

STEAM FAIR JUDGING CRITERIA -

# Investigative

<b>Scientific Thought (10 points)</b>	<b>Engineering Goal (10 points)</b>	<b>Mathematics/Computer Science (10 points)</b>
<ul style="list-style-type: none"> <li>● Was the problem scientifically significant and the hypothesis clearly stated?</li> <li>● Did the student(s) look at different aspects of the problem, and chose a sufficiently limited project – was it well planned?</li> <li>● Did the student use appropriate control of variables?</li> <li>● Was the conclusion justified and properly drawn from experimental data?</li> <li>● Was sufficient literature research performed and applied?</li> <li>● Does the student understand what further research is warranted?</li> </ul>	<ul style="list-style-type: none"> <li>● Was the purpose and engineering design criteria/specifications significant and clearly stated?</li> <li>● Was the software or hardware prototype to be invented/ engineered relevant, workable and feasible?</li> <li>● Could the solution be used in design or construction of some end product or program?</li> <li>● Was there evidence of redesign and retest under conditions of use?</li> <li>● Did the student consider inventions, products, software, and applications by others?</li> <li>● Does the student understand next steps or possible future improvements?</li> </ul>	<ul style="list-style-type: none"> <li>● Entire software development life cycle is clearly evident including plans that match the requirements and results from testing and computing.</li> <li>● Testing is done and the above is noted, in addition, a “test plan” is a well written, key part of the process.</li> <li>● Retesting, redesigning, debugging, optimizing are done until the design criteria has been reached and the design goal has been clearly fulfilled.</li> <li>● Computer program readouts are clearly explained.</li> <li>● Exemplary quality, requirements are stated, design is clear, development and testing is accurate and retesting is done to ensure accurate solution.</li> </ul>

## Creativity (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 (10 points)

- Are there appropriate replications or repeated testing?
- Are there adequate data, drawings, flowcharts, schematics presented to explain findings?
- Are procedures, materials and research thoroughly documented?
- Were photos of hardware prototypes or a software demo provided?

## Skill/Comprehension (10 points)

- Does the student understand the subject?
- Has the student used good laboratory, technical or programming skills?
- Did the student build equipment, design experiments, or program software?
- How much mentoring or other help did the student receive to carry out experiments or testing?

## Clarity (10 points)

- Are the abstract, board, and oral communication accurate and understandable?
- Are the data and test results communicated sufficiently so others can see a mathematical relationship or lack of a relationship.
- Are phases of the project presented in an orderly manner?