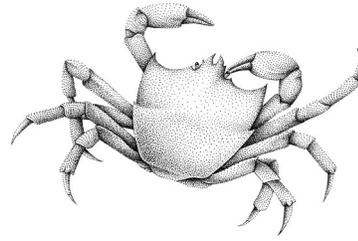


Ocean Survival



Topics

Patterns of Survival

Grades

K-2

Site

Outdoors, Aquarium, Classroom

Duration

90 minutes, in 2-3 parts

Materials

- Science notebooks
- Pencils
- **Survival Sentence Frames**
- Internet-connected devices

Vocabulary

habitat, observe, survive

Next Generation Science Standards

Practices

Constructing Explanations

Core Ideas

LS1.A Structure and Function

Crosscutting Concepts

Patterns

Performance Expectations

See page 4

Focus Question

What do living things need to survive?

Overview

Students observe an animal in its habitat (at the Monterey Bay Aquarium, in the schoolyard, or at a field site). Based on those observations, they write sentences describing what they think the animal needs to survive in its habitat. Students publish their sentences as a digital book.

Objectives

Students will:

- Make scientific observations.
- Construct explanations based on observations.
- Create a digital book communicating their thinking.

Background

Animals need different things to **survive** in different habitats. These include things such as food, water and oxygen, but they also include adaptations (body parts and behaviors) that allow animals to survive in their specific **habitat**. It is important to note that certain misconceptions can arise about adaptations and natural selection. Be sure to discuss adaptations as body parts and behaviors organisms are born with and that are inherited from their parents, not things that organisms want to do or have. For example, a shark didn't "want" to bite harder so it grew a strong jaw. Adaptations due to random genetic mutations coupled with environmental pressures. They develop over numerous generations.

Opportunities for observation can be very important to help students begin to think about what animals and plants need to survive. With support, even very young students can construct basic explanations based on observable evidence. This skill is not only integral to the science process, but also closely connected with language proficiency.

To support students as scientific thinkers, it's important to refrain from anthropomorphizing (giving animals human traits) during science activities. Encourage students to refer to animals as "it" rather than him or her if the gender is unknown. During the digital storybook creation portion of the activity, have students use only photos or scientific illustrations rather than imaginative animal



VOCABULARY

habitat: a home for plants and animals that provides food and protection

observe: to experience something using your senses (what you see, hear, feel, smell or taste)

survive: to live or exist



TEACHER TIP

Pre-literate students can make verbal observations, related illustrations and attempted writing. Some may need adult support.

illustrations. It can be helpful to talk about the difference between fiction and nonfiction books before this activity so students have an understanding of why imaginative illustrations aren't appropriate in this context.

Teacher Preparation

1. Plan a field trip to the Monterey Bay Aquarium or your local aquarium, zoo, or nature center where students will be able to observe animals within exhibits.
2. Before going, select a specific area that emulates animals' natural habitats. For example, the Monterey Bay Habitats and Kelp Forest exhibits are good replications of the natural world.
3. Research different digital storybook apps and websites that your students can use. A free, popular one is Little Bird Tales (see resources).

Procedure

Part One: Create a Class Digital Storybook

1. INTRODUCE THE FOCUS QUESTION TO THE CLASS.

Share the question: *What do plants and animals need?* You may write it on the whiteboard or have students add it to their science notebook. Give students time to write their initial thoughts down or discuss with a partner.

2. INVITE STUDENTS TO OBSERVE A FAMILIAR ANIMAL.

Select a specific animal that students have some experience with, such as a class pet or an insect in the schoolyard. Tell students that they will **observe** this animal like scientists. Explain that scientists learn about the natural world by observing it closely with all their senses. (If appropriate, you may talk about using tools such as hand lenses to enhance our senses.) Invite students to observe the animal closely, and prompt them to think about what the animal needs to survive in its habitat. Explain that when scientists observe animals in nature, they try to be as invisible as possible so they can learn what the animals do naturally, without human interaction. After students have observed the animal for a minute or so, encourage them to look more closely by taking photos or creating scientific illustrations.

3. SHOW STUDENTS A SAMPLE DIGITAL STORYBOOK.

Introduce the word **survive** to students. Work as a class to define the word. Tell students that, as a class, they will create a digital book about how an animal survives. Play the Little Bird Tale "Plant Survival" (https://littlebirdtales.com/tales/view/story_id/433811/) as a sample. This sample offers students a sentence frame they can use later:

"I think the (animal) needs _____ to survive because (observation)."

