

Pts.	Evaluation Criteria	Excellent 17-20 points	Good 13-16 points	Fair 9-12 points	Poor 0-8 points
20 score	<p><b>Science Project:</b></p> <ul style="list-style-type: none"> <li>Objectives</li> <li>Hypothesis (question)</li> <li>Use of Resources* <i>*jr/sr projects only</i></li> </ul> <p><b>Engineering Project:</b></p> <ul style="list-style-type: none"> <li>Problem Statement (design criteria)</li> </ul>	<ul style="list-style-type: none"> <li>Clearly stated &amp; well-written</li> <li>Appropriate for grade level &amp; original</li> <li>Creative approach to problem solving</li> </ul> <p>I. Testable, clear, bounded hypothesis</p> <hr/> <ul style="list-style-type: none"> <li>A comprehensive, correctly formatted bibliography was included &amp; footnotes are present in text and display</li> <li>Student(s) used full resources available (e.g. labs, advisors, experts, scientific periodicals &amp; texts, internet)</li> </ul> <hr/> <p>A. Clear, original problem statement that meets potential users' needs B. Clearly defined design criteria and goals</p>	<ul style="list-style-type: none"> <li>Lacking in 1 area: clarity, appropriate level, or creativity</li> </ul> <p>I. Hypothesis present, but not completely testable</p> <hr/> <ul style="list-style-type: none"> <li>Incomplete citations</li> <li>Used <b>most</b> available resources</li> <li><b>Most</b> internet resources are scientific &amp; reputable</li> </ul> <hr/> <p>A. Statement is <b>not</b> original B. Goals/criteria are measurable but <b>vague</b></p>	<ul style="list-style-type: none"> <li>Lacking in 2 areas: clarity, appropriate level, and/or creativity</li> </ul> <p>I. Hypothesis incomplete or not testable</p> <hr/> <ul style="list-style-type: none"> <li><b>Minimal</b> effort on citing sources</li> <li>Used <b>some</b> available resources</li> <li><b>Some</b> internet resources are scientific &amp; reputable</li> </ul> <hr/> <p>A. <b>Incomplete</b> statement B. Goals/criteria are <b>poorly defined</b>/not measurable</p>	<ul style="list-style-type: none"> <li>Poorly conceived or lacking in all 3 areas</li> </ul> <p>I. Hypothesis <b>missing</b> or poorly defined</p> <hr/> <ul style="list-style-type: none"> <li><b>No</b> sources or citations</li> <li>Project suffered as a result of <b>not</b> using available resources</li> <li>Internet resources are <b>not</b> scientific or reputable</li> </ul> <hr/> <p>A. Statement <b>missing</b> or poorly defined B. Goals/criteria <b>missing</b></p>
20 score	<p><b>Science Project:</b></p> <ul style="list-style-type: none"> <li>Design &amp; Procedures</li> </ul> <p><i>Experimental design &amp; implementation (hypothesis testing)</i></p> <p><b>Engineering Project:</b></p> <ul style="list-style-type: none"> <li>Engineering process (design &amp; prototype)</li> </ul>	<p>I. Exemplary, creative plan to support / refute hypothesis with valid testing II. Sequential experimental procedures are quantitatively and/or qualitatively listed, and connect hypothesis, data &amp; results III. Procedures are logical and repeatable IV. Sample sizes, number of trials are sufficient. Valid control group. V. All other variables are carefully controlled</p> <hr/> <p>A. Design goals &amp; approach clearly stated &amp; reproducible, alternatives considered B. Design creative, schematics / software provided (as applicable), well labeled C. Assembly details or set-up instructions for device are clearly laid out D. Photos provided or prototype on display E. Materials used in appropriate ways</p>	<p>I. Sufficient plan to support / refute hypothesis with all other criteria met, <b>or</b> II. Exemplary plan and <b>3</b> of <b>4</b> other criteria for excellence met, <b>or</b> III. <b>Some</b> improvements needed throughout</p> <hr/> <p>A. <b>3-4</b> of 5 criteria required for excellence are met <b>or</b> B. <b>Some</b> improvements could be made</p>	<p>I. Sufficient plan with <b>3</b> of <b>4</b> other criteria for excellence met, <b>or</b> II. Exemplary plan and <b>2</b> of <b>4</b> other criteria for excellence met, <b>or</b> III. <b>Major</b> improvements needed throughout</p> <hr/> <p>A. <b>1-2</b> of 5 criteria required for excellence are met <b>or</b> B. Existing information is <b>incomplete</b>, or needs <b>major</b> improvement</p>	<p>I. Sufficient plan with <b>1-2</b> of <b>4</b> other criteria for excellence met, <b>or</b> II. Plan information is unclear / missing / insufficient, <b>or</b> III. Criteria II-V are <b>lacking</b> or grossly deficient</p> <hr/> <p>A. Description of design &amp; implementation not included or <b>inadequate</b> to show how design works and/or if design meets requirements B. No engineering. Project was merely <b>tinkering</b>.</p>
