TUSD STEM Fair Handbook

2026/2027

How to enter

Students can register by having a teacher complete the following form:
TUSD STEM FAIR Registration – Fill out form

Last Updated: 10/09/2026

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Deadline and Fair Events

August 17, 2026	Registration opens **TUSD STEM FAIR Registration – Fill out form**
October 15 and 16, 2026	Informational STEM Fair Meeting on Teams
November 27, 2026	Registration closes
January 22, 2027 3:30-6:00 pm	Delivery of projects and all applicable resources to West High School Cafeteria between 3:45 pm- 6: 00 pm **Remember to bring:** • Tri-fold Board • 1 Notebook(notebook for all students is optional) • Projects can be brought in individually or by a school representative.
January 23, 2027	**STEAM Fair & Expo** • Judging will take place from 9:00 am - 12:00 pm *Specific interview time slots will be sent out prior to the day of the fair** • Fair Open to the public from 12:00 am – 1:00 pm • Awards Ceremony from 1:00 pm - 2:00 pm
Project Pick-Up: January 23rd, following the end of the STEM Fair. Projects not picked up by the end of the day will be discarded. Contact the TUSD STEM Department if you have any questions. • Dean Reese, STEM Director, dreese@tusd.net • Thien Vu-Nguyen, STEM Coordinator tvunguyen@tusd.net	

Our Goal Statement

The TUSD STEM vision is to empower every student for success in tomorrow's world. The TUSD STEM Mission is engaging in STEM experiences connecting each student to the real world and prepares them for college and career success through collaboration, critical thinking and problem solving. Participation in the TUSD STEM Fair provides an opportunity for students to develop STEM skills and dive into an area of individual interest in a safe and supportive way.

Ethics Statement

Scientific fraud and misconduct are not condoned at any level of research or competition. This includes plagiarism, forgery, use of presentation of other researcher's work as one's own and the fabrication of data. Fraudulent projects will not be tolerated and will be disqualified.

Eligibility

Each student may enter a project that covers research done over a maximum of 12 continuous months between January 2026 and January 2027.

Who Can Enter

The TUSD STEM Fair is open to all pK-12 students who attend school in TUSD and have a teacher or qualified adult sponsor. The TUSD STEM Fair is a qualifying fair for the San Joaquin Office of Education STEAM Fair.

General Requirements

1. All projects must adhere to the Ethics Statement above.
2. All projects must adhere to local, state, country and U.S. Federal laws, regulations and permitting conditions.
3. All projects must adhere to the display and safety requirements found in this handbook.
4. The use of non-animal research methods and the use of alternatives to animal research are strongly encouraged and must be explored before conducting a vertebrate animal project.
5. It is the responsibility of the student and coach to check with the STEAM Fair Coordinator for any additional restrictions or requirements.
6. Projects should NOT have the student's names, teacher's name or school name on the front of any project.

Safety Suggestions

Check out the ISEF Rules Wizard website ruleswizard.societyforscience.org to determine safety issues/concerns for any project. This should be your starting point as it will guide you through specific safety concerns as well as what forms are required if your student is interested in qualifying for state.

Projects that are not allowed for ANY grade level

- **NO** blood products, human tissue, and bodily fluids.
- **NO** dry ice or liquid nitrogen or other dangerous liquid gases.
- **NO** guns, potato cannons, paintball guns, bows/arrows – or other dangerous projectiles.
- **NO** Compressed gas (including, but not limited to CO2)
- **NO** Lasers (except for class I with eye/skin protection) or use of ionizing radiation X-rays or nuclear energy.
  NO Vertebrate animal parts.
- **NO** Pathogenic agents (Biological Safety Level {BSL} 2+).
- **NO** Recombinant DNA (rDNA).
- **NO** Ingestion (tasting, eating, inhalation or drinking) of any substance by human or vertebrate animal subjects.
- **NO** Carcinogenic, mutagenic and potentially toxic chemicals/fumes.
- **NO** Explosive or flammable chemicals/gasses.
- **NO** Radioactive materials.
- **NO** High voltage equipment.
- **NO** introduction of non-native and/or invasive species, pathogens, toxic chemicals or foreign substances into the environment.
- **NO** prescription drugs, alcohol or controlled substances.
- **NO** sore-bought bought kits
- **NO** Glitter

