

CULMINATING LESSON

Creating a Marine Protected Area

Lesson at a Glance

Students demonstrate their knowledge of marine protected areas by creating point-of-view persuasive essays that focus on the class marine environment model. Students may also participate in a mock neighborhood board meeting where they share their points of view in oral presentations. From these essays, students will be able to design an MPA for the marine environments they created in Lesson 1.

Lesson Duration

Two 45-minute periods

Essential Question(s)

Why is it important to create Marine Protected Areas?

Key Concept

- Organisms in marine environments need specific conditions in order to survive. They are impacted not only by wind, waves, storms, and tsunamis, but also by human-caused phenomena, including pollution and destruction of habitat.
- Marine Protected Areas (MPA's) provide a way of protecting the marine environment from human-caused phenomena including pollution, over-fishing, and destruction of habitat.

Instructional Objectives

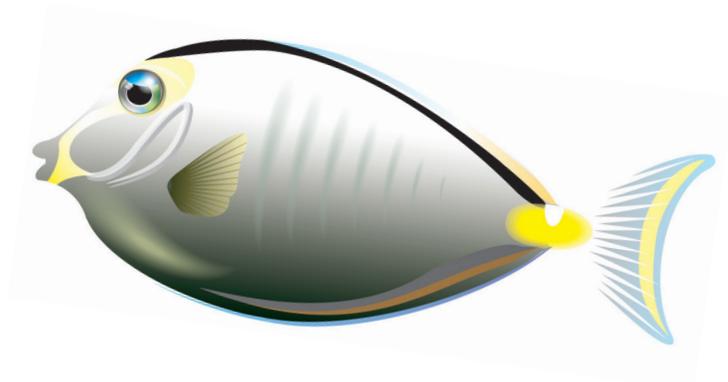
- I *can* illustrate and describe the conditions both positive and negative an organism faces as part of a marine protected area.
- I *can* write a point-of-view persuasive essay on life in a marine protected area with information cited from various sources.

Related HCPSIII Benchmark(s):

Science SC.4.3.2
Describe how an organism's behavior is determined by its environment.

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

Language Arts LA 4.4.7
Write a simple bibliography entry for a book and website.



Assessment Tools

Benchmark Rubric:

Topic		Interdependence	
Benchmark SC.4.3.2		Describe how an organism's behavior is determined by its environment	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Illustrate and explain in detail with examples how different organisms' behaviors are determined by their environment	Illustrate and explain with no examples how an organism's behavior is determined by its environment	Illustrate and give very little explanation of how an organism's behavior is influenced by its environment	Recognize that an organism's behavior is influenced by its environment through illustration only.

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

Topic		Citing Sources	
Benchmark LA.4.4.7		Write a simple bibliography entry for a book and website (e.g., author, title, publisher, copyright)	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Write a simple bibliography entry, with accuracy and completeness	Write a simple bibliography entry, with no significant errors	Write a simple bibliography entry, with one or two missing elements or several errors in style	Write a simple bibliography entry, with most elements missing or many errors in style

Assessment/Evidence Pieces

Materials Needed

Teacher	Class	Group	Student
<ul style="list-style-type: none"> Computers with Internet access 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Student worksheet: MPA Culminating Writing Piece (<i>each student will receive a different focus</i>)

Instructional Resources

Student Worksheet: *MPA Point of View Planning Sheet*

Assessment Tool: *Culminating Lesson Teacher Resource Checklist – Creating a Marine Protected Area*

Lesson Plan

Lesson Preparation

- Review the key concepts of each lesson in order to prepare for review with students, including:
 1. Healthy marine environments
 2. Natural impacts on marine environments
 3. Human impacts on marine environments
 4. Marine protected environments (MPA)
 5. Rules for marine protected areas and objections

I. Unit Assessment

- A. Review briefly with students the following information:
 1. Healthy marine environments
 2. Natural impacts on marine environments
 3. Human impacts on marine environments
 4. Marine protected environments (MPA)
 5. Rules for marine protected areas and objections
- B. Ask students to refer back to their drawings from the previous lessons. Use the class model as an example. Have them check that they have the following things on their drawings:
 1. Original drawing and caption of the organism they chose and the marine environment that it needs to survive
 2. Overlay or additional drawing showing the impacts humans have on the marine environment
 3. “Rules” that they would create to protect the marine environment
- C. Refocus students on the class model. Have them brainstorm how they would make the monk seal’s marine environment a Marine Protected Area. How would they make it into a marine protected area? What reason would they use? (Refer to worksheet from Lesson 2) What level of protection would they assign it? (Refer to reference worksheet and student research)
- D. Break up the students into groups and assign each group to represent a landowner, a turtle, a professional fisherman, a boater, a boat tour/day cruise operator, a recreational user, i.e. surfer, etc. Distribute each student the appropriate point of view report planning worksheet for their group. They will fill out the worksheet and use it to write supporting arguments for the organism’s survival.
- E. Have students write up and present a proposal for their Marine Protected Area. Students may use the research they gathered in the previous lesson to complete their writing pieces.
- F. Students need to include a bibliography in their writing piece. One method for citing a website is below.

