

Welcome to the WGSD Science Fair

“How To” Meeting



Presented by:

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Science Fair Dates

Avery: February 8

Bristol: February 7

Clark: February 9

Edgar Road: February 7

Givens: February 9

Hudson: February 9 & 10

District Fair: March 7

Greater St. Louis Fair: Register by March 20,
Upload by April 20

Science Fair Coordinators

Avery- Shayla Pott

Bristol- Renee Clifton

Clark- Alison Weatherby

Edgar Road- Shayla Pott

Givens- Shayla Pott

Hudson- Carolyn Recke

Science Fair Reminders: 2023

HUMAN STUDIES

- Projects studying bullying/depression/anxiety will **NOT** be allowed. Instead, student may submit a research paper where students can study **RELIABLE DATA. NO SURVEY OR INTERVIEWING** of students will be allowed regarding bullying/depression/anxiety
- No projects allowed that can cause potential harm to humans
- Human subjects (and parents for anyone under age 18) need to sign a Human Informed Consent Form (ie-permission form) – (see sample)
- Students with projects involving humans need to include the following in their research plan-
 - What procedures are in place for safeguarding confidentiality?
 - Describe how you will inform participants about the purpose of the study and what they will be asked to do.
- Students with projects involving humans will need to include a sample of their human consent form with their logbook. (See Sample Human Informed Consent Form)

Science Fair Reminders: 2023

MOLD/BACTERIA

- **IMPORTANT FOR 2023**

Projects that handle, test, or sample bacteria or mold can be submitted with pre-approval by the Academy of Science - St. Louis SRC. Projects involving mold or bacteria will need pre-approval by the Academy of Science - St. Louis Scientific Review Committee (SRC). Please contact fair director, Jessica Winkler at jwinkler@academyofsciencestl.org for approval information.

VIRUSES/COVID-19

IMPORTANT FOR 2023

Projects will **NOT** be allowed that handle, test, or sample viruses. If a student is interested in studying viruses then they may submit instead a research paper by studying reliable data from university labs, the CDC or other scientific entities. NO testing of water fountains, door handles, cell phones, etc. will be allowed.

Science Fair Reminders: 2023



HAZARDOUS MATERIALS/FIRE **IMPORTANT FOR 2023**

Projects will **NOT** be allowed that handle, test, or sample fire (or burning objects) or hazardous materials. If a student is interested in fire or hazardous materials they may submit a **research paper** where students can **study reliable data** from university labs, the CDC or other scientific entities.

POWER TOOLS

Students participating in the General K-12 fair may **NOT** handle power tools. (Power tools may be used in a project if handled by parent or teacher).

Science Fair Reminders: 2023

NO GUNS/FIREARMS/PROJECTILE WEAPONS

NO experiments will be allowed using firearms or projectile weapons. No guns or firearms or bow and arrows of any kind. No Nerf guns or Nerf bow and arrows. No slingshots.

NO DRUGS/ALCOHOL

NO experiments will be allowed using firearms. No guns or firearms or bow and arrows of any kind. No Nerf guns or Nerf bow and arrows. No slingshots. Experiments using prescription drugs, illegal drugs or alcohol will NOT be allowed.

ANIMALS

- No animals (this includes invertebrates) should be harmed or caused pain.

Science Fair Reminders: 2023

TEAM PROJECTS

IMPORTANT FOR 2023 A maximum of two (2) Academy of Science – St. Louis Science Fair students may work together on any one (1) project. Any award funds that are allocated to a team project will be evenly distributed between teammates.

Research Plan

A. Students e-mail teacher with research and safety plan **BEFORE** beginning experiment and research.



Include the following in your e-mail to your teacher:

1

What is the question or problem being addressed and expected outcome?

2

Describe in detail the method and procedures including all safety precautions. Include all procedures to be used for data collection and/or building your prototype, if engineering project

3

Identify any potential risks and safety precautions to complete the project safely.

