



Hot Topics: Red Tide

Lesson Topic

Red Tide

RIEL Biology Element

Sociopolitical Consciousness

Time Required

One to two class periods

Standards Addressed

- SC.912.L.17.3 Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms.

Science and Engineering Practice

- Asking Questions and Defining Problems

Content Learning Objectives

- Students will be able to describe the causes of red tide including human activity and identify how red tide affects water quality.

Lesson Summary

Students will use news resources to research causes and effects of red tide in the Gulf of Mexico. Then students will engage in a class discussion about red tide.

Students will engage with local news and studies to identify problems in the Gulf Coast both human and ecological.

Students will use local news sources and studies to outline the current impacts human activities have on the Tampa Bay Area. Students will be able to define the effects of the red tide on humans and ecosystems.

Materials

- [Red Tide PowerPoint](#)
- Electronic device that can access Internet
- Student Worksheets
- [Google News Search Link](#)
- [WUSF Article](#): Red handed: The connection between human pollution and Florida's worsening red tide outbreaks
- Projector for PPT
- Water Quality Test Kits*
- Water Sample Location*

*If using extension activity

Before the Activity

Obtain a class set of electronic devices if needed. Download and modify the student worksheet and teacher PPT as needed. Modify the Google search link to better reflect your needs. Distribute the student worksheet to students.

If using the extension activity, obtain water quality test kits. Identify a location to do water sample testing or obtain water samples for students to use.

Lesson Activities

1. **Engage.** With your students, the teacher will lead discussion of previous knowledge and experiences students have with red tide. Students will contribute their prior knowledge and personal experiences to class wide discussion. Ask students to share their personal experiences with red tide. Continue discussion asking students what they already know or want to know about red tide.
2. **Explain.** Teacher will provide students with a student worksheet, WUSF article, and Google News link. Update Google News Link to best reflect your class needs.
 - a. [Google News Search Link](#)
 - b. [WUSF Article Link](#)Students will use their findings to describe the questions from the student worksheet in 2 paragraphs. The teacher can choose to modify this to bullet points as needed.
1. **Evaluate & Elaborate.** Teacher will lead a discussion summarizing all of the student findings and adding extra information as needed. The provided PowerPoint has suggested discussion points. Students will use this time to contribute their findings to the class discussion.
2. **Extend.** Teacher will provide students with water quality test kits and water samples/sample locations. Students will use the time provided to assess their water samples and upload data. Students can upload results to citizen science group [Earth Echo's website](#) free of charge.

Teacher Notes

If you would like to add the *extend* portion of the lesson, add another class period to run water quality tests.



Name: _____

Date: _____

Red Tide Student Sheet

Directions: Use the article and news reports to answer the following questions on red tide.

Your red tide news briefing must include:

1. At least 2 paragraphs
2. The species of dinoflagellate involved in red tide: _____
3. The suspected causes of red tide (at least 2!)

1. _____

2. _____

4. Negative effects of red tide

Two impacts on humans:

1. _____

2. _____

Two impacts on native organisms:

1. _____

2. _____

5. What effects does this have on the ecosystem?

6. What can you do about red tide?
