You Are Invited!

Rogers Park Elementary School 2019 Science Fair: March 21

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. If you are planning to compete in the **Alaska Science & Engineering Fair the weekend of March 29-30,** make sure to consult the guidelines at ***https://alaskasciencefair.org/events/2018-asef-event/***

When? **Thursday, March 21st** Judging and interviews during school hours. Family and Friends Viewing in the Gym Thursday 3:30—5:00.

Where? Rogers Park Elementary Gym

Projects are allowed on the bus.

"At a Glance" Science Fair Timeline

Week One: February 11-15

- Choose a project. Will you do an experiment, demonstration, model, collection or invention? What's your BIG question?
- Write a hypothesis or set a goal, depending on your project.
- Start looking for materials and information.

Week Two: February 18-22

- 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 25-March 1

- 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 graphs, charts and visual aids, such as photos and drawings.

Week Four: March 4-8

- 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!

Spring Break: March 11-15

- Put your final touches on your project and practice explaining it so you are ready for next week!

Wed., March 20: Bring your completed project to school.
Thur. March 21: Science Fair judging. Parent viewing 3:30-5:00.
Fri., March 22: All projects go home.

March 29-30: State Science and Engineering Fair

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.***

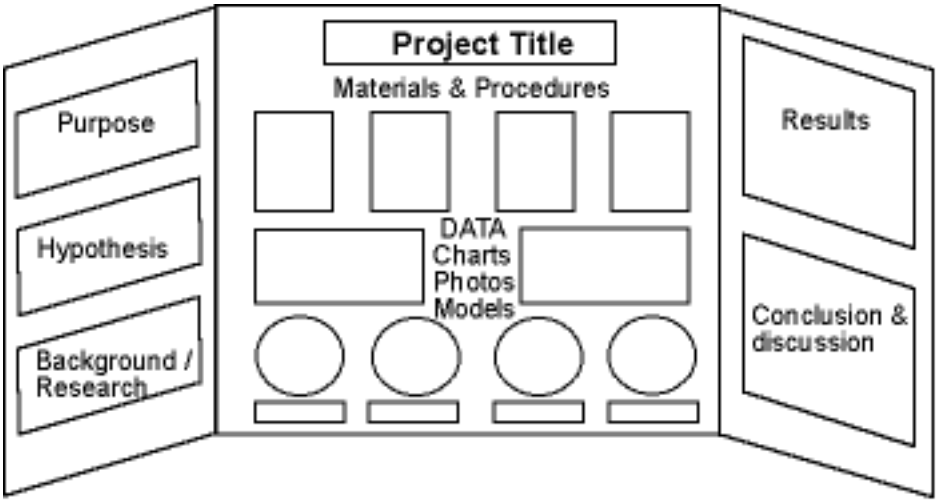
6. **Invention**

   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 recover and 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.

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 and dad.

Science Fair Checklist: *Things to Know*

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 protozoa;
    - 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;
    - 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' min.) 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
- DNA
- animal or human tissues

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.

State Science and Engineering Fair March 29-30

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 forms and more information about the State Science and Engineering Fair visit ***https://alaskasciencefair.org/events/2018-asef-event/***

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 Internet access, ask your teacher to print a copy.

Judging Criteria for the State Science Fair

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.

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.