Thursday, January 26th
6:00-8:00pm
Wellington Elementary Gymnasium

Come to this free, family-friendly event to see student projects and participate in hands-on activities and demonstrations!

Everyone is Encouraged to Do a Project!
The 2023 Wellington STEM Night is open to all STEM enthusiasts – grades Kindergarten through 5th.

To register your student's project please visit the PTA web site at WellingtonPTA.org. Make sure to register by January 13th to ensure space for your student's project. The **first 50** registrants receive a **free** project board from your Wellington PTA.

Sometimes Picking A Project Is The Hardest Part!
Use this Wellington STEM Night Detailed Information Packet for project tips, ideas and web resources.

This event is fully funded by your Wellington PTA.

If you have questions, email maryam@wellingtonpta.org.

Registration:
https://wellingtonpta.org/Page/School/STEM%20FAIR

STEM Fair Volunteer Opportunities
https://www.signupgenius.com/go/508044aafa72ea6fa7-stem#/

Wellington STEM Night

General Guidelines

- Projects may be individual, group, or classroom projects.

- Students can enter projects on any subject relating to science, technology, engineering, or math, or any combination of the five areas. Some examples of project categories include:

  Biological Sciences Chemistry
  Environmental and Earth Sciences Math
  Computer Sciences Engineering
  Physical Sciences Statistics

- STEM Projects
  - May be focused on discovery ("how something works" or "why something happens") or an investigation to solve a scientific question.
  - Students may enter "works in progress". *Don't worry if your experiment isn't totally complete – tell us what you have learned so far!*
  - It is not necessary to spend a lot of money to have a successful project. You can use common, inexpensive household materials for great projects!
  - Clearly communicate what you observed or tested by having a neat and easy to follow display. *(Please see **Constructing Your Project Display.**)*
  - Have fun! Remember: learning something new is important!
  - **Live animals, dangerous chemicals, explosives, drugs, hypodermic syringes or needles, or open flames may not be included in any exhibit.**

Preparing a STEM Project

1. Select a Topic

A STEM project is an experiment you perform or observations you make to find an answer to a question - "how something works" or "why something happens". Choose a topic that you are interested in.

2. Gather Background Information/Research Your Topic

You can get information about the subject of your STEM Fair project from books, magazines, the Internet, people, libraries and companies. Keep notes about what you've learned and where you've gotten the information and use them in your presentation.

3. Use the Scientific Method, if possible.

Use the scientific method to answer a question about your topic, that is:

- State the **question** you are answering. What are you trying to find out?
- State your **claim/hypothesis**—your guess about what the answer will be.

- Decide on your **variable** (something you will change or vary) or observations that will help you find your answer.
- Describe your **procedure** (what you did)
- Decide on how you will measure or describe your results. Try to use measurements to describe your **evidence/observations**- for example, report that the plants grew "1 cm", rather than that they were "bigger".

4. **Record the Results of Your Tests, Measurements, and Observations**.
   Do your test, observations, or experiment as described (see above). *Remember to include your results, observations, or measurements on your presentation board!*

5. **Interpret Your Results (Summarize and Make Conclusions)**
   Describe what happened in your experiment. You can use tables, graphs, or charts to summarize the results of your measurements or observations. Do your results support or disprove your hypothesis? It is alright if your results disprove your claim/hypothesis – this happens all the time in science. *Make sure you state your conclusions on your display!*

6. **Construct an Exhibit or Display**
   Your display or exhibit should be neat and easy to see (does NOT have to be typed). Describe your project—show what you did, how you did it, and what your results were. Be sure people can understand what you did. Make it fun!

7. **Come to the STEM Night, share your project and have FUN!**

Ideas for STEM Fair Projects

1. **Use Your Experiences**
   Remember a time you noticed something and thought, "I wonder how that works? Or, "I wonder what would happen if…" then turn that into a project.

2. **Check the Science Section of the Library**
   Go to the library. They have lots of books on potential STEM Fair projects.

3. **Surf the Internet**
   Use a computer with a web browser and search for "Science/STEM Fair Projects" on a topic that interest you. For example: aviation, marine biology, electricity, pollution, electric cars, composting, or hydroponics.

   Here are some great resources for Science Fair project ideas: **school.discoveryeducation.com/sciencefaircentral**
   sciencebuddies.org
   sciencefairadventure.com

4. **Think About Current Events**

Look at the newspaper. Current events may give you ideas for projects. For instance, people are hungry throughout the world because of droughts. This might lead you to a project on growing plants without much rain—which plants grow okay with little water?

5. **More Ideas**

What material are the best insulators and conductors?
Are dogs colorblind?
Do soap bubbles last longer on warm days or cold days?
What is the best method, other than heat, to melt ice?
How do plants react to different kinds light, colors and neighbor plants?
How does sound travel?
How does color influence heat absorption from sunlight?