*****Teachers can always feel free to reach out with questions about safety to the TUSD STEM Department, but all student safety should be monitored closely by the teacher/adult sponsor.**

Investigative Projects

Investigative Projects require students to explore a phenomenon and/or problem and should follow the Scientific or Engineering Design Process.

- (Think “traditional” science & engineering fair project) - See examples **HERE**

Requirements for Investigative Projects

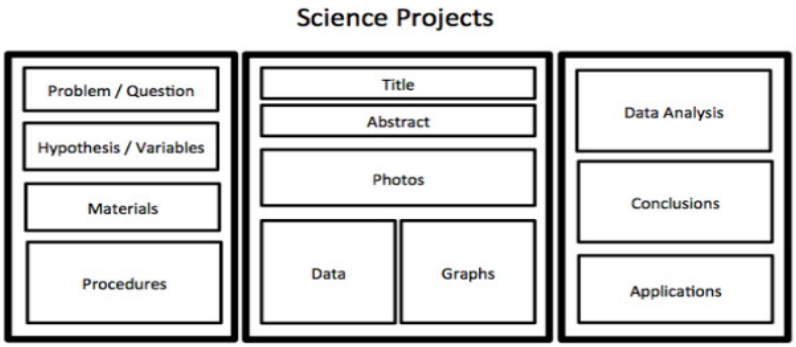
1. Scientific or Sensemaking Notebook(s):
    - Handwritten or computer generated
    - One per student participant (including K-3)
    - Should be an ongoing dated log of everything. Should be an authentic representation of the entire project.
    - Should show evidence of student thinking, brainstorming ideas, processing and reflection of what occurred.
    - Notebooks should include annotated research information NOT just a bibliography. (Excluding K-3)
    - Acknowledgements: Note credit given to parents, teachers and other sources.
    - Display board to communicate your work to others. Tri-fold board size (36" tall by 48" wide

*There are different requirements for the different focus areas. Look at the following pages to see the specifics.

Type	**Description**	**Area of Focus**
Investigative	Require students to explore a phenomenon and/or problem and should follow the Scientific	● Science ● Engineering ● Math ● Computer Science

For **Investigative Science/Math/Computer Science Focus** projects, the Tri-fold board must at minimum have the following categories:

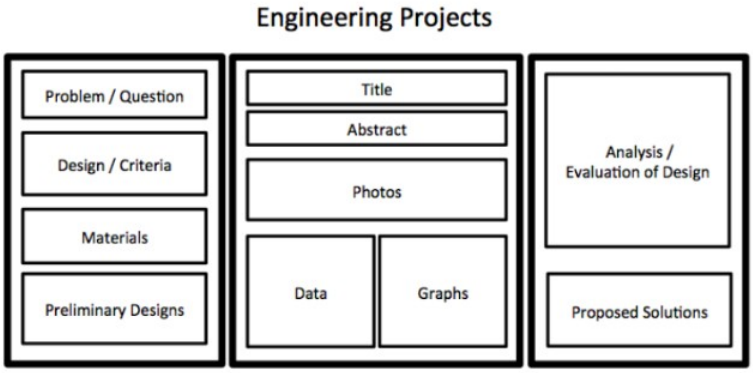
- Title
- Problem or Question
- Background/Research
- Hypothesis
- Materials
- Procedure
- Abstract
- Photos
- Data and/or Data Tables/Graphs
- Data Analysis
- Conclusion
- Next Steps or Applications



The board is a visual representation of your project. This is a sample of what components should be on your board. However, organize your board to fit the needs of your project.

