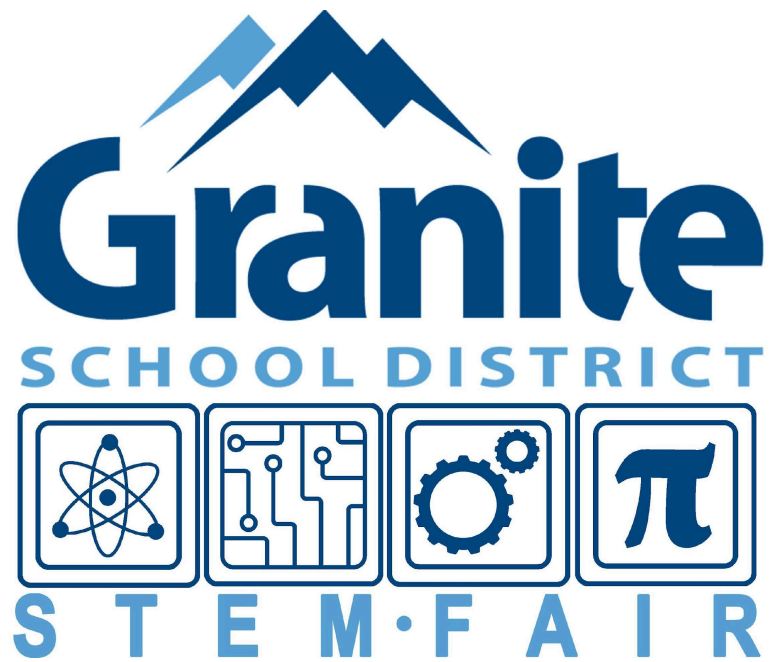




2026

STEM Fair Handbook

[GSD STEM Website](#)

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We are excited that you will be participating in STEM Fair! This is an opportunity for you to explore a topic that you are interested in learning more about. Please refer to this handbook as you work on your project. It includes information on how to participate and includes links to the forms and templates you'll need.

Timeline Checklist

- ☐ Pre-approval: Plan your project and complete your pre-approval form before beginning. See pages 3 and 10 for more information.

- ☐ School fairs completed by
(Open to all grades - see your teacher or school coordinator to find out when your school fair is) **January 14, 2026**

- ☐ Virtual projects must be submitted by
(Open to grades 5th - 12th) **midnight on January 19, 2026**
**NOTE: Jan. 19th is a holiday, if your student needs teacher help submitting make sure they are submitted by Jan. 16th*

- ☐ Virtual fair winners notified by
(end of business day) **January 21, 2026**

- ☐ Registration for the in-person district fair
(for winners of the virtual fair) by **3:00 pm January 27, 2026**
**NOTE: We begin printing materials at this time, so no late registrations will be accepted*

- ☐ District in-person fair
(Open to grades 5th - 12th) **January 30, 2026**

- ☐ USEF regional fair
(Open to grades 5th - 12th)

Senior Division Pre-registration **DUE January 30, 2026**

All registration **DUE February 11, 2026**

Regional fair **March 9-13, 2026**

Levels of Competition

There are four levels of competition: school, district, regional, and national/international. Your teacher will tell you when your school's STEM Fair is, and what you need to do to participate.

School: Each school determines how to select their school winners. Some schools send the top projects from each class and others have a school-wide fair where all students compete. **Each elementary school can send up to 15 projects to the district fair; secondary schools can send up to 30.** If your project is a school winner, you will need to submit a virtual project to participate in the district fair. See the "Registering for the District Virtual Fair" section on page 8 for details on how to submit your project to the district fair.

District: Virtual Fair: All school winners will submit a slide deck with their project summary to the district virtual fair. See the "Registering for the District Virtual Fair" section on page 8 for details on how to submit your project to the district fair. Judges will select the top virtual projects to compete in the District In-Person fair.

District: In-Person Fair: Winners of the virtual fair will compete in the district in-person fair on February 7th, 2025. Participants will bring their project board and be interviewed by the judges. The winners of the district fair are eligible to compete in the University of Utah Science and Engineering Fair (USEF).

Regional Fair: The University of Utah Science and Engineering Fair (USEF) is our regional fair, where students from several districts compete. If you are a district winner, you will receive instructions from USEF for registering your project. Senior division projects (9th - 12th) must [pre-register](#).

National/International: USEF sends the top projects to the Thermo Fisher Scientific Junior Innovators Challenge (the national competition for grades 5-8), or ISEF (the international competition for grades 9-12).

Before You Begin

There are two things you need to do before you get started on your project.

