HOW YOU CAN MAKE A DIFFERENCE!

4th-12th Grade Discussion Guide

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National Marine Sanctuary Foundation

NATIONAL MARINE SANCTUARIES

SCIENCE CATEGORIES
Social Studies/Anthropology, Biology, Conservation, Ecology, Environmental Science, Sustainability

TIMEFRAME
Lesson 60 minutes, projects will take longer

MATERIALS
Whiteboard for lists, internet to research organizations, For Web of Life Lesson: thin rope or string, plant and animal name tags (unique one for each student).

KEY WORDS
Habitat, Invasive Species, Stewardship, Endangered, Extinct, Sanctuary, Volunteer, Guardians

LEARNING OBJECTIVES

Students will be able to:

- Identify a few of the challenges an ocean or great lake coastal areas may have due to human influences.

- Explore the difference that stewardship, informed decisions, influence and volunteering can make.

- Determine how they can be active in their own community to save threatened communities of animals and plants.

ACTIVITY SUMMARY

In the Into the Outdoors video for Marine Conservation, How You Can Make a Difference, your students will witness other students making a difference by volunteering in their local community. Through discussion, planning and projects your students will have the opportunity to make a difference in their own community.

BACKGROUND INFORMATION

Our beaches are part of local watersheds, which are also a part of national marine sanctuary waters. Keeping the watershed healthy where you live also keeps the Great Lakes and Oceans healthy too because the waters are connected. In this video we see students participating in the Ocean Guardians School Program (a program from NOAA, the National Oceanic and Atmospheric Administration) at Monterey Bay National Marine Sanctuary in California. The Ocean Guardians, Groundswell, and the National Marine Sanctuary Foundation work together to get students involved in stabilizing and improving natural habitat for coastline animals.

In the featured student stewardship project, students remove Iceplant, an invasive species from South Africa. South Africa has a similar climate to coastal California, so the plant thrives there. However, it changes the habitat conditions of the area it inhabits, making it unsuitable for native plants to colonize due to competition. In turn this causes native animals, including snowy plovers and burrowing owls, to lose vital habitat. The students remove the invasive Iceplant and replace them with native lower dune and upper beach species. It has been observed that through their efforts, the endangered Snowy Plover and Burrowing Owl are recolonizing the beaches and increasing in number.
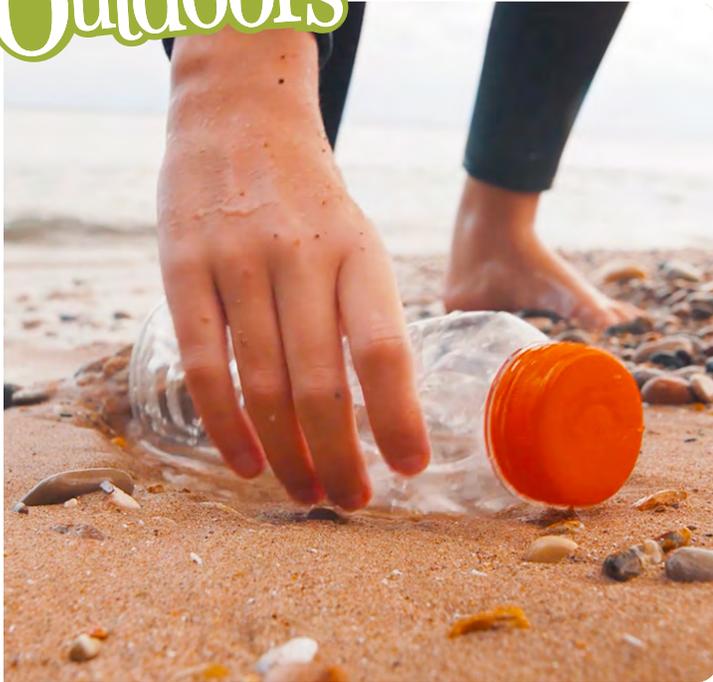
VOCABULARY

INVASIVE SPECIES – A species of plant or animal (either small or large) that successfully colonizes into an area other than where it is naturally found.

ENDANGERED SPECIES - A species of plant or animal that is in danger of extinction because of changes in its environment or ecosystem.

EXTINCTION - The state of non-existence of something that once existed in a certain habitat, region or place.

STEWARDSHIP - The action of taking care of resources.

SANCTUARY - A place where a person, plant or animal takes refuge from stress factors outside of the sanctuary.

VOLUNTEER - A person who gives his or her time toward a project without monetary compensation.

GUARDIAN - One who protects a living being or resource.

