

GLOBE INTERNATIONAL VIRTUAL SCIENCE SYMPOSIUM—BADGES AND CRITERIA FOR HS AND UG SCIENCE PROJECTS

GLOBE INTERNATIONAL SCIENCE SYMPOSIUM
STUDENT RESEARCH BADGE (ALL PROJECTS—OVERALL REPORT)

★★★★	★★★	★★	★	
<ul style="list-style-type: none"> • Report contains all of the criteria listed below and makes clear connections among them. • The report is well organized, neat and well presented. • The writing is clear and concise. • The report contains the five elements required for acceptance, clearly labeled. • Members of the project team respond to judges' comments with additional insights gained. 	<ul style="list-style-type: none"> • Report contains all of the elements and most of the criteria listed below and makes clear connections among them. • The report is well organized, neat and well presented. • The writing is clear. • The report contains the five elements required for acceptance, clearly labeled. 	<ul style="list-style-type: none"> • Report contains most of the criteria listed below. • The report is well organized. • The report contains the five elements required for acceptance, clearly labeled. 	<ul style="list-style-type: none"> • Report contains the five elements required for acceptance, clearly labeled. (1, 2, 3, 5 & 8) 	<ul style="list-style-type: none"> • Report submitted, but does not contain all five elements required for acceptance.

Project elements and criteria (*required element)

1. Title*

- a. Concise (less than 15 words)
- b. Summarizes paper's content

2. Abstract*

- a. Concise (less than 300 words)
- b. Context of research
- c. Research questions
- d. Objectives set
- e. Brief methods description
- f. Results
- g. Conclusions
- h. Recommendations for a way forward
- i. Key words that emphasize key ideas in the paper (3-5 words)

3. Research Questions*

- a. Include why they are important and are of scientific interest
- b. Concern some aspect of Earth's environment (local or global issue)
- c. Include a well-written description of background information
- d. Provide significant insight into both the topic of investigation and the research process
- e. Answering them requires an advanced understanding of the subject matter
- f. Require a thoughtful research plan
- g. Are answerable through scientific research appropriate to the scope of the report.

4. Introduction and review of the literature

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- a. **Thorough (250–500 words)**
 - b. **Description of the problem**
 - c. **State of the science**
 - d. **Importance**
 - e. **Community relevance**
 - f. **Citations in text (at least 3-5 references, including at least one primary source in a peer-reviewed journal. Do not include wikis or Q&A sites such as answers.com. Look at The Purdue “OWL” for guidance and resources: owl.english.purdue.edu)**
- 5. Research Methods***
- a. **There is a direct link provided between the datasets and research question(s)**
 - b. **Study site: A map and description of the study site. It should mention area of study, climatic characteristics and basic aspects of land cover**
 - c. **Data collection: A description of GLOBE protocols used to answer the research question as well as where and how data was gathered in the field (sampling method: Where, how many samples were measured)**
 - d. **Print screen of data entry in the Web page of GLOBE.**
 - e. **Data analysis: Mention what kind of mathematical calculation was applied to analyze the data**
 - f. **The data presented are sufficient to answer the research question(s)**
- 6. Results**
- a. **Tables and graphics applying statistical analysis of data to show mean, dispersion or grouping data.**
 - b. **Data support the conclusions**
 - c. **Print screen of GLOBE visualization page**
- 7. Discussion**
- a. **interpretation of results**
 - b. **possible sources of error**
 - c. **comparison with similar studies**
 - d. **discuss whether results support the hypothesis or not, and why**

8. Conclusion*

- a. Gives a thorough and insightful explanation as to how the conclusion was reached**
- b. Put findings in context, why it's important/relevant, impact, with regard to the science**
- c. What improvements in methods**
- d. What follow-on research/actions to be taken, future protocols that could be added**
- e. Impact of working with a project mentor**

9. Bibliography/citations

- a. Materials correctly cited**
- b. GLOBE materials used**
- c. Sources beyond those provided by GLOBE**