1. **Set up a notebook.** This is where you will keep track of everything you do during your project. See the "Suggestions for Keeping a Notebook" section on page 6 for more information on what to include in your notebook.
2. **Complete the pre-approval form:**

For grades 5-8: Click [here](#) for the pre-approval form (click [here](#) for the Spanish version). Your teacher or school coordinator will give you instructions for turning in your pre-approval form.

Please make a copy to keep before sending in your form. You could take a picture, or use a scan to PDF app to use your phone to scan your paperwork. See the section "Project Approval Guidelines" section on page 10 to find out if you will need to submit additional paperwork or signatures for your project.

For grades 9-12: You will need to pre-register with USEF before the district fair. **Start by logging in at <https://usef.utah.edu/login>.** After entering an email address, students will enter their name (team projects will enter the email for the team leader) and cell phone number. A 6 digit code will be sent to the student registering.

Senior division students will enter all aspects of their project, including project title and abstract. After the student has participated at their district level fair, they will log back into their account and after receiving a new 6 digit code, they will log back in to their project and update it.

The full list of ISEF required forms can be found [here](#). Form 1B is the only form that will be required to upload during pre-registration.

Choosing a Project and Getting Started

Choosing a project can be challenging. No matter what type of project you do, pick a topic that you are interested in. You will be spending a lot of time on this topic, and it will be more fun if it is something you care about.

If you choose to do a **science project**, you will be doing an experiment to learn more about something. Make observations about the world around you. What are some things you notice? What questions do you have? Record these ideas in your notebook and use them to find a topic that you are interested in and develop a question you can collect data to answer. See page 7 for more information on science projects.

If you choose to do an **engineering project**, you will be designing a solution to a problem. What are some problems that you could work to solve? What are your ideas for solving them? Record these ideas in your notebook and use them to identify a problem that you'd like to design a solution for. See page 7 for more information on engineering projects.

Categories

When you register your project, you will need to decide which of the following categories it fits into. You can find out more about each category on the [USEF website](#).

- Behavioral & Social Sciences
- Biology & Microbiology
- Chemistry & Biochemistry
- Civil & Environmental Engineering
- Computer Science & Applied Computational Methods
- Earth & Environmental Sciences
- Electrical Engineering
- Energy: Chemical & Physical
- Mechanical & Materials Engineering
- Medicine, Health Sciences & Biomedical Engineering
- Physics, Astronomy & Math
- Plant Sciences

Recommended/Not Recommended Topics

Projects should be experiments or engineering projects. Demonstrations and reports are not suitable for STEM Fair.

There are some **topics that we'd like to see more of:**

- Computer science projects
- Mathematical applications and mathematical modeling projects
- Engineering projects that address problems that do not already have a solution

There are also topics that we see a lot of. These can be fun, but are not usually competitive enough to win awards or move to the next level. If you got your project idea from a book or website, make sure you adapt the idea to make it your own, and don't simply repeat an experiment that has already been done. **Topics to avoid:**

- Effect of music, talking, colored light, or different liquids on plants
- Effect of cola, coffee, etc. on teeth (decay, coloring, etc.)
- Effect of color on memory, emotion, mood, how food tastes, test performance, etc.
- Effect of distractions on reaction time
- Effect of running, jumping, music, video games, etc. on blood pressure
- Effect of music, video games, sleep, etc. on test performance
- "Which brand is best" experiments
- Simple preference tests (what do girls/boys or cats/dogs like better)
- Female/male comparisons, especially if bias shows
- Optical illusions, including Stroop effect
- Projects from kits (for example, solar or robotic kits)
- Taste, color, or paw preferences of cats, dogs, or other animals
- Ball bounce tests with poor measurement techniques
- Magnet demonstrations (for example, comparing hot and cold magnets, types of magnets, etc.)
- Fingerprints and heredity
- Hovercraft design
- Growing bacteria collected from the environment (doorknobs, hands, keyboards, etc.)
- Hand sanitizer tests
- Types of insulation effectiveness
- Coke and mentos
- Slime
- Baking cookies (changing amount of baking soda, flour, etc.)
- Potato/vegetable battery

Suggestions for Keeping a Notebook

You should keep track of everything you do, from coming up with an idea to your final reflection, in your notebook. Good notes show consistency and thoroughness to the judges and will help you when presenting your project. If judges have any questions about if you completed your project, you can use your notebook to show that it is your work.

What should I include in my notebook?

- List of project ideas.

- Project title and question you are trying to figure out or problem you are trying to solve.

