

Dear Parents,

St. John Lutheran School is planning to hold a Science Fair on April 12! We hope that, with your encouragement, your child will enjoy participating in the fair and preparing a project. This will be an exciting experience for our school and for our students! Attached is information to help you and your child prepare for the fair.



Why a Science Fair?

We are confident the following benefits will result from your child's participation in the Science Fair:

- A better understanding of God's wonderful creation
- Reinforcement of grade level science and literacy skills
- Fostering curiosity, awareness, and creativity
- Increased scientific knowledge
- Learning research techniques
- Growth in ability to work independently
- Having fun with science!

Date

The Science Fair will be held on **Friday, April 12.**

Who will participate?

Students in grades K-8 will be participating in the Science Fair in various ways. Teachers at each level will provide additional information to help you to better understand what is expected of your child.

What are the categories for the Science Fair?

EXPERIMENT (Option for Grades 3-4, Required for Grades 5-8)

Students will conduct an experiment to find the answer to a question/problem. Using the **Scientific Method** will take them through the correct process of asking a question, doing some preliminary research, making a hypothesis (a best guess at how it will turn out), planning and conducting an experiment, and analyzing the results. Experiments will be more involved and will usually compare results. An example would be "What is the strongest brand of paper towel?"

RESEARCH PROJECT (Option for Grades 3-4)

Students will choose a science topic to research, complete a research paper, a display board, and present it to the class. An example a research project is "Tornadoes".

Will there be awards?

All students participating in the Science Fair will receive an award. First, second, and third place ribbons will be given according to the judging in grades 3-8. Students will also receive a grade in Science based on the work presented at the fair.

When should the students work on their projects?

Much of the work for the Science Fair will need be done at home – especially if an experiment is conducted. Teachers will help students to understand the process and guide them along the way.

Parental Involvement

It is important that parents are involved in their child's project. What can parents do to help?

- Help your child to choose a project. Look at ideas with them on the internet. Discuss the project options that are provided.
- Encourage your child to do their best.
- Check on their progress to make sure he/she completes the project on time. (A timeline is included to help monitor their progress).
- Offer advice and suggestions.
- Remember, that this is a school project so please be careful not to do the work for your child.

Science Kits

No science kits will be allowed in the science fair.

Display Boards

Students will be expected to share their information on a display board. We will have display boards available for purchase at school for \$4.00 or you can purchase them on your own.



How do we begin?

The teachers will be working with your child to help them in choosing a topic for the fair. There are many websites on the internet that can also provide you and your child with ideas for their project. Sciencebuddies.org is a good website, however, there are many other sites to explore as you begin the science fair process.

Science Fair Agreement

Your child is asked to identify the topic for his/her science fair project by January 23. A “contract” sheet is included asking for basic information about the project and the signatures of both parent and child. We want to be sure that you as parents are aware of the projects so that we are all working together throughout the process. Teachers will then review their choice and give approval for their project. Please be sure your child receives approval by his/her teacher before they begin working on their science fair project.

What if I have questions about the Science Fair?

Questions about the science fair can be directed to your child's teacher or to Mr. List.

Student Timeline

for

Science Fair Project (Experiment)



TASK	Student Due Date	Check when done
1. Choose and submit for teacher approval, a topic question/problem to investigate.	January 25	
2. Do preliminary research. Search a variety of sources on your topic including books, magazines, and the internet.	January 25 - February 3	
3. Develop a hypothesis (your best guess) based on your preliminary research.	February 3 - 10	
4. Decide on a procedure that you will use to test your hypothesis.	February 11-13	
5. Make a list of your materials. Gather your materials.	February 14-22	
6. Conduct your experiment. Compile and record your data.	February 23 - March 31	
7. Organize your data and results.	April 1-3	
8. Write your conclusion based upon your results. Write a real world application to what you have learned.	April 3-7	
9. Assemble your science fair display board and display items.	April 3-7	
10. Bring your science fair project to school to display.	April 8-12	
11. Take your science fair project home.	April 15	

St. John Lutheran School

Science Fair Contract

Student _____ Grade _____

The type of project chosen is:

- Research Report
- Experiment

The topic I have chosen is:

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RESEARCH PROJECT (Option for Grades 3-4)

Students will choose a science topic to research, complete a research paper, a display board, and present it to the class. An example of a research project is "Tornadoes".

By signing below, my child and I have agreed that he/she will complete a project for the Science Fair. We realize that doing the project will require work hours beyond the school day. We also acknowledge that the Science Fair project is required coursework for the child's Science class at St. John Lutheran School and will be reflected in his/her report card.

Student Signature

Parent/Guardian Signature

Please sign and return to the child's teacher by Friday, January 25, 2019

The Scientific Method

Science is a process of solving problems. The methods scientists use to find answers to problems are called Scientific Methods.

How do you find new facts to science? How can you test an idea to see if it is acceptable. One way is to use the following steps:

Make a clear statement of the problem

Try to understand the problem for which you seek an answer.

Collect information that relates to the problem.

Find as much information as you need from books, the internet, and other written records.

Form a hypothesis.

Form your own hypothesis, or best prediction based on information. A hypothesis is a possible solution for a problem. A hypothesis is formed after studying the facts and ideas relating to the problem.

Test the hypothesis.

Design and perform some experiments to see if your hypothesis is acceptable. An experiment is a way of testing a hypothesis. You can test many of your ideas by trying them.

Accept or reject the hypothesis.

