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## ENGINEERING DESIGN JUDGING CRITERIA

**POINTS      BULLETS DO NOT HAVE A PRE-DETERMINED NUMERICAL VALUE.**

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### 1. KNOWLEDGE ACHIEVED (10 points maximum)

- Correct use and understanding of terms and principles
- Literature search: appropriate use of scientific, engineering or medical journals /sources vs just popular literature citations
- Student shows they have gained knowledge and understanding unique to their project
- Adequate depth of knowledge and skills in technology systems involved
- In interview student supplements answers with additional relevant information

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### 2. USES OF ENGINEERING DESIGN (10 points maximum)

- Engineering design: specific problem or need defined, background information gathered and analyzed, criteria for success established, preliminary designs prepared and prototype or model created, prototype or model tested and results analyzed, results clearly communicated
- Sufficient testing of the prototype or model; data appropriately measured, presented and analyzed
- Prototype meets criteria for success that were established
- Well-documented design/engineering notebook
- Student effectively used materials and processes to correctly build prototype or model
- Student identifies and applies scientific principles in their design

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### 3. CLARITY OF EXPRESSION (10 points maximum)

- Clear statement of technological problem or need and the appropriate criteria for success
- Design notebook: organization, sketches/photos, iterations, testing data and results, references
- Written report: unambiguous title, organization, results, conclusions, reflections, correct grammar and spelling, citations, references
- Visual display: neatness, conveys essence of the problem statement, background, design statement, prototype, testing & results, and conclusion(s)
- Oral presentation: understanding or from memory; questions answered correctly and clearly

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### 4. ORIGINALITY & CREATIVITY (10 points maximum)

- New idea, concept, principle, design, or non-obvious approach
- Novel association or relationship of previous designs or knowledge
- Design effectively addresses problem or need creatively
- Design-based rather than a summary of knowledge

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### TOTAL POINTS

**CIRCLE RATING:   Superior   Excellent   Good**

Minimum score for **INDIVIDUAL** projects at State Science Day: SUPERIOR: 36 points, EXCELLENT: 24 points, GOOD: 12 points.

JUDGE'S Printed Name \_\_\_\_\_ Signature \_\_\_\_\_

### JUDGE MUST ADD COMMENTS ON BACK:

Please add your comments about the project. Students especially look for constructive criticism to improve the project for future science days.

**Over >>>**

**COMMENTS FROM JUDGE:**

Please provide appropriate praise, constructive criticism and suggestions for improvement.

\_\_\_\_\_ **1. KNOWLEDGE ACHIEVED (10 points)**

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\_\_\_\_\_ **2. USES OF TECHNOLOGICAL DESIGN (10 points maximum)**

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\_\_\_\_\_ **3. CLARITY OF EXPRESSION (10 points)**

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\_\_\_\_\_ **4. ORIGINALITY & CREATIVITY (10 points)**

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\_\_\_\_\_ **TOTAL POINTS**