Sample:

Author (if known), “Title of Page or Document.” Title of the Site. (if applicable)

Date of electronic publication, last update, or date of posting. Name of institution or publisher affiliated with Site (if known). Date of download. <URL/address of site>.

Example:

Brian, Marshall and Jeff Tyson. “How Cell Phones Work.” How Stuff Works. 2004. 20 Dec. 2004. <<http://electronics.howstuffworks.com/cell-phone.htm>>.

Sample and example retrieved from:

http://www.cwcboe.org/Washington/teachers/ckellenberger/bibliography_format.htm, (July 2009)

- G. As an assessment, have students update their marine environment. How would they make it into a marine protected area? What reason would they use? (Refer to worksheet from Lesson 2) What level of protection would they assign it? (Refer to reference worksheet and student research)

Extended Activities

- A. Have students present their point of view essays in a mock neighborhood board meeting. Each group can debate their point of view for the full board.

If this extended activity is done with students, it may also meet the following benchmark:

Topic		Discussion and Presentation	
Benchmark LA.4.6.2		Give short, informal presentations to inform or persuade	
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Give creative, short, highly effective informal presentations to inform or persuade	Give short, informal presentations to inform or persuade	Give short, informal presentations that are somewhat informative or persuasive	Give short, informal presentations that do not inform or persuade

- B. You may want to use the Champagne pond story called Corks Blow at Champagne Pond. “To hear residents tell it, the steady trickle of visitors to this *Kapoho* pool has turned into a tsunami, damaging fragile habitat and leaving a trail of human waste. And frustrated *Kapoho Beach* Lots residents a...” Date: Oct. 29, 2007; found in the Hawai‘i Tribune-Herald as an example of a place that should be deemed a Marine Protected Area. The library may be best, since the Hawai‘i Tribune-Herald charges a small fee for archive retrieval. Find more articles like this about needed MPA sites.
- C. A class project. Issue investigations: Pick a place and have them research it. Divide the class into teams and have each team select an organism endemic to Hawai‘i that is endangered. Have teams research the organism’s habitat and determine whether or not it should be an MPA and if so, at what level?

Additional Extension Activity

If this extension activity is performed, it can meet the following math benchmarks:

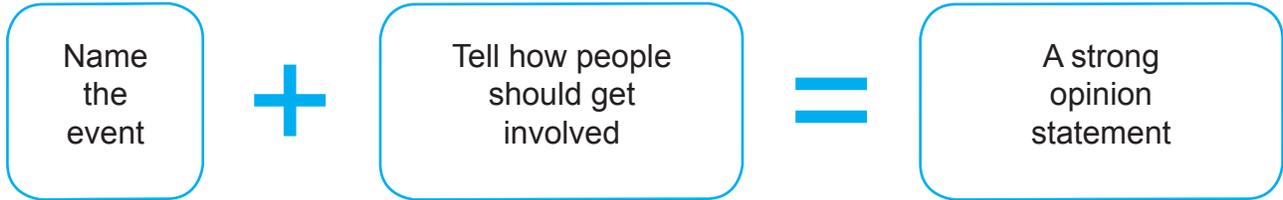
- 4.3.2 Represent a relationship between quantities in a variety of forms (e.g. manipulatives, tables, pictures, symbols.)
- 4.3.3 Describe the rate of change numerically and verbally based on data recorded in a table or graph.
- A. Have students focus on the commercial catch rate graph on pg. 7 of Marine Protected Areas of Hawai‘i publication. While the graph shows a definite downward trend in the catch rate, are these the fishes we normally eat? How can we find out?
- B. Have students conduct a survey to research the following questions:
- 1) What are your three most favorite fishes to eat? (Adults cook for the children. They will know what types of fish the children eat.)
 - 2) Approximately how many pounds of each fish do you eat per year? Ask a variety of adults, including visitors.
- C. Have students make a prediction about what they will find.
- D. Data analysis to include:
- 1) Identification of the most popular types of fish eaten and extrapolation of the # of pounds consumed by the populous each year.
 - 2) Alignment of the data collected with commercial catch rate data. At what point will the marine ecosystem no longer support the consumption rate of these fish?
 - 3) Make a conclusion: what should be done in terms of fisheries management?
- E. Students must display collected data in table or graphic form.



