

LESSON 3 Creature Feature

Lesson at a Glance

Students use their knowledge about various organisms and their structures to create their own creature. The students will “invent” a new species that has just been “discovered” in the Hawaiian shoreline ecosystem and will need to express what adaptations the creature has that allow it to survive in a specific area of the shoreline ecosystem. They use art materials to make a colorful drawing, or 3-D model of a new species they have “discovered.” Students describe the various parts of their invented creature, explaining how the special adaptations help their organism survive.

Lesson Duration

Two 45-minute periods

Essential Question(s)

What structure and function would a species need to survive on the coastal shoreline, or coastal wetland in its new environment?

Key Concepts

- All organisms have their own unique structures that allow them to survive in their habitat.
- Plants and animals living in the shoreline environment have many traits that provide them with protection and help their survival.

Instructional Objectives

- I can create and assemble my own shoreline species that has special characteristics so it can live in one of the shoreline habitats studied.
- I can present my new *creature* to the class and tell my classmates how it is designed to survive the harsh Hawaiian shoreline or coastal wetland environments.
- I can speak clearly with a good volume and pace when I share the new species I created.
- I will use a variety of materials artistically to create an original work of art.

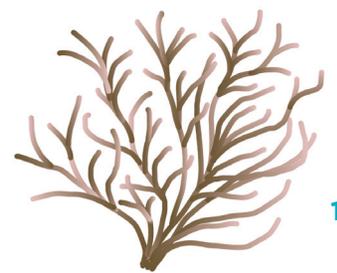
Related HCPSIII Benchmark(s):

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

Visual Arts FA.3.1.3
Use observational skills in creating an original work of art.

Language Arts LA.3.6.1
Use oral language to obtain information, complete a task, and share ideas and personal opinions with others.

Language Arts LA.3.6.5
Vary expression, level, pacing, and intonation according to content and purpose.



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 | Advanced | Proficient |
| 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 | 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 |

| | | | |
|---|--|--|---|
| Topic | | How the Arts Communicate | |
| Benchmark FA.3.1.3 | | Use observational skills in creating an original work of art | |
| Rubric | | | |
| Advanced | Proficient | Partially Proficient | Novice |
| Consistently use observational skills in creating an original work of art | Usually use observational skills in creating an original work of art | Sometimes use observational skills in creating an original work of art | Rarely use observational skills in creating an original work of art |

| | | | |
|---|---|---|---|
| Topic | | Discussion and Presentation | |
| Benchmark LA.3.6.1 | | Use oral language to obtain information, complete a task, and share ideas and personal opinions with others | |
| Rubric | | | |
| Advanced | Proficient | Partially Proficient | Novice |
| Use creative oral language to obtain information, complete a task, and share ideas and personal opinions with others, in a highly effective way | Use oral language to obtain information, complete a task, and share ideas and personal opinions with others | Use typical oral language that sometimes aids in obtaining information, completing a task, or sharing ideas and personal opinions with others | Use inappropriate oral language that does not aid in obtaining information, completing a task, or sharing ideas and personal opinions with others |

| | | | |
|---|---|---|---|
| Topic | | Delivery | |
| Benchmark LA.3.6.5 | | Vary expression, level, pacing, and intonation according to content and purpose | |
| Rubric | | | |
| Advanced | Proficient | Partially Proficient | Novice |
| Vary expression, level, pacing, and intonation, in a highly effective way, according to content and purpose | Vary expression, level, pacing, and intonation according to content and purpose | Vary some expression, level, pacing, or intonation according to content and purpose | Use little variation in expression, level, pacing, or intonation according to content and purpose |

Assessment/Evidence Pieces

Lesson

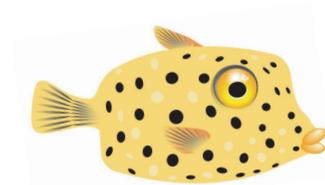
- Student worksheet: *Creature Feature*
- Assessment Tool: *Creature Feature Checklist (optional)*

Materials Needed

| Teacher | Class | Group | Student |
|--|---|--|--|
| <ul style="list-style-type: none"> Optional: camera to capture evidence of student activity | <ul style="list-style-type: none"> Various art materials available for students (suggested list below, may be modified based on safety and availability) <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>SAFETY: please provide items that will not pose any safety threats to the students.</p> </div> <ul style="list-style-type: none"> o Crayons, paint, markers o Tape o Construction paper scraps o Modeling clay o Pipe cleaners o Clothespins o Toothpicks o Glitter o Fabric/felt scraps o Old household items (e.g. egg cartons, milk jugs, sponges, old bath mat with suction cups, old socks, etc.) | <ul style="list-style-type: none"> None | <ul style="list-style-type: none"> Drawing paper Scissors [Suggestion: May wish to remind students to observe safe use of scissors.] Glue Index card Tape |