LEARNING PROCEDURE

INTRODUCTION:

The Ocean Guardians program allows parents and students to be active in conservation efforts in their local communities. We will look at the benefits of active stewardship both for the local natural community, and for the students and adults who take part.

ACTIVITY 1:

1. Student testimonies: Actively listen to the testimonies of students Gianna, Isabelle and Maya. Active listening means that you'll take notes, writing down comments of not only what they say, but also why they choose to do what they do, and how it makes them feel. Imagine yourself in their place by thinking about their perspectives, and how the experiences they talk about help form their perspectives. Listen closely and take notes on what they say. Be prepared to discuss their perspectives with the rest of the class.

   A. Gianna - loves to be an ocean guardian because she likes saving sea animals. Plastic on the beach is what she does not like to see.

   B. Isabelle - does not like to see trash and likes the beach they worked at because it did not have trash on it. She is working with her local county commissioner's office to ban plastic straws in her county to keep them from getting into the ocean. She is excited that she could be helping to make a law. (Plastic straws are single use items that are too light to be recycled and are one of the common items found during beach clean ups.)

   C. Maya- hopes the ocean can get cleaner, that through her classes' efforts that other people will realize how important it is, and that other people will become ocean guardians.

Imagine that you would have the opportunity to do a beach clean up project, and discuss these questions as a class:

  i. If you saw trash on the beach, how would it make you feel?

  ii. Why would it make you feel better to see a clean beach?

  iii. Do you think you'd enjoy lending a hand by removing trash from the beach to leave it cleaner?

  iv. How would making that difference make you feel about yourself, and your connection to the sea life?

  v. Would you be willing to go the next step and find other ways to help restore the beach habitat by removing invasive species and planting native ones? What would be the benefit to the natural beach community? How would you feel after doing the project?

2. In the video, you hear about an invasive species called Iceplant. Work as a class to write a list of what you heard that Iceplant did to the beaches it invaded.

  A. First, define "invasive species".

   i. Look up the definition.

   ii. Restate the definition in your own words.

   iii. Based on your definition, is Iceplant supposed to be on the Monterey Bay shoreline naturally?

   iv. If it is not, could it have the capacity to damage the local ecosystem? Why do you think so, or why not?

   v. Review the concept of an ecosystem in order to have the understanding needed to answer this question, if you need to. (There is a supplement link attached to the end of this lesson.)

  B. Now list the effects of Iceplant, as relayed in the video by the teacher, facilitators and students at the sanctuary.

   i. Habitat disappeared

   ii. Snowy plover, bush bunnies, burrowing owls disappeared

   iii. Beach suffered from great erosion and floods, reducing the beach size

   iv. Dune ecosystem degraded

   v. Nutrients and water that are needed by other plants are removed from the sand

   vi. Keeps native plants from growing and providing habitat

ACTIVITY 2: GET INVOLVED IN STEWARDSHIP IN YOUR COMMUNITY!

1. Discussion and research.

A. Discuss as a class the natural communities you have near where you live. Do you have a school forest? City, county or state park in your community? Is there a lake or river nearby? Make a list of places nearby that might need your protection or could benefit from your help in similar ways that the students at the Monterey Bay Marine Sanctuary showed by example.

B. Look up groups who partner with volunteers to improve and protect conditions for native species in your community. Some groups to look for:

    i. Local river/lake/wetland protection groups

    ii. Local forest/grassland protection groups

    iii. Local hunting groups

    iv. Regional and national non-profit groups like The Nature Conservancy, The Wild Ones, The Sierra Club, World Wildlife Fund, Pheasants Forever, Ducks Unlimited.

    v. Government funded agencies like the Department of Natural Resources (DNR), The National Fish and Wildlife Service (NFWS) or NOAA (National Oceanic and Atmospheric Administration.)

C. After keyword searching these terms with your town and county name and compiling your list, discuss as a class which habitats and programs you might be able to assist, either as a class or with your family. If possible, make a plan to take a field trip to do some stewardship work, and document your project.

2. What if you don't find or can't go volunteer with an organization near you? You could still do a project on your own school yard, in your yard at home, or in your neighborhood.

A. Many urban areas still have wildlife living in it. Wildlife cameras capture images of deer, coyotes, foxes and other wild animals that live deep inside cities. There are also insects like butterflies that appreciate habitat in urban areas.

B. You could get permission to plant beds of native perennial flowers, or place planters around the school that have colorful annual flowers that attract beneficial butterflies and gentle honeybees. Look up what flowers give them the most food, and also thrive in your climate. Write a proposal to your principal to gain permission to plant your flowers. Partner with the Parent Teacher Association (PTA) to raise money for the flowers. Find a local greenhouse that will do a fundraising plant sale that will get your class the funds to purchase plants for your school.

