Wind Energy Challenge Scoring Rubrics: A Step-by-Step Guide
How to score the Wind Energy Challenge (WEC) elements using a MESA Rubric

• Using the following steps will ensure correct scoring for all events

• Please familiarize yourself with the rubric for the portion you are scoring currently –
  o Technical Paper
  o Oral Presentation
  o Academic Display
### Example: Technical Paper Rubric
(Same scoring process for the Oral Presentation & Academic Display)

<table>
<thead>
<tr>
<th>Purpose, Materials &amp; References</th>
<th>Procedures</th>
<th>Data and Results</th>
<th>Conclusion</th>
<th>Length, Format &amp; Title Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 4 – 4 points each</strong></td>
<td>Level 4 – 4 points each</td>
<td>Level 4 – 4 points each</td>
<td>Level 4 – 4 points each</td>
<td>Level 4 – 4 points each</td>
</tr>
<tr>
<td>a. Purpose: clearly and precisely describes scenario type, project and complete</td>
<td>a. Presented in logical and sequential order clearly addressing inquiry topics</td>
<td>a. Excellent use of data tables, graphs, etc. well labeled and organized</td>
<td>a. Smoothly and clearly supports or negates the purpose statements</td>
<td>a. All Title Page elements included: Title, Scenario type, School, Team Name &amp; Number, Team Members</td>
</tr>
<tr>
<td>b. Materials list: descriptive and complete</td>
<td>b. Excellent explanation of inquiry variables (manipulated, controlled, responding)</td>
<td>b. Description of results and observations clear and concise</td>
<td>b. Refers strongly to data &amp; results for support</td>
<td>b. Report Format</td>
</tr>
<tr>
<td>c. References: numerous and varied primary and secondary sources consulted and cited</td>
<td>c. Clearly explains procedures used in each inquiry</td>
<td>c. Proper and effective use of scientific vocabulary and terminology</td>
<td>c. Includes strong ideas for improving work, model or solution</td>
<td>c. 5-10 pages typed double-spaced</td>
</tr>
<tr>
<td>d. Many specifics for maintaining experiment quality or procedure problems</td>
<td>d. Demonstrations complete understanding of topic</td>
<td></td>
<td></td>
<td>1-inch margin, font size 12</td>
</tr>
<tr>
<td><strong>Level 3 – 3 points each</strong></td>
<td>Level 3 – 3 points each</td>
<td>Level 3 – 3 points each</td>
<td>Level 3 – 3 points each</td>
<td>Level 3 – 3 points each</td>
</tr>
<tr>
<td>a. Purpose: well stated and complete</td>
<td>a. Information is well organized and clearly deals with the scenario described</td>
<td>a. Supports or negates the purpose statements</td>
<td>a. Title page: properly formatted</td>
<td></td>
</tr>
<tr>
<td>b. Materials list: adequate</td>
<td>b. Most inquiry variables well described (manipulated, controlled, responding)</td>
<td>b. Refers usefully to data &amp; results</td>
<td>b. Report Format: correct</td>
<td></td>
</tr>
<tr>
<td>c. References: numerous sources consulted and properly cited</td>
<td>c. Good description of procedures used in each inquiry</td>
<td>c. Includes some ideas for improving work, model or solution</td>
<td>c. Few minor grammatical, mechanical, and spelling errors</td>
<td></td>
</tr>
<tr>
<td>d. Some specifics for maintaining experiment quality or procedure problems</td>
<td>d. Appropriate use of scientific vocabulary and terminology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 2 – 2 points each</strong></td>
<td>Level 2 – 2 points each</td>
<td>Level 2 – 2 points each</td>
<td>Level 2 – 2 points each</td>
<td>Level 2 – 2 points each</td>
</tr>
<tr>
<td>a. Purpose: not complete</td>
<td>a. Organization is acceptable</td>
<td>a. Weakly supports or negates the purpose statements</td>
<td>a. Title page: missing 1 or 2 elements</td>
<td></td>
</tr>
<tr>
<td>b. Materials list: appears to be missing items</td>
<td>b. Weak description of inquiry variables (manipulated, controlled, responding)</td>
<td>b. Few results or observations made</td>
<td>b. Report Format: few errors</td>
<td></td>
</tr>
<tr>
<td>c. References: acceptable number of sources consulted and cited</td>
<td>c. Inadequate description of procedures used in each inquiry</td>
<td>c. Appropriate use of scientific vocabulary</td>
<td>c. Grammar, mechanics, and spelling mostly correct</td>
<td></td>
</tr>
<tr>
<td>d. Few specifics for experimental quality</td>
<td>d. Few specific for maintaining experiment quality</td>
<td>d. Acceptable understanding of topic</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 1 – 1 point each</strong></td>
<td>Level 1 – 1 point each</td>
<td>Level 1 – 1 point each</td>
<td>Level 1 – 1 point each</td>
<td>Level 1 – 1 point each</td>
</tr>
<tr>
<td>a. Purpose: missing scenario type and/or poor description of project/objectives</td>
<td>a. Weak organization, confused focus</td>
<td>a. Does not clearly address the purpose</td>
<td>a. Title Page: missing 3 or more elements</td>
<td></td>
</tr>
<tr>
<td>b. Materials list: inadequate or missing</td>
<td>b. Poor description of inquiry variables</td>
<td>b. Does not refer to data &amp; results</td>
<td>b. Report Format: many errors</td>
<td></td>
</tr>
<tr>
<td>c. References: consulted few or no sources</td>
<td>c. Poor description of inquiry procedures</td>
<td>c. No ideas for improving work included</td>
<td>c. Weakness in control of grammar, mechanics, and spelling</td>
<td></td>
</tr>
<tr>
<td>d. No specifics for experimental quality</td>
<td>d. Poor understanding of topic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Start with one column

