

**Fresno County Science Fair**  
**2024**  
**Judging Criteria For General Science Projects**

<b>Project</b>		<b>Presentation</b>	
<b>Research Question (10)</b>		<b>Poster (10)</b>	
	Clear and focused purpose		Logical organization of material
	Identifies contribution to field of study		Clarity of graphics and legends
	Testable using scientific method		Supporting Documentation displayed
<b>Design and Methodology (15)</b>		<b>Interview (25)</b>	
	Well designed plan and data collection methods		Clear, concise, thoughtful responses to questions
	Variables and controls defined, appropriate and complete		Understanding of basic science relevant to project
<b>Execution: Data Collection, Analysis and Interpretation (20)</b>			Understanding interpretation and limitations of results and conclusions
	Systematic data collection and analysis		Degree of independence in conducting project
	Reproducibility of results		Recognition of potential impact in science, society, and/or economics
	Appropriate application of math and stats methods		Quality of ideas for further research
	Sufficient data collected to support interpretation and conclusions		For team projects, contributions to and understanding of project by all members.
<b>Creativity (20)</b>			
	Project demonstrates creativity in one or more of the criteria above (20)		

## General Science Project Criteria

### 1. **INTRODUCTION** - What is your research question?

- Explain what is known or has already been done in your research area. Include a brief review of relevant literature. If this is a continuation project, a brief summary of your prior research is appropriate here. Be sure to distinguish your previous work from this year's project.
- What were you trying to find out? Include a description of your purpose, your research question, and/or your hypothesis.

### 2. **METHODS** - Explain your methodology and procedures for carrying out your project in detail.

- What did you do? What data did you collect and how did you collect that data? Discuss your control group and the variables you tested.
- DO NOT include a list of materials.

### 3. **RESULTS** - What were the result(s) of your project?

- Include tables and figures which illustrate your data.
- Include relevant statistical analysis of the data.

### 4. **DISCUSSION** - What is your interpretation of these results?

- What do these results mean? Compare your results with theories, published data, commonly held beliefs, and expected results.
- Discuss possible errors. Did any questions or problems arise that you were not expecting? How did the data vary between repeated observations of similar events? How were results affected by uncontrolled events?

### 5. **CONCLUSIONS** - What conclusions did you reach?

- What do these results mean in the context of the literature review and other work being done in your research area? How do the results address your research question? Do your results support your hypothesis?
- What application(s) do you see for your work?

### 6. **REFERENCES**

- Limit your list to the most important references.
- List the references/documentation used which were not of your own creation (books, journal, articles).

**Fresno County Science Fair**  
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**Judging Criteria For Engineering Projects**

<b>Project</b>		<b>Presentation</b>	
<b>Research Problem (10)</b>		<b>Poster (10)</b>	
	description of a practical need or problem to be solve		Logical organization of material
	definition of criteria for proposed solution		Clarity of graphics and legends
	explanation of constraints		Supporting Documentation displayed
<b>Design and Methodology (15)</b>		<b>Interview (25)</b>	
	Exploration of alternative to answer need or problem		Clear, concise, thoughtful responses to questions
	Identification of solution		Understanding of basic science relevant to project
	Development of prototype / model		Understanding interpretation and limitations of results and conclusions
<b>Execution: Construction and Testing (20)</b>			Degree of independence in conducting project
	Prototype demonstrates intended design		Recognition of potential impact in science, society, and/or economics
	Prototype has been tested in multiple conditions/trials		Quality of ideas for further research
	Prototype demonstrates engineering skill and completeness		For team projects, contributions to and understanding of the project by all members.
<b>Creativity (20)</b>			
	Project demonstrates creativity in one or more of the criteria above (20)		

## Engineering Project Criteria

### 1. **INTRODUCTION**-What is your engineering problem and goal?

- What problem were you trying to solve? Include a description of your engineering goal.
- Explain what is known or has already been done to solve this problem, including work on which you may build. You may include a brief review of relevant literature.
- If this is a continuation project, a brief summary of your prior work is appropriate here. Be sure to distinguish your previous work from this year's project.

### 2. **METHODS** - Explain your methods and procedures for building your design.

- What did you do? How did you design and produce your prototype? If there is a physical prototype, you may want to include pictures or designs of the prototype.
- If you tested the prototype, what were your testing procedures? What data did you collect and how did you collect that data?
- DO NOT include a separate list of materials.

### 3. **RESULTS** - What were the result(s) of your project?

- How did your prototype meet your engineering goal?
- If you tested the prototype, provide a summary of testing data tables and figures that illustrate your results.
- Include relevant statistical analysis of the data.

### 4. **DISCUSSION** - What is your interpretation of these results?

- What do these results mean? You may compare your results with theories, published data, commonly held beliefs, and/or expected results.
- Did any questions or problems arise that you were not expecting? Were these problems caused by uncontrolled events? How did you address these?
- How is your prototype an improvement or advancement over what is currently available?

### 5. **CONCLUSIONS** - What conclusions did you reach?

- Did your project turn out as you expected?
- What application(s) do you see for your work?

### 6. **REFERENCES**

- Limit your list to the most important references. List the references/documentation used which were not of your own creation.

# Computer Science Project Criteria

## 1. INTRODUCTION - What is your research question?

- Explain what is known or has already been done in your research area. Include a brief review of relevant literature.
- If this is a continuation project, a brief summary of your prior work is appropriate here. Be sure to distinguish your previous work from this year's project.

## 2. FRAMEWORK - Notation and framework.

- Introduce the concepts and notation needed to specify your research question, methods, and results precisely.
- Define relevant terms, and explain prior/background results. (Novel concepts developed as part of your project can be presented here or in Section 4, as appropriate.)

## 3. FINDINGS - Present your findings and supporting arguments.

- What did you discover and/or prove? Describe your result(s) in detail. If possible, provide both formal and intuitive/verbal explanations of each major finding.
- Describe your methods in general terms. Then:
  - Present rigorous proofs of the theory results – or, if the arguments are long, give sketches of the proofs that explain the main ideas.
  - For numerical/statistical results, include tables and figures that illustrate your data. Include relevant statistical analysis. Were any of your results statistically significant? How do you know this?

## 4. CONCLUSIONS - What is your assessment of your findings?

- How do the results address your research question? And how have you advanced our understanding relative to what was already known?
- Discuss possible limitations. Did any questions or problems arise that you were not expecting? What challenges do you foresee in extending your results further?
- What application(s), if any, do you see for your work?

## 5. REFERENCES • Limit your list to the most important references. • List the references/documentation used which were not of your own creation.