

## Alameda County Science and Engineering Fair Rubrics

*Each category is 20% of final score, rated on a 1-10 scale*

### Engineering Projects Rubric

Creativity	<ul style="list-style-type: none"> <li>• Does the project show creative ability and originality in the questions asked? Are the findings or outcome novel?</li> <li>• Creative approach to solving the problem, the analysis of the data, the interpretation of the data? The use of equipment, the construction or design of new equipment?</li> <li>• Creative research should support an investigation and help answer a question in an original way.</li> <li>• A creative contribution promotes an efficient and reliable method for solving a problem.</li> </ul>
Engineering Goals	<ul style="list-style-type: none"> <li>• Does the project have a clear objective?</li> <li>• Is the objective relevant to the potential user's needs?</li> <li>• Is the solution workable, acceptable to the potential user, economically feasible? Were constraints identified prior to design?</li> <li>• Could the solution be utilized successfully in design or construction of an end product?</li> <li>• Were multiple designs or prototypes built for testing? Was the solution tested for performance under the conditions of use? Was the design improved by iteration?</li> <li>• Is the solution a significant improvement over previous alternatives?</li> </ul>
Thoroughness/ Rigor	<ul style="list-style-type: none"> <li>• Was the purpose carried out to completion within the scope of the original intent?</li> <li>• How completely was the problem covered?</li> <li>• Are the conclusions based on a single experiment or was there replication? Were appropriate statistics used on replicates?</li> <li>• How complete are the project notes?</li> <li>• Is the student/team aware of other approaches or theories and can explain what the project adds to prior knowledge in the field?</li> <li>• Is the student /team familiar with scientific literature in the studied field? Are there scientific literature citations relevant to the project (not just popular literature such as local newspapers or interest websites)?</li> </ul>
Skill/ Independence/ Teamwork	<ul style="list-style-type: none"> <li>• Does the student/team have the required laboratory, computation, observational and design skills to obtain supporting data?</li> <li>• Did the student/team receive appropriate or excessive assistance from parents, teachers, scientists, or engineers? Was the project completed under adult supervision, or did the student/team work largely alone?</li> <li>• Where did the equipment come from? Was it built independently by the student or team? Was it obtained on loan? Was it part of a laboratory where the student or team worked?</li> <li>• Is the student/team able to answer questions during the interview clearly and thoughtfully?</li> <li>• For team projects only:             <ul style="list-style-type: none"> <li>○ Are the tasks and contributions of each team member clearly outlined?</li> <li>○ Was each team member fully involved with the project, and is each member familiar with all aspects?</li> </ul> </li> </ul>
Clarity	<ul style="list-style-type: none"> <li>• How clearly does the student discuss the project and explain the purpose, procedure, and conclusions? Watch out for memorized speeches that reflect little understanding of principles.</li> <li>• Does the written material reflect the student's or team's understanding of the research?</li> <li>• Are the important phases of the project presented in an orderly manner?</li> <li>• How clearly is the data presented? How clearly are the results presented? How well does the project display explain the project?</li> <li>• Is the student/team personable, persuasive, and able to speak with non-specialists?</li> </ul>

## Alameda County Science and Engineering Fair Rubrics

### Science Projects Rubric

Creativity	<ul style="list-style-type: none"> <li>• Does the project show creative ability and originality in the questions asked? Are the findings or outcome novel?</li> <li>• Creative approach to solving the problem, the analysis of the data, the interpretation of the data? The use of equipment, the construction or design of new equipment?</li> <li>• Creative research should support an investigation and help answer a question in an original way.</li> <li>• A creative contribution promotes an efficient and reliable method for solving a problem.</li> </ul>
Scientific Thought	<ul style="list-style-type: none"> <li>• Is the problem stated clearly and unambiguously?</li> <li>• Was the problem sufficiently limited to allow a plausible approach? Good scientists can identify important problems capable of solutions.</li> <li>• Was there a procedural plan for obtaining a solution?</li> <li>• Are the variables clearly recognized and defined?</li> <li>• If controls were necessary, did the student recognize their need and were they correctly used?</li> <li>• Are there adequate data to support the conclusions? Were any statistics used to prove this?</li> <li>• Does the student/team recognize the data's limitations?</li> <li>• Does the student /team understand the basic science relevant to the project?</li> <li>• Does the student /team have an idea of what further research is warranted?</li> </ul>
Thoroughness/ Rigor	<ul style="list-style-type: none"> <li>• Was the purpose carried out to completion within the scope of the original intent?</li> <li>• How completely was the problem covered?</li> <li>• Are the conclusions based on a single experiment or was there replication? Were appropriate statistics used on replicates?</li> <li>• How complete are the project notes?</li> <li>• Is the student/team aware of other approaches or theories and can explain what the project adds to prior knowledge in the field?</li> <li>• Is the student /team familiar with scientific literature in the studied field? Are there scientific literature citations relevant to the project (not just popular literature such as local newspapers or interest websites)?</li> </ul>
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