Willamette Primary School
Science Inquiry and Engineering Fair 2020
Information and Registration Packet

General Information

K – 5 students are encouraged to enter a project in the Willamette Primary School Science and Inquiry Fair. Students may work on projects individually or in groups. The fair is non-competitive; it is designed to highlight student inquiry and investigation. Participants will be asked to present their projects on the evening of March 5th.

To enter: Please fill out the participation form included in this packet and return it to the office by January 31st. The participation form must have a parent/guardian signature.

Schedule

Friday, January 31st	**Registration forms due**
Friday, February 7th	**Presentation display boards given to registered students**
Monday, March 2nd	**Students bring projects to school and share projects with their class**
Thursday, March 5th	**Students bring projects to the gym 12:00-12:45**
Thursday, March 5th	**Projects on display in the gym 12:45- 2:05**
Thursday eve, March 5th 6:00 – 7:00 p.m.	**Family viewing of projects, taking projects home at the end**
**** Tuesday, March 10th 5:30 - 7:15 p.m.**	**Optional participation in district Science Fair-West Linn HS**

WLWV School District Science Fair

All entrants in Willamette's Science Inquiry Fair are encouraged to also share their work at the CREST- Jane Goodall Science Symposium on Tuesday, March 10th at West Linn High School. If you need more information regarding this event, please contact Willamette's Instructional Coordinator, Nicole Minor at minorn@wlwv.k12.or.us.

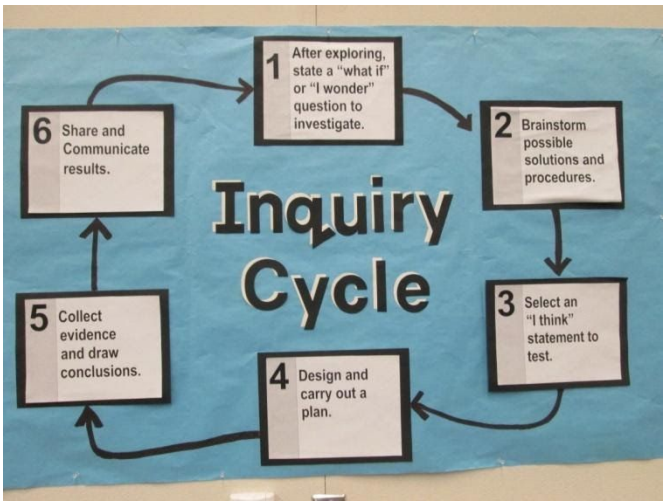
Getting Started

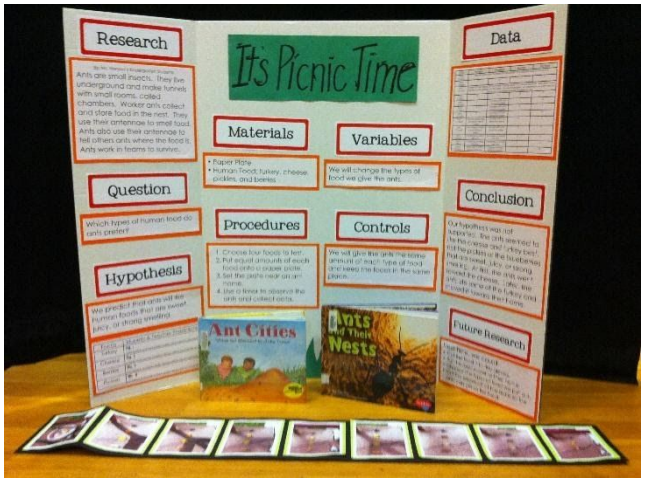
Students are encouraged to start by asking themselves, *"What do I want to learn more about?" or "What have I observed that I still wonder about?"* Once a driving question is determined, students may start collecting background information and engage in the research process. There are many resources available to help you get started. Willamette Primary's library and the West Linn public library will have resources to support your inquiry project. The website www.sciencebuddies.org is a great resource for project ideas and tools. Many other ideas can be found at sites such as the Internet Public Library: http://www.ipl.org/div/projectguide/.

First decide what type of project you want to do this year: Research/Inquiry, Experimental, or Engineering Design

Follow an observation that you've made, or follow-up with a scientific concept that interests you, and begin an Inquiry Research project.

Scientific inquiry research projects start with your authentic question, such as what insect makes that noise? How do chickens sit on their eggs without breaking them? How do optical illusions really work? What is global warming? Once you've determined your question, work through the steps in the Inquiry Cycle chart to the left. If you have any questions about this, please ask your teacher or Mrs. Baker in the library.





You may decide to complete an experimental study. Here are the steps to take when researching a question by completing an experiment:

Question

Choose a topic you find interesting. Observe and think about…

- How something works?
- How two things differ from each other?
- How does an animal or organism behave?
- What changes behavior?

Now the challenge – narrow the topic to a specific question with one thing that changes.

Hypothesis

Think about what you know about your topic; predict what your experiment will show.

Framing the investigation (Background information)

Tell what you already know about your topic.

How did you become interested in this question?

How did you come up with your question and hypothesis?

