



Question. Experiment. Communicate. Cowlshaw Elementary School Science Fair

All Cowlshaw students and their parents are invited to participate in the science fair on **Friday, February 22, 2019**, in the Cowlshaw Gym, from 6:30 to 8:30 PM.

Information about the Cowlshaw PTA Science Fair:

- The Science Fair is open to K - 5th grade students at Cowlshaw Elementary.
- All students can display their experiment along with poster or Display Board
- Kindergarten - 2nd grade students can also participate by submitting a science poster for display only.
- Project can be done individually or a group of 2 students in the same grade.
- Adult volunteers (“Science Experts”) will talk to students about their experiment and ask few questions
- All Student participants will be rewarded for their hard work and will receive a certificate. Special recognition will be awarded to one project in each grade level.
- Project to be done at home, not in school.
- All students are encouraged to come and see their Classmates’ Experiments; also there will be a slideshow of parent-submitted pictures, and a live science demonstration show.
- Students must be pre-registered to participate. Please register online, or fill out the Registration Form on the last page of this document, and turn in via backpack mail. Registration begins **Monday, December 17th, 2018**
- The following detailed guidelines should answer any questions you may have on this fun and educational process.



Project Guidelines



What is a science fair?

Science fairs provide opportunities for kids to creatively explore an area that interests them—to do science themselves! Thinking of a project, asking a question about an area or field of study, determining a way to test the answers to their questions, and creating a colorful display are all ways to get students excited about science and learning. Creating a science fair project encourages even more questions about science and closer attention to things around them.

Where do I start?

Thinking of your science fair project can be fun and challenging. First, think of an area that interests your child, or they are curious about. Make sure it is a subject they are interested in.

K-2 students can also participate by submitting a science poster for display only. Examples include:

- The Five Senses
- Planets of our Solar System
- Dinosaurs of the Jurassic
- Model of the Digestive System

However, what is really fun when doing a science fair project is to ask a question that leads to an experiment. This process of answering questions by creating an experiment that really narrows down cause and effect is called The Scientific Method. This is what science is all about!

Here are examples which turn one of the above poster subjects into one that asks a question:

- Which of the five senses is used most?
- How high is Venus in the night sky?
- Why did dinosaurs get so big in the Jurassic Period but then smaller during the Cretaceous?

- How long does it take for food to go through the digestive system?

Science Fair Project Guide for Cowlshaw Elementary School

How do you get some answers? (The Scientific Method)

Oooh... the **Scientific Method**.....Does it sound a little scary? Well, it's not. It's just the way that scientists get from asking a question to finding an answer. Here's a short outline of how it works.

- First, ask your **Question**
- Then make a guess—**Hypothesis**
- Take a look with experiments—**Observations**
- Write down observations—**Data**
- Make a **picture** of what you observed—charts, graphs, tables, or photographs
- Decide what it means – **Conclusions**



Pick your project!

Ask a question! This is probably going to be the title of your science fair project. Need some help with getting ideas? Ask a question that leads to an experiment!--Remember that an experiment compares things. It is important to ask the question in a way that you can compare or measure things to get an answer. You might need to work on your question and ask it a few different ways before you figure out the best way to ask it so that it leads to a measurable answer.

Research your topic!

Next you need to research your topic. Find out as much as you can about your topic. Read books on it, find magazines or newspapers, talk to people you know, do online searches to help you find more information.



Suppose your project is "Which paper towel really lasts longer?" It would be a good idea to do some research on how paper towels are made. Perhaps write to the different paper towel companies and ask about their equipment or where their paper comes from. You could even try to make your own paper towels and test those against the national brands.

If you are in Kindergarten and you are really interested in dinosaurs, you could do research by going to the Field Museum to see Sue and the Rockford Dinosaur museum to see Jane (T-Rex fossils). Talk to the guides at the museum to find out more information. Take pictures of both to see how they are the same and how they are different.

State your hypothesis!

Since you've done a bit of research, you probably have some ideas about how your experiment will turn out. Make a guess and write it down. State your hypothesis in a way you can measure or check.

Do your experiment!

Now you need to check your hypothesis to see if it is correct or not. (A little sneaky hint here: being wrong is ok...sometimes it's easier to check it that way) Set up your experiment so that you are changing only one thing and the rest of it stays the same. The thing you change is called your variable because you are varying or changing it.

Gather your results!

Record the results of your experiment using charts, graphs, photographs, or measurements. Feel free to record your data in more than one way.

Draw your conclusions!

What happened with your experiment? Did it turn out the way you thought it would or were you surprised? What did you learn? Write it down. It doesn't have to be long. Just think about it and state it in a clear way.