In each column the goal is to determine the level the team was able to reach for each letter in the column.

In the example on the left you will see for each level there is an a, b, and c.

a- is the Purpose. Did the team earn a level of 4, 3, 2, or 1 based on their performance.

Indicate the letter of the level you think they earned. Red Font is used to indicate the level the judge believed the team earned in this example.

They earned 2 points for a.

<table>
<thead>
<tr>
<th>Purpose, Materials &amp; References</th>
<th>Level 4 – 4 points each</th>
<th>Level 3 – 3 points each</th>
<th>Level 2 – 2 points each</th>
<th>Level 1 – 1 point each</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Purpose: clearly and precisely describes scenario type, project and complete</td>
<td>a. Purpose: clearly and precisely describes scenario type, project and complete</td>
<td>a. Purpose: well stated and complete</td>
<td>a. Purpose: not complete</td>
<td>a. Purpose: missing scenario type and/or poor description of project/ objectives</td>
</tr>
<tr>
<td>b. Materials list: descriptive and complete</td>
<td>b. Materials list: descriptive and complete</td>
<td>b. Materials list: adequate</td>
<td>b. Materials list: appears to be missing items</td>
<td>b. Materials list: inadequate or missing</td>
</tr>
</tbody>
</table>

Score

2
To complete the column

<table>
<thead>
<tr>
<th>Purpose, Materials &amp; References</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 4</strong> – 4 points each</td>
</tr>
<tr>
<td>a. Purpose: clearly and precisely describes scenario type, project and complete</td>
</tr>
<tr>
<td>b. Materials list: descriptive and complete</td>
</tr>
<tr>
<td>c. References: numerous and varied primary and secondary sources consulted and cited</td>
</tr>
</tbody>
</table>

| **Level 3** – 3 points each   |
| a. Purpose: well stated and complete   |
| b. Materials list: adequate   |
| c. References: numerous sources consulted and properly cited   |

| **Level 2** – 2 points each   |
| a. Purpose: not complete   |
| b. Materials list: appears to be missing items   |
| c. References: acceptable number of sources consulted and cited |

| **Level 1** – 1 point each   |
| a. Purpose: missing scenario type and/or poor description of project/objectives   |
| b. Materials list: inadequate or missing   |
| c. References: consulted few or no sources   |

**Score**

\[
2 + 4 + 3 = 9 \\
A + B + C = 9
\]

Repeat this for b and c as well.

b earned a 4 and c earned a 3

Total the number and write in the score box at bottom of column. 2 for a, 4 for b and 3 for c. This adds up to 9 total for the column.

