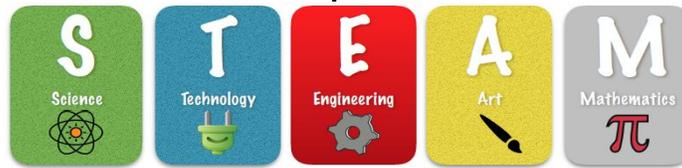


# TUSD Elementary School STEAM Fair



## 4<sup>th</sup>/5<sup>th</sup> Grade - Problem Solving/Experimental Design

(Focus: Science, Technology, Engineering, Art, Math)

### Project Specifications

**Wonderings:** What have I always wondered about? What experiment can I create to learn more?

#### Requirements:

##### Scientific Thinking/Model Design

Why did you create your experiment?

- Identify a purposeful question or problem which could be investigated. Be sure to base the experiment on personal interest with support
- Form a claim, clearly outline the procedures, and identify what stayed the same and what changed in each trial. Repeat the experiment at least 5 or more times (trials)

##### Research Plan (Scientific Process)

What is the procedure for creating your experiment?

- Be sure to complete all written parts and research the topic using 3 or more sources
- Create an abstract (summary) of the project.

##### Scientist's Data and Results

What evidence did you have to support your claim and reasoning?

- Includes daily, detailed notes about your observations and experiment problems
- Measure and display your evidence and list materials used
- Indicate the redesign of the experiment and provide detailed reasoning.

##### Visual/Digital Display

How will you share your project?

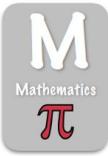
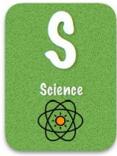
- The experimental design may only occupy a space the size of a student's desktop (24" long and 15" deep). Anything larger must be approved by the teacher.
- The experimental design may be mounted on a display board, cardboard/tagboard, or any reasonable manner that fulfills the size display requirements.
- Students must produce their own display that is organized and clearly communicates findings.

##### Oral Presentation

How will you verbally explain your project?

- Must be 1-2 minutes and explain the purpose of the project and what was discovered.
- Presentations can be via video, but the student has to be the one explaining the experiment in the video, and student must be prepared to answer questions during the presentation.

\*Please see scoring rubric on the back for even more details.



Room \_\_\_\_\_

Score \_\_\_\_\_/15

Teacher \_\_\_\_\_

Name \_\_\_\_\_ Grade \_\_\_\_\_ Project Title \_\_\_\_\_

## STEAM Fair - 4th & 5th Grade Scoring Rubric

	<b>3 Master Scientist</b>	<b>2 Super Scientist</b>	<b>1 Scientist in Training</b>	<b>0 Not Evident</b>
<b>Scientific Thinking / Experimental Design</b> Why did you create your experiment?	Student identified a purposeful question or problem which could be investigated: -experiment is based on personal interest with support - formed a claim - clearly outlined procedures -clearly identified what stayed the same in each trial - clearly identified what change - completed experiment at least 5 or more times -Clearly evident redesign of the experiment	Student attempted to follow all of the steps of the scientific process, but a few parts may need more detail or explanation, such as: -experiment lacks personal interest -formed a claim -outlined procedure -completed experiment 3-4 times -no redesign	Several parts of the scientific process are lacking, such as: -no personal interest in experiment provided -the claim or problem was not testable had no personal -procedure was unclear -completed experiment 1-2 times	Student did not complete a project using the steps of the scientific process
<b>Research Plan (Scientific Process)</b> What is the the procedure for creating your experiment?	All written parts are complete, including: -procedure is clear -researched the topic using 3 or more sources, -an abstract (summary);	All parts of the research plan are complete, though a few areas may need greater detail: -procedure is incomplete -researched the topic using 2 sources	Some parts of the research plan may be incomplete or missing: - missing procedure -researched the topic using one source	Research plan not completed
<b>Scientist's Log</b> What evidence did you have to support your claim and reasoning?	Includes daily, detailed notes about: -observations -identifies experiment problems -correctly measured and displayed evidence -listed materials -included redesign - provided detailed reasoning	Includes several day's worth of notes: -observations -identifies experiment problems -correctly measured and displayed evidence -listed materials -included redesign -provided reasoning	Notes are minimal: -limited observations -lacks identification of experiment problems -little or no evidence was collected -materials list was incomplete -did not include a redesign -lacked a clear reasoning	Notes about the process are missing or severely incomplete
<b>Visual / Digital Display</b> How will you share your findings?	Visual/digitally produced display; -neat, -informative -strongly supports the research plan - includes 3 or more photos, graphs or diagrams -conforms to specified size -writing is neat -detailed and free of errors -highest quality work is evident	Visual/digitally produced display is - neat - informative - includes at least 2 photos, graphs or diagrams -work is neat but may have some errors	Visual/digitally produced display is: -show minimal quality - frequent errors in writing - illegible writing	No visual/digitally produced display was submitted
<b>Oral Presentation</b> How will you verbally explain the project?	Presentation is coherent and well organized; - provides clear explanation of problem/question -claim -procedure -results -what was learned -Approx. 2-3 minutes	Student is -provides an explain of problem/question -claim -procedure -results - what was learned; but -may need some teacher prompting	Student has difficulty explaining the parts of his/her project and what he/she learned even with teacher prompting; presentation is not prepared	Student is unable to explain his/her project or what he/she learned; or student did not share his/her project