Science Fair Guidelines and Safety Rules

Projects should be the work of an individual or a team of students and be monitored by a parent. In addition, many experiments have safety risks which must be identified and addressed by parents before the experiment. To make the science fair a safe and fun experience for the families that will be attending the fair, please follow these guidelines* in picking your project:

- Parents must carefully monitor any experiments that are performed as part of a project.
- No open flames are permitted.
- No dangerous combustible chemicals are permitted.
- All electrical safety rules should be obeyed.
- No live human or animal experiments are allowed.
- Parents must sign a Consent form (Please see Consent form at the bottom of the Registration form)

Exhibit Guidelines

At the science fair, you will be allocated space at a table on which to place your exhibit. Please follow these guidelines in creating an exhibit to bring to the fair:

- Include your project title, name, and class on a 36" X 48" tri-fold display board. (See example next page.)
Display boards are also available for a discounted price (\$3) on the website, or registration form.
- Your display must fit within the space of 36 inches wide and 20 inches deep, and be self-supporting.
- In addition to the display board, other materials such as papers and dioramas may be included.
- Demos performed at the fair need to be set up in a way that is safe and non-damaging.
- Items brought to the fair must fall within school safety guidelines.
- Parents must supervise children at all times during the fair.

Feedback on student projects by Parent “Science Experts”

Students should be prepared to briefly discuss their project with parent volunteers and answer questions about it (Formal presentation is not expected). For the Cowlishaw Science Fair, all participants will receive a participation award, and 1 project from each grade will receive additional recognition. Here are some examples of questions:

- Tell me about your project.
- What did you think would happen?
- Did you repeat the experiment?
- What is your conclusion?

