

GLOBE INTERNATIONAL SCIENCE FAIR—JUDGING RUBRIC AND BADGES FOR 6–8 SCIENCE PROJECTS

Level Element	Superior - 4	Good – 3	Progressing – 2	Basic – 1	Score
1. Abstract	<p>A <b>well-written, complete</b> abstract that summarizes the report is present that includes all of the components required at level 3, and: Recommendations for a way forward.</p>	<p>A <b>complete</b> abstract that summarizes the report is present. The abstract includes:</p> <ul style="list-style-type: none"> <li>• The problem,</li> <li>• Questions asked,</li> <li>• Objectives set, and</li> <li>• Conclusions made.</li> </ul> <p>Abstract follows designated format and does not exceed 200 words.</p>	<p>A <b>partially complete</b> abstract is present.</p>	<p>An abstract is present.</p>	
2. Research question(s) (required for acceptance)	<p><b>Clear, creative</b>, and student-led research question(s) include all of the components at level 3, and:</p> <ul style="list-style-type: none"> <li>• Include a well-written description of background information, and</li> <li>• Provide significant insight into the topic of investigation and the relevant scientific concepts.</li> </ul>	<p><b>Original</b>, student-led research question(s) include all of the components at level 2, and:</p> <ul style="list-style-type: none"> <li>• Include why they are important,</li> <li>• Require a thoughtful research plan, and</li> <li>• Are of scientific interest.</li> </ul>	<p>Student-led research question(s) are asked, <b>explained</b>, and:</p> <ul style="list-style-type: none"> <li>• Concern some aspect of Earth’s environment,</li> <li>• Include a brief description of background information, and</li> <li>• Are answerable through scientific research appropriate to the scope of the report.</li> </ul>	<p>Student-led research question(s) are <b>asked</b>; questions may be simple enough to answer without research or are beyond the scope of a GLOBE project report.</p>	

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3. Hypothesis	A <b>well-written</b> hypothesis is present, that includes all of the components at level 3, and: Clearly defines how it is both testable and measurable.	A <b>testable and measurable</b> hypothesis is present that: <ul style="list-style-type: none"> <li>Proposes a possible explanation to a phenomenon or problem, and</li> <li>Defines how it is testable.</li> </ul>	A <b>testable and measurable</b> hypothesis is present.	A hypothesis is present.	
4. Student-led investigation plan	A <b>clear and complete</b> investigation plan is present that includes the components at level 3, and: <ul style="list-style-type: none"> <li>Clearly outlines the steps to complete project, and</li> <li>Describes the collaboration process.</li> </ul>	A <b>complete</b> investigation plan is present that: <ul style="list-style-type: none"> <li>Describes a student-led research process, and</li> <li>Lists the steps to complete project.</li> </ul>	A <b>partially complete</b> investigation plan is present that describes a student-led research process.	An investigation plan is present.	
5. Research methods: Extent to which GLOBE protocols are incorporated (required for acceptance)	<b>Full advantage</b> is taken of a <b>combination of GLOBE protocols</b> , and: <ul style="list-style-type: none"> <li>There is a direct link provided between the datasets and research question(s), and</li> <li>The scope of research includes how the data were analyzed (e.g. time period, geographic area, or specific sites involved).</li> </ul>	A <b>combination of GLOBE protocols</b> is used, and: The data presented are sufficient to answer at least one research question.	<b>GLOBE protocols</b> are used, and: The data presented partially address at least one research question.	The investigation includes use of at least one <b>GLOBE protocol</b> .	

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6. GLOBE data and data entry (required for acceptance)	GLOBE data use includes all of the components at level 3, and: Data sources are clearly labeled by school.	GLOBE data use includes all of the components at level 2, and: GLOBE data are entered into the GLOBE database.	GLOBE data were collected, and: Data from other GLOBE school(s) are included in the project ( <i>if appropriate for the research question</i> ).	GLOBE data were collected for the project.	
7. Data summary: Use of tables and/or graphics for data display (required for acceptance) <i>Other images are not scored for this element.</i>	Tables and graphics are accurate are present that include the components at level 3, and <ul style="list-style-type: none"> <li>• Are of high quality,</li> <li>• Are well presented, and</li> <li>• Enable the reader to easily grasp the key points of the paper.</li> </ul>	Tables and/or graphics are present that include the components at level 2, and: <ul style="list-style-type: none"> <li>• Display enough of the data to support the conclusion, and</li> <li>• Are orderly, well labeled, and easy to interpret.</li> </ul>	Tables and/or graphics are present that include the components at level 1, and: <ul style="list-style-type: none"> <li>• Provide comparisons between data, and</li> <li>• Display data that supports the conclusion.</li> </ul>	Tables and/or graphical representations of data are present, including: <ul style="list-style-type: none"> <li>• Maps,</li> <li>• Time series plots, or</li> <li>• Other visualizations of the data.</li> </ul>	
8. Data analysis: Depth and quality	An <b>insightful and meticulous</b> analysis of the data is performed, that includes the components at level 3, and: <ul style="list-style-type: none"> <li>• Is scientifically valid,</li> <li>• Completely addresses the question(s) posed to the extent possible for the grade level, and</li> <li>• Clearly discusses any uncertainties or limitations present in the dataset.</li> </ul>	A <b>complete</b> analysis of the data is performed, that: <ul style="list-style-type: none"> <li>• Is clearly explained,</li> <li>• Is relevant to the research question(s),</li> <li>• Presents sufficient mathematics clearly define the analysis, and</li> <li>• Briefly mentions any uncertainties or limitations present in the dataset.</li> </ul>	A <b>partial</b> analysis of the data is performed that is appropriate to the research topic.	Some data analysis is performed.	