4

Teacher or parent oversight. Who will be supervising your project (Parent/Guardian or your teacher)?

For approval, parent or teacher must be present and supervising during experimentation or prototype development and building.

Research Plan- 2



If your project involves human subjects, also answer the following questions.

Protection of Privacy and Informed Consent for projects that involve human subjects: What procedures are in place for safeguarding confidentiality? Describe how you will inform participants about the purpose of the study and what they will be asked to do. Provide a sample of your human consent form.

Submitting Research Plan

When you have completed your research plan, please email your plan to your building coordinator for approval. You will need to note the date of the approval on the safety form. This **MUST** be completed **prior** to starting any project.

Avery- Shayla Pott: pott.shayla@wgmail.org

Bristol- Renee Clifton: clifton.renee@wgmail.org

Clark- Alison Weatherby: weatherby.alison@wgmail.org

Edgar Road- Shayla Pott: pott.shayla@wgmail.org

Givens- Shayla Pott: pott.shayla@wgmail.org

Hudson- Carolyn Recke: recke.carolyn@wgmail.org

Types of Projects

Observation

Collection

Maker (Model, Invention, Engineering)

Research

Experiment

Observation

In an observation study, the scientist looks at a system from the outside. The scientist should not change the system any time during the experiment; all the values of all variables are set by the creation of the system and its own internal workings. It is important to notice that all independent variables in an observation study are dependent variables and vice versa. Observations are done to learn how the system works without outside interaction.



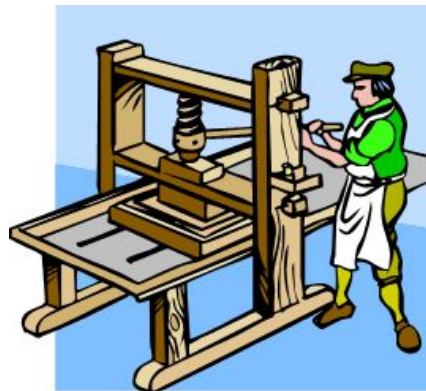
Collection

The object of a collection study is to understand how the members of a set of objects are similar and dissimilar to each other. The similarities are what make the collection a set. The dissimilarities make each object an individual.



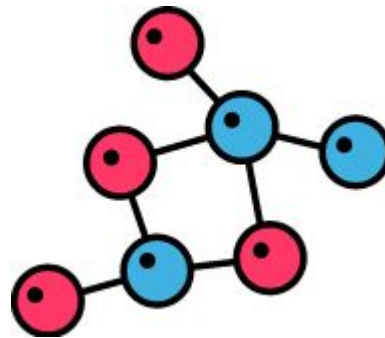
Maker: Inventions

The object of an invention study is to solve a problem by creating a new machine or process. Once a person has created the invention/engineering, one should build and test a prototype. This testing stage will create the data for an invention/engineering study. Test what effect changing either the invention/engineering or operating conditions has on the performance of the invention/engineering.



Maker: Model

A model study is simply making a model of a real world object. The more similar to the real object, the better the model. Usually, models are made to give the scientist something easier to study than the real object the model was based upon.



Research Paper

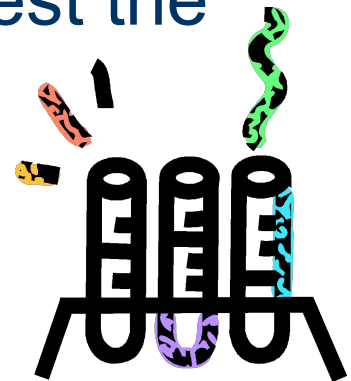
Research Paper Division is for students who want to investigate bacteria, virus, fire or hazardous materials. If a student is interested in bacteria, virus, fire or hazardous materials, they are *NOT* allowed to handle, sample or test. However, they can study data that is available from reliable sources and submit a Research Paper.

