

# MANGROVES: HEALTHY MANGROVES

Grade 4

## ESSENTIAL QUESTIONS: WHY ARE MANGROVES IMPORTANT?

- What does a healthy mangrove environment/ecosystem look like?
- What can harm a healthy mangrove environment/ecosystem?

## LEARNING GOALS

What should learners know and be able to do by the end of the lesson?

Students will be able to:

- Name characteristics and components of a healthy mangrove
- Describe examples of things and human actions that can harm a healthy mangrove
- State cause and effect of harms done to a healthy mangrove

**Approximate Length of Lesson: Two 45-minute class sessions**

**Approximate Number of Minutes: 90 minutes**

## BENCHMARKS

Sci.4.4.3 Recognize factors that cause or contribute to rapid changes in the environment and describe the impact of such rapid changes on animal and plant life.

## SUMMATIVE ASSESSMENT

Song creation and performance

## FORMATIVE ASSESSMENT TOOLS

- Vocabulary review
- Responses to discussions
- Student drawings of healthy and unhealthy mangroves

## FOCUSED LANGUAGE FEATURES: VERNACULAR + ENGLISH

Language Functions	Related Sentence Structures / Patterns (Examples)	Vocabulary
State cause and effect	If <u>cause</u> , then <u>effect</u> . <u>Effect</u> because <u>cause</u> . <u>Cause</u> so <u>effect</u> .	healthy benefit change
Distinguish between healthy and unhealthy mangroves	A healthy mangrove _____, <u>but</u> an unhealthy mangrove _____. A healthy mangrove _____. <u>On the other hand</u> , an unhealthy mangrove _____.	harm

## LEARNING SEQUENCE

### Lesson: Healthy Mangrove Environment/Ecosystem

Activate Prior Knowledge	<ul style="list-style-type: none"> <li>Read aloud the essential questions for this lesson.</li> <li>Give students some time to think about the questions. Ask for volunteers to share their thoughts.</li> <li>Show pictures of mangrove forests. Ask students to identify benefits and services that the mangrove forest provides from the pictures (coastal protection, nursery, building materials, food)</li> </ul>
Introduce Vocabulary	<ul style="list-style-type: none"> <li>Define the term healthy (physically strong, not likely to become ill or weak). Name characteristics of a healthy person, healthy animal, healthy ocean</li> <li>Review vocabulary from Lesson 1 (benefit, change, harm)</li> </ul>
Healthy Mangrove	<ul style="list-style-type: none"> <li>If a mangrove environment/ecosystem is healthy, what will the mangrove ecosystem look like? (roots, leaves) What kinds of living things will we find in the mangrove environment/ecosystem?</li> <li>In small groups, create and label drawing of a healthy mangrove environment/ecosystem.</li> </ul>
What Can Harm a Healthy Mangrove	<ul style="list-style-type: none"> <li>Refer to the interview from lesson 1. Ask students to recall harms caused by people to mangroves.</li> <li>Listen to/read different scenarios 1 to 5 of actions done towards a mangrove swamp as a result of those benefits/services. Scenarios 1 to 3 focus on general actions done towards a mangrove swamp, while scenarios 4 and 5 focus on human impacts on mangrove swamp.</li> <li>Create a cause/effect flow chart to show how certain things and actions can harm mangrove swamps. Teach and practice using</li> </ul>

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the cause/effect signal words to communicate the cause/effect of harms to mangrove swamps.

- If those things and actions take place, what will happen to the mangrove ecosystem? In small groups, create and label drawing of an unhealthy ecosystem
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Compare student drawings of healthy and unhealthy mangrove ecosystems and distinguish between the two.

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**Song: Healthy Mangroves**

- Have students work in small groups to create a song that describes a healthy mangroves and things that can harm healthy mangroves
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Revisit K-W-L chart from lessons 2 & 3 and answer questions/record new learning

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**Essential Questions**

Review the essential questions for this lesson. Ask for responses based on what we have learned.

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## RESOURCES

- Pictures of mangrove forests
- Fact sheet #5 on sea level rise and mangroves
- Cause/effect flow chart
- Paper for drawing
- Pencil and markers for drawing
- Scenarios
- Song about mangroves
- K-W-L chart from lessons 2 & 3