



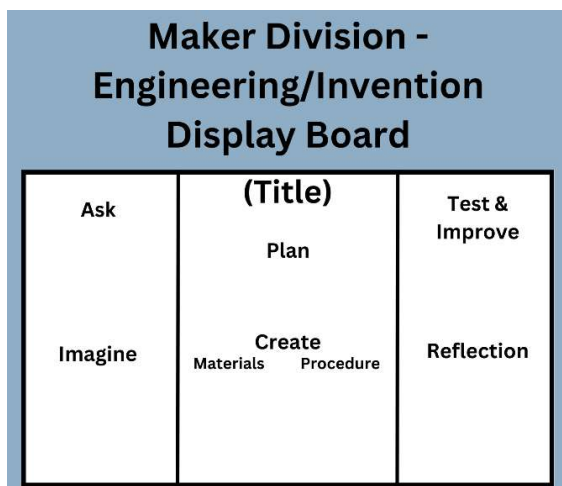
Project Overview:

Engineers and inventors design new things to solve problems and improve the world around us. For this project, you will identify a problem and use the Engineering Design Process to create a solution. As you design, apply the elements of art; line, shape, color, texture, form, space, and value; to make your invention both functional and visually engaging.

You will keep an engineering notebook to document your research, sketches, material lists, procedures, test data, and reflections. The steps of the Engineering Design Process are:

1. **Ask** – What problem are you trying to solve?
2. **Imagine** – Brainstorm lots of ideas.
3. **Plan** – Pick one idea and make a plan.
4. **Create** – Build a prototype (a model that shows your idea).
5. **Test & Improve** – Try it out! What works? What can you make better?

Tri-Fold Board Expectations:



Engineering Notebook Expectations:

- Define the problem
- Research notes
- Citations from research
- Sketches from planning
- Material lists
- Procedures for building
- Notes and Data from testing
- Reflection

Digital Presentation Expectations:

Students can choose to create a digital presentation in place of a tri-fold board. The presentation must include the following:

1. **Title Slide** – Include the project title, your name, and your teacher's name.
2. **Ask** – State the problem or question your model is trying to answer.
3. **Explore** – Share your research and possible solutions you discovered.
4. **Model** – Show pictures of your model in action. Describe how it works, list the materials you used, and explain how you built it.
5. **Evaluate** – Share test results or data and use key vocabulary to explain what you learned.
6. **Explain** – Reflect on how your model could be improved, how it solves the problem, and what you would change next time.



2025-2026 STEAM Fairs
 Maker Division – Engineering/Invention Project Description & Rubrics
 6th Grade – 12th Grade

Student Names:		Grade:		
Teacher's Name		Project Title:		
Category	Exceeds Expectations	Meets Expectations	Approaching	Beginning
Title & Description (5)	5 Creative, specific title and strong description of the invention's purpose	4 Clear title and short description	2-3 Title or description is incomplete or unclear	0-1 No title or description
Define the Problem (5)	5 Problem is clearly explained with detail about who it helps and why it matters	4 Problem is explained with some details	2-3 Problem is vague or missing important details	0-1 Problem not explained
Research (5)	5 Includes detailed, accurate research with multiple credible sources; explains existing solutions and why this design matters	4 Includes accurate research with some details and examples	2-3 Limited or partially accurate research	0-1 Minimal or no research provided
Engineering Notebook (20)	20 Complete with problem, research notes, citations, sketches, materials, steps, test data, and reflection; sketches show accuracy and detail	15-19 Includes most required sections; shows effort and organization	10-14 Missing sections or limited detail; sketches lack accuracy	0-9 Incomplete or missing logbook
Imagine (10)	10 Brainstorming shows multiple creative ideas and thoughtful consideration of possible solutions	8-9 Shows more than one idea with some details	5-7 Shows only one simple idea with little detail	0-4 No brainstorming shown
Plan (10)	10 Detailed step-by-step plan with clear drawings/writing; easy for others to replicate	8-9 Plan is clear but missing some detail	5-7 Plan has limited steps or detail	0-4 Plan unclear or missing
Create & Build (20)	20 Prototype is well-built, accurate, labeled, and visually engaging; strong application of art/design elements; originality evident	15-19 Prototype is complete, mostly neat, and labeled; some design/artistic elements used effectively	10-14 Prototype incomplete, messy, or lacking labels; minimal artistic effort	0-9 Prototype missing or poorly constructed
Test & Improve (10)	10 Prototype tested thoroughly; reflection clearly explains outcomes, strengths, weaknesses, and possible improvements	8-9 Prototype tested with reflection on what was learned	5-7 Prototype tested but reflection lacks clarity/detail	0-4 No testing or reflection shown
Presentation (Trifold or PowerPoint) (10)	10 Presentation is polished, organized, and engaging; student demonstrates deep knowledge and confidence	8-9 Presentation is complete and clear	5-7 Presentation is missing parts or difficult to follow	0-4 Presentation incomplete or unclear
Artistic Expression (5)	5 Student skillfully integrates elements of art throughout the invention; originality and creativity make the work both functional and visually engaging	4 Student includes some elements of art with effort toward visual appeal	2-3 Minimal effort toward artistic quality; little evidence of elements of art	0-1 No attempt to use artistic elements

****Students/Teachers are to complete the top portion of this form and make sure it is attached to the STEAM Fair project for judges to reference, all scores are entered through the shared digital scoring form.****