LIMIT: 5 PAGES DOUBLE-SPACED

Experiment

In an experiment your aim should be to test the effect of changing one variable in a system on the other variable. The variable altered is the independent variable and the effect measured is the dependent variable.

Experiments are done to directly test the workings of a system.



PARTS OF AN EXPERIMENT

- Problem
- Hypothesis
- Procedure
- Background Information
- Trials and Samples
- Results
- Conclusion
- Bibliography
- Log Book

Problem

- This is the question you are hoping to answer by doing this project.
- This is where you need to state your variables.
- This is written as a clear cause and effect question, and it needs to have a measurable outcome.

Variables

- IV- Independent Variable: This is what “I” the experimenter changes in the experiment.
- DV- Dependent Variable: This is what changes, the results you measure
- Constant: This is what remains constant throughout your experiment.
- Control: This is the test with no changes. It is used as a standard of comparison for tests. Not all experiments have a control.

Hypothesis

- Your prediction as to what will happen in your experiment

Procedure

- These are the steps taken to complete the project.
- Number the steps so judges can see the sequence you performed.

Background Information

- Background information researched on your given topic/experiment. Explains WHY the project is important and WHY it was chosen.
- Use at least 3 sources

Trials and Samples

- A trial is each time your experiment is tested.
- The minimum number is **THREE**. (Always do at least 3 trials!)

Results

- The results have 2 parts.
 - A chart/graph showing the **AVERAGE** of your results.
 - A written paragraph explaining your results.

Conclusion

- This is the reflection of your results. In paragraph form, try to address what happened in your experiment, and state how you would improve it if you were to do this experiment again.
- Tell what your next step would be if you were to continue this experiment. “If I were to continue this study I would...”

Bibliography

- A list of all your resources, books, magazines, websites...that you used to research. Have at least 3 sources, they can be written in any format.

Log Book

- This is to be a handwritten and scanned or a typed Word document file
- Shows that the student has written the process, observations, and data.
- Daily Diary Entries
- ALL participants must have a **SAFETY FORM SIGNED!!!** This form can be accessed and printed from the Webster Groves School District Science Fair website.

SAMPLE LOG BOOK

Important Website

Greater St. Louis Science Fair website
<http://www.sciencefairstl.org/>

E-Fair- 2023

1. **Rules:** The project (experiment, research, etc) must be completed following all of the rules of the Academy of Science - St. Louis Science Fair.
2. **Two files** must be turned in (uploaded) with each e-fair project:
 - A. **PowerPoint for the Project Presentation** - The presentation file (powerpoint) will have approximately **10 slides** or pages. It should contain everything that would normally have been displayed on your project board. Pictures, text, and scanned drawings are all acceptable. Please follow the same rules as for projects that are presented on boards.
You will upload your powerpoint for judging.
 - B. **Word Document for the Log Book** - The word document is your log book. See [log book](#) in website for general guidelines. You will upload your word document logbook for judging (approximately **10 pages**).
 - i. **(Log Book needs to contain the safety form (sign and scan the safety form and add to your log book - important worth 10 points).**
 - ii. **[Click here to view a sample logbook.](#)**
3. **FOR RESEARCH PAPER DIVISION**, you will upload just 1 file, which is limited to 5 pages double-spaced. Upload as a word doc or pdf.

Submitting for Building/WGSD Fairs

To submit your project, please email your building coordinator in **ONE** email with **TWO** attachments: Project and Logbook by 8:00 AM the day of your building's fair.

Your building coordinator will reply with a “received” email confirming the submission.

Projects will be scored and results sent electronically within one week of the fair.

Students that qualify for the District fair will receive additional information about submitting their projects. Any changes suggested from the building fairs will be allowed prior to the District Fair.

Website for “How To” Booklet

<https://mo02202299.schoolwires.net/Page/18163>

Sample Projects

Which Will Freeze Faster?

Which Material Will Grow Borax Crystal Faster?

Questions?

Good Luck,
you can do it!