6. **Try Putting Different Words In These Blanks**

What is the effect of _____ on _____?
humidity germination of seeds
temperature the volume of air

How or to what extent does the _____ affect _____?
humidity growth of fungi
color of a material its heat absorption

Which or what _____ (verb) _____?
detergent makes the most bubbles

What Makes a Good Project?

1. **You are interested in the topic!!**

2. **You can do an experiment or make observations to find an answer to a question.**

While K-2 grades will focus more on discovery and observation, a good STEM project for grades 3-5 is an experiment—that means it's a test to find an answer to a question you have.

For example, if you are interested in bugs and you saw some ants moving real slowly once on a cold day, you might test to see what effect temperature has on the rate at which bugs move. You'd get some bugs, find a way to make their container a little colder than normal and somehow measure how fast they move. Then you'd make their container a little warmer than normal and measure how fast they move then.

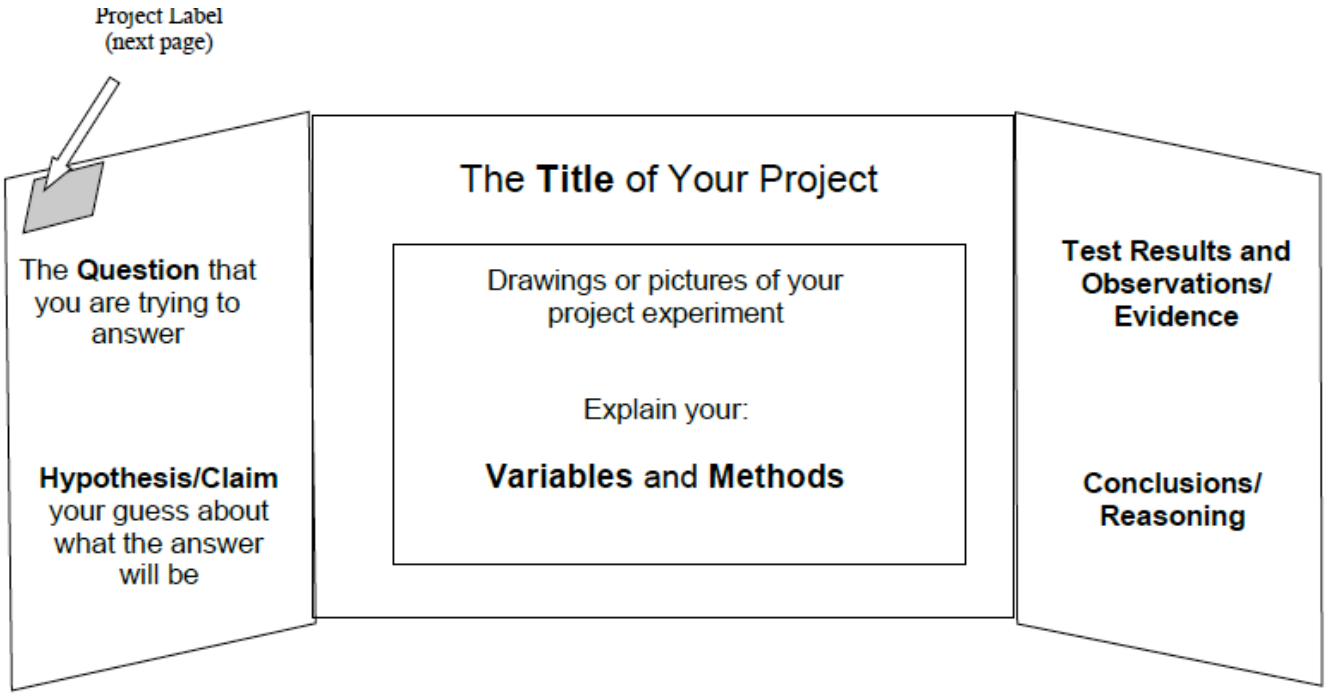
3. **You can do it with only a little help from adults.**

Once you decide "what" and "how" you will do your project, having too much adult help takes away some of your fun and you won't learn as much. Your project doesn't have to be perfect! Discuss with your parents and teachers where you really need their help.

4. **It doesn't hurt or scare people or animals, including you.**
It's not only a bad idea; it is also against the rules of our STEM Night and of the school district. You also may not use dangerous materials in your project experiment. You should ask a teacher or parent if you are not sure.

5. **It's a <u>GREAT</u> project if…**
Your test results or observations make you wonder about other things. Doing the project, or reading or seeing what happened makes you think of other questions you are curious about.

Example STEM Project Display



Please cut this label out and attach it to the upper left hand corner of your project.

Name: _____

Project Title:_____

_____

Grade:

_____

Teacher:

_____

Please write what you would like to say about your project to parents and practice speaking it out loud at home:

Project Explanation: _____

_____

_____

_____

_____

_____

_____

_____

Equipment and your research materials can be placed on the table.