Name: _____ Date: _____

MPA Point of View Planning Sheet #1

Pretend you are a turtle living off the beach. Write up a newspaper article persuading readers to help with the survival efforts of a monk seal in your area using your point of view. Remember to have a strong opinion statement in your beginning paragraph, 3 topic / reason paragraphs, and a call to action in your ending paragraph. Fill out the pre-writes below to help you.



My Strong Opinion Statement: _____

Topic 1:

Topic 2:

Topic 3:

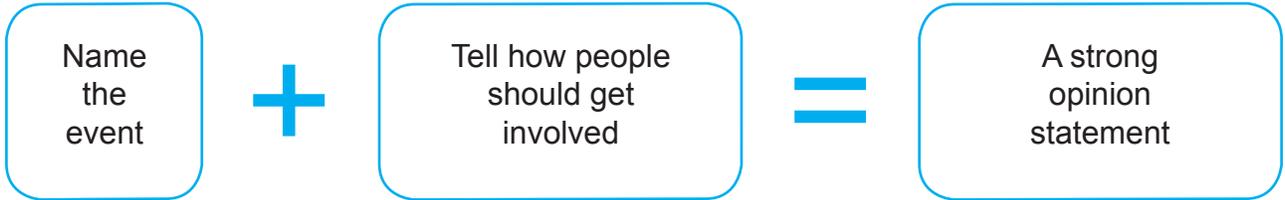
TOPIC SENTENCE STARTERS
 First of all, The first reason, To start with,
 In addition, Another reason, Also, Most importantly,
 The biggest reason, The best reason

My Call to Action Statement: _____

Name: _____ Date: _____

MPA Point of View Planning Sheet #2

Pretend you are a landowner of a beachfront property. Write up a newspaper article persuading readers to help with the survival efforts of a monk seal in your area using your point of view. Remember to have a strong opinion statement in your beginning paragraph, 3 topic / reason paragraphs, and a call to action in your ending paragraph. Fill out the pre-writes below to help you.



My Strong Opinion Statement: _____

Topic 1:

Topic 2:

Topic 3:

TOPIC SENTENCE STARTERS
 First of all, The first reason, To start with,
 In addition, Another reason, Also, Most importantly,
 The biggest reason, The best reason

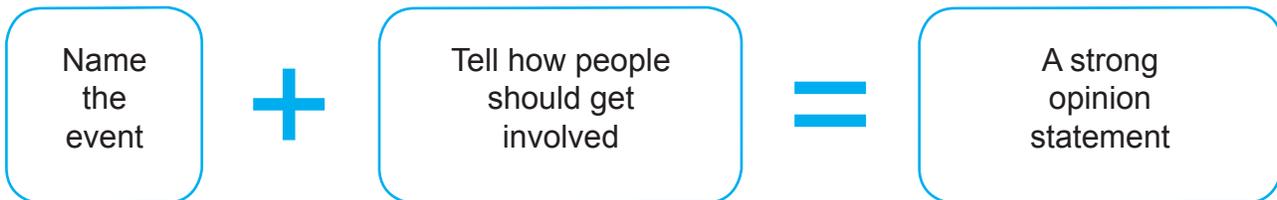


My Call to Action Statement: _____

Name: _____ Date: _____

MPA Point of View Planning Sheet #3

Pretend you are a professional fisherman fishing off the beach. Write up a newspaper article persuading readers to help with the survival efforts of a monk seal in your area using your point of view. Remember to have a strong opinion statement in your beginning paragraph, 3 topic / reason paragraphs, and a call to action in your ending paragraph. Fill out the pre-writes below to help you.



My Strong Opinion Statement: _____

Topic 1:

Topic 2:

Topic 3:



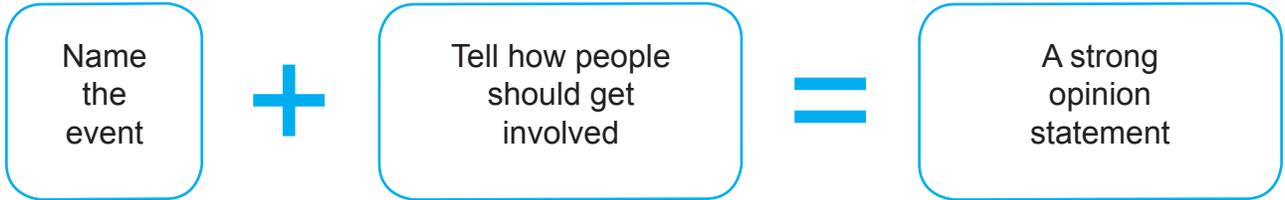
TOPIC SENTENCE STARTERS
 First of all, The first reason, To start with,
 In addition, Another reason, Also, Most importantly,
 The biggest reason, The best reason

