You Are Invited!

Rogers Park
Elementary School
2020 Science Fair: March 19

You are invited to take part in the Rogers Park Science Fair! This exciting event encourages you to think and act like scientists. Students, you will develop and use skills in writing, oral presentation, creative thinking, and problem solving. Parents, we ask that you encourage your child and monitor his or her progress. Your support is key to a successful project. Please do not allow your involvement to extend any further. To promote your student’s learning, it is important that your child wrestles with the problems and works to solve them. Guide your child whenever and wherever you can, but let the final project reflect your child’s effort and design.

This packet will have everything you need to create a successful science project for the Rogers Park Science Fair. There are additional guidelines and ideas at the Rogers Park website. If you are planning to compete in the Alaska Science & Engineering Fair the weekend of March 27-29, make sure to consult the guidelines at http://www.alaskasciencefair.org

Where? Rogers Park Elementary Gym

Projects are allowed on the bus.
"At a Glance" Science Fair Timeline

Week One: February 10-14
- Choose what you want to do. Do you want to do an experiment, demonstration, model, collection or invention?
- Think of your BIG question.
- Write a hypothesis or set a goal, depending on your project.
- Start looking for materials and information.

Week Two: February 17-21
- Gather all the supplies you think you'll need.
- Make a plan. What will you do first? Second?
- Begin experimentation, collection or designing your invention.
- Record observations.

Week Three: February 24-28
- Continue recording notes/observations.
- Write down all the information you want to put on your board, including the steps you followed to complete your project.
- Begin preparing graphs, charts and visual aids, such as photos and drawings.

Week Four: March 2-6
- Neatly write or type the text for your board.
- Decide how everything will fit on your board.
- When you’re happy with it, glue everything in place.
- Practice explaining your project so you’re ready for judges!

Week Five: March 16-20 (The week after Spring Break)
- Bring your board to school on Wednesday, March 18
- Thursday March 19 Science Fair Display and Judging
- Thursday March 19 Friends and Family Viewing 3:30-5:30
- State Science Fair: March 27-29
Choosing a Project

The key is to do a project that interests you. What do you wonder about? Then pick the type of project that fits.

1. Collections
For Primary Students K-3. Collections of rocks, seashells, leaves, or other items from nature. They should be labeled with the name of the rock, where it came from, etc. A short report on the items would be great but not necessary. Collections must be attached to Science Fair board for entry. Photos are a great substitute if attaching the collection is not possible.

2. Experiment
Write a hypothesis and design an original experiment to answer a particular question, record and report the results, and reach conclusions based upon those results. Show that you followed all of the steps of the scientific method.

3. Demonstration
A demonstration usually involves re-testing an experiment that has already been done by someone else. You can also choose to demonstrate a particular science principle or fact, how something works or the reason behind a science phenomenon.

4. Research
Collect information about a topic and present your findings in an interesting way. In a research project, the student investigates a chosen topic by consulting primary sources. In addition to consulting reading materials, students could also spend time with experts such as scientists, health care workers, engineers, etc. The intent is for the student to explore an in-depth scientific area and report the findings in a vivid, interesting way through photos, a journal, drawings, etc.
5. Model
This type of project involves building a model to show how something works, such as a model of the eye or a model of a submarine. Students should be able to explain the use, function and importance in detail. **Model must be attached to the Science Fair board for entry into the Science Fair. Photos or drawn diagrams are a great substitute if attaching the model is not possible.**

6. Invention
Student should identify a current problem and design/create something new and original that would solve that problem. A student would record and report his or her efforts and display the steps taken to solve the problem as well as display their work. **Inventions must be attached to science fair board for entry. Photos or drawn diagrams are a great substitute if attaching the invention is not possible.**
Displaying a Science Fair Project

You may reuse an old board, buy a new one, or make your own (check dimensions on “Science Fair Checklist”). The most important consideration is that the unit be freestanding and durable. Following are suggestions for developing a display:

What to put on the display:

Title of the Project:
Make your title clear and short.

Purpose:
List the reasons for pursuing the project and the topic to be investigated. This should also include what you hoped to learn by investigating this area.

Procedure:
What did you do to carry out your plan? What methods or materials were used to discover new information?

Hypothesis: A hypothesis is an educated guess or prediction about what you think will happen. Note: Hypotheses are used mainly in experimental projects.
**Results:** What did you learn during or after your project?

**Conclusion:** This statement summarizes your project. You may discover something not originally planned. Conclusions may also include ways to improve the project.

**Visual Aids:** These include photographs, charts, surveys, graphs, data, drawings or paintings, diagrams, or other illustrative materials that show vital information gathered during the project.

**Name and Classroom:** Clearly print your name and classroom number on the back of your display.

Remember: All items submitted to the science fair MUST be firmly attached to the science fair board. No loose items are allowed.

