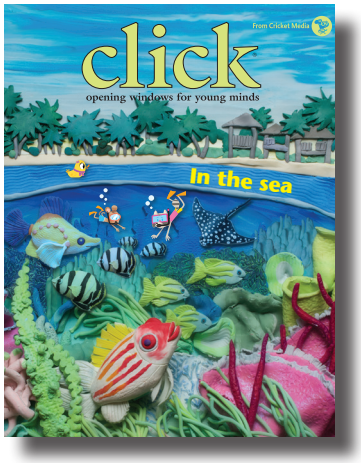
Teacher's Guide

MAGAZINE ARTICLES

Contents

Teacher's Guide for *Click: In the Sea*



OVERVIEW

In this magazine, readers will learn about a variety of creatures that live under the ocean. **Click: In the Sea** *includes information about a trip to an aquarium, scientists who live and work in the ocean, a well-traveled loggerhead turtle, and the many ways ocean creatures protect themselves.*

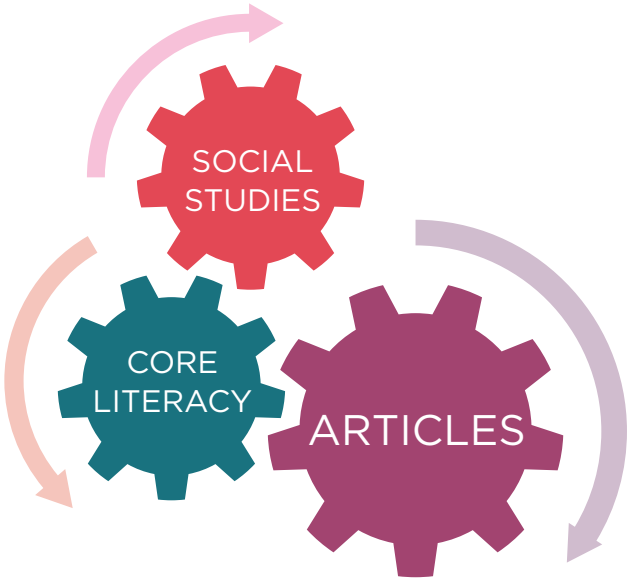
ESSENTIAL QUESTION:

What special features help different creatures live under the ocean?

We invite you to use this magazine as a flexible teaching tool, ideal for providing interdisciplinary instruction of social studies and science content as well as core literacy concepts. Find practical advice for teaching individual articles or use a mini-unit that helps your students make cross-text connections as they integrate ideas and information.

READ INDIVIDUAL ARTICLES PAGES 4 – 9

Each article in this magazine is well-suited for teaching literacy concepts and content area knowledge. For each individual article in this guide, you'll find the following:



TEACH A MINI-UNIT PAGES 11 – 13

Magazine articles can easily be grouped to make cross-text connections and comparisons. Our Mini-Unit allows students to read and discuss multiple articles and integrate ideas and information (CCSS.Reading.9). Discussing multiple articles (CCSS.Reading.9) prepares students to write texts to share and publish in a variety of ways (CCSS.Writing.2).

Skills and Standards Overview

Essential Question: What special features help different creatures live under the ocean?