20 score	<p><b>Science Project:</b></p> <ul style="list-style-type: none"> <li>Data &amp; Results (experimentation)</li> <li>Documentation* (notebook) <i>*jr/sr projects only</i></li> </ul> <p><b>Engineering Project:</b></p> <ul style="list-style-type: none"> <li>Problem Solution (testing and redesign)</li> </ul>	<p>I. Experiments run are appropriate for hypothesis being tested II. Sufficient data. Repetition of experiments III. Correct &amp; appropriate statistical tests run</p> <hr/> <ul style="list-style-type: none"> <li>Clearly written, complete and clear</li> <li>Procedures are easy to follow</li> <li>Comments, observations included</li> <li>Records include dates, signatures</li> </ul> <hr/> <p>A. Measures of performance/improvement have been made (including cost) B. Functionality is fully tested &amp; validated C. Records on testing are included D. Prototype was redesigned or potential design improvements were identified</p>	<p>I. <b>2</b> of the <b>3</b> criteria for excellence met II. <b>Some</b> improvements could be made</p> <hr/> <ul style="list-style-type: none"> <li><b>3</b> of <b>4</b> standards for excellence were met <b>or</b></li> <li><b>Some</b> improvements could be made</li> </ul> <hr/> <p>A. Final design <b>works</b> but has not been fully tested B. <b>No advantage</b> over original C. <b>Some</b> improvements could be made</p>	<p>I. <b>1</b> of the <b>3</b> criteria for excellence met II. <b>Major</b> improvements required</p> <hr/> <ul style="list-style-type: none"> <li><b>2</b> of <b>4</b> standards for excellence were met <b>or</b></li> <li><b>Major</b> improvements required</li> </ul> <hr/> <p>A. Final design does <b>not</b> meet end user's needs B. <b>No improvement</b> over original C. <b>Major</b> improvements required</p>	<p>I. <b>Incorrect</b> experiments and data analysis for hypothesis II. <b>Insufficient</b> data</p> <hr/> <ul style="list-style-type: none"> <li><b>1</b> of the standards for excellence were met <b>or</b></li> <li>No notebook or <b>missing</b></li> </ul> <hr/> <p>A. Little or <b>no</b> testing B. <b>No</b> records C. <b>No</b> redesigns</p>
20 score	<p><b>Science Project:</b></p> <ul style="list-style-type: none"> <li>Discussion &amp; Conclusions</li> </ul> <p><b>Engineering Project:</b></p> <ul style="list-style-type: none"> <li>Evaluation</li> </ul>	<p>I. Status of the hypothesis is correctly and logically addressed, and stated in an unbiased manner (confirmed / refuted) II. Completeness of work and validity of conclusions are substantiated III. Discussion is insightful, demonstrates clear understanding of research project, broader subject &amp; suggested new work</p> <hr/> <p>A. Significance, relevance, applications, utility, cost effectiveness, improvements, benefits and performance addressed</p>	<p>I. <b>2</b> of <b>3</b> criteria for excellence met, <b>or</b> II. <b>Some</b> improvements could be made</p> <hr/> <p>A. <b>Some</b> evaluation areas not addressed</p>	<p>I. <b>1</b> of <b>3</b> criteria for excellence met <b>or</b> II. Overall information is <b>lacking</b> in quality and perspective</p> <hr/> <p>A. <b>Many</b> evaluation areas not addressed</p>	<p>I. <b>No</b> discussion / conclusions provided</p> <hr/> <p>A. <b>No</b> evaluation areas addressed</p>
20 score	<p><b>Science+Engineering:</b></p> <ul style="list-style-type: none"> <li>Interview</li> <li>Display</li> </ul>	<p>Exemplary understanding... – Research findings / design results – Ability to interpret graphs, statistics, etc... – Related background information – Project rational, details &amp; validity</p> <hr/> <p>Exemplary display... – Creativity, clarity, logic, interpretability, construction, writing, graphics, grammar – All information directly relates to project</p>	<p><b>Good</b> understanding... – Research findings – Ability to interpret graphs, statistics, etc. – Related background information</p> <hr/> <p><b>Good</b> display – Most information is appropriate, organized and easily accessible.</p>	<p><b>Fair</b> understanding... – Research findings – Ability to interpret graphs, statistics, etc... – Related background information</p> <hr/> <p><b>Fair</b> display ... – Some information is appropriate, organized and easily accessible.</p>	<p><b>Poor</b> understanding... – Cannot answer questions adequately and precisely – Does not incorporate display into interview – Unfamiliar with related background information</p> <hr/> <p><b>Poor</b> display... – Confusing, unorganized, incorrect or inappropriate information</p>