



OCEAN GRAZERS

Concepts

These activities focus on the effectiveness of the Ocean Grazers unit for each of the students. Students will present their Research Projects to the class and finish conclusion-period assessment paperwork.

HCPS III Benchmarks

SC 3.3.1 LA 3.1.6
SC 3.4.1 FA 3.1.2
SC 3.5.1

Duration

(2) One-hour periods

Source Material

PRISM

Vocabulary

None.

Ocean Grazers Conclusion

Summary

Welcome to the end of the Ocean Grazers Unit! A lot has been covered during this quarter and this last lesson is focused around putting student knowledge to use. The activities take place in the classroom (wrapping up their research projects and presentations) and present a great opportunity to review concepts learned over the past nine weeks. In addition, the Self Reflection and Post-Assessment allow the teacher to assess the individual effectiveness of the Unit for each of the students.

Objectives

- Students will present their research project to their classmates.
- Students will formulate a basic food web of ocean grazers that begins with algae or phytoplankton.
- Students will re-write the Giant Kelp Forest Song lyrics to be more relevant to the marine creatures and plants of Hawai'i.
- Students will share favorite Ocean Grazer memories as a class.

Materials

Research Project Presentations

One copy of Research Project Rubric per student

Conclusion Period

One copy of Post-Assessment per student (11 x 14 paper if possible)

One copy of Self Reflection per student

Making Connections

One of the emergent ideas throughout the Unit is personal connections. Students will relate their knowledge of their new findings and concepts, and excite a greater enthusiasm for the scientific process – through inquiry! All of the previous lessons have prepared students to use inquiry skills to answer scientific questions about the natural world around them. These activities test student content knowledge after the Unit is completed, and if their science enthusiasm and inquiry skills have increased through Ocean Grazers curriculum.

Teacher Prep for Activity

The teacher should print the Research Project Rubric (one copy per student) to grade student performance during and after the Research Project Presentations. Also, the teacher needs to print and copy a sufficient number of Post-Assessments (11 x 14" if possible) and Self



Reflections for each student. For the Self Reflection activity, it is essential for students to have their own Pre-Assessment. In this activity, they will be comparing their own responses to the same questions (on the Post and Pre-Assessments).

Background

The class has been studying ocean grazers for several months and should by now have a solid grasp of the variety of limu (e.g. branched, encrusting, brown, red, green, phytoplankton; *see* Lesson 2), connections between plants and animals in the ocean (*see* all Lessons), different types of ocean grazers (e.g. sea urchins, pipipi, honu; *see* Lessons 3 – 7), the concepts of structure and function and how structure design is pertinent to organism survival (*see* Lessons 3 – 7). Now is a good time to review concepts and vocabulary to help students see the big picture of the part ocean grazers play in the marine ecosystem.

Consider asking students inquiry and synthesis questions such as: How does limu play a part in the marine food web? What are some potential ways that animals can help plants survive in the ocean? What are some of the structures that ocean grazers use to survive? Can honu can spread limu spores like birds spread terrestrial plant seeds? *What do you think?* Might an a‘ama crab have a different primary diet if its chelipeds were larger, like a “normal” crab?

Procedure

Activity 1. Class Research Project Presentations (1 hour minimum)

Now is an appropriate time for the students to share their research on species of interest.

Perhaps limit their talks to a handful of fun facts, a couple of specific structures that help the animal survive (or function) and a brief description of their dioramas.

1. Ask the students to sit in a circle or facing front.
2. Have the presenter stand/sit in front of the class and share findings. *It might be helpful to ask another student to assist the presenter.*
3. Use the Research Project Rubric to assess student presentations during this time.

Activity 2. Conclusion Period (1 hour)

1. Distribute a Post-Assessment to each student.
2. Allot approximately 30 minutes.
3. When finished, lead small class discussion about specific things students learned during the unit. *A gallery walk might also be nice to share the drawings of ocean grazer scenes.*
4. Next, return the students’ Pre-Assessments for comparison to be used for their Self Reflections.
5. Distribute a Self Reflection paper to each student.
6. Give students an additional 20 minutes to complete this reflection. *This may be a good homework assignment (if some students don’t finish in time).*

Alternately, if the teacher prefers, the Post-Assessments can be collected and graded before the Self Reflection activity. *If the teacher decided to save the Limu Party (see Optional CULTURE Extension from Lesson 2) till the end of the quarter, the class now becomes a group of ocean grazers that can feast on the limu treats for the remainder of the period.*



Assessments

This Unit includes a variety of formative and summative assessments, including the Research Project presentation, Post-Assessment, and Self Reflection (from this lesson plan). The Self Reflection is another way for students to share with teachers where they “think they are at” (after making direct comparisons between their Pre and Post-Assessment paperwork). The ability of the students to discuss three valid structures of their organism of choice (during the Research Project presentation) is another good indication of their grasp of the concepts. In addition, some of the other activities that students have turned in during the quarter (e.g. Turtle Puppets, MyFish Worksheet) have also yielded a perspective about what the students have learned over the quarter.

