**STUDENT OUTCOME:** Students will be prepared to present their research at the [GLOBE Pacific Student Research Symposium](https://www.globe.gov/web/united-states-of-america/home/student-research-symposia) on **April 26th & 27th, 2018** and/or submit to the  [GLOBE International Virtual Science Symposium](https://www.globe.gov/news-events/globe-events/virtual-conferences/2019-international-virtual-science-symposium) by **April 10th**.

***(RUBRICS are at the bottom of document.)***

**TIMELINE Pacific SRS:**

**🞎 Month of January:**

* Student groups assigned
* Research question assigned to student groups

**🞎 Week of February 4th and 11th: *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.
		- Public opinion polls compared to GLOBE data can be used to describe we are simply interested in describing 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. n
* What affect does \_\_\_ have on \_\_\_?
* Write a one sentence HYPOTHESIS that answers your question.

**🞎 From February 11th to April 1st: *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

**🞎 Week of March 18th: *Write* *Introduction***

* Obtain SRS poster template and SRS rubric
* Write about the following:
	+ Describe the problem you are trying to solve
	+ State of the science of your topics
	+ Why is this research important to your group?
	+ What is the community connection of your research?

**🞎 Week of March 25th: *Write About Your* *Research Method***

* Write about the following:
	+ Describe what you did for your research.
		- Include # 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 (use GoogleEarth)
* Include an image or two of students collecting data

**🞎 Week of April 1st: *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 of some sort
	+ Make sure your graph has a title and is numbered
	+ Make sure you have a legend (description of the information) in your graph

**🞎 Week of April 8th: *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 on line to see if anyone else has done the same kind of research as you just completed.)

**🞎 Week of April 8th: *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?
* Write about the impact of working with a project mentor/scientist

**🞎 Week of April 15th: *Bibliography***

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

**🞎 Week of April 15th: *Abstract***

* + Write down what you did in your research project
	+ Write down why you did this research project
	+ Write down your conclusion of your research

**🞎 Week of April 22nd: *Practice Presentation***

* Prepare Posters
* Students present to Class and Other Stakeholders

**TIMELINE IVSS – International Virtual Science Symposium**

**IVSS – LAST SUBMITTAL DATE April 10th**

* If you want to submit to the [International Virtual Science Symposium](https://www.globe.gov/news-events/globe-events/virtual-conferences/2019-international-virtual-science-symposium/instructions) 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 on May 17th. *(Cash prize is intended to offset the costs for students/teacher to attend the GLOBE Annual Meeting in Detroit in mid-July)*

**🞎 Week of January 14th: Assign Groups**

**🞎 Week of January 21st and 28th: Research Question and Revision of Research Question**

**🞎 February 4th – March 11th: Collect Data**

**🞎 Week of February 25th: Write Introduction**

**🞎 March 4th: Write Research Methods**

**🞎 Week March 11th: Analyze Results**

**🞎 Week of March 18th: Discuss Results**

**🞎 Week March 25th: Write Conclusion**

**🞎 Week of April 1st: Write Bibliography and Abstract**

**🞎 Week April 8th: Upload to GLOBE website from January 1st to April 10th**

**Rubrics**

Teachers using the GME project rubric should evaluate all students’ projects (whether submitted to the SRS or IVSS or local exhibitions. A hard copy of the completed rubric for each project will need to be turned into GME (Tracy) after the project presentation.

**GLOBE Mission EARTH**

* [Project Rubric Scoring Sheet](https://www.globe.gov/web/mission-earth/overview/partners/uc-berkeley/lessons-activities?p_p_id=56_INSTANCE_FDMOphHQwRP5&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1) developed for GME Teachers by GME-West teachers and it aligns to [Project Poster Template](https://www.globe.gov/web/mission-earth/overview/partners/uc-berkeley/lessons-activities?p_p_id=56_INSTANCE_FDMOphHQwRP5&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1)
* Must turn in completed rubric to Tracy for all student projects (NASA Evaluation)

**Pacific SRS:**

* [SRS Reviewer Rubric](https://www.globe.gov/documents/20016639/0/Reviewer_Rubric_2018.pdf/5bea6c44-80bf-4c7f-b902-d38c7fe38ade) will be used at the SRS
* [Peer Rubric](https://www.globe.gov/documents/20016639/0/PeerReviewRubric_GLOBE_SRS_2018.pdf/233b8938-3c87-4af9-9432-09a1b65510c0) will be used at the SRS

**IVSS:**

* [IVSS Rubric](https://www.globe.gov/news-events/globe-events/virtual-conferences/2019-international-virtual-science-symposium/rubrics-and-badges) (includes types of badges) will be used for reports/visuals uploaded to the GLOBE website for the IVSS.