

LESSON 3 Dare to Compare

Lesson at a Glance

Students choose two animals from their flash card deck to compare. They use information they already have, and other resources, such as the Internet and books, to find out more about the two animals. After listing information on the two animals, they use a *Venn diagram* to present their information.

Lesson Duration

Two 45-minute periods

Essential Question(s)

How can we compare different open ocean animals?
What kind of structures do open ocean animals have and how do these structures enable them to survive?

Key Concepts

- Open ocean animals have developed structures and functions that enable them survive.

Instructional Objectives

- I can compare the structures of two open ocean animals using a Venn diagram graphic organizer.
- I can read grade level informational text about my open ocean organism fluently.
- I can locate information about my open ocean animals in a variety of grade-level appropriate resources.

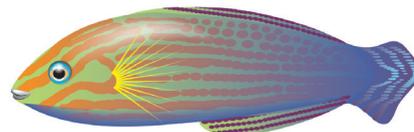
Related HCPS III Benchmark(s):

Science SC.3.4.1
Compare distinct structures of living things that help them to survive.

Science SC.3.5.1
Describe the relationship between structure and function in organisms.

Language Arts LA.3.1.5
Read grade-appropriate narrative and informational text aloud, with fluency and accuracy.

Language Arts LA 3.1.6
Locate information in a variety of grade-appropriate sources.



Assessment Tools

Benchmark Rubric:

Topic		Cells, Tissues, Organs, and Organ Systems	
Benchmark SC.3.4.1		Compare distinct structures of living things that help them to survive	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Group living things by the distinct structures that help them to survive and provide justification for the grouping	Compare distinct structures of living things that help them to survive	Describe a few ways in which distinct structures of living things help them to survive	Name distinct structures of living things that help them to survive

Topic		Unity and Diversity	
Benchmark SC.3.5.1		Describe the relationship between structure and function in organisms	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Classify the structures of organisms according to their function	Describe the relationship between structure and function in organisms	Identify the relationship between structure and function in an organism	Recall that structures in organisms are related to the functions they perform

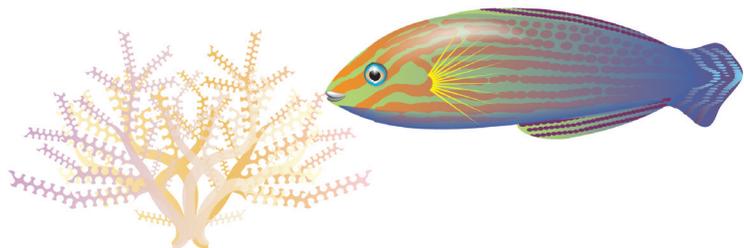
Topic		Fluency	
Benchmark LA.3.1.5		Read grade-appropriate narrative and informational text aloud with fluency and accuracy	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Read aloud a grade-appropriate narrative and informational text, with fluency, accuracy, and expression	Read aloud a grade-appropriate narrative and informational text, with fluency and accuracy	Read aloud a grade-appropriate narrative and informational text, with minimal fluency or accuracy	Read aloud a grade-appropriate narrative and informational text, with little or no fluency or accuracy

Topic		Locating Sources/ Gathering Information	
Benchmark LA.3.1.6		Locate information in a variety of grade-appropriate sources	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Locate substantive information in an extensive variety of grade-appropriate resources	Locate information in a variety of grade-appropriate resources	Locate limited information in a few grade-appropriate resources	Locate information in one or two grade-appropriate resources or locate irrelevant information

Assessment/Evidence Pieces

Lesson

- Student Worksheet *Venn Diagram*
- Ocean Animal Research and Venn Diagram Assessment
- Teacher Rubric Assessment for Ocean Animal Research and Venn Diagram



Materials Needed

Teacher	Class	Group	Student
<ul style="list-style-type: none"> Chart paper sized Venn Diagram or computer version of Venn Diagram for class demonstration 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Internet Access Copies of Student Worksheets

Instructional Resources

Teacher Reading: *Reading List Suggested Websites*

Student Worksheet: *Venn Diagram*

Student Assessment: *Ocean Animal Research and Venn Diagram Self-Evaluation*

Teacher Assessment: *Rubric Assessment for Ocean Animal Research and Venn Diagram*

Student Vocabulary Words

Venn diagram: a graphic organizer tool used to show similarities and differences between two things.