Resources

None – see Lesson 1 (Intro Period) for Ocean Grazers references and resources.

Extension Activities

Ocean Grazers Crossword Puzzle:

The following crossword puzzle incorporates 15 vocabulary terms or key concepts from various lessons in the Ocean Grazers Unit. It is fun way to assess the science knowledge that students have learned with the curriculum. The teacher can distribute to students after the Unit’s completion as an in-class assignment, end-of-quarter game, or take-home work.

Use the crossword puzzle that is provided below or make your own at:

http://teachingtechnology.suite101.com/article.cfm/free_crossword_generator_for_teachers.

Culture/Art/Math/Literature Connections

Ask students to incorporate Hawaiian cultural-history stories into their Research Projects (especially if they are related to their organism of choice).



RESEARCH PAPER RUBRIC ·§§§· Student Name: _____

RUBRIC	ME	MP	N	U
RESEARCH STRATEGY- Ss can brainstorm different questions, develop a hypothesis, and conduct research	I can plan and stay focused throughout the task. I had no problem meeting deadlines.	I was able to plan a research paper and answer my questions.	I had some difficulty planning and conducting research.	I did not plan. I do not have a completed project.
RESEARCH STRATEGY- Ss can gather information from a variety of sources.	I used a variety of resources and carefully selected information.	I used resources to find answers to my questions	I used only (1) resource. My information is not complete.	I could not find any resources.
SPEECH- Ss can give a planned speech to share information	My speech was FANTASTIC! I spoke loudly, clearly, and slowly. I looked at my audience. I stood still. I have note cards...and you could tell that I was well prepared.	My speech was GOOD! I spoke loudly, clearly, and slowly. I made good eye contact. I stood still.	My speech was OKAY! I was reminded to speak louder, clearer, of slower. I sometimes looked at my audience. I moved around.	No speech given.
	ME	MP	N	U
VISUAL- Ss can create a visual display	AMAZING! Neat, interesting, visually appealing.	GOOD! Simple, constructed well.	OKAY! Neat in some areas, sloppy in other areas.	UNACCEPTABLE! Crafted poorly, "slapped together in 5 minutes."



Name: _____ Date: _____

Self-REFLECTION

1. Look at your Pre-Assessment and your Post-Assessment. What do you notice about the things you learned? (List at least 5...)

2. Rate your level of learning:

- 1- I didn't learn much.
- 2- I learned a little about structures and functions of *Ocean Grazers*.
- 3- I learned a lot about structures and functions, and I want to continue learning.