C. You could do a project at home with your parents to plant a native insect garden. Look up colorful plants that attract butterflies and other native insects. Make a plan to plant them with your family when the season is right. Take a year to observe and journal the progress of your garden, what the plants are doing and how they are changing each week, and the varieties of insects you observe there. Make sure to plant your garden in a place that meets its sunlight, soil type and space needs, and choose plants that are native to your region and work within your climate zone. Research their water and care needs, as well as diseases they might get, and check on them at least once or twice a week so you can see if they are getting enough water, are sick, or need other care.

D. You could do a habitat, planting or housing project for wildlife in your district. In urban areas, we can plant park gardens, or put up bat houses and wood duck houses, squirrel nesting boxes or bird feeding stations for animals and people to enjoy. Find out what your local district will allow by contacting your district supervisor or parks department, and in what format they'd like to receive your proposal. After devising a plan, along with a timeline, activity, budget and funding source, present them your proposition for the project you'd like to do. Be prepared to appear in a meeting like Isabelle did to propose your project, as the district supervisors may like to ask questions before approval!

CONCLUSION:

YOU can make a difference in the lives and future of wildlife in your region. Remember that each local habitat is connected to a bigger region. What you do locally can be a big contributor to the overall health of the region and can have national and international impact! Even a monarch butterfly visiting your garden may need to fly to Central America for the winter - extending your influence to the global wildlife community! The wetland habitat you improve connects to a stream, then a river, then goes to the ocean. Every small community makes an impact on a larger one. The birds take food to their young and then fly free to other states or countries. There are no insignificant impacts where nature stewardship is concerned!

EXTENDING THE LESSON

- Form a school based stewardship group or club that students can join, influence, educate one another and plan activities from year to year.

- See these lessons for more information on ecosystems:

  - Food Web Game and discussion

  - Next Gen Science Ecosystem lessons

- Fund raise for a regional, national or international group that supports stewardship work. Invite someone from that group to give a presentation at your school, and accept your school's donation.

- You may need to propose projects that require approvals. Here is a guide to project management.

RELATED LINKS (NATIONAL ORGANIZATIONS IN THIS LESSON)

- NOAA
- Groundswell
- National Marine Sanctuary Foundation
- The Nature Conservancy
- The Wild Ones
- Sierra Club
- World Wildlife Fund
- Pheasants Forever
- Ducks Unlimited
- U.S. Fish and Wildlife Service
- National Park Service

The following National Common Core Standards can be met teaching;

HOW YOU CAN MAKE A DIFFERENCE!:

GRADE 4:

CCSS.ELA-LITERACY.RI.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
CCSS.ELA-LITERACY.RI.4.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
CCSS.ELA-LITERACY.RI.4.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
CCSS.ELA-LITERACY.RI.4.7	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
CCSS.ELA-LITERACY.RI.4.8	Explain how an author uses reasons and evidence to support particular points in a text.
CCSS.ELA-LITERACY.RF.4.3	Know and apply grade-level phonics and word analysis skills in decoding words.
CCSS.ELA-LITERACY.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
CCSS.ELA-LITERACY.W.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.
CCSS.ELA-LITERACY.W.4.8	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
CCSS.ELA-LITERACY.W.4.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCSS.ELA-LITERACY.SL.4.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
CCSS.ELA-LITERACY.SL.4.2	Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
CCSS.ELA-LITERACY.SL.4.3	Identify the reasons and evidence a speaker provides to support particular points.
CCSS.ELA-LITERACY.SL.4.4	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
CCSS.ELA-LITERACY.SL.4.6	Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation.
CCSS.ELA-LITERACY.L.4.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.4.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
CCSS.ELA-LITERACY.L.4.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.4.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

GRADE 5:

CCSS.ELA-LITERACY.RI.5.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
CCSS.ELA-LITERACY.RI.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
CCSS.ELA-LITERACY.RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
CCSS.ELA-LITERACY.RI.5.7	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
CCSS.ELA-LITERACY.RI.5.8	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
CCSS.ELA-LITERACY.RF.5.3	Know and apply grade-level phonics and word analysis skills in decoding words.
CCSS.ELA-LITERACY.RF.5.4	Read with sufficient accuracy and fluency to support comprehension.
CCSS.ELA-LITERACY.W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.
CCSS.ELA-LITERACY.W.5.8	Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.
CCSS.ELA-LITERACY.W.5.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCSS.ELA-LITERACY.SL.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
CCSS.ELA-LITERACY.SL.5.2	Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
CCSS.ELA-LITERACY.SL.5.3	Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.
CCSS.ELA-LITERACY.SL.5.4	Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
CCSS.ELA-LITERACY.SL.5.6	Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.
CCSS.ELA-LITERACY.L.5.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.5.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.