- Experimental design (describe how you set up your investigation) or engineering process (describe how you tested your prototypes and the revisions you made to the prototypes, etc.).

- Data tables, with your raw data and summaries of the data.

- Observations.

- Diagrams and sketches.

- Calculations.

- Graphs.

- “Ah-ha!” moments and insights you have.

- Pictures and photographs.

- Notes from any research you do, including the source.

- Printouts from any scientific equipment (for example, from spectrometers, HPLC, IR, NMR, etc.).

- Types of errors, or notes on things that could have affected the outcome of the experiment or test.

- New questions and ideas for what you would do next.

How do I make my notebook?

- Don't remove pages or erase anything. Draw a line through errors.

- Number the pages.

- Date all entries.

- Each new entry should begin on a separate page.

- Write legibly.

- If you need more space, you can use more than one notebook.

- If your project is a continuation from past years, you should have all of your old notebooks.

Difference Between Science and Engineering Projects

Science and engineering projects follow different processes. Each process is outlined below.

Science Projects

1. Identify your topic and goals. What is the investigation about? What will you be investigating, and why? What will you try to figure out?
2. Do some research to find out what we already know about the topic, and what experiments have already been done. Use the things you learn to determine exactly what you want to focus on. You may need to revise your topic and/or goals for the investigation.
3. Determine how you will investigate the topic. What steps will you take, and how will you set up the investigation? You can use drawings and words to plan your investigation.
4. Collect data. Determine what measurements and observations you will record. Set up data tables to record your data and observations.
5. Analyze your data. What patterns, trends, and relationships can you identify? What do these patterns, trends, and relationships mean?
6. Interpret your data. Compare your data to your original goal for the investigation. Does the data address your goals? Does the data match what you thought would happen? Discuss any unexpected results or errors, and revisions to your investigation plan that would generate more accurate data. Explain what the data means.
7. Reflect on your learning. What did you learn from your project? How could your results help someone? What were some issues that came up during the project, and how did you address them?
8. Consider what comes next. What questions came up during the investigation that you would like to investigate? What new investigations would help you understand your results better?

Adapted from NSTA Science Scope Magazine, "Tried and True: Teaching the practice of science, unteaching the scientific method", Summer, Volume 33, 2010.

Engineering Projects

1. Identify problems that you would be interested in addressing. You can use magazine articles, observations from your own life, or ask people about challenges or problems they have to gather ideas for your project.
2. Do some research to find out what we already know about this problem, and what solutions already exist. If there are already solutions, consider how they could be improved. After doing research, you may need to revise the problem you want to address.
3. Define the problem that you will address. Include criteria that the solution should meet.
4. Develop ideas for a solution. You can start with sketches of possible designs in your notebook. You can include measurements, materials that will work, etc. Also make a plan for how you will test your designs to see how well they work.
5. Build a prototype. Select your best idea, and build a prototype. Test the prototype to see how well it solves the problem and meets your criteria.
6. Revise, test, revise, test... Use your test results to make revisions to your design. Test the new design, and compare the results to the previous test and to your criteria. Continue testing and revising your design until you have a product that meets your criteria.
7. Reflect on your learning. What did you learn from this project? How could your results help someone? What are some issues that came up during the project and how did you address them? How well did you meet your design goals?
8. Consider what comes next. What questions or problems came up during the process that you would like to investigate or develop a solution for? What future changes to your design would make it better?

Registering for the District Virtual Fair

If you win at your school fair, you will need to submit your project to the district virtual fair:

You can use the templates below to create your virtual project:

[Science project template](#) (English)

[Science project template](#) (Spanish)

[Engineering project template](#) (English)

[Engineering project template](#) (Spanish)

Make sure the share setting on your slides is changed to “anyone with the link can view,” and then use [this form](#) to submit your virtual project. **Only submit your slides if you were a school fair winner.**

All project submissions must be completed by 3:00 on January 17, 2025. We strongly encourage you to submit your project early. That way, if there is a problem with the submission, it gives us time to correct the problem. If you are unsure how to submit the virtual project, please ask your teacher or school STEM Fair coordinator for help.

Templates for Virtual Projects

Links to templates for the virtual projects are below. After clicking the link, click the blue button to make a copy. Consider organizing the file in your drive so that you can find it quickly. You will be able to edit these slides. Follow the instructions. Make sure you change the title of the slides to include your project title and school.

[Science project template](#) English

[Science project template](#) Spanish

[Engineering project template](#) English

[Engineering project template](#) Spanish

Scoring Rubrics

The scoring rubrics below will be used to judge projects at the district level.