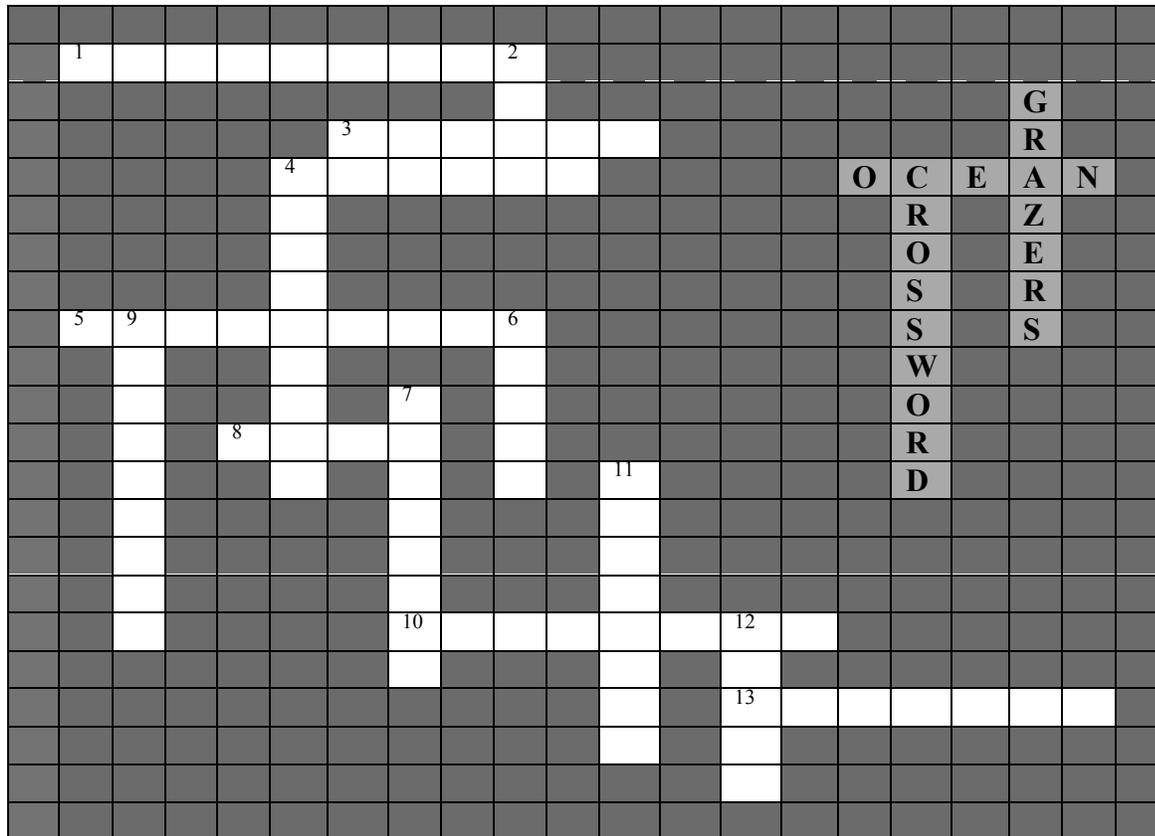
3. COMMENTS / SUGGESTIONS FOR IMPROVEMENT:



Name: _____

Date: _____

Ocean Grazers Crossword Puzzle



Answer the following questions

ACROSS:

1. Scientists use these worksheets to collect their data, or write scientific observations on (*noun*).
3. The shape of a fish's tail or _____ (*noun*) fin will often reveal certain information about to their habitat and lifestyle.
4. Limu does not have seeds, but instead uses _____ to reproduce (*noun*).
5. The a`ama crab has a small pair of _____ (*noun*) because it primarily uses them to pluck tiny pieces of limu from rocks.



8. In Hawai'i, underwater plants such as algae and seaweed are called _____ (*noun*).
10. Anything that is alive. An individual plant or animal is called an _____ (*noun*).
13. If an organism is from Hawai'i, and is only found here it is called _____ (*adjective*).

DOWN:

2. The best time to view ocean grazers at the beach is at low _____ (*noun*), when the creatures are easier to access.
3. The process where two organisms are interacting in a way that helps them both.
6. Many animals (including fish and sea urchins) use this structure for defense (*noun*).
7. 'Ina (or rock-boring urchins) have small, short spines that may _____ (*verb/noun*) to bore holes into lava rocks.
9. Another word for ocean grazer (*noun*).
11. Before the herbivorous Green Sea Turtle (*honu*) becomes an adult, it is considered a _____ (*noun/adjective*) and they are carnivorous.
12. Many ocean grazers (such as 'opihī, honu and the a'ama crab) use this hard structure for protection (*noun*).



2. **Tide** – The best time to view ocean grazers at the beach is at low _____ (*noun*), when the creatures are easier to access.
3. **Symbiosis** – The process where two organisms are interacting in a way that helps them both.
6. **Spine** – Many animals (including fish and sea urchins) use this structure for defense (*noun*).
7. **Function** – ‘Ina (or rock-boring urchins) have small, short spines that may _____ (*verb/noun*) to bore holes into lava rocks.
9. **Herbivore** – Another word for ocean grazer (*noun*).
11. **Juvenile** – Before the herbivorous Green Sea Turtle (*honu*) becomes an adult, it is considered a _____ (*noun/adjective*) and they are carnivorous.
12. **Shell** – Many ocean grazers (such as ‘opihi, honu and the a‘ama crab) use this hard structure for protection (*noun*).



Post-Assessment

Name: _____

Date: _____

What do you think you know about Life in the Ocean?	What do you think you know about animals that Graze?	How do you feel about science?
Draw a scene (picture) of ocean grazers in their habitat.		



What do you want to know about how animals survive in the ocean?	Do plants live in the ocean?
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Maybe ...
How could you find out?	