Lake Seneca Elementary School Parent Teacher Association

Science Fair Guide

This guide offers information and resources for students and families to discuss before the student selects a topic and completes the project at home.

https://lakesenecapta.com/

Science begins by asking questions and then seeking answers. Asking good questions is an important skill to learn and practice for students and scientists. Have you ever wondered about any of the following?

What is the best way to keep ice from melting?

Why is the sky blue? How do airplanes fly?

How do flies walk on the ceiling?

How are rainbows made?

What happens when two objects collide at the same speed and one has a greater mass than the other?

Why can we see the moon during the day?

Why do plants need water to grow?

We're excited about your participation and can't wait for your presentation at the Science Fair on April 26. *Please consider these important dates to plan your project:*

Week of March 25, 2019 to April 1, 2019	Science Fair flyer is sent home. Students request permission from parents/guardians to participate. Students select a topic and begin their research.
April 5, 2019	**Deadline to request a Tri-Fold Display Board. Return the Science Fair Entry Form with your parent/guardian's signature to school.**
Week of April 8, 2019	Students who requested a Tri-Fold Display Board will receive one to complete their entire project at home.
April 17-22, 2019	*Spring Break*
April 26, 2019	Set-up begins at 6:45 pm in the All-Purpose Room. Bring your completed tri-fold display board and related material to present your findings at the Science Fair.

You may conduct an experiment or create a demonstration on any topic. *It's your choice!* Think about a science lesson from class that you'd like to explore further. Is there something you want to learn more about that you observed in your neighborhood or elsewhere? Was there a book you read about a cool and curious character who inspired you to ask questions and solve problems? *Choose what interests you.*

Some ideas include: weather conditions and patterns; seasonal changes; plant life cycles; effects of magnets on objects; properties of minerals, rocks, soil, and water; day and night sky descriptions; moon and sun observation; motion (forces, gravity, and friction); temperature effect on materials (heating, cooling); fossils; changes to Earth's surface; energy (potential, kinetic); light properties; characteristics of Earth and other planets; *the sky is the limit!*

To find a fun science fair project idea, visit your local library or check what's available online at https://montgomerycountymd.libguides.com/c.php?g=175414&p=1156316.

You can find many project ideas on the following websites:

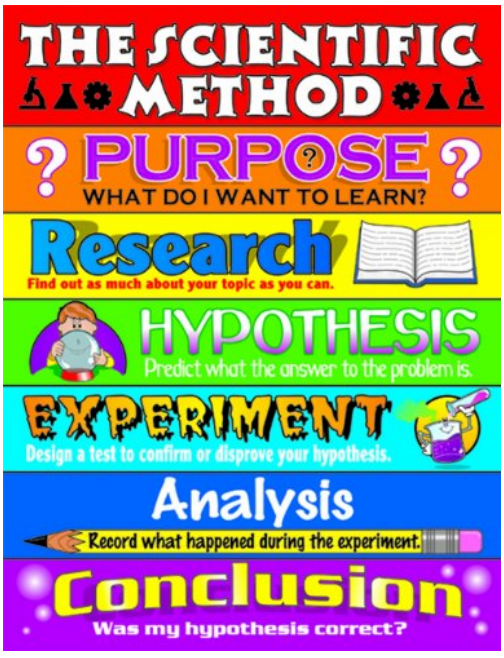
- https://www.sciencebuddies.org/
- http://www.cool-science-projects.com/
- https://www.sciencemadesimple.com/
- https://www.education.com/science-fair/

A few things to keep in mind:

- This isn't a competition. Students should have fun and learn from each other.
- All work related to the project must be done in advance by the student and completed at home.
- Appropriate guidance may be provided to the student by a parent/guardian, teacher, family member, or friend, as needed.
- Select project topics that DO NOT harm others or use dangerous chemicals.
- Battery-operated projects are acceptable.
- Electricity/Access to an outlet WILL NOT be provided during the Science Fair.
- Be respectful of other's effort, work, and property.
- Write a rough draft of your project before designing your board or adding content.
- Tri-fold displays should be colorful, easy to read and understand, and neat.
- Charts, illustrations, photos, and text can be taped or glued to the display board.
- Students should practice their presentations at home (3-5 minute limit).
- Remember to *smile*. You'll do a great job!

Use the six-step format of *The Scientific Method* to inform your experiment:

1. **Ask a question. What's the purpose of your project? What do you want to learn?** How? What? When? Who? Which? Why? Where?
2. **Conduct research.** Gather information about the question. Find out as much as you can. Visit the library or search online for ideas.
3. **Form a hypothesis**. Guess your answer! A hypothesis is an educated guess about how things work. It is an attempt to answer your question with an explanation that can be tested. A good hypothesis allows you to make a prediction: *"If I do this, then this happens."*
4. **Test the hypothesis. Plan your experiment to test your prediction.** It's important that your experiment is a "fair test." A "fair test" is when you make sure to change only one factor at a time while keeping all other conditions the same.
5. **Analyze your data / Draw a conclusion**. Record what you've learned in a journal or "lab notebook." Once your experiment is complete, analyze your data (info collected) to see if your hypothesis is supported. If your prediction was not accurate, you may form a new hypothesis and test it. This may mean starting all over again. Scientists do this all the time. ☺
6. **Conclusion. What did you learn?** When your experiment is complete and your hypothesis is supported by an accurate prediction, use your tri-fold display board to communicate your results.



Sample Tri-fold Display

**Experiments*

Procedure	Project Title Student Name Student Grade Question	Results
Sources of Information	Hypothesis Photos	Conclusion

**Demonstrations*

Information	Project Title Student Name Student Grade Question	Information
Charts, illustrations, photos	Sources of Information	Charts, illustrations, photos

We welcome the participation of parents and guardians to make this event a success. Should you have any questions about this guide or want to volunteer at the Science Fair, please send an email to president@lakesenecapta.com - *Thank you!*