MAGAZINE ARTICLES	CORE CONTENT CONCEPT	LITERACY SKILLS	CORRESPONDING CCSS ANCHOR STANDARDS
Fishy Tale Expository Nonfiction	Different animals use their body parts in different ways to take in food, water, and air.	• Close Reading • Analyze Text Structure • Interpret Visual Information • Present a Script	*Reading 1, 3, 5 & 7* *Speaking & Listening 1 & 6*
Underwater Garden Photo Essay	Animals depend on their surroundings to get what they need, including food and shelter.	• Close Reading • Interpret Visual Information • Analyze Relationships • Create a Class Fact Book	*Reading 1, 2, 3 & 7* *Writing 2*
Underwater Explorer, Sylvia Earle Expository Nonfiction	People's choices have an impact on their environment.	• Close Reading • Analyze Text Structure • Interpret Visual Information • Create a Persuasive Poster	*Reading 1, 3, 5 & 7* *Writing 1*
Aquanauts Infographic	People's demands for new and improved technology change over time.	• Close Reading • Analyze Relationships • Interpret Visual Information • Create an Aquanaut Questionnaire	*Reading 1, 2, 3 & 7* *Writing 2*
I'm Amazing Photo Essay	Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.	• Close Reading • Identify Author's Purpose • Interpret Visual Information • Collaborate	*Reading 1, 2, 3, 6 & 7* *Speaking & Listening 1*
One Tiny Turtle Narrative Nonfiction	Animals have predictable characteristics at different stages of development.	• Close Reading • Analyze Word Choice • Analyze Sensory Details • Write a Story	*Reading 1, 2, 3 & 4* *Writing 3*

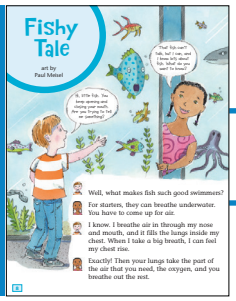
Comparing Texts: *Reading 9*

Mini-Unit: *Reading 1, 2 & 3; Writing 2*

ARTICLE: Fishy Tale

Magazine pages 8 - 10, Expository Nonfiction

Lexile Score: 610



A young aquarium visitor meets a friendly girl who knows a lot about fish and answers all his questions.

ESSENTIAL QUESTION

What special features help different creatures live under the ocean?

CORE CONTENT CONCEPT

Science Different animals use their body parts in different ways to take in food, water, and air.

CROSS-CURRICULAR EXTENSION

Art Use a shoe box to create an aquarium diorama. First, cover the inside of the box with blue paint or paper. Then use drawing paper to make colorful pictures of sea animals. Cut them out and glue them in the box.

KEY VOCABULARY

oxygen (p. 8) a chemical that is found in the air and that is necessary for life

gills (p. 9) the body parts that a fish uses for breathing

slits (p. 9) long, narrow cuts or openings in something

flap (p. 9) a flat piece of material that is attached to something on one side

PREPARE TO READ

Invite students to share their experiences visiting aquariums. Encourage them to explain who they went with and what they saw. Then ask students to name some fish and animals that live in the sea. Explain that the next article tells about a boy who visits an aquarium and learns about sea creatures.

CLOSE READING AND TEXT ANALYSIS

Key Ideas

- What is the difference between how fish breathe and how humans breathe? Support your answer with details from the article. *CCSS Reading 1*
- What kind of place are the boy and girl in? Use information from the pictures to support your answer. *CCSS Reading 3*
- Name one sea creature that is a fish and one that is not a fish. Use details from the text to explain the difference between them. *CCSS Reading 3*

Craft and Structure

- **Analyze Text Structure** Who is asking the questions in this article—the girl or the boy? Who is answering the questions? How can you tell? *CCSS Reading 5*
- **Interpret Visual Information** Look at the photographs on page 9. Which details in the text does each photo help you understand? Work with a partner to find the details. Then take turns reading them aloud. *CCSS Reading 7*

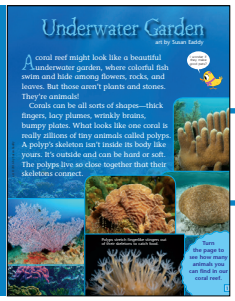
SPEAKING AND LISTENING

Present a Script Work with a partner to act out this article. First, decide who will be the girl and who will be the boy. Then practice reading your parts. Use the little pictures of the boy and girl to help you know which parts are yours. Try to make the words sound like a real conversation. When you are ready, perform the article for the class.

ARTICLE: Underwater Garden

Magazine pages 11 - 13, Photo Essay

Lexile Score: 610



A coral reef is full of color, movement, and mystery—some objects that look like plants and stones are actually made of tiny animals.

ESSENTIAL QUESTION

What special features help different creatures live under the ocean?