Design the investigation (Procedure)

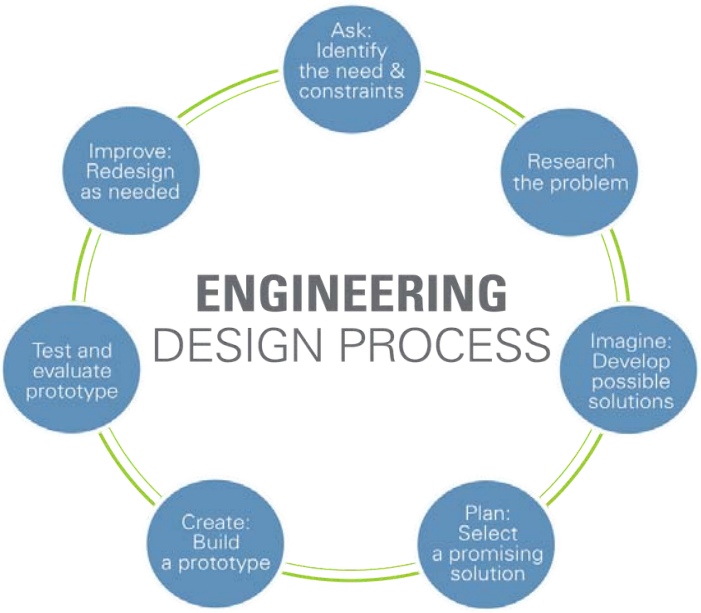
Try to keep everything the same except the one thing you are changing. For example, if you are measuring how many times your cat plays with the big ball compared to the small ball, you would try not to change the color of the balls, the bounciness of balls, or the smell of the balls. Plan the steps in detail. Someone should be able to follow your instructions and do the same exact experiment.

Collect and organize your data

- Run your experiment
- Record data
- Record extra observations
- Present data in a way that shows how the thing you changed affected the thing you measured. For example, how ball size compared to how many times the ball was played with. Decide if a chart or graph would show this best. Think about how best to display your data so it answers the question your experiment is asking.

Analyze and interpret your data (Conclusion)

- Did you use science facts you know to help explain



https://www.teachengineering.org/k12engineering/designprocess

Or, think like an engineer!

Students may choose to identify a problem or a need that could be improved with innovative design. Please follow these steps and chat with teacher or Mrs. Baker if you would like to pursue a Model/Design project.

Use a display board to present your project. Your board should include:

- The title of your project
- Your name, grade and teacher
- Use correct spelling and please write neatly, arrange your board with headings so your audience can easily read it
- Your question, or problem clearly stated
- And the following sections depending on the type of project you've chosen:
    - Experiment- question, background research, hypothesis, materials and procedure, results, conclusions, new questions or next steps, citation of research sources used
    - Engineering Design- background research, purpose or problem that your design helps to solve, prototype revision summaries and photographs, conclusions and reflections, new questions or next steps, citation of research sources used
    - Inquiry and Research- question, summary of research findings, conclusions, new questions or next steps, citation of research sources used

Your project may *not* include:

- Science or math kits from stores
- Expensive or non-replaceable property
- Live animals, reptiles or bugs (observations of live animals are permitted)
- Matches, flames, chemicals or flammable substances
- Electricity passing through non-insulated wire
- Anything that must be plugged into an outlet
- Liquids that can spill or anything that may cause stains
- Sharp or breakable items, glass
- Blood or gory products or illustrations
- Items containing common allergens such as peanuts, tree nuts or latex

*If it can spill, hurt or cause an allergic reaction it is not allowed

Suggestions for Parents:

- ➢ Help your child get started – a project idea may be something that your child is interested in, curious about, or a subject she is learning about in class.
- ➢ Have your child think about the following sentences:
  I want to do …..I want to find or show…..I think that…..What will happen if…..I want to learn more about….. This is how children learn about the world around them!
- ➢ Encourage your child – the Science Inquiry Fair is meant to be a *fun* learning experience, engaging children in continuous questions about the world around them. It is non-competitive. Parents do not need a background in science, mathematics, or technology to be a support!
- ➢ Monitor your child's progress – changing ideas, missing items, overlooking steps, and not managing time effectively are common occurrences in any project. Help guide your child towards completing a finished project. This is a great way to teach organization and planning skills that children need to develop.
- ➢ Avoid doing your child's project for him – handwritten signs and descriptions in a child's own words are great! However, support with typing or data input, depending on the age of your child, may be helpful.

Key Reminders:

- Science Inquiry and Engineering projects are completed outside of school.
- Presentation boards will be provided and distributed to registered students.
- Students whose projects are based on true wonderings related to their own interests tend to have more success with managing the process, completing the project, and sharing their learning!

Timeline to Help You Plan Your Project and Stay on Track:

By January 31st	Formulate your question and determine which kind of project you will complete. Turn in your entry form!
Weeks of February 3rd and February 10th	Begin your study or experiment. Gather background information on your topic and design your study, experiment, or prototype to find out the possible answers/solutions to your question.
February 10th -- March 2nd	Work towards completing our research, design process, or experiment. Give yourself plenty of time to be thorough and precise. Follow the guide for displaying your work. Complete your display board to share your findings with friends and family. Practice sharing your information with an audience at home.
March 2nd	Bring your project to school and be prepared to share it with your class.
March 5th	Projects will be on display for school-wide student viewing from 12:45- 2:00.
Eve of March 5th	6:00-7:00 Science Inquiry and Engineering Open House (all families are invited). **At the end of the night, please take your project home with you.**
March 10th	Interested students may share their projects at the WLWV CREST-Jane Goodall Science Symposium at West Linn High School from 5:30- 7:15pm and then bring back to Willamette the following day.

Willamette Science Inquiry and Engineering Fair Entry Form

Please return this form to the office by January 31st

Date _____ **Grade/Teacher**_____

Name _____

If you plan to work in partnership with another student, both students should fill out their own forms. Add your partner's name to your form and turn forms in together!

My Question/Investigation _____

_____

Type of Project (circle one)**:**

- Inquiry and Research
- Engineering Design
- Experimental

Student Signature_____

Parent Signature_____

Each participant will receive a Willamette Science Inquiry and Engineering t-shirt (new design this year)!!! Donations of $5.00 payable to Willamette Primary are greatly appreciated to offset the cost of t-shirts.

Student t-shirt size (circle one): youth small youth medium youth large youth x - large adult small