There should only be one of each letter Indicated in each column.
## Purpose, Materials & References

**Level 4 – 4 points each**
- a. Purpose: clearly and precisely describes scenario type, project and complete
- b. Materials list: descriptive and complete
- c. References: numerous and varied primary and secondary sources consulted and cited

**Level 3 – 3 points each**
- a. Purpose: well stated and complete
- b. Materials list: adequate
- c. References: numerous sources consulted and properly cited

**Level 2 – 2 points each**
- a. Purpose: not complete
- b. Materials list: appears to be missing items
- c. References: acceptable number of sources consulted and cited

**Level 1 – 1 point each**
- a. Purpose: missing scenario type and/or poor description of project/objectives
- b. Materials list: inadequate or missing
- c. References: consulted few or no sources

## Procedures

**Level 4 – 4 points each**
- a. Presented in logical and sequential order clearly addressing inquiry topics
- b. Excellent explanation of inquiry variables (manipulated, controlled, responding)
- c. Clearly explains procedures used in each inquiry
- d. Many specifics for maintaining experiment quality or procedure problems

**Level 3 – 3 points each**
- a. Information is well organized and clearly deals with the scenario described
- b. Most inquiry variables well described (manipulated, controlled, responding)
- c. Good description of procedures used in each inquiry
- d. Some specifics for maintaining experiment quality or procedure problems

**Level 2 – 2 points each**
- a. Organization is acceptable
- b. Weak description of inquiry variables (manipulated, controlled, responding)
- c. Inadequate description of procedures used in each inquiry
- d. Few specifics for maintaining experimental quality

**Level 1 – 1 point each**
- a. Weak organization, confused focus
- b. Poor description of inquiry variables
- c. Poor description of inquiry procedures
- d. No specifics for experimental quality

## Data and Results

**Level 4 – 4 points each**
- a. Excellent use of data tables, graphs, etc. well labeled and organized
- b. Description of results and observations clear and concise
- c. Proper and effective use of scientific vocabulary and terminology
- d. Demonstrations complete understanding of topic

**Level 3 – 3 points each**
- a. Data tables, graphs, diagrams, etc. have few labeling/organizing errors
- b. Well written results and observations
- c. Good use of scientific vocabulary and terminology
- d. Good understanding of the topic

**Level 2 – 2 points each**
- a. Data table, graphs diagrams incomplete
- b. Few results or observations made
- c. Appropriate use of scientific vocab/term
- d. Acceptable understanding of topic

**Level 1 – 1 point each**
- a. Poor incorporation of data tables, etc.
- b. Little or no results/observations shared
- c. Little use of scientific vocab/term
- d. Poor understanding of topic

## Conclusion

**Level 4 – 4 points each**
- a. Smoothly and clearly supports or negates the purpose statements
- b. Refers strongly to data & results for support
- c. Includes strong ideas for improving work, model or solution

**Level 3 – 3 points each**
- a. Supports or negates the purpose statements
- b. Refers usefully to data & results
- c. Includes some ideas for improving work not clear

**Level 2 – 2 points each**
- a. Weakly supports or negates the purpose statements
- b. Refers poorly to data & results
- c. Ideas for improving work not clear

**Level 1 – 1 point each**
- a. Does not clearly address the purpose
- b. Does not refer to data & results
- c. No ideas for improving work included

## Length, Format & Title Page

**Level 4 – 4 points each**
- a. All Title Page elements included: Title, Scenario type, School, Team Name & Number, Team Members
- b. Report Format
  - 5-10 pages typed double-spaced
  - 1-inch margin, font size 12
- a. Almost no grammatical, mechanical, and spelling errors

**Level 3 – 3 points each**
- a. Title page: properly formatted
- b. Report Format: correct
- c. Few minor grammatical, mechanical, and spelling mostly correct

**Level 2 – 2 points each**
- a. Title page: missing 1 or 2 elements
- b. Report Format: few errors
- c. Grammar, mechanics, and spelling mostly correct

**Level 1 – 1 point each**
- a. Title Page: missing 3 or more elements
- b. Report Format: many errors
- c. Weakness in control of grammar, mechanics, and spelling

### Score Calculation

<table>
<thead>
<tr>
<th>Score</th>
<th>Score</th>
<th>Score</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2+4+3=9</td>
<td>4+3+2+2=11</td>
<td>4+2+4+1=11</td>
<td>2+4+3=9</td>
<td>4+3+3=10</td>
</tr>
</tbody>
</table>
This will complete the judges portion of the scoring. The raw scores will be entered into the Master Scoring Spreadsheet. The spreadsheet will then calculate the final scores.
If you have any questions or concerns, please contact Curt Sande
Lead Judge
MESA USA WEC
sande@wsu.edu
509-358-7965