[Science project scoring rubric](#)

[Engineering project scoring rubric](#)

Project Approval Guidelines

Projects should be approved before students begin. If you are not sure if a project should be approved, contact Suzette Boland (slboland@graniteschools.org). See the guidelines below for approval on projects that include people, animals, microorganisms/fungus, or potentially dangerous materials.

People

- Experimentation on humans must conform to the same regulations as other animals.
- Human studies, including surveys, taste testing, and physical exertion, **must have prior approval** from the mentor teacher or district coordinator.
- Informed consent forms must be signed by each participant and the parent/guardian (if participants are minors).
- Informed consent forms can be found [here](#).

Animals Student projects that use animals must follow these guidelines:

- Behavior observation studies or supplemental nutritional studies involving pets may be done at home.
- Any other experiments involving laboratory animals CANNOT be conducted in a student's home, but must be done in a lab.
- Proper animal care must be provided daily, including weekends, holidays, and vacations.
- Experimental procedures that cause unnecessary pain or discomfort are prohibited (vertebrates and invertebrates).
- Experiments designed to kill vertebrate animals are prohibited.
- Experiments with a death rate of 30% or higher are prohibited (vertebrates).

A veterinarian's signature is required of all projects with vertebrate animals, except for behavior observations of pets.

Microorganisms and Fungus

- Bacteria/fungus may not be grown at home or in elementary classrooms. There are NO exceptions to this, and no scenario where home growth is approved.
- Pathogenic bacteria experimentation is prohibited.
- If bacteria are grown, they must be in sealed Petri dishes.
- A plan for safe disposal must be included in the student's investigation plan.
- Projects with microorganisms must be done in a BioSafety Level 1 or 2 lab. Most of our junior and senior highs have a lab that can be used.
- Projects not following these guidelines will be disqualified.
- If you need help finding a lab, contact Suzette Boland (slboland@graniteschools.org).

Firearms, Weapons, Hazardous Materials and/or Fire

- You will need to check with your teacher, school STEM Fair coordinator, and district coordinator for pre-approval. If you aren't sure if it's a hazardous chemical, you can email the district coordinator Suzette Boland (slboland@graniteschools.org).

Forms and Templates

Pre-approval forms

[Elementary/junior division pre-approval form \(for grades 5-8\); English version](#)

[Elementary/junior division pre-approval form \(for grades 5-8\); Spanish version](#)

[Senior division pre-registration](#)

Science project resources

[Science project template](#) English

[Science project template](#) Spanish

[Science project judge score sheet](#)

Engineering project resources

[Engineering project template](#) English

[Engineering project template](#) Spanish

[Engineering project judge score sheet](#)

Judging Rubrics

[Science project judge score sheet](#)

[Engineering project judge score sheet](#)

Miscellaneous forms

[Informed consent forms](#)

FAQ

Who can I contact at the district?

Suzette Boland slboland@graniteschools.org; 385-646-8090

Megan Black: msblack@graniteschools.org

Can my school fair happen after the January 15 deadline?

No. For students to be eligible for the district fair, judging at the school level needs to be complete by January 15. This allows time for students to make revisions to their project based on the school judges' feedback, and gives students and parents time to submit virtual projects.

Can I work in a team?

Yes. Up to three students can work as a team. Students must be in the same division (elementary division, which is 5th and 6th grade, junior division, which is 7th and 8th grade, or senior division, which is 9th - 12th grades).

Do we really need to have consent forms?

Yes. The consent forms provide a level of safety for students. USEF will not allow projects without consent forms, so students without consent forms will not advance beyond the district fair.

Can K-4 students participate?

Yes, but only at the school level. The district, regional, and national/international fairs only host grades 5-12.

Can 9th - 12th grade students participate?

Yes. If your high school doesn't have a fair and you'd like to participate, contact Suzette Boland (slboland@graniteschools.org) for information.

Is there an entry fee?

The school and district fairs do not have an entry fee, but the regional fair does. If your project advances to the regional fair and you need help paying the entry fee, contact your school and/or Suzette Boland (slboland@graniteschools.org).

My school doesn't hold a STEM Fair. Can I still participate?

Yes. If your school does not have a STEM Fair, individual students may still participate in the district fair. Please contact Suzette Boland (slboland@graniteschools.org) for information.

Can I skip the school and district fair and just enter the regional fair?

No. The regional fair rules require students to participate in local schools and district fairs and be selected to represent their district at the USEF.

How do I know who my school's STEM Fair coordinator is?

Contact Suzette Boland (slboland@graniteschools.org) or Megan Black (msblack@graniteschools.org) to find out who your school's coordinator is.