My Call to Action Statement: _____

Name: _____ Date: _____

MPA Point of View Planning Sheet #4

Pretend you are a boater frequenting the beach. Write up a newspaper article persuading readers to help with the survival efforts of a monk seal in your area using your point of view. Remember to have a strong opinion statement in your beginning paragraph, 3 topic / reason paragraphs, and a call to action in your ending paragraph. Fill out the pre-writes below to help you.



My Strong Opinion Statement: _____

Topic 1:

Topic 2:

Topic 3:

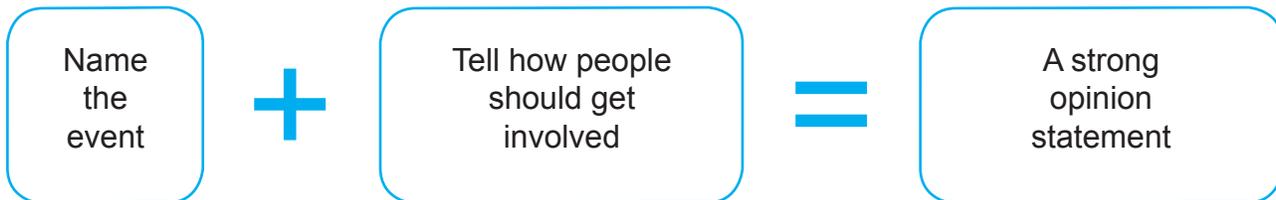
TOPIC SENTENCE STARTERS
 First of all, The first reason, To start with,
 In addition, Another reason, Also, Most importantly,
 The biggest reason, The best reason

My Call to Action Statement: _____

Name: _____ Date: _____

MPA Point of View Planning Sheet #5

Pretend you are a boat tour worker that takes visitors around the beach. Write up a newspaper article persuading readers to help with the survival efforts of a monk seal in your area using your point of view. Remember to have a strong opinion statement in your beginning paragraph, 3 topic / reason paragraphs, and a call to action in your ending paragraph. Fill out the pre-writes below to help you.



My Strong Opinion Statement: _____

Topic 1:

Topic 2:

Topic 3:

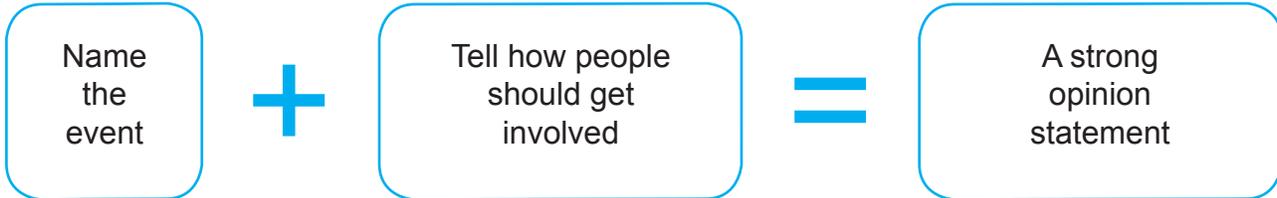
TOPIC SENTENCE STARTERS
 First of all, The first reason, To start with,
 In addition, Another reason, Also, Most importantly,
 The biggest reason, The best reason

My Call to Action Statement: _____

Name: _____ Date: _____

MPA Point of View Planning Sheet #6

Pretend you are a frequent surfer at the beach. Write up a newspaper article persuading readers to help with the survival efforts of a monk seal in your area using your point of view. Remember to have a strong opinion statement in your beginning paragraph, 3 topic / reason paragraphs, and a call to action in your ending paragraph. Fill out the pre-writes below to help you.



My Strong Opinion Statement: _____

Topic 1:

Topic 2:

Topic 3:



TOPIC SENTENCE STARTERS
 First of all, The first reason, To start with,
 In addition, Another reason, Also, Most importantly,
 The biggest reason, The best reason



My Call to Action Statement: _____

CULMINATING LESSON

Teacher Resource Checklist

Creating a Marine Protected Area

Name	<i>Range of writing</i>	<i>Can describe the impact of MPAs on various groups (writing piece)</i>	<i>Makes a connection between the organism and environment (writing piece)</i>
	<i>Reports that focus on a central question and incorporates summaries from research</i>		
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