For **Engineering/Computer Science Focus** projects, the tri-fold board must at minimum have the following categories:

- Title
- Problem or Question
- Background/Research
- Design Criteria
- Materials
- Preliminary Designs/Prototypes
- Abstract
- Photos
- Data: Test /Redesign
- Evaluation of Design
- Next Steps/Proposed Solution



The board is a visual representation of your project. This is a sample of what components should be on your board. However, organize your board to fit the needs of your project.

Helpful Resources:

- For more help with the display board, visit the following website for more suggestions and tips: ScienceBuddiesLink
- STEAM Fair Project/Display EXAMPLES
- Use the checklist HERE to ensure that you have all the necessary requirements

Whole Class Projects

- Only the K-3 division is allowed to participate as a whole class.
- Can enter an investigative project
- All students should have their own notebooks, but only one board and one notebook is required for the STEAM Fair
- Display
    - Tri-fold board size 36” tall by 48” wide
    - Follow the same requirements for the specific focus for investigative projects.
    - STEAM Fair Project/Display EXAMPLES
- **Interviews will not be required but a video should be submitted via QR code on the display board.** Video requirements:
    - Video will be no longer than 10 minutes and no shorter than 4 minutes.
    - Several spokespersons can be selected to speak for the class.
    - The following questions should be answered by students in their video:
        1. Tell us about your project.
        2. What did you do?
        3. How did you do it?
        4. What happened?
        5. What did you learn?
        6. What would you do differently next time?
        7. How do you think your research/work could help people?
        8. Anything else you would like to add to insure the project is explained fully Explained (look at the corresponding rubric for your project)

Judging and Rubrics

How will I be judged?	The grade specific rubrics on the following pages will be used to score your project. Your score will be determined from reviewing your tri-fold project board, notebook, and your interview.
Will I be interviewed by judges?	**K-3 students and Whole class** • Will NOT be interviewed • Will submit videos via QR codes on their display board **Grades 4-12** • Will be interviewed on Saturday, January 23, 2027 • Specific interview time slots will be sent out prior to fair day • Time slots will be from 9:00 am -12:00 pm Students choosing not to be interviewed can submit their projects for participation but will not be eligible for awards. **Possible Interview Questions: link**
Divisions, Teams, and Whole Class	**Divisions: Divided by the following grades:** • K-3, 4-5, 6-8, 9-12 **Teams:** • Team projects may have a maximum of 3 members. • All team members should have their own notebooks, but only one is required for the day of the fair. **Whole Class**: • Only the K-3 division is allowed to participate as a whole class. • All students should have their own notebooks, but only one board
Awards	The place awards are dependent upon the outcome of the judging points within each division. These awards may be certificates, ribbons and/or medals. First, second, and third place awards will be given in each division (K-3, 4-5, 6-8, and 9-12) for the following: Investigative Focus Science Computer Science/Math Engineering Project winners, based upon the judge's evaluation, will be invited to compete in the SJCOE STEAM Fair for investigative projects only.

