

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

<p>20 score</p>	<p>Science+Engineering ng: • Interview</p> <p>• Display</p>	<p>Exemplary understanding... – Research findings / design results – Ability to interpret graphs, statistics, etc... – Related background information – Project rational, details & validity</p> <hr/> <p>Exemplary display... -- Creativity, clarity, logic, interpretability, construction, writing, graphics, grammar -- All information directly relates to project</p>	<p>Good understanding... – Research findings – Ability to interpret graphs, statistics, etc. – Related background information</p> <hr/> <p>Good display -- Most information is appropriate, organized and easily accessible.</p>	<p>Fair understanding... – Research findings – Ability to interpret graphs, statistics, etc... – Related background information</p> <hr/> <p>Fair display ... – Some information is appropriate, organized and easily accessible.</p>	<p>Poor understanding... – Cannot answer questions adequately and precisely – Does not incorporate display into interview – Unfamiliar with related background information</p> <hr/> <p>Poor display... -- Confusing, unorganized, incorrect or inappropriate information</p>
----------------------------	---	--	---	---	---