To accept or reject your hypothesis, study the results obtained in the experiments. In some cases you may be forced to a conclusion that your hypothesis was incorrect. This does not mean that your work was wrong or useless ... it means that you learned what the answer must not be.

Steps of the Scientific Method

These are the steps to follow to use the Scientific Method.

The Question

Your science fair project starts with a question. This might be based on an observation you have made or a particular topic that interests you. Think what you hope to discover during your investigation, what question would you like to answer? Your question needs to be about something you can measure and will typically start with words such as what, when, where, how or why.

Background Research

Talk to your science teacher and use resources such as books and the Internet to perform background research on your question. Gathering information now will help prepare you for the next step in the Scientific Method.

Hypothesis

Using your background research and current knowledge, make an educated guess that answers your question. Your hypothesis should be a simple testable statement that expresses what you think will happen.

Experiment

Create a step by step procedure and conduct an experiment that tests your hypothesis. The experiment should be a fair test that changes only one variable at a time while keeping everything else the same. Repeat the experiment a number of times to ensure your original results weren't an accident.

Data

Collect data and record the progress of your experiment. Document your results with detailed measurements, descriptions and observations in the form of notes, journal entries, photos, charts and graphs.

Observations

Describe the observations you made during your experiment. Include information that could have affected your results such as errors, environmental factors and unexpected surprises.

Conclusions

Analyze the data you collected and summarize your results in written form. Use your analysis to answer your original question, do the results of your experiment support or oppose your hypothesis?

Communication

Present your findings in an appropriate form, whether it's a final report for a scientific journal, a poster for school or a display board for a science fair competition.

Science Fair Critique



Title of Project _____

Scientist _____ Grade _____

Hypothesis / Testable Question

Hypothesis / Testable Question is clearly stated. It is a simple testable statement that presents a question that can be answered through experimentation or expresses what the student thinks will happen. 1 - 2 - 3 - 4 - 5

Experiment

The student developed a good procedure for testing the hypothesis/testable question, including use of control data. 1 - 2 - 3 - 4 - 5

Data

Data was collected and documented in an organized and clear way. 1 - 2 - 3 - 4 - 5

Observations

The student describes what took place during the experiment. They may include comments discussing factors that affected results. 1 - 2 - 3 - 4 - 5

Conclusions

Based on analysis, the student provided acceptance or rejection of the hypothesis or gave an answer to their testable question. Write a real world application to what you have learned. 1 - 2 - 3 - 4 - 5

Presentation Board

Neat, well organized, and visually appealing. 1 - 2 - 3 - 4 - 5

Includes key components to provide a thorough picture of the project. 1 - 2 - 3 - 4 - 5

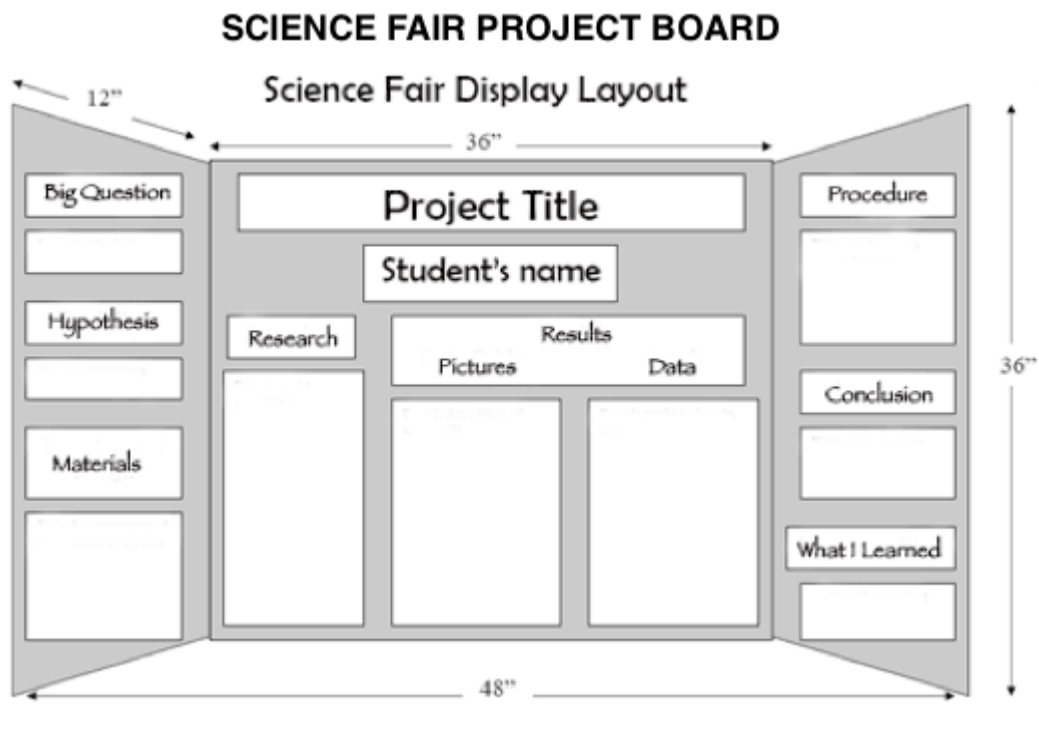
AWARDS

- Blue Ribbon (30-35)
- Red Ribbon (25-29)
- White Ribbon (15-24)
- Green Ribbon (00-14)



TOTAL SCORE

Experiment Display Board Example



Research Display Board Example

