

After judging, check one box please →

1<sup>st</sup> Place

2<sup>nd</sup> Place

3<sup>rd</sup> Place

## AAE STEM Festival: Student Science Project Evaluation Rubric

Project Number: \_\_\_\_\_ / Individual Project **OR** Group Project / (circle one)

Category	Evaluation Criteria		Yes	No
<u>Comprehension:</u> <b>Use of Scientific Method</b>	<b>Was the scientific method employed?</b> (Observations lead to a hypothesis; hypothetical predictions tested by experimentation.) Did the experiment <u>correctly utilize dependant and independent variables</u> ? Were a <u>sufficient number of trials</u> performed? Was <u>data analysis mathematically sound</u> ?	R1		
<u>Originality:</u> <b>Uniqueness, &amp; Creativity</b>	<b>From your interview or from looking over the project, does the idea for this project appear to be unique to the student?</b> Is the project the result of <u>original thought</u> by the student? Is the level of the project <u>appropriate for the grade level/age of the student</u> ?	Q1		
<u>Organization, Completeness, Clarity &amp; Comprehension:</u> <b>Presentation</b>	<ul style="list-style-type: none"> <li>Is the presentation logical, clear and well laid out? Spelling and punctuation correct? Would an observer understand <i>why the experiment was performed, what was done to test the hypothesis, what the results were, and what conclusions were made from the experiment?</i></li> <li>A <b>Science Journal</b> was provided with the project that document the entire process in a manner that would allow someone <b>to repeat all of the steps</b> included in the experiment <u>or</u> that would produce data, if followed that would <b>lead up to the conclusions arrived at</b> by the student scientist that conducted the project project.</li> </ul>	R2		
<u>Clarity &amp; Comprehension:</u> <b>Oral Interview</b>	<b>Does the student show knowledge of both the scientific method and speak knowledgeably about the project.</b>	Q2		
<u>Organization &amp; Completeness</u> <b>Conclusions Value, Applicability</b>	<b>Were conclusions supported by the experiments results?</b> Was the basis for the conclusions clearly evident? Did they <u>address the problem statement</u> ? Did the project have value in that it addressed a scientific question or social problem, or raised questions that could be addressed by future research?	R3		
<u>Effort &amp; Motivation:</u> <b>Utilization of Resources</b>	<p><b>Did the student make full use of resources available to him or her</b>, including: parents, teachers, other students, outside experts, textbooks and other reference materials, libraries, and the internet?</p> <p>----- For Primary K-5 Students -----</p> <p>Did the student seek outside guidance and review of his work (as opposed to having others actually <i>do</i> the project)?</p>	Q3  ----- Q3'		

Notes: Constructive & Positive Feedback

**Evaluator Name:** \_\_\_\_\_

(Please tally your scoring and check a "place" on top of this sheet)

[R means "Required" for a 1<sup>st</sup> place. The number subscript indicates importance 1>2>3]

[ Q items are quality indicators pointing to a high value that help in the force ranking]

## SCORING<sup>1</sup>

### First Place

A score “YES” for all “R” items and the “Q 1” item indicates that the project had *no major deficiencies*. It was *original in concept* and *used the scientific method* to test a hypothesis. Conclusions, even if negative, flowed logically from the results of the experiment. The quality of research was appropriate to the grade level of the student. The display was clear and well presented. Such a project would not be out of place at a state or national science fair.

### Second Place

A score of **yes** for two of the three “R” indicates *a sound project*, with a well-defined objective and experiment design. In this case, *the project may lack some originality or the display may be simply adequate*. The experiment may not have included a sufficient number of repetitions or may not have controlled external variables to sufficiently validate results. Such a project would have the potential to be top-notch project with more attention to details, planning and rigor.

### Third Place

A score of **yes** for one of the three “R” items indicates that there is a *significant defect in the project*. Typically, these projects do not follow the scientific method to test a hypothesis. A common example is a project that *simply records a series of observations* – say, water pH in a stream, and plots the data on a graph. Some of these projects may be very well executed and presented. In this case, a major redesign of the project would be needed to bring it up to top-caliber.

### ?

A score of **Yes** for no “R” items **indicates major defects in the project**, or it may be poorly done and sloppily presented. Some of these projects appear to have been put together *“the night before.”* Others involve no experimentation, but rather use an encyclopedia article or other resource as the basis for a poster presentation.

## Suggested Student Interview Questions

- How did you come up with the idea for this project?
- What did you learn from your background search?
- How many times did you run the experiment with each configuration?
- Did you collect all that data under the same conditions, e.g., at the same temperature (time of day) (lighting conditions)?
- How does your apparatus work?
- What do you mean by (terminology or jargon used by the student) ?
- Do you think there is an application in industry for this knowledge?
- Were there any books that helped you do your analysis?
- What is the next experiment to do in continuing this study?
- Do you have any questions for me?

<sup>1</sup> Adapted from <http://www.utah.edu/uees/fair/judges%20sheet.pdf>