Instructional Resources

- Student Worksheet: *Creature Feature*
- Teacher Answer Key: *Creature Feature*
- Assessment Tool: *Creature Feature Checklist*



Student Vocabulary Words

- camouflage:** the structural adaptation that allows species to blend in to their surroundings to avoid detection by predators. Colors that help an animal hide are called camouflage.
- function:** how a structural feature of an organism is used or what it does.
- structure:** a distinct physical feature which helps the plant or animal survive in their environment.
- structural feature:** unique quality of a plant or animal structure.

Lesson Plan

Lesson Preparation

- Review the Science Background provided in the Unit Overview.
- Collect art materials and set up a materials supply station. Students should have their own scissors and glue ready.
[Suggestion: Teacher may want to have supplies in separate containers to allow for ease in students obtaining and returning supplies.]
- Make copies of the *Creature Feature* Student Worksheet. Review the Teacher Worksheet version.
- Optional: *Creature Feature Checklist* Assessment Tool.

I. Structure and Function Review

- Review students' understanding thus far of the relationship between structures and functions that help an organism to survive.
- Refer to the interactive bulletin board/mural from Lesson 2 and pick a few of the organism to review the relationship between structures and how each organism survives in its habitat. For example, point to the hard shell of the *'opihi* (limpet) and discuss how art materials could be used to show this trait. For this example, students could make a protective watertight covering with a piece of egg carton or folded paper to represent the limpet's protective shell.
- Use the Creature Feature Clues from the *Creature Feature* Student Worksheet to check for understanding of features and functions.

II. Creature Feature

- Introduce and explain to students that they will be imagining that they are scientists and have just discovered a shoreline creature that no one else has seen before. They will be using the structural and behavioral features they have learned about to show how this new, shoreline organism looks. Their discovery can be a new type of bird, crab, plant, tree, fish, or something totally unique. Encourage students to be creative, but to think about how their new creature would have unique structural features to allow it to survive.
- Remind students that:
 - 1) They must begin with a diagram/sketch of the new species and explain the unique structures and/or behaviors that help them survive in their new habitat.
 - 2) Their new *critter* must be able to survive the harsh environment of the shoreline habitats, that is, brainstorm conditions such as sun, wind, wave, and salt exposure.
 - 3) They must be able to show and explain the structural features of their new critter and how these features help it to function and survive in a shoreline environment.
 - 4) They need to invent a descriptive name for their new species. For instance, "*Umbrella Crab*."
- After students complete their models, have each student show his or her new organism, describe its features, and use their diagram/sketch to explain how it survives in a shoreline environment.
- Display the organisms on a bookcase or shelf, together with an index card stating the name, where each lives in the shoreline ecosystem, and the adaptations it has made in order to survive in the ecosystem.

LESSON 3

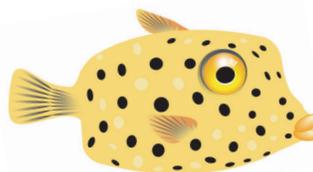
Creature Feature

Page 1 of 2

Instructions: Match the picture of a plant or animal with the description of its features by writing the letter on the line above the picture on page 2 of this worksheet.

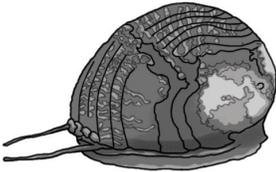
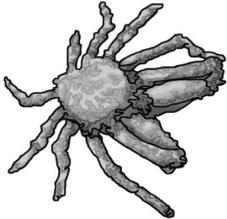
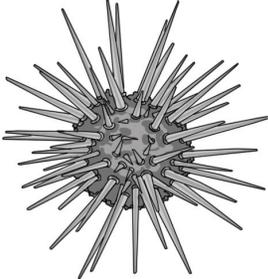
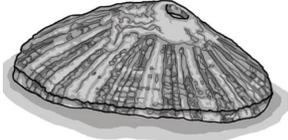
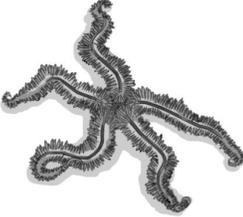
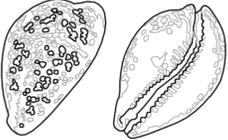
A. Creature Feature Clues

