

CULMINATING LESSON **Crime Scene Report**

Lesson at a Glance

Now it's time for the students to put together all of the information that they gathered throughout this investigation. Students will demonstrate their knowledge of beach ecosystems by writing a crime scene report about beach ecosystems that addresses beach habitats "the scene of the crime," pollution including trash "the suspect," beach organisms and sand "examining the crime scene." The crime scene report should be done as a response to Claude the Crab's initial inquiries and the evidence they gathered on their beach field trips.

Lesson Duration

One 45-minute period

Essential Question(s)

What is pollution?

How is an organism's behavior determined by its environment?

How do organisms survive in specific environments?

How is sand created?

Key Concepts

- Organisms need specific conditions in order to survive. These specific conditions are affected by pollution.
- Pollution can be both point source pollution (from a source) and non-point source pollution (from multiple sources).
- Pollution travels from a source in order to find the beach, in the same fashion that sand travels from a source to a beach. There are various types of pollution, but much of what can be observed on the beach is trash.

Instructional Objectives

- I can use what I have observed and learned to describe the importance of healthy of beach ecosystems.

Related HCPSIII Benchmark(s):

Science: SC 4.1.2
Differentiate between an observation and an inference

Science: SC 4.5.3
Describe how different organisms need specific environmental conditions to survive.

Science: SC 4.8.1
Describe how slow processes sometime shape and reshape the surface of the Earth.

Language Arts: LA 4.4.1
Write in a variety of grade-appropriate formats for a variety of purposes and audiences.



Assessment Tools

Benchmark Rubric:

Topic		Scientific Knowledge	
Benchmark SC.4.1.2		Differentiate between an observation and an inference	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Explain the difference between an observation and an inference and give examples	Differentiate between an observation and an inference	Provide examples of observations and inferences	Define an observation and an inference
Topic		Unity and Diversity	
Benchmark SC.4.5.3		Describe how different organisms need specific environmental conditions to survive	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Explain why different organisms need specific environmental conditions to survive	Describe how different organisms need specific environmental conditions to survive	List specific environmental conditions that organisms need to survive	Recall that organisms need specific environmental conditions to survive
Topic		Forces that Shape the Earth	
Benchmark SC.4.8.1		Describe how slow processes sometimes shape and reshape the surface of the Earth	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Use evidence to explain how slow processes have shaped and reshaped the surface of the Earth	Describe how the shaping and reshaping of the Earth's land surface is sometimes due to slow processes	Provide examples of the shaping and reshaping of the Earth's land surface due to slow processes	Recognize that the shaping and reshaping of the Earth's land surface is sometimes due to slow processes
Topic		Range of Writing	
Benchmark LA.4.4.1		Write in a variety of grade-appropriate formats for a variety of purposes and audiences, such as: <ul style="list-style-type: none"> narratives that follow a plot and describe a setting and characters poems that provide insight into why the topic is memorable responses to literature reports that focus on a central question and incorporate summaries from research accounts based on personal experience that have a clear focus and supporting details pieces to reflect on learning and to solve problems 	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Insightfully adapt writing to grade-appropriate formats for a variety of purposes and audiences	Adapt writing to grade-appropriate formats for a variety of purposes and audiences	Write with some adaptation to grade-appropriate formats for a variety of purposes and audiences	Write with little adaptation to grade-appropriate formats for a variety of purposes and audiences

Assessment/Evidence Pieces

Lesson

- Student writing piece

Materials Needed

Teacher	Class	Group	Student
<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Writing Materials

Instructional Resources

Student Worksheet: *Crime Scene Report*

Student Vocabulary Words

A comprehensive list of student vocabulary words found in this unit:

ecosystem: all living and non-living things that interact with each other in an environment.

environment: surroundings and conditions in which an organism lives.

erosion: the transport of broken down material.

feral: not domesticated; wild.

habitat: the environment where an organism lives.

non-point source pollution: pollution that cannot be traced to a specific source.

organism: a living thing.

point source pollution: pollution that can be traced to a specific source.

pollution: anything in the air, soil, or water that degrades the environment.

sand: broken down rock or organic material that lines beaches.

weathering: the breaking down of rock and organic material.

Lesson Plan

Lesson Preparation

- Review the key concepts of each lesson in order to prepare for review with students, including:
 - o Pollution as point source pollution and non-point source pollution.
 - o Types and sources of sand, and the idea that sand is weathered (breaks down) and eroded (moved) much like trash and marine debris.
 - o The various habitats of the beach and likely organisms to find in each habitat as well as the conditions the organisms need to survive

I. Unit Assessment

- A. Review and list the concerns of Claude the Crab (from Lesson 1).
For what problem or problems did Claude the Crab ask for help?
- B. What have we learned from lessons in this unit that helps to identify and explain Claude’s problem or problems?
Briefly review with students what was learned about the following:
 - 1) **Pollution:** Make sure students understand that pollution always has at least one source. If it has one direct source, it is considered point source pollution. If it has many sources that are more difficult to pinpoint, it is considered non-point source pollution. When students locate a pollutant on the beach, it can be classified, and if it is point source pollution, identify the source.
 - 2) **Types and sources of sand.** It is important to make a connection between how sand is transported from a source, and how types of pollution can also be transported from a source.
 - 3) **Beach Ecosystems, Habitats, and Organisms:** Make sure students understand that organisms live in specific habitats and that they need specific environmental conditions to survive. These conditions determine how they behave.
- C. Based on what we have learned, and evidence from our field trip to the beach, ask students what are some potential solutions to Claude’s problem.
- D. Ask students to write a “Crime Scene Report” that addresses what they learned about beach ecosystems, habitats and organisms (Lesson 1), types of sand and their origins (Lesson 2), the types and sources of pollution (Lesson 3), types and origins of debris and how it affects the beach habitats (Lessons 4 and 5). Handout Student Worksheet “Crime Scene Report”. The questions they answer will review what they have learned within this unit and answer the question of who was trying to hurt Claude the crab and possible solution to help him solve his problem.

Crime Scene Report

Who was the victim?

Where was the scene of the crime?

Create a list of details regarding the crime scene.
(Describe the beach sand and its origin.)

Who were your suspects in this case? (types and sources of pollution)

What did you find when you examined the crime scene? (Talk about 1st field trip)

After visiting the crime scene several times what conclusions did you make regarding this case?

Who do you think was trying to hurt the victim and why?