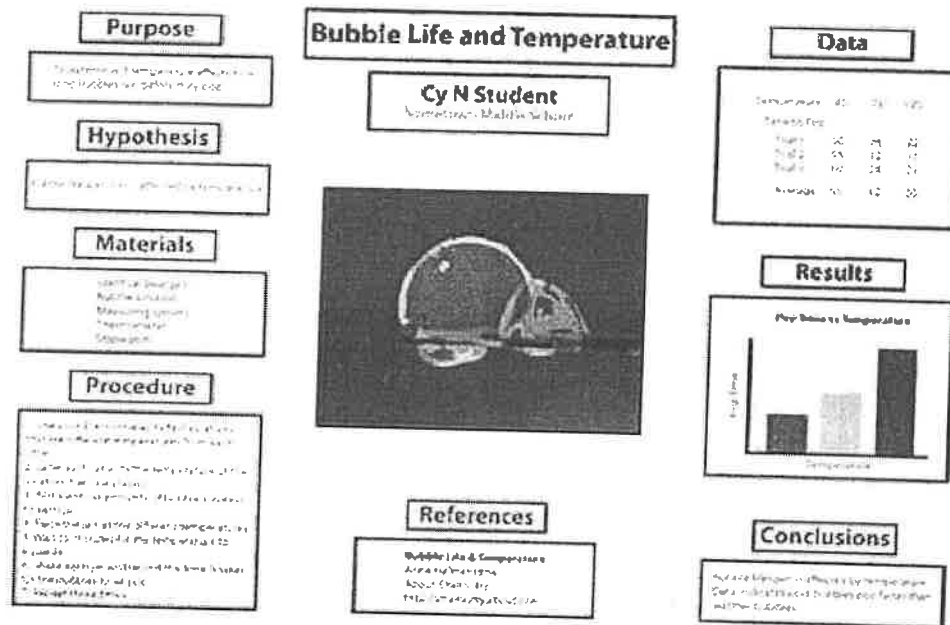
- original program using any computer language
- examples: graphics or math demonstration, game, utility program
- identify purpose of program
- include display board?
- printout of code?
- program should be run smoothly and require no special skills to use

5. Invention or Innovation

- a useful object that has never been made before (invention)
- a new service or process, or an improvement to something (innovation)
- begins with a "need" or problem to solve
- project must include an Inventor's Notebook (log of progress towards invention)

6. Illustrated Science Report

- research on a scientific topic that doesn't fit any of the other categories
- often a topic that is impractical for an experiment or demonstration
- examples: lions, Ebola virus, subatomic particles
- needs to include extensive research, expressed in student's own words and original illustrations
- this can be on paper or electronic format
- must also include a display board with visual aids such as pictures, charts, etc.



- **Title** The title should be an accurate description of the project. The title is usually centered at the top of the poster.
- **Pictures** Try to include color photographs of your project, samples from the project, tables, and graphs.
- **Introduction and Purpose** Sometimes this section is called 'Background'. This section introduces the topic of the project, explains your interest in the project, and states the purpose of the project.
- **The Hypothesis or Question** Explicitly state your hypothesis or question.
- **Materials and Methods** List the materials you used in your project and describe the procedure that you used to perform the project. If you have a photo or diagram of your project, this is a good place to include it.
- **Data and Results** Data and Results are not the same thing. Data refers to the actual numbers or other information you obtained in your project. Data is often presented in a table or graph. The Results section explains what the data means.
- **Conclusion** The Conclusion focuses on the Hypothesis or Question as it compares to the Data and Results. What was the answer to the question? Was the hypothesis supported? What did you find out from the experiment?
- **References** You may need to cite references or provide a bibliography for your project. Reference may be cited on the poster or printed out and placed below the poster.

Problem/ Purpose

State the problem you meant to solve.

Project Title

by
Your Name

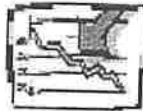
Results

What did you learn from your work? Explain your data.

Hypothesis

State your hypothesis.

Data & Graphics



Display your data and pictures in this area.

Graphics are very effective for explaining results.

Conclusions

Was your hypothesis right or wrong? Can you make a new one?

Procedures

Explain the experiments you did. What? How? Why?

Recommendations

From what you learned, would you try anything new?

~~ Science Fair Board Layout ~~

Experimental Project



Science Fair websites



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

Looking for inspiration for a science fair project? In need of fun, at-home science experiments? Science Buddies has over 1,000 Project Ideas in all areas of science.

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

Separate science fair guides for students, teachers, and parents.

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

Science Fair Projects for all levels. We have hundreds of ideas for every science topic, from Astronomy to Zoology!

<http://www.ipl.org/div/projectguide/>

If you've never done a science fair project before, DON'T PANIC! The IPL's Science Fair Project Resource Guide will help you through the whole project by guiding you to a variety of excellent web resource

<http://pbskids.org/dragonflytv/scifair/>

You can turn the investigations that you see on DragonflyTV into your own science fair project! Every investigation featured on the show has its own Web page where the kids describe exactly what they did. It follows what they asked, what kinds of experiments they tried, and what they found out. Then, we added other ideas for even more projects for you to try.

[http://www.k12northstar.org/Page/2969-⁸⁸⁰⁰](http://www.k12northstar.org/Page/2969-8800)

School district page with links to entry forms and district guidelines.