Rubric for Grades K-5 Science, Engineering or Math/Computer Science Projects

Scientific Thought (10 points) K-5TH GRADE	Engineering Goal (10 points) K-5TH GRADE	Mathematics/ Computer Science (10 points) K-5TH GRADE
• **Clear Question/Problem**: Is the question or problem important and easy to understand? Was it specific enough to explore properly? Did the student think carefully about different parts of the problem? • **Control of Variables**: Did the student identify and manage all the important factors? Were any needed controls used correctly? • **Data and Conclusion**: Did the student collect enough data to support their conclusion? Were any basic math or simple statistics used to check the results? Does the student know the limits of their findings and what else could be explored? • **Research**: Did the student learn from books, articles, or other resources to help with the project? Can the student explain what they learned and cite where the information came from?	• **Clear Purpose and Design**: Is the project's goal clear? Are the design and goals important for what the project is trying to achieve? Does the project have a clear and useful purpose? • **Feasibility and Usefulness**: Is the project idea practical, and could it actually work? Could it be used to create something real, like a program or a device? • **Innovation and Improvement**: Did the student try different designs or models? Was the project tested in real situations and improved over time? Does the project show progress or offer something better than before? • **Future Ideas**: Does the student understand what could be done next or how the project could be improved? Has the student looked at similar ideas or products by others?	• **Planning and Development**: Does the project show a clear plan/explanation of the problem that matches the goals and test results? Was the software development process well thought out and included a test plan? • **Testing and Fixing**: Did the student test, fix, and improve the project until it met the design goals? Does the proof/exploration have clear documentation of students' struggles and approach? Is the final product successful in what it was supposed to do? • **Explaining the Program**: Can the student explain how their program/proof works and what it does/how it proves the claim? Is the work done at a high level of quality with clear goals and accurate/logical testing/reasoning? • **Scientific Accuracy**: Are the important parts of the project clearly identified and explained? Are all calculations accurate? Were any necessary controls used correctly? Is there enough data to back up the project's conclusions?

Rubric for Grades K-5 Science, Engineering or Math/CS Projects Additional Categories

K-5th grade: Creativity and Originality (10 points)

- **Unique Ideas:** Did the student come up with an original topic or a new way of doing things? Are the results something new or different?
- **Creative Thinking:** Did the student try something new or think outside the box to solve a problem, create software, or run an experiment? Did they go beyond what's in the textbook?
- **Problem-Solving:** Did the student find a good way to solve a problem on their own? How much of the work was their idea, and how much help did they get? If they used ideas from the internet or other sources, did they give credit?

K-5th grade: Thoroughness and Rigor (10 points)

- **Completing the Project:** Did the student fully complete what they set out to do? Did they explore the problem as much as they could?
- **Checking and Recording:** Did the student test things more than once to make sure the results were accurate? Did they keep good notes and write down all their steps?
- **Explaining the Work:** Did the student use drawings, charts, or diagrams to help explain what they found out? Do they understand how their project fits in with other ideas, and can they explain it?

K-5th grade: Skill, Independence, and Teamwork (10 points)

- **Skills and Work:** Did the student show good skills in building, coding, or doing experiments? Did they do most of the work by themselves?
- **Getting Help:** How much help did the student need from adults? Did they do the project mostly on their own or with a lot of guidance?
- **Working Together:** If it were a team project, did everyone have a clear job? Did all team members help and understand the project? Did they use what they had in smart ways?

K-5th grade: Clarity and Communication (10 points)

- **Talking About the Project:** Can the student clearly explain what they did and why? Are their presentations, posters, or talks easy to understand?
- **Organizing Ideas:** Did the student organize their project steps in a way that makes sense? Is it easy to follow their data and see what it means?
- **Writing and Visuals:** Do the student's written work and visual aids show they really understand the project? Are their charts and posters clear and helpful?
- **Communication Skills:** Is the student good at talking to others about their project? Can they answer questions in a way that shows they really know their stuff without just repeating memorized answers?