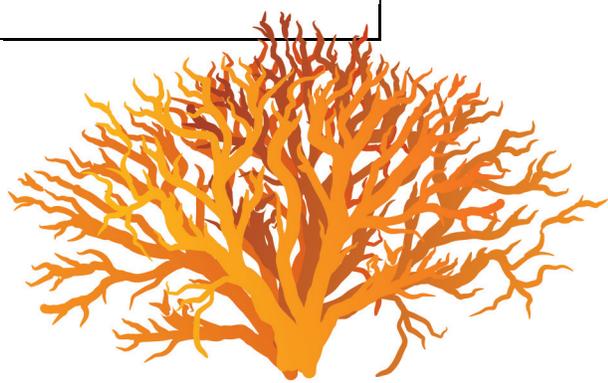
| Features |
|--|
| a) <i>My pelvic fins are fused together to form a suction disc, and I blend in well with my environment.</i> |
| b) <i>I have a white bill and float on the water like a cork.</i> |
| c) <i>My short spines are sharp for protection, and my teeth can scrape seaweed from solid rock.</i> |
| d) <i>Dozens of us can be found clustering under ledges in the splash zone. We are black with fine spiral lines.</i> |
| e) <i>My long, sharp beak is great for poking in mud for tiny animals to eat for dinner.</i> |
| f) <i>I'm fast and flat, and like hiding under rocks. If I break my flexible arm, it can grow back too.</i> |
| g) <i>My vines spread out to help keep me in place, and my rounded leaves are thick and tough to withstand the windiest of days.</i> |
| h) <i>My foot is strong and leaves a permanent depression on my "home" rock. My cone-shaped shell is ribbed and helps protect my body.</i> |
| i) <i>It's "true" – I camouflage myself with tiny seaweeds and animals like anemones, sponges, and bryozoans.</i> |
| j) <i>My shell is white with dark spots and I have a name in common with a large cat.</i> |





B. Creature Feature Pictures

| | | |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  | | |

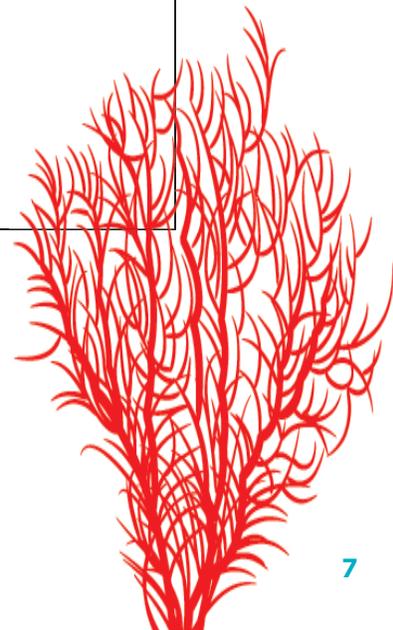
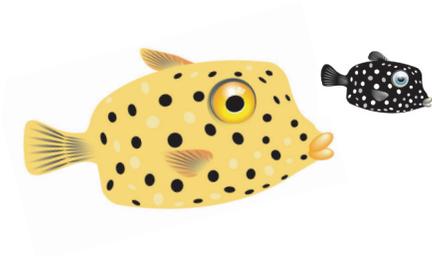


LESSON 3 Teacher Answer Key

Creature Feature

This is a teacher version of the Creature Feature Student Worksheet. Image(s) below is labeled with the clues (a-j).

| | | |
|-----------|-----------|-----------|
| <u>E.</u> | <u>D.</u> | <u>I.</u> |
| <u>B.</u> | <u>C.</u> | <u>A.</u> |
| <u>H.</u> | <u>G.</u> | <u>F.</u> |
| <u>J.</u> | | |



LESSON 3 Teacher Resource Checklist

Creature Feature

| Name | <i>SC3.5.1 Structure and Function (creature caption)</i> | <i>FA 3.1.3 Observational skills to create a work of art (created creature)</i> | <i>LA 3.6.1 Use Oral Language (creature presentation)</i> | <i>LA 3.6.5 Vary expression, level, pacing... (creature presentation)</i> |
|------|--|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |
| 31. | | | | |
| 32. | | | | |
| 33. | | | | |
| 34. | | | | |
| 35. | | | | |