Lesson Plans

Lesson Preparation

- Review the Science Background provided in the Unit Overview. Preview the suggested books and websites provided in the Teacher Reading. Arrange to have the suggested readings or similar text available for students to use as they conduct research on various organisms.
- On a piece of chart paper, list the websites that may be used for this lesson.
- Prepare a large Venn Diagram Chart to model how to do a comparison using a graphic organizer. (Note: The student worksheet or a computer version may be used with a digital presenter in lieu of a large chart paper version.)
- Make copies of the Student Worksheet *Venn Diagram*, one per student.
- Post the chart paper *Wonderings About the Open Ocean* from Lesson 1 on the wall.

I. Comparing the Open Ocean Zones

- Refer students back to their “*I Wonder*” questions on the chart paper *Wonderings About the Open Ocean* from Lesson 1. Explain that they will do some scientific background research to help answer more of their “*I Wonder*” questions.
- Ask students to get out the ocean animal flash cards they made and sit with their partner or in their triad (groups of three). Have students divide their cards into three stacks: “Sunlight” Zone animals, “Twilight” Zone animals, and “Darkness” Zone Animals. Check for understanding and accuracy by having students read aloud what animals are in their stacks. Refer to the Open Ocean Zones Poster students made as a key to the different layers.

- C. Tell students to first look at all the animals in the “Sunlight” Zone. Ask probing questions such as:
- 1) How can you compare the different body parts?
 - 2) What are some differences between them?
 - 3) What do you observe about the “Sunlight” Zone in general?
- D. Follow the same questioning with the other two zones.
- E. Explain to students that the different body parts or “structures” these organisms have are “adaptations” that enable an organism to survive in its environment. The “fishing rod” that grows from the snout of the Deep Sea Angler Fish is an adaptation that enables it to survive by enhancing its ability to capture food. Adaptive structures such as the “fishing rod” functions to enhance the survival of the organism as a species over time.

II. Comparing Two Open Ocean Animals in a Venn Diagram

- A. Inform students they will be doing research on two open ocean animals, and that they will compare and contrast them using a graphic organizer called a *Venn diagram*.
- B. Show the teacher model of a Venn diagram, and explain that the sides of the circle that do not overlap are for characteristics that are different about the animals being compared, and that the overlapping section in the middle is for the characteristics the two animals have in common. Have students choose two animals from the activity cards, and model the process for the class. Include modeling on how to use non-fiction books to find further information about the animals.
- C. Pass out the *Venn Diagram Organizer Student Worksheet*, with the *Self-Assessment for Ocean Animal Research and Venn Diagram* copied on the other side of the worksheet. Ask students to first look at the rubric. Review the objectives and expectations.
- D. Have students select their two animals and begin work.
- 1) Facilitate students’ use of non-fiction books and the Internet to research information about the animals they selected. (*Note: Please ensure that students have proper internet permissions before allowing them onto the internet.)
 - 2) Direct students to conduct a self-assessment using *Ocean Animal Research and Venn Diagram Self-Evaluation* as they complete their assignment.
 - 3) Provide students who finish early with the option to continue work on the animals of their *Open Ocean Zones Poster*, or to play the concentration card game with the *Open Oceans Animal Flashcard* decks provided in Lesson 2.

Extended Activities

Have students create an informational ocean field guide brochure with as many animals as they can research.