<table>
<thead>
<tr>
<th>Parent and Community Help Needed!</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display Board Set Up:</strong> Wednesday, March 18 3:30-4:30</td>
</tr>
<tr>
<td>Set up tables, put out tablecloths, arrange displays.</td>
</tr>
<tr>
<td><strong>Last Minute Touches:</strong> Thursday March 19, 8:30-9:30</td>
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<tr>
<td>Help get last minute projects arranged and any last minute set up.</td>
</tr>
<tr>
<td><strong>Judging:</strong> Thursday March 19, AM and/or PM</td>
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<tr>
<td>Use judging form to help you interview students one at a time.</td>
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<tr>
<td><strong>Clean Up:</strong> Thursday March 19, 5:30-6:15</td>
</tr>
<tr>
<td>MANY adult helpers needed to fold and carry display boards to classrooms, take down tables and neaten the gym.</td>
</tr>
<tr>
<td>Please contact Mrs. Jigliotti to sign up! <a href="mailto:jigliotti.joey@ask12.org">jigliotti.joey@ask12.org</a></td>
</tr>
</tbody>
</table>
Your child’s project should be their own work as much as possible. All parents will need to help with ideas, resources, and materials. Consider the age of your child and let their project reflect their abilities. The child should do the work and learn by trying, while the parent acts as the advisor and assistant.

1. Your child should decide on the idea. Provide science fair idea books or help look online. Keep looking until they find an idea that sparks interest, and is do-able. If your child wants to use a science experiment “recipe” from a book (a Demonstration) you can help them to change the variables and or extend the project so that it is different from the book (an Experiment) to get a different outcome.

   Child centered question: Did I find an idea that was really interesting to me and made me want to learn?

2. Focus on learning. Parents can assist with interpreting information so that it is easier to understand. For the most part, resources should be at their reading and comprehension level, with a parent checking for understanding. Children will be learning many things during this process - how to work independently, how to do research, how to present information, and how to explain their work. What seems to be a simple project may be best for learning these complicated skills.

   Child centered question: Did I learn a lot about my topic?

3. Your child should do the lion's share of the work. Do not help if they are complaining, have left it to the last moment, or refuse to do almost all of the work. This is an opportunity for them to fail and learn from their mistakes. If an adult rescues them, the lesson will be to expect rescue. Do set timelines and goals with
your child so you avoid late night marathons. Praise all cheerful effort, including work that isn't up to your standards.

Student centered question: Did I work with a scholarly attitude, keep on track, with no complaining?

3. Let your child's age determine how the information will be shown. K-2 students may want to dictate while a parent types. Older students can print or type information, or a combination of both. Parents can help with editing. Encourage children to draw and label rather than cut out or print pictures. Models should be made entirely by the child. Parents might help with a table or graph, but the child should enter the information. Parents should help by photographing the child working, and by giving advice about how to lay out the board before gluing.

Child centered question: Did I do my best work to make my board informative and interesting?

4. Information to know before starting:

What are the expectations of the classroom teacher? Will this be required, or will it be extra credit? Will the child be required to present to the class or provide a class science experiment?

Will your child be interested in entering the State Science Fair? If so, make sure the project follows the guidelines and requirements, which are different than school expectations.

Child centered question: Do I know what my teacher expects my project to include?

5. What will the budget be for materials? Items might be needed, such as a presentation board (5$-20$), lettering or decorations (keep these to a minimum), and materials for a model, invention, or experiment. It is up to the family to decide the budget, but focus on needs, not wants. A general guideline might be between $5-$30.
The Written Report

We encourage all entrants to prepare at least a short written report. Any student wishing to submit his or her entry to the State Science Fair is required to include a written report.

The written report is the record of the entire project from start to finish; a summary of everything you did to investigate the selected topic.

Typed or handwritten reports should be neatly bound in an attractive folder or binder. If typed, the report should be double-spaced. Younger students may dictate to parents or siblings, but the words must be their own!

The parts of your Written Report:

Title Page: The title page should be attractive (include a drawing, graphic, or picture) and show the title of your project, your name, and date.

Table of Contents: Listing headings and page numbers.

Statement of Purpose: This two- or three-sentence statement explains what you expected to discover.

Hypothesis: Students who select an experiment to perform should include their hypothesis in the written report. It is not necessary to include a hypothesis for other types of projects.
Introduction: This part of the report contains all the background information you collected about the topic. Any books or articles read, or authorities consulted should be summarized and presented in this section. It should be written in your own words and should not be copied from an encyclopedia or other reference.

Materials: List of all the materials and supplies used in the project. Include quantities and amounts. 'Materials' sections are not required if you chose to do a research project.

Procedure: These are your methods, instructions for how you went about creating or completing your project. It should be written in a logical order and using as much detail as possible.