CORE CONTENT CONCEPT

Science Animals depend on their surroundings to get what they need, including food and shelter.

CROSS-CURRICULAR EXTENSION

Geography Use the library or a computer to learn where coral reefs are found. Then find these places on a world map or a globe.

KEY VOCABULARY

reef (p. 11) a long line of rocks or coral or a high area of sand near the surface of the water in the ocean

polyp (p. 11) a small sea animal (such as a coral) that has a body shaped like a tube

PREPARE TO READ

Show students photographs of coral reefs, and invite them to describe what they see. Explain that a coral reef is a habitat, or a place where many different kinds of plants and animals live. Invite students to share anything they know about coral reefs. Then explain that they will learn about reefs in this article.

CLOSE READING AND TEXT ANALYSIS

Key Ideas

- What is this article mainly about? How can you tell? Find details to support your answer. *CCSS Reading 2*
- Which coral looks like thick fingers? Which look like wrinkly brains? Are these good descriptions? Use picture details to support your answer. *CCSS Reading 1*
- What are some key details about polyps? Find information in the text to list four key details. *CCSS Reading 1*

Craft and Structure

- **Interpret Visual Information** What do you notice about the coral reef on pages 12-13? What makes it interesting to look at? Work with a partner to list and describe the things you notice. *CCSS Reading 7*
- **Analyze Relationships** On page 13, find the creatures that look the same in some way. They might be spotted, look like noodles, or have pointy parts. Work with a partner to sort the creatures into groups. *CCSS Reading 3*

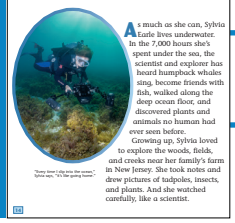
WRITING

Create a Class Fact Book Use the internet or a library book to find 1-2 interesting facts about coral reefs. Write this information on a piece of paper and draw pictures to go with it. Create a cover with a title such as "Our Class Book of Coral Reef Facts." Ask your teacher to staple the cover and pages into a book. Keep your book on display in the classroom.

ARTICLE: Underwater Explorer, Sylvia Earle

Magazine pages 14 - 18, Expository Nonfiction

Lexile Score: 1080


Underwater Explorer

Sylvia Earle

by Rachel Young

As much as she can, Sylvia Earle lives underwater. In the 7,000 hours she's spent under the sea, the scientist and explorer has heard humpback whales sing, become friends with fish, walked along the deep ocean floor, and discovered plants and animals no human had ever seen before.

Growing up, Sylvia loved to explore the woods, fields, and creeks near her family's farm in New Jersey. She took notes and drew pictures of tadpoles, insects, and plants. And she watched carefully, like a scientist.

Oceanographer Sylvia Earle has spent her life exploring the world's oceans, which feel like home to her. She has worked hard to protect and preserve them and was named a "Hero for the Planet" by *Time* magazine.

ESSENTIAL QUESTION

What special features help different creatures live under the ocean?

CORE CONTENT CONCEPT

Science People's choices have an impact on their environment.

CROSS-CURRICULAR EXTENSION

Language Arts Sylvia Earle is also an author. Look for her books for kids and read them as a class.
Dive: My Adventures in the Deep Frontiers
Hello Fish! Visiting the Coral Reef

KEY VOCABULARY

tadpoles (p. 14) small creatures that become adult frogs or toads

habitat (p. 15) the place or type of place where a plant or animal naturally or normally lives or grows

glinting (p. 18) shining in small bright flashes

PREPARE TO READ

Explain that as a child, Sylvia Earle collected frogs, fish, and tadpoles. She spent many hours exploring the woods and pond near her home and drew pictures and wrote about the things she saw. Invite students to share their experiences with wildlife and if they would like to become scientists.

