**Elementary STEM Fair Judging Criteria**

**S**cience, **T**echnology, **E**ngineering, and **M**athematics

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| --- | --- |
| **Project Title:** | **Judge:** |
| **Project Number:** | **Scientific Investigation** *OR* **Engineering Design** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Elements** | **Description of Criteria** | | | | **0** | **1** | | **2** | **3** |
| **Low to High** | | | | |
| **Scientific or Engineering Design Process** | | | | | | | | | |
| **Testable Question or**  **Problem to be Solved** | Asks a specific, measurable, cause & effect question OR clearly defines how a problem will be solved. | | | |  |  | |  |  |
| Identifies the project as a Scientific Investigation OR an Engineering Design. | | | |  |  | |  |  |
| **Background Research** | Describes why this project was selected and describe research. Shows evidence of understanding the project and can explain why project is important. | | | |  |  | |  |  |
| Identifies a variety of sources that guided the research. | | | |  |  | |  |  |
| **Hypothesis and Specifying Requirements** | Predicts a reasonable outcome as a result of a specific change OR clearly explains how prototype will solve a problem | | | |  |  | |  |  |
| **Identifying Variables** | Identifies independent variable, dependent variable | | | |  |  | |  |  |
| Identifies conditions/controls | | | |  |  | |  |  |
| **Procedures** | Describe the process and/or explain in detail the development of the prototype. High score would indicate that the project can be repeated after reading. | | | |  |  | |  |  |
| **Trials/Samples** | At least 5 trials are shown or variations of the prototype are displayed. | | | |  |  | |  |  |
| **Data Collection** | Use of photos/charts/graphs/illustrations to show data | | | |  |  | |  |  |
| Data is clearly labeled | | | |  |  | |  |  |
| Data measurements were done precisely | | | |  |  | |  |  |
| Data collected relates to the thinking around the hypothesis | | | |  |  | |  |  |
| Explains why data supports or fails to support the hypothesis | | | |  |  | |  |  |
| **Communication** | | | | | | | | | |
| **Conclusion** | ***Written*** reflection that describes what the student has learned. Were there any surprises? What would you do differently or to continue the project? | | | |  |  | |  |  |
| **Abstract** | ***Written*** summary of the entire investigation. | | | |  |  | |  |  |
| **Discussion** | Explains what was done throughout the project. | | | |  |  | |  |  |
| Defends the connection between their results and conclusions. | | | |  |  | |  |  |
| **Explains where the research can lead in the future (or not lead in the future), and why.** | | | |  |  | |  |  |
| **Relates their research to the real world.** | | | |  |  | |  |  |
| **Communicates problems and identifies potential sources of error.** | | | |  |  | |  |  |
| **Thoroughness** | | | | | | | | | |
| **Backboard** | All components are present and is visually interesting. *(question or problem, hypothesis, abstract, resources cited, title and authors, testing and planning, data and results, conclusion)* | | | |  |  | |  |  |
| **Research Planning Guide** | Completed in its entirety including a log of scientific notes and thinking taken throughout the project. | | | |  |  | |  |  |
| **TOTAL (OUT OF 69)** | | | | |  |  | |  |  |
| **Recommended Place** | | **1st** | **2nd** | **3rd** | | | **4th** | | |