

The Engineering Method

Following is an outline of the engineering method based on the criteria used by ISEF:

- Title — what your project is about
- Description — what is the practical need or problem you want to solve
- Design Criteria / Constraints — for proposed solution
- Alternatives — that answer a similar need or problem
- Solution — what is your answer to the problem
- Prototype or model – what you use to test your answer
- Data/Results — the results of testing your prototype in multiple conditions and trials
- Conclusion – how well your prototype demonstrates your intended design solution

The Engineering Design Process:

- Define a need; what is the practical need or problem you want to solve
- Establish design criteria and constraints
- Evaluate alternative designs
- Solution — what is your answer to the problem
- Build a prototype of your design
- Test and evaluate the prototype using the design criteria
- Analyze test results, make design changes, and retest
- Communicate the design

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