

| Pts. | Evaluation Criteria | Excellent 12-14 points | Good 9-11 points | Average 6-8 points | Needs Improvement 5 or below |
|---------------------------------|--|--|--|---|--|
| ____ score 14 possible | 1. Objectives / Requirements Hypothesis (question) Or Problem Statement (invention / design goal) | Applies to all projects... – Clearly stated & well-written – Appropriate for grade level & original I. Testable, clear, bounded hypothesis A. Creative in design concept to meet separately identified usage requirements | --Lacking in 1 area: clarity, appropriate level, and insight by student I. Hypothesis present, but not completely testable A. Problem / design statement present, but not original | --Lacking in 2 areas: clarity, appropriate level, and insight by student I. Hypothesis incomplete or not testable A. Incomplete problem / design statement | --Poorly conceived or lacking in all 3 areas: clarity, appropriate level, and insight by student I. Hypothesis missing or poorly defined A. Problem / design statement missing or poorly defined |
| ____ score 14 possible | 2. Design & Procedures Scientific method in experimental design & implementation (hypothesis testing) Or Engineering process in design of invention & its implementation (fulfilling requirements) | I. Exemplary plan to support / refute hypothesis with valid testing II. Sequential experimental procedures are quantitatively and/or qualitatively listed, and connect hypothesis, data & results III. Variables, controls, trials are sufficient IV. Procedures are logical and repeatable A. Design goals & approach clearly stated & 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 | I. Sufficient plan to support / refute hypothesis with all other criteria met, or II. Exemplary plan and 2 of 3 other criteria for excellence met, or III. Some improvements needed throughout A. 3-4 of 5 criteria required for excellence are met, or some improvements could be made | I. Sufficient plan with 2 of 3 other criteria for excellence met, or II. Exemplary plan and 1 of 3 other criteria for excellence met, or III. Major improvements needed throughout A. 1-2 of 5 criteria required for excellence are met, or existing information is incomplete, or needs major improvement | I. Sufficient plan with 1 of 3 other criteria for excellence met, or II. Plan information is unclear / missing / insufficient, or III. Non-plan criteria are lacking or untreated A. Description of design & implementation not included or inadequate to show how design works and/or if design meets requirements |
| ____ score 14 possible | 3. Data / Results Experimentation (completeness & documentation) Or Problem Solution (fulfilling requirements) | I. Where possible, data are presented in graphs and/or tables II. Correct & appropriate data presentation III. Sufficient data to create confidence A. Where possible graphs, tables or other data were used to evaluate & document invention design goals vs. requirements B. Functionality is fully tested & validated C. Records on testing are included D. Prototype was redesigned or potential design improvements were identified | I. 2 of the 3 criteria for excellence met or some improvements could be made A. This information is sufficient but not outstanding (as per criteria for excellence) | I. 1 of the 3 criteria for excellence met or major improvements required A. This information is deficient | I. Data were not presented in graphs & tables, or were improperly presented A. This information is missing or improperly presented |
| ____ score 14 possible | 4. Discussion / Conclusions Experimentation (hypothesis supported or not) Or Problem Solution (usage value, potential) | 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 & suggested new work A. Applications... Significance, utility, cost effectiveness, value, practical applications identified, improvement directions clear | I. 2 of 3 criteria for excellence met, or some improvements could be made A. Applications... Sufficiently addressed | I. 1 of 3 criteria for excellence met, or overall information is lacking in quality and perspective A. Applications... Vaguely identified | I. No discussion / conclusions provided A. No applications or needs addressed |
| ____ score 14 possible | 5. Interview How precisely are questions answered? | Exemplary understanding... – Research findings / design results – Ability to interpret graphs, statistics, etc... – Related background information – Project rational, details & validity | Good understanding... – Research findings – Ability to interpret graphs, statistics, etc.. – Related background information | Fair understanding... – Research findings – Ability to interpret graphs, statistics, etc... – Related background information | Poor understanding... – Cannot answer questions adequately and precisely |
| Pts. | Evaluation Criteria | Excellent 9-10 points | Good 7-8 points | Average 5-6 points | Needs Improvement 4 or below |
| ____ score 10 possible | 6. Display | Exemplary... – Creativity, clarity, logic, interpretability, construction, writing, graphics, grammar | Good... – Creativity, clarity, etc... | Average effort... – Creativity, clarity, etc... | Inadequate display... – Creativity, clarity, etc... |
| ____ score 10 possible | 7. Notebook | – Clearly written, complete and clear – Goals & procedures are easy to follow – Comments included – Records include dates | – 3 of 4 standards for excellence were met, or some improvements could be made | – 2 of 4 standards for excellence were met, or major improvements required | – No notebook or 1 of the standards for excellence were met |
| ____ Score 10 possible | 8. Use of Resources | --A comprehensive, correctly formatted bibliography was included & footnotes are present in text of introduction & discussion – Acknowledgements, crediting individuals, businesses and/or educational / research institutions included (when necessary) – Student(s) used full resources available (e.g. labs, advisors, experts, periodicals, texts, reference literature, Internet) | Bibliography, acknowledgements... – Present – Formatted incorrectly – Incomplete bibliography | Bibliography, acknowledgements... – Minimal effort, requires improvement | Bibliography, acknowledgements... – None incorporated into the presentation |