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9. Conclusion: Strength of conclusion (required for acceptance)	A <b>thoughtful</b> conclusion is present that includes the components at level 3 and: <ul style="list-style-type: none"> <li>• Gives a thorough and insightful explanation as to how the conclusion was reached, and</li> <li>• Recommends future research.</li> </ul>	A conclusion is present, <b>supported</b> by the data, and: <ul style="list-style-type: none"> <li>• Gives a partial explanation of how the conclusion was reached, and</li> <li>• Describes how the data support the conclusion.</li> </ul>	A conclusion is present and <b>supported</b> by the data.	A conclusion is present and <b>relevant</b> to the report.	
10. Discussion of measurement limitations including possible sources of error	A <b>clear, complete and insightful</b> discussion of the limitations of the methods used is present and a description is provided explaining the <b>rationale</b> for using these analyses.	A <b>clear and complete</b> discussion of the limitations of the methods used is presented.	A <b>partial</b> discussion of the limitations of the methods used is presented.	Some discussion of the limitations of the methods used is presented.	
11. Bibliography /Citations	Materials used are cited <b>completely</b> , including any graphics, tables, or figures not created by students.	<b>Most</b> materials used are cited, including graphics, tables, or figures not created by students.	<b>Some</b> materials used are cited.	A <b>few</b> of the materials used include partial citations.	
12. Response to judges' comments	<b>All</b> comments are addressed by making <b>clear</b> connections between the report, revisions and comments. Responses clearly indicate <b>additional insight</b> gained by addressing the comments.	<b>Most</b> of the comments are addressed by making <b>clear</b> connections between the report, revisions and the comments.	<b>Most</b> of the comments are addressed by responses make connections to the report, with some indication of ways to improve.	A <b>few</b> responses are included that partially describe how the report addresses the comments.	
Total score					

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GLOBE INTERNATIONAL SCIENCE FAIR BADGE (ALL PROJECTS—OVERALL REPORT)

★★★★	★★★	★★	★
Report contains <b>all 12</b> of the elements listed above, is well organized, neat and well presented. <b>All</b> of the elements are scored at the 3-point level or above. Most are scored at the 4-point level. The writing is clear and concise.	Report contains <b>all 12</b> of the elements listed above, is organized and well presented. <b>Most</b> of the elements are scored at the 3-point level or above. Most of the writing is clear	Report contains <b>most</b> of the elements listed, and is organized and well - presented	Report contains the <b>five</b> elements required for acceptance, clearly labeled. (2, 5, 6, 7 & 9)

ADDITIONAL BADGES (UP TO 5—OPTIONAL)

Level Badge	★★★★	★★★	★★	★
B1. Collaboration	All team members are listed, along with clearly defined roles, how these roles support one another, and descriptions of each student’s contribution, The descriptions clearly indicate the advantages of the collaboration.	All team members are listed, along with clearly defined roles, how these roles support one another, and descriptions of each student’s contribution.	All team members are listed, along with a clear description of each student’s contribution and some indication of how students supported one another.	All team members are listed, along with some brief examples of contributions from each.
B2. Community impact	The report clearly describes how a local issue <b>led</b> to the research questions and <b>makes connections</b> between local and global impacts.	The report describes how a local or global issue <b>led</b> to the research questions, and describes <b>possible</b> impacts of the results for addressing the issue.	The report describes how a local or global issue <b>motivated</b> the research.	The report includes a description of a local or global issue and how it is <b>related</b> to the research.
B3. Connection to local or network scientist	The report clearly describes collaboration with a scientist that <b>improved</b> the research	The report describes collaboration with a scientist that <b>improved</b> the research	The report describes how input from a scientist <b>extended</b> students’ understanding of the	The report includes a <b>brief</b> description of input from a scientist.

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	methods, precision, analyses and interpretations of results.	methods and students’ understanding of the results.	project.	
B4. Interscholastic connection	The report describes a <b>carefully planned</b> interscholastic or international collaboration that describes <b>rationales</b> for data collection in different regions and the <b>advantages</b> of comparing results.	The report describes an interscholastic or international collaboration, including <b>planning</b> for data collection and comparing results.	The report <b>includes</b> GLOBE data from at least two different schools, regions or countries, and describes efforts to <b>coordinate</b> data collection. Data from the student expedition to Mt. Kilimanjaro may be included as part of this badge.	The report <b>includes</b> GLOBE data from at least two different schools.
B5. Engineering solution	The report includes all of the components for level 3, and: <ul style="list-style-type: none"> <li>• Describes how the design meets criteria defined in the context of the problem, and</li> <li>• Describes how constraints limit the design.</li> </ul>	The report includes all of the components for level 2, and: <ul style="list-style-type: none"> <li>• Applies scientific ideas to the design cycle, and</li> <li>• Describes the potential impact of the solution on the environment.</li> </ul>	The report describes an engineering solution to a real-world problem, based on student-generated sources of evidence.	The report describes an engineering solution to a real-world problem.