LESSON 3 Teacher Reading

Reading List Suggested Websites

http://seawifs.gsfc.nasa.gov/OCEAN_PLANET/HTML/ocean_planet_overview.html The Ocean Planet site is a companion exhibit to the Smithsonian Institution’s National Museum of Natural History traveling exhibition.

http://www.mbayaq.org/efc/efc_mbari/mbari_resources.asp

The Monterey Bay Aquarium has a nice section of their website dedicated to the deep-sea. The “Life in the Deep Sea Interactive” is especially great for visuals.

<http://www.waquarium.org/> The Waikiki Aquarium website focuses on the aquatic life of Hawai‘i and the tropical Pacific Ocean. It presents good information about animals and plants in the *Virtual Tour* feature of the site.

<http://www.mbayaq.org> The webcam full screen is an exciting tool for students to use. It is also an excellent source for pictures of open ocean animals, and facts about them.

http://www.panda.org/about_wwf/what_we_do/marine/blue_planet/open_ocean/ The WWF site has an informative article entitled *Blue Planet: Open Ocean “A World of Extremes”*.

http://www.sheddaquarium.org/explore_by_animal.html The Shedd Aquarium site offers a feature where students may search by animal or organism. The site is easy to navigate with excellent pictures and to the point factual information.

<http://sanctuaries.noaa.gov/education/fun/welcome.html> The National Marine Sanctuary site has several interactive games with open ocean type themes. This may be used as an extended activity for students who complete the assignment early.

Some Suggested Books

Wells, S. (1991). *The Illustrated World of Oceans*. Rockefeller Center, New York: Simon & Schuster.

Cole, J. (1994). *The Magic School Bus On The Ocean Floor*. New York: Scholastic.

Maestro, B. (1997) *A Sea Full of Sharks*. New York: Scholastic.

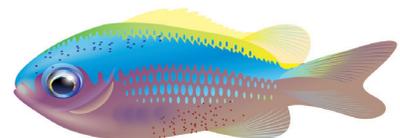
Demi. (1991). *Find Demi’s Sea Creatures*. New York: Putnam & Grosset..

Armour, R.. (1989). *Sea Full Of Whales*. New York: Scholastic.

Selberg, I & McGuinness, D. (1990). *Secrets of the Deep*. New York: Dial Books for Young Readers

Steele, P. & Camm, M. (1991) *Sharks and Other Creatures of the Deep*. New York: Dorling Kindersley Inc

Lionni, L. (1968). *Swimmy*. New York, Pantheon.

