

# GLOBE Research Project Planning Guide

Modified from a document created by [GLOBE Mission EARTH](#).

**STUDENT OUTCOME:** Students will be prepared to present their research at the [GLOBE Student Research Symposium](#) and/or submit to the [GLOBE International Virtual Science Symposium](#).

## **TIMELINE SRS:**

Count backwards from your region's SRS date for a suggested timeline for completing a GLOBE student research project. Find the dates for each regional SRS [here](#). For support on each step of the research process see the [SRS Science Practices Pages](#).

### **□ 12-15 weeks prior to SRS:**

- Student groups assigned
- Research question developed by/assigned to student groups

### **□ 10-11 weeks prior to SRS: *The Research Question and Revision of Research Question***

- Three types of Research Questions:
  - **Descriptive.** When a study is designed primarily to describe what is going on or what exists.
    - Describing the characteristics of a variable or phenomenon.
    - Public opinion polls compared to GLOBE data can be used to describe something.
  - **Relational.** When a study is designed to look at the relationships between two or more variables.
    - How does \_\_\_ and \_\_\_ compare?
  - **Causal.** When a study is designed to determine whether one or more variables causes or affects one or more outcome variables.
    - What affect does \_\_\_ have on \_\_\_?
- Write a one sentence HYPOTHESIS that answers your question.

### **□ 3-10 weeks prior to SRS: *Collect Data***

- Determine equipment need to perform field work.
- Design data collection plan:
  - Determine frequency of data collection.
  - Decide where will data be collected.
  - Identify who will collect data.
  - Identify who will enter data into GLOBE database.
- Data Collection from:
  - Field work from data collection plan
  - GLOBE Visualization Tool
  - NASA Satellite data/images
  - HoloGLOBE

### **□ 5 weeks prior to SRS: *Write Introduction***

- Obtain [GLOBE poster template](#) (*link downloads a PPT*) and SRS reviewer feedback forms (*see below*).
- Write about the following:

# GLOBE Research Project Planning Guide

- Describe the problem you are trying to solve.
- State of the science of your topic(s).
- Why is this research important to your group?
- What is the community impact/connection of your research?

## □ 4 weeks prior to SRS: *Write About Your Research Method*

- Write about the following:
  - Describe what you did for your research:
    - Include number of data sets you used.
    - What data sets did you compare?
  - Describe your study areas: (site, school, community)
  - Describe GLOBE protocols used
  - Justify why the data presented are sufficient to answer the research question
- Include a picture of your study area (e.g., from Google Earth)
- Include an image or two of students collecting data

## □ 3 weeks prior to SRS: *Analyze Results*

- Create a table of your results:
  - Make sure your table has a title and is numbered.
  - Make sure each column and row in your table is clearly labeled.
- Create a visualization of your results- graph(s):
  - Make sure your graph has a title and is numbered.
  - Make sure you have a legend (description of the information) in your graph.

## □ 2 weeks prior to SRS: *Discussion of the Results*

- Summarize (in words) your results by referring to your tables(s) and graphs(s).
- Write about possible sources of error with your data:
  - What errors in your data might there be?
  - Do your results compare with someone else's research? (You will have to look online to see if anyone else has done the same kind of research as you just completed.)

## □ 2 weeks prior to SRS: *Conclusion*

- Discuss whether the results support your hypothesis:
  - Discuss why or why not your hypothesis was correct.
- Write about how you reached your conclusion.
- Restate why it is important to know the results of your research.
- What follow-up actions would you like to take:
  - Continue the study?
  - Different protocols?
  - Collaboration with others?
- Write about the impact of working with a project mentor/scientist (*if applicable*).

## □ 1 week prior to SRS: *Bibliography*

- State the books/articles/websites you used in this project.

## □ 1 week prior to SRS: *Abstract (1 paragraph)*

- Write down what you did in your research project.
- Write down why you did this research project.

## GLOBE Research Project Planning Guide

- Write down your conclusion of your research.

### □ **Week of the SRS: Practice Presentation**

- Prepare Poster(s).
- Students present to Class and Other Stakeholders.

## **TIMELINE IVSS – International Virtual Science Symposium**

If you want to submit to the [International Virtual Science Symposium](#) and compete for a cash prize:

### Required Elements:

1. Visual (poster or power point or video)
  2. Written report (your written report can be adapted from your poster information)
  3. 2 badges with summary in visual and report
  4. Abstract
  5. Photo release form
  6. Thumbnail image
- Only projects that have received 4 stars on “research” and have completed all of the elements will be entered into the random drawing for a cash prize in the spring. *(Cash prize is intended to offset the costs for students/teacher to attend the GLOBE Annual Meeting held each summer)*

### □ **12 weeks prior to IVSS deadline: Assign Groups**

### □ **10-11 weeks prior to IVSS: Research Question and Revision of Research Question**

### □ **4-9 weeks prior to IVSS: Collect Data**

### □ **6 weeks prior to IVSS: Write Introduction**

### □ **5 weeks prior to IVSS: Write Research Methods**

### □ **4 weeks prior to IVSS: Analyze Results**

### □ **3 weeks prior to IVSS: Discuss Results**

### □ **2 weeks prior to IVSS: Write Conclusion**

### □ **1 week prior to IVSS: Write Bibliography and Abstract**

### □ **Week April 8<sup>th</sup>: Upload to GLOBE website from January 1<sup>st</sup> to April 10<sup>th</sup>**

## **RUBRICS/REVIEW FEEDBACK**

### **SRS:**

- Both a Reviewer and a Peer Review Feedback Form will be used at the SRS, which can be found [here](#).

### **IVSS:**

- [IVSS Rubric](#) (includes types of badges) will be used for reports/visuals uploaded to the GLOBE website for the IVSS.