Rubric for Grades 6-12 Science, Engineering or Math/CS Projects

Scientific Thought (10 points) 6-12th grade	Engineering Goal (10 points) 6-12th grade	Mathematics/ Computer Science (10 points) 6-12th grade
• **Significance and Clarity:** -Was the question/problem scientifically significant and clearly stated? -Is the question/problem limited enough to allow a plausible approach, and a hypothesis is clearly stated? -Did the student(s) plan the project well by considering different aspects of the question/problem? • **Control of Variables:** -Were variables clearly recognized, defined, and appropriately controlled? -Were controls correctly used if necessary? • **Data and Conclusion:** -Are there adequate data to support the conclusions? -Were any statistics used to validate the findings? -Does the student/team recognize the limitations of the data and understand what further research is warranted? • **Literature Research:** -Was sufficient literature research performed and applied? -Is the student/team familiar with relevant scientific literature, and are there appropriate citations?	• **Clarity and Significance:** -Is the project's purpose clear and its design criteria or constraints/specifications significant? -Does the project have a well-defined objective, and is it relevant to potential user needs? • **Feasibility and Practicality:** -Is the proposed solution (software, hardware, or other prototypes) workable, feasible, and relevant? -Could it be used in the design or construction of an end product or program? • **Innovation and Improvement:** -Were multiple designs or prototypes built for testing? -Was the solution tested under real conditions, and was it improved through iteration? -Is the solution a significant improvement over previous alternatives? • **Next Steps and Future Considerations:** -Does the student understand the potential next steps or possible future improvements? -Has the student considered similar inventions, products, or applications by others?	• **Software Development Life Cycle**: -Is the entire software development life cycle/explanation of the problem clearly evident, including plans that align with the requirements and results from testing? -Does the project include a well-written test plan as a key part of the process? • **Testing and Debugging**: -Were testing, retesting, redesigning, debugging, and optimizing performed until the design criteria were met? -Is the design goal clearly fulfilled? Does the proof/exploration have clear documentation of students' struggles and approach? • **Program Explanation**: -Are computer program readouts/written proof clearly explained and documented? -Does the project demonstrate exemplary quality with clear requirements, accurate development, thorough testing, clear and logical reasoning, and thoughtful explanation? • **Scientific Rigor**: Are the variables in the project clearly recognized and defined? -If controls were necessary, were they correctly used? -Are the definitions, axioms, and theorems correctly referenced? -Are there adequate data to support the conclusions?

Rubric for Grades 6-12 Science, Engineering or Math/CS Projects – Additional Categories

6-12th grade: Creativity and Originality (10 points)

- **Novelty of Project:** Does the project demonstrate originality in the topic chosen or the approach taken? Are the findings or outcomes novel?
- **Innovation in Approach:** Has the student used a creative or innovative approach to test a hypothesis, design software, or conduct experiments? Does the project explore new ground beyond textbook solutions?
- **Problem-Solving Contribution:** Does the project offer an efficient and reliable method for solving a problem? How much of the idea and execution was the student's own, and how much assistance did they receive? Projects sourced from external resources must be clearly acknowledged and may score lower in this category.

6-12th grade: Thoroughness and Rigor (10 points)

- **Scope and Project Completion:** Was the project's purpose fully carried out within its original intent? How thoroughly was the problem explored?
- **Replication and Data:** Are there appropriate replications or repeated testing to ensure accuracy? Are the project notes, procedures, and materials thoroughly documented?
- **Data Presentation and Understanding**: Are data, drawings, flowcharts, and schematics presented clearly to explain findings? Is the student aware of other relevant theories or approaches, and can they explain how their project contributes to the field?

6-12th grade: Skill, Independence, and Teamwork (10 points)

- **Technical Proficiency:** Does the student/team demonstrate strong technical, programming, or laboratory skills? Did they independently build equipment, design experiments, or program software?
- **Level of Assistance:** How much mentoring or supervision did the student receive? Was the project completed independently or under significant guidance?
- **Resourcefulness and Team Collaboration:** For team projects, are the tasks and contributions of each member clearly outlined? Was each team member fully involved and familiar with all aspects of the project? How effectively did the student/team use available resources?

6-12th grade Clarity and Communication (10 points)

- **Presentation and Explanation:** How clearly does the student/team discuss and explain the project's purpose, procedures, and conclusions? Are the abstract, board, and oral presentations accurate and understandable?
- **Organization of Content:** Are the important phases of the project presented in an orderly and logical manner? Is the data communicated clearly, showing relationships or a lack thereof?
- **Written and Visual Materials:** Does the written material reflect a deep understanding of the research? Are visual aids easy to follow and effective in supporting the project's explanation?
- **Engagement and Communication Skills:** Is the student/team personable, persuasive, and able to communicate effectively with non-specialists? Are their answers thoughtful and clear, avoiding over-reliance on memorized speeches?