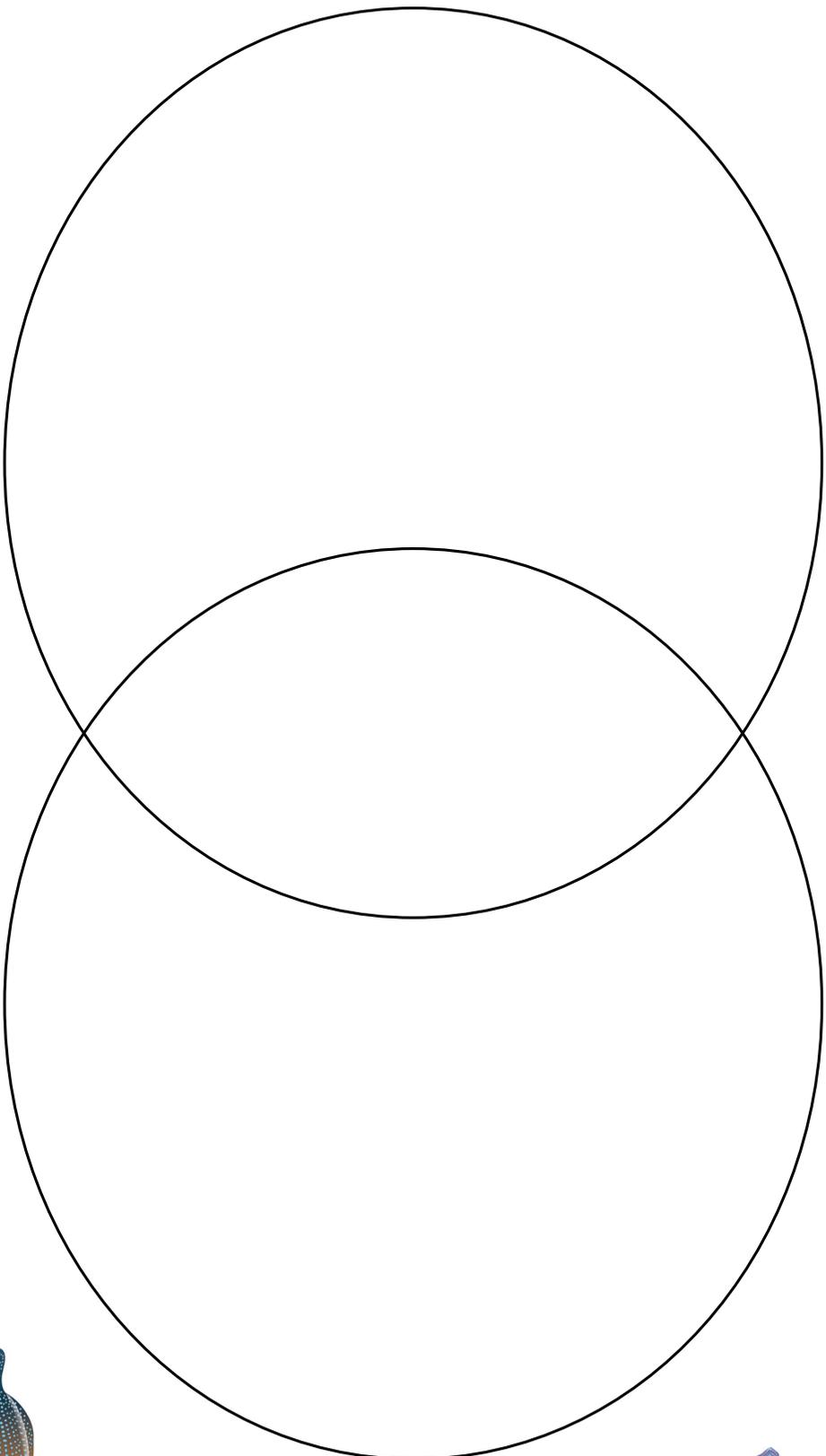


LESSON 3

Name: _____ Date: _____

Venn Diagram

Animal 1: _____ Animal 2: _____



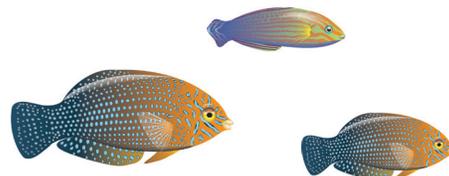
LESSON 3 Teacher Version Rubric Assessment for Ocean Animal Research and Venn Diagram

TASK: Choose two animals from your water column poster, and research their similarities and differences.

Name: _____ **Date:** _____

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Topic		Unity and Diversity	
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Rubric			
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Teacher Comments



LESSON 3

Ocean Animal Research and Venn Diagram Self Evaluation



Name: _____ Date: _____

WOW!	YES!	ALMOST!	NOT YET
<ul style="list-style-type: none"> o I used a Venn diagram to compare two animals that live in the open ocean with lots of interesting details to show how they are alike and different. o I also used a variety of different books and websites when doing my research. 	<ul style="list-style-type: none"> o I used a Venn diagram to compare two animals that live in the open ocean with some details to show how they are alike and different. o I also used a few different books and websites when doing my research. 	<ul style="list-style-type: none"> o I used a Venn diagram to compare two animals that live in the open ocean with a few obvious details to show I understood how they are alike and different. o I also used at least one book and one website. 	<ul style="list-style-type: none"> o I used a Venn diagram to compare two animals that live in the open ocean with one or two obvious details to show I understood how they are alike and different. o I also used at least one book and one website when doing my research.

Reflections:

