

# MANGROVES: HEALTHY MANGROVES

Grade 3, 4, & 5

## 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

Grade 3: Sci.1.3.5 Identify cause and effect relationships. Sci.5.3.1 Name and describe living things that are found in the ocean, reefs, and swamps.

Grade 4: 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.

Grade 5: Sci.1.5.2 Explain cause and effect relationships in nature (for example, that a lack of rain results in plants being stressed and sometimes dying). Sci.5.5.3 Describe that global warming is causing sea levels to rise, and explain how sea level rise can impact marine ecosystems.

## SUMMATIVE ASSESSMENT

Song performance (gr. 3)

Song creation and performance (gr. 4 & 5)

## 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 of actions done towards a mangrove swamp as a result of those benefits/services. Ask students to focus on the following based on their grade level:               <ul style="list-style-type: none"> <li>Grade 3: scenarios 1 to 3 (general actions done towards a mangrove swamp)</li> <li>Grade 4: scenarios 1 to 5 (human impacts)</li> <li>Grade 5: scenarios 1 to 7 (human impacts and sea level rise and extreme weather as a result of climate change.</li> </ul> </li> </ul>

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Refer to fact sheet #4 on sea level rise and extreme weather on mangroves)

- Create a cause/effect flow chart to show how certain things and actions can harm mangrove swamps. Teach and practice using 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**

- Gr. 3: Teach students a song that describes a healthy mangrove and things that can harm healthy mangroves. Have students work together to create dance movements to represent key concepts.
- Gr. 4 & 5: 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