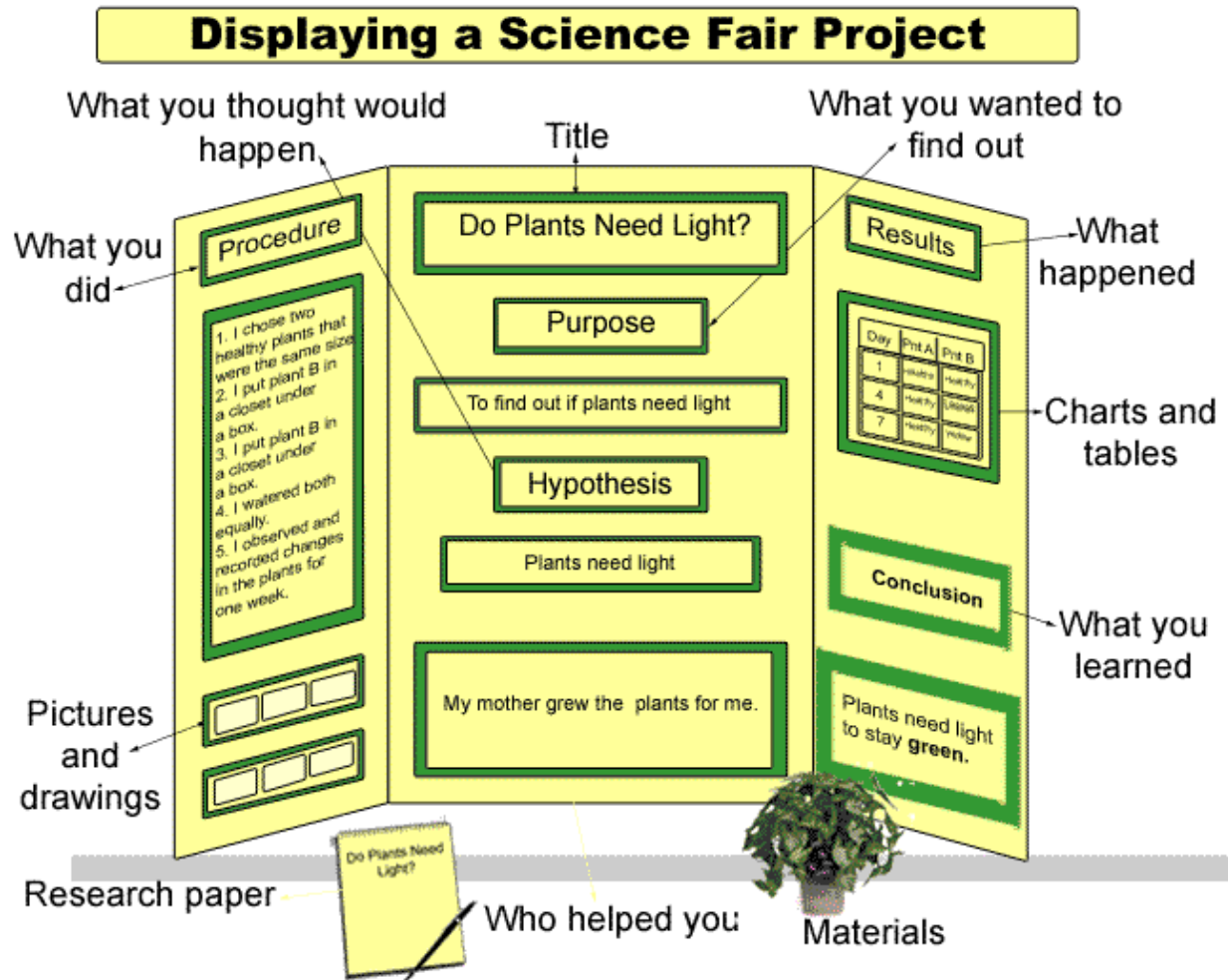
Scientific Process Checklist

- Problem or Question
- Research
- Hypothesis
- Method (experiment plan)
- Data
- Results
- Conclusion
- Science Display Backboard



Sample Science Fair Display Boards

Example:



Fair Schedule

Friday, February 22nd (6:30 PM – 8:30 PM)

5:00 PM Setup, grades 3-5

5:30 PM Setup, grades K-2

6:30 PM Public welcome

8:30 pm Fair ends, Exhibits removed

- On the day of the fair, all student participants and their parents must arrive and set up their exhibits before the fair is open to the public.
- During the science fair, Cowlishaw Elementary families and their guests are invited to come and view the displays.
- Each student should be present at their exhibit during the requested time, until after their exhibit has been reviewed by a Science Expert.
- Children may not be unattended at any time during the fair.
- All projects must be taken home at the end of the fair.

Science Fair Project Idea References

- <http://www.ipl.org/div/projectguide/>
- <http://www.cool-science-projects.com/Science-Fair-Project-Ideas.html>
- <http://sciencebuddies.com>
- <http://www.super-science-fair-projects.com/>
- <http://www.all-science-fair-projects.com>

Visit the Cowlshaw Website and click on ELMC Book Search to see what books we have to support your question. Talk to Mrs. Chmielecki in the LMC for science books.

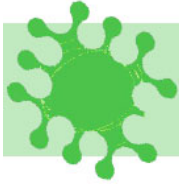
Book Suggestions (Available at Naperville Public Libraries & some in the LMC):

- Janice VanCleave's A+ Science Fair Projects by Janice VanCleave
- Janice VanCleave's A+ projects in Earth science: winning experiments for science fairs and extra credit by Janice VanCleave
- Janice VanCleave's Guide to the Best Science Fair Projects by Janice VanCleave
- Janice VanCleave's Guide to More of the Best Science Fair Projects by Janice VanCleave
- Janice VanCleave's A+ projects in Earth science : winning experiments for science fairs and extra credit. by Janice VanCleave
- Janice VanCleave's electricity : mind-boggling experiments you can turn into science fair projects._ by Janice VanCleave
- The complete handbook of science fair projects_ by Julianne Blair Bochinski
- Step-by-Step Science Experiments in Astronomy, Janice VanCleave
- Discovering Sciences: Solids, Liquids, and Gases, Atoms and Molecules, Chemicals and Materials, Energy and Work, Electricity and Magnetism, Force and Motion by John Farndon & Ian Graham
- Science fair projects : Forces and motion by Kelly Milner Halls

Science Fair Project Ideas

- Do different brands of popcorn leave different amounts of unpopped kernels?
- What percentage of an orange is water?
- How to make a potato battery
- Does temperature affects the rate at which seeds sprout?
- Does salt or sugar affect the growth of alfalfa seeds?
- Does a pineapple grow best in sand, soil, or water?
- How does a guitar make high and low sounds?
- How to build your own telegraph machine
- What makes a parachute work?
- How does an elevator work?





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Registration Form

(Due by – February 8, 2019)

This form must be filled out and signed by a Parent/Guardian.

No pre-approval needed. You may start work immediately.

Students must be registered to participate in the science fair.

Student Name: _____

Project Title: _____

Science Category: _____

Class/Teacher: _____

Parent Signature: _____ Date: _____

Phone Number: _____

Email: _____

Consent form: Must be signed by a parent

I am Responsible for the displayed items used for the project in the science fair.

Parent's Name: _____ Date: _____

Parent signature: _____

Order Display Materials

Students need to purchase their own display boards and header boards.

The display boards should preferably be white.

Questions? Contact Cowlshaw PTA Science Fair Chair:

Anica Dubey: anicadubey@yahoo.com