

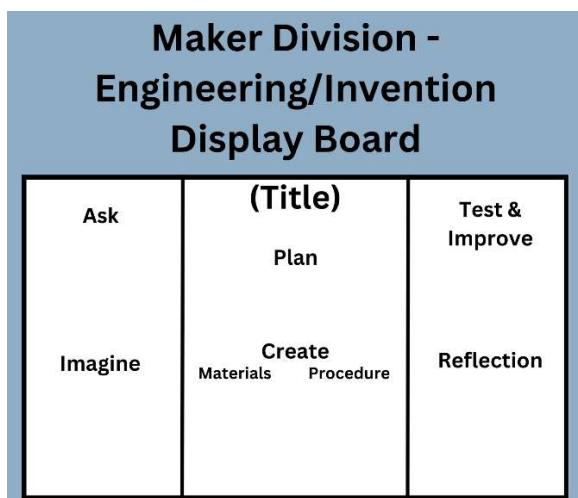


### Project Overview:

Engineers and inventors design new things to solve problems and improve the world around us. For this project, you will think of a problem in your everyday life and use the Engineering Design Process to create a solution. As you design, be sure to apply the elements of art; line, shape, color, texture, form, space, and value; to make your invention both functional and visually engaging. Throughout the process, you will keep an engineering notebook to record your research, sketches, plans, 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  
 Kindergarten – 5<sup>th</sup> Grade

Student Names:		Grade:		
Teacher's Name		Project Title:		
Category	Exceeds Expectations	Meets Expectations	Approaching	Beginning
<b>Title &amp; Description (5)</b>	<b>5</b> Creative title and clear description that explains the invention's purpose	<b>4</b> Clear title and short description	<b>2-3</b> Title or description is incomplete or unclear	<b>0-1</b> No title or description
<b>Define the Problem (5)</b>	<b>5</b> Problem is clearly explained with details about who it helps and why it matters	<b>4</b> Problem is explained with some details	<b>2-3</b> Problem is vague or missing important details	<b>0-1</b> Problem not explained
<b>Research (5)</b>	<b>5</b> Includes many accurate facts, examples, or existing solutions; shows strong understanding	<b>4</b> Includes some accurate facts and examples	<b>2-3</b> Includes few facts; may be unclear or incomplete	<b>0-1</b> Little or no research provided
<b>Engineering Notebook (20)</b>	<b>20</b> Notebook is complete and organized; includes problem, research notes with citations, sketches, materials list, steps, test data, and thoughtful reflection. Sketches demonstrate accuracy in shape, proportion, and detail; exploration of light, shadow, and composition when appropriate	<b>15-19</b> Notebook includes most parts; sketches show some accuracy	<b>10-14</b> Notebook includes some parts but is missing important details; sketches lack accuracy	<b>0-9</b> Notebook missing or mostly empty
<b>Imagine (10)</b>	<b>10</b> Many creative ideas listed or drawn; shows wide brainstorming of possible solutions	<b>8-9</b> Several ideas listed or drawn	<b>5-7</b> One or two ideas with little detail	<b>0-4</b> No brainstorming shown
<b>Plan (10)</b>	<b>10</b> Step-by-step plan with clear drawings/writing; easy for others to follow	<b>8-9</b> Plan is clear and complete	<b>5-7</b> Plan is missing steps or unclear	<b>0-4</b> No plan provided
<b>Create &amp; Build (20)</b>	<b>20</b> Prototype is complete, neat, labeled, and accurate; pictures/drawings show process. Student skillfully applies elements of art to make the invention both functional and visually engaging; design shows originality	<b>15-19</b> Prototype is complete and mostly neat; some elements of art are applied effectively	<b>10-14</b> Prototype is incomplete, messy, or missing labels; minimal use of artistic elements	<b>0-9</b> Prototype not built or missing most parts; no attention to artistic quality
<b>Test &amp; Improve (10)</b>	<b>10</b> Prototype tested; results are shared; reflection explains what worked, what did not, and how to improve	<b>8-9</b> Prototype tested; some results or improvements described	<b>5-7</b> Prototype tested but results are unclear or no improvements suggested	<b>0-4</b> Prototype not tested
<b>Presentation (Trifold or PowerPoint) (10)</b>	<b>10</b> Presentation is neat, complete, and easy to follow; student explains project confidently	<b>8-9</b> Presentation is neat and complete	<b>5-7</b> Presentation is missing some parts or hard to follow	<b>0-4</b> Presentation is unclear or incomplete
<b>Artistic Expression (5)</b>	<b>5</b> Student skillfully integrates elements of art throughout the invention; originality and creativity make the work both functional and visually engaging	<b>4</b> Student includes some elements of art with effort toward visual appeal	<b>2-3</b> Minimal effort toward artistic quality; little evidence of elements of art	<b>0-1</b> 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.\*\***