For older students, you may want to make the sentence frame more complex.

"I think the (animal) needs _____ to survive in the (habitat) because (observation)."

4. CREATE SURVIVAL SENTENCES IN A SHARED WRITING SESSION.

After students have created illustrations or taken photos, bring them together for a shared writing session in which you introduce the sentence frame used in the sample Little Bird Tale. As a class, use the sentence frame to write three or more sentences about what the chosen animal needs to survive in its habitat. To help students build scientific habits of mind, it's important that they use their specific observations (as opposed to prior knowledge) to support their claims.

5. USE THE SHARED WRITING TO CREATE A CLASS DIGITAL STORYBOOK.

Lead students through the creation of a digital storybook. Model using the shared writing as the text, use students' photos or illustrations, and have students choral read to record the narration.

6. PREPARE STUDENTS TO CREATE THEIR OWN DIGITAL STORYBOOK.

Explain to students that they're going on a field trip, where they will be scientists and observe more animals in their habitats. Invite students to go to a new page of their science notebook and paste (or copy) the survival sentence frame at the top. Explain that they will be able to select an animal, observe it and then create a digital storybook about how it survives.

Part Two: At the site, students make observations and take pictures for their own digital storybooks.

6. STUDENTS SELECT AN ANIMAL TO OBSERVE.

When you arrive at the chosen area, give students about five minutes to walk around and explore the area. Then, gather students back together and ask them to select one animal to observe and write about.

7. STUDENTS MAKE OBSERVATIONS.

Have students observe the animal they chose for three to five minutes, depending on their age. Ask them to think about what their animal needs to survive in its habitat. As students observe their animal, have them use their science notebooks to write notes or draw illustrations about some of the things they think the animal needs to survive in its habitat. Encourage them to use the sentence frame to support their writing. If students need prompting, ask them if they could survive in the same habitat and why or why not. A student might write:

"I think the sea otter needs fur to survive in the kelp forest because the ocean is very cold."

8. STUDENTS TAKE PICTURES FOR A DIGITAL SURVIVAL BOOK.

After students have made their observations, have them think-pair-share. Ask them to list at least three things their animal needs to survive and explain how their observations support their thinking. Then, give students time to photograph their animal with their iPad. (They will use these photographs in their digital storybooks.)



TEACHER TIP

Don't have access to a class set of tablets?

Ask chaperones to bring their smartphones. Students can use them to take photos that they then email to the teacher for later use.

Part Three: Back in the classroom, students make their own digital storybooks.

9. STUDENTS MAKE AND SHARE THEIR DIGITAL SURVIVAL BOOKS.

Ask students to create their digital survival books using the pictures, illustrations, and written observations they collected at the Aquarium or field site. After students have created and published their digital storybooks, allow them time to share their book with a partner, a small group, the whole class or at a school event.

10. RETURN TO THE FOCUS QUESTION.

Now that students have made observations about animals in specific ecosystems and discussed their books, have them revisit the question: *What do living things need to survive?* Students may think on their own or discuss with a partner. Then in their science notebook, you may have them draw a line of learning, and under it, add their new ideas to their original thoughts about the question.

Resources

Website

Little Bird Tales <https://littlebirdtales.com>

Standards

Next Generation Science Standards www.nextgenscience.org

Performance Expectation

Supports K-LS1: Use observations to describe patterns of what plants and animals (including humans) need to survive.

Relates to 1-LS1: Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

Relates to 2-LS4: Make observations of plants and animals to compare the diversity of life in different habitats.

California Transitional Kindergarten Standards

Supports PreK-LS1.3: Recognize that living things have habitats in different environments suited to their unique needs.

Common Core State Standards www.corestandards.org

Language Arts, W.K.6, W.1.6, W.2.6

Writing: With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.

Language Arts, W.K.2

Writing: Use a combination of drawing, dictating and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.



TEACHER TIP

If you have limited technology, have students work in small groups of 3-4, each student contributing one page to the group's digital storybook.

**THE MISSION OF THE
MONTEREY BAY
AQUARIUM
IS TO INSPIRE
CONSERVATION OF THE
OCEANS.**

Survival Sentences

I think the _____
(animal)

needs _____ to survive

because _____
(observation)

_____.

I think the _____
(animal)

needs _____ to survive

in the _____ because _____
(habitat) *(observation)*

_____.