

# STEAM FAIR JUDGING CRITERIA - EXHIBITION

(NOT eligible for advancement to CA State Science and Engineering Fair)



PROJECT ID# \_\_\_\_\_ JUDGE INITIALS \_\_\_\_\_

PROJECT TITLE \_\_\_\_\_

Judging Criteria	Points	Points
Rube Goldberg / Science Fiction / Reverses Engineering and Invention / Robotics and Coding	10	
Creativity	10	
Thoroughness	10	
Skill	10	
Clarity	10	
<b>Maximum Total Points</b>	<b>50</b>	

Rube Goldberg (10 points)	Science Fiction (10 points)	Reverse Engineering and Invention (10 points)	Robotics and Coding (10 points)
<ul style="list-style-type: none"> <li>Numerous types of simple machines are used and identified accurately.</li> <li>Several types of energy transfers are used and identified correctly, including indication of direction.</li> <li>Duration of a sequential events (time) is taken into account as part of the sequence.</li> <li>Complexity and quantity of steps are considered during development.</li> <li>Multiple converging simultaneous, recurring, or reusable paths are provided.</li> <li>Device has a clearly identified task, and a simple trigger event initiates the operation.</li> </ul>	<ul style="list-style-type: none"> <li>Structure of entry is well designed for the intended storyline or concept (may include unusual formatting of unique sequencing)</li> <li>Combination of entry formats (illustrations with storylines, storyboards with plays, etc.) are well done and appropriate.</li> <li>“Willful suspension of disbelief” effort is almost negligible.</li> <li>Stories, visions, and/or characters keep the reader’s attention and interest.</li> <li>Knowledge and understanding of the topic is conveyed.</li> <li>Use of an alternate scientific idea or concept, which is not</li> </ul>	<p><b>Project Type: Invention</b></p> <ul style="list-style-type: none"> <li>Invention addresses real world problem</li> <li>Prototype of ‘mock-up’ is relevant and complete enough to show the important aspects of the invention.</li> <li>Components (materials /sub-components) of the device are correctly identified, and their functions are described.</li> </ul> <p><b>Project Type: Reverse Engineering</b></p> <ul style="list-style-type: none"> <li>Disassembly of this product will help the audience understand an unfamiliar operational concept.</li> <li>How the original unit operates based on the disassembled components works is described completely and accurately</li> </ul>	<ul style="list-style-type: none"> <li>The entered robot or software is complete and operational, or if s subassembly, is a critical portion that demonstrates function and operability</li> <li>The function and purpose of the entry is clearly explained</li> <li>Any sub-components are described and clarified completely.</li> <li>The means of operation of the robot or software is explained to an appropriate level for the intended audience</li> <li>Design information and/or software source code is documented and explained adequately.</li> <li>Documentation shows the process of building and designing your robot</li> </ul>

<ul style="list-style-type: none"> <li>• Diagram of operation is understandable.</li> </ul>	<p>currently proven, is important to the piece.</p>	<ul style="list-style-type: none"> <li>• Product selected has appropriate complexity to allow understanding without being overly simple</li> <li>• Cause and Effect between and within sub-assemblies is correctly identified</li> <li>• Methods and concepts are evaluated to improve the disassembled product</li> <li>• Components (materials /sub-components) of the device are correctly identified, and their functions are described.</li> </ul>	<p>with illustration of plans and steps.</p>
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**Creativity/Originality (10 points)**

- Is the project topic unique or the approach original?
- Has the student used a novel approach for checking the hypothesis or testing an engineering design or software? Projects from the internet or other sources are acceptable if clearly acknowledged but should be scored lower.
- Evidence of student's contributions: What level of assistance was received for the idea and execution?

**Thoroughness/Organized/Completed (10 points) as applicable**

For all:

- Record of daily work is evident in notebook/journal
- Notebook supports evidence of work completed.

As applicable:

- Is there development of the product over time?
- Are there adequate data, drawings, flowcharts, schematics presented to address the scope?
- Has all of the work been completed in the past 12 months?
- Is the interpretation or performance claims supported with data?
- Are procedures and materials thoroughly documented?
- Were photos of hardware prototypes or a software demo provided?

**Skill/Comprehension (10 points)**

For all:

- How much mentoring or other help did the student receive to carry out experiments or testing?
- Does the student understand the subject?

For applicable:

- Has the student used good laboratory, technical or programming skills?
- Did the student build equipment, design experiments, or program software?

**Clarity (10 points)**

- Are the summary, board, and oral communication accurate and understandable?
- Are the data and test results clear?
- Are phases of the project presented in an orderly manner?

**Comments or Questions:**