CCSS.ELA-LITERACY.L.5.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.
CCSS.ELA-LITERACY.L.5.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

GRADE 6:

CCSS.ELA-LITERACY.RI.6.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
CCSS.ELA-LITERACY.RI.6.3	Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).
CCSS.ELA-LITERACY.RI.6.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.
CCSS.ELA-LITERACY.RI.6.7	Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.
CCSS.ELA-LITERACY.RI.6.8	Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
CCSS.ELA-LITERACY.W.6.7	Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.
CCSS.ELA-LITERACY.W.6.8	Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.
CCSS.ELA-LITERACY.SL.6.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
CCSS.ELA-LITERACY.SL.6.2	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
CCSS.ELA-LITERACY.SL.6.3	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
CCSS.ELA-LITERACY.SL.6.4	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
CCSS.ELA-LITERACY.SL.6.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.
CCSS.ELA-LITERACY.L.6.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.6.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
CCSS.ELA-LITERACY.L.6.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.6.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

GRADE 7:

CCSS.ELA-LITERACY.RI.7.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
CCSS.ELA-LITERACY.RI.7.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.
CCSS.ELA-LITERACY.RI.7.8	Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.
CCSS.ELA-LITERACY.W.7.7	Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.
CCSS.ELA-LITERACY.W.7.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
CCSS.ELA-LITERACY.SL.7.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
CCSS.ELA-LITERACY.SL.7.2	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
CCSS.ELA-LITERACY.SL.7.3	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
CCSS.ELA-LITERACY.SL.7.4	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
CCSS.ELA-LITERACY.SL.7.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.
CCSS.ELA-LITERACY.L.7.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.7.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
CCSS.ELA-LITERACY.L.7.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.
CCSS.ELA-LITERACY.L.7.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

GRADE 8:

CCSS.ELA-LITERACY.RI.8.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-LITERACY.RI.8.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

CCSS.ELA-LITERACY.RI.8.8 Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.

CCSS.ELA-LITERACY.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

CCSS.ELA-LITERACY.W.8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.8.2 Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

CCSS.ELA-LITERACY.SL.8.3 Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.

CCSS.ELA-LITERACY.SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

CCSS.ELA-LITERACY.SL.8.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

CCSS.ELA-LITERACY.L.8.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.8.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

CCSS.ELA-LITERACY.L.8.4 Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.8.5 Demonstrate understanding of figurative language, word relationships, and

CCSS.ELA-LITERACY.L.8.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

GRADES 9-10:

CCSS.ELA-LITERACY.RI.9-10.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-LITERACY.RI.9-10.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
CCSS.ELA-LITERACY.RI.9-10.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.
CCSS.ELA-LITERACY.W.9-10.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
CCSS.ELA-LITERACY.W.9-10.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
CCSS.ELA-LITERACY.SL.9-10.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
CCSS.ELA-LITERACY.SL.9-10.2	Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
CCSS.ELA-LITERACY.SL.9-10.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.
CCSS.ELA-LITERACY.SL.9-10.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
CCSS.ELA-LITERACY.SL.9-10.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.
CCSS.ELA-LITERACY.L.9-10.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.9-10.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
CCSS.ELA-LITERACY.L.9-10.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9-10 reading and content, choosing flexibly from a range of strategies.
CCSS.ELA-LITERACY.L.9-10.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

GRADES 11-12:

CCSS.ELA-LITERACY.RI.11-12.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
CCSS.ELA-LITERACY.RI.11-12.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

CCSS.ELA-LITERACY.W.11-12.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
CCSS.ELA-LITERACY.W.11-12.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
CCSS.ELA-LITERACY.SL.11-12.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11-12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
CCSS.ELA-LITERACY.SL.11-12.2	Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
CCSS.ELA-LITERACY.SL.11-12.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.
CCSS.ELA-LITERACY.SL.11-12.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.
CCSS.ELA-LITERACY.SL.11-12.6	Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.
CCSS.ELA-LITERACY.L.11-12.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.11-12.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
CCSS.ELA-LITERACY.L.11-12.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11-12 reading and content, choosing flexibly from a range of strategies.
CCSS.ELA-LITERACY.L.11-12.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

NEXT GENERATION SCIENCE STANDARDS:

GRADE 4:

4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

GRADE 5:

5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

GRADES 6-8:

MS-LS2-1.   Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS2-2.   Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS2-4.   Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

GRADES 9-12:

HS-LS2-6.   Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

HS-LS2-7.   Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

HS-LS4-5.   Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.