# **Project Overview:**

Scientists use models to help them learn and explain new ideas. A model can show how something works or help explain important vocabulary. For your project, you will create a model to show what you are learning. As you design, be sure to apply the elements of art; line, shape, color, texture, form, space, and value; to make your project both functional and visually engaging. Your model might be a scale model of the solar system, a Scratch Jr program, or a Dash robot project. Throughout the process, you will keep an engineering notebook to record your research, sketches, plans, and reflections. Research, build, and label your model to share your learning!

## **Tri-Fold Board Expectations:**

# Maker Division - Model Display Board Significance (Title) (Description) Imagine Research Plan Materials Procedure Reflection

## **Engineering Notebook Expectations:**

- Define the problem
- Research notes
- Citations from research
- Sketches from planning
- Material lists
- Procedures for building
- 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. **Significance of Model** Explain why your model is important and why you chose it.
- 3. **Research** Share your research
- 4. **Imagine** Sketch possible models you can create
- 5. **Plan & Model** Show pictures of your model in action. Describe how it works, list the materials you used, and explain how you built it.
- 6. **Test** Share test results or data and use key vocabulary to explain what you learned.
- 7. **Reflection** Reflect on how your model could be improved and what you would change next time.

	Student Names:			Grade:
Ī	eacher's Name		Project Title:	
Category	Exceeds Expectations	Meets Expectations	Approaching	Beginning
Title & Description (5)	5 Creative, clear title and strong description of the model's purpose	Clear title and short description	2-3 Title or description is incomplete or unclear	0-1 No title or description
Significance of Model (5)	Clearly explains why the model is important and why others should care	Explains why the model is important	2-3 Gives a simple or vague reason	0-1 No explanation of importance
Research (5)	5 Includes several accurate facts, key words, and discoveries; shows strong understanding	Includes some accurate facts and key words	2-3 Includes few facts; some may be unclear or incomplete	0-1 Little or no research provided
Engineering Notebook (10)	Notebook is complete with detailed notes and drawings. sketches demonstrate accuracy in shape, proportion, and detail, exploring light, shadow, and composition when appropriate	8-9 Notebook has clear notes and some drawings/reflections; sketches show some accuracy	5-7 Notebook has a few notes or is missing sections; sketches lack accuracy/detail	<b>0-4</b> Notebook is missing or almost empty
Imagine (10)	10 Shows many creative ideas and materials considered; clear brainstorming	8-9 Shows some ideas and materials; brainstorming is clear	5-7 Shows only one or two ideas with little detail	<b>0-4</b> No brainstorming shown
Plan (10)	10 Step-by-step plan with clear drawings/writing; easy for someone else to follow	8-9 Plan is evident but missing some steps or drawings.	5-7 Plan is missing steps or details	0-4 Plan is missing or unclear
Create & Build (20)	Model is neat, well-built, labeled, and accurate; pictures/drawings show process; students skillfully apply elements of art (line, shape, color, texture, form, space, value) to make the model both functional and visually appealing; design shows originality	15-19  Model is complete, mostly neat, and labeled; some elements of art are used effectively	10-14  Model is incomplete, messy, or missing labels; minimal use of artistic elements	0-9  Model not built or missing most parts; no attention to visual/artistic quality
Test & Reflect (10)	Model is tested; strong reflection explains what worked, what did not, and surprises	8-9 Model is tested; reflection explains what was learned	5-7 Model is tested but reflection is unclear or missing details	0-4 No testing or reflection shown
Presentation (Trifold or PowerPoint) (10)	Presentation is neat, complete, and easy to follow; student explains project confidently	8-9 Presentation is neat and complete	5-7 Presentation is missing some parts or hard to follow	0-4 Presentation is unclear or incomplete
Artistic Expression (5)	Student skillfully integrates elements of art throughout the project; originality and creativity make the work both functional and visually engaging	Student includes some elements of art with clear 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

<sup>\*\*</sup>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.\*\*