Observations and Results: This is the description of what you learned from the project. It can include visual observations, measurements, graphs, charts, or other visual data that summarize the results of the study. If you chose to do a research project, this would be the main body of your text with all your findings and research summary.

Conclusions: A brief statement explaining why your project turned out the way it did, what it means, and why we should care. If an experiment was chosen, the conclusion should state whether the hypothesis was proven or not, and how it could be improved.

Bibliography: The bibliography should list all the printed materials and websites you consulted. Items should be listed in alphabetical order in a standard format.

Acknowledgments: This is where you thank all the people who helped you with your project, including mom, dad, siblings or other helpers.
Science Fair Checklist: Things to Know

Please check with your teacher or email Mrs. Wohlfirth if you have questions or want an exception.  wohlfirth_barbara@asdk12.org

1. Project size under 30" x 48" x 108" (depth, width, height)
2. Project must be able to stand up
3. Displays may NOT contain the following:
   - Live animals or plants or dried plants;
   - Food materials (NO EXCEPTIONS);
   - Soil, solutions, chemicals, household products or water, dry ice or other sublimating solids. Display of clean, empty containers is acceptable;
   - Drugs or drug look-alikes;
   - Microorganisms, algae, mold, bacteria, or protozoan;
   - Preserved animal parts (teeth, fingernails, feathers, hair and bones may be okay if preserved and sealed in plastic, NOT a zip-lock);
   - Exposed electrical apparatus or open batteries; wiring must be insulated;
   - Flammable gases or open flames;
   - Unshielded fans, light bulbs, belts pulleys, chains or moving parts with tension or pinch points;
   - Photos of animals in surgical or lab procedures;
   - Sharp items such as needles, scissors, or glass tubing, syringes, pipettes; or
   - Awards, medals, flags, or business cards.

4. Additional display criteria:
   - No operation of class III or IV lasers.
   - Displays producing high temperatures must be insulated from surroundings.
   - High voltage equipment must have grounded metal shield or cage; high voltage wiring, switches, etc., must have insulation and overload safety.
• 110-volt AC circuits must have UL approved cord (9’ minimum) and grounded plug.
• Bare wire and knife switches used only on circuits of 12 volts or less.
• Large vacuum tubes and ray-generating devices must be shielded.

Experimentation involving the following is strongly DISCOURAGED:
• nonhuman vertebrate animals
• controlled substances
• pathogens (all bacteria isolated from environment are considered pathogenic)
• DNA
• animal tissues
• humans

All items submitted to the Science Fair must be firmly attached to the Science Fair board. Photos or drawn diagrams are a great substitute for any item that cannot be safely attached or that is valuable or breakable.
The State Science Fair March 27-29

You have done all the work, why not enter your amazing efforts in the State Science Fair for a chance to win some awesome prizes and show your smarts?

For registration and more information about the State Science Fair visit: http://www.alaskasciencefair.org/index.html.

Make sure that your project and the finished board and report meet all of the requirements for the State Science Fair.

If you do not have access to the Internet, please ask your teacher to print a copy for your family.

State Science Fair Judging Criteria

A judge will interview you and fill out a rubric. Your judge will ask you three open ended questions (such as “tell me what you learned”). You should practice explaining what you learned in a clear and logical way, e.g., the purpose, procedure, results, and conclusions drawn from the project. Most of all, you should feel proud of your work and show that in your enthusiasm! Everyone will receive awards for participation.
Rubrics are meant to give you feedback and encouragement.

Judging Rubric (this is the same rubric used at the State Science Fair)
Elementary projects are rated on a scale of 1-3 with 1 being the highest. The student interview is a very important part of the judging process.
For each trait or criteria:
1- indicates that the described trait or criteria is present to a high degree;
2- indicates that the trait or criteria is present though a small piece may be missing;
3- indicates the trait or criteria may be present but not well developed.

Total Project Rating: 1 2 3

I. Process Rating: 1 2 3

The project shows evidence of a logical thought process for gathering information, processing data and drawing conclusions. Process skills such as observation, measurement, inference, communication, etc. are used. Experiments show the use of a scientific method, which includes a question, hypothesis, procedures, results, and conclusions.

II. Understanding Rating: 1 2 3

The student is able to articulate or demonstrate the ideas that she or he learned while doing the project. The student can reflect on how the project might be expanded or changed in the future.

III. Creativity/Child Centered Rating: 1 2 3

The project reflects the child’s interest. The project topic is unique or the student’s approach to the topic is creative.

IV. Presentation Rating: 1 2 3

The project is pleasing to the eye. Information is presented in an understandable sequence. Charts, graphs or tables are clear. The presentation is age appropriate. If there is an additional written explanation, such as a journal or log, student learning is reflected.