CLOSE READING AND TEXT ANALYSIS

Key Ideas

- How has Sylvia helped other people learn about the ocean? Find information in the text to support your answer. *CCSS Reading 1*
- What do you learn about Sylvia from reading about her childhood? Use information from the text to support your answer. *CCSS Reading 3*
- The author calls Sylvia "brave and curious." Why is this a good description of her? Use details from the article to support your answer. *CCSS Reading 3*

Craft and Structure

- **Analyze Text Structure** A biography tells about someone else's life. Which details in this article show that Sylvia loves being under the ocean? Work with a partner to list them. *CCSS Reading 5*
- **Interpret Visual Information** Use information in the photographs and the captions to describe the Tektite II. What is it for? What do people do in it? Write sentences to explain. *CCSS Reading 7*

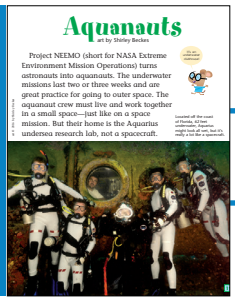
SPEAKING AND LISTENING

Create a Persuasive Poster Sylvia Earle teaches people how to take care of the oceans. Research ocean pollution. Then create a poster that tells about protecting beaches and oceans from pollution. Use a slogan, such as "Think Blue and Go Green," "Save our Seas," or "Don't Trash the Beach." Draw one big picture or a few smaller ones to illustrate your poster. Present your posters to other classes.

ARTICLE: Aquanauts

Magazine pages 19 - 22, Infographic

Lexile Score: 920


Aquanauts

art by Shirley Beckes

Project NEEMO (short for NASA Extreme Environment Mission Operations) turns astronauts into aquanauts. The underwater missions last two or three weeks and are great practice for going to outer space. The aquanaut crew must live and work together in a small space—just like on a space mission. But their home is the Aquarius undersea research lab, not a spacecraft.

This article explains how astronauts train for space missions by living underwater as aquanauts.

ESSENTIAL QUESTION

What special features help different creatures live under the ocean?

CORE CONTENT CONCEPT

Science People's demands for new and improved technology change over time.

CROSS-CURRICULAR EXTENSION

Art Imagine you could live under the ocean in an underwater house. Use your imagination to draw a picture of your underwater dream home. Show where you sleep and eat. Make your home a fun and fantastic place.

KEY VOCABULARY

research lab (p. 19) a laboratory where scientists work

decompressing (p. 20) having physical pressure released or reduced

gravity (p. 20) the natural force that tends to cause physical things to move toward each other

buoy (p. 21) an object that floats on water in a lake, bay, river, etc.

PREPARE TO READ

Discuss what an astronaut does and display a photo of an astronaut floating outside a space station. (NASA.gov has many photos.) Then display the photo on magazine page 19. Ask students to notice how the situations shown are similar. Explain that the people in the water are called aquanauts.

CLOSE READING AND TEXT ANALYSIS

Key Ideas

- Why do people spend time in Aquarius? What do they want to learn? Use information from the article to support your answer. *CCSS Reading 2*
- What would be exciting about living in Aquarius? What would be difficult? Support your answer with information from the text. *CCSS Reading 1*
- What can you learn about Aquarius from the experiment on page 22? Use details from the text to support your answer. *CCSS Reading 1*

Craft and Structure

- **Analyze Relationships** How are space missions and underwater missions similar? How are they different? Work with a partner to show this information in a Venn diagram (p. 15). *CCSS Reading 3*
- **Interpret Visual Information** Draw a picture to show the Aquarius, the life support buoy that floats above it, and the baseplate and legs underneath. Label the parts and explain what they do. *CCSS Reading 7*

WRITING

Create an Aquanaut Questionnaire What would you like to learn about being an aquanaut and living underwater? Work in a group to come up with a list of questions. Then see if you can find the answers by conducting research on the internet. Share your questions and any answers you find with the class.

ARTICLE: I'm Amazing

Magazine pages 23 - 26, Photo Essay

Lexile Score: 1220

Singing, racing, changing shape—these ocean animals are truly talented. Will you be able to decide which animal is the most amazing one?

ESSENTIAL QUESTION

What special features help different creatures live under the ocean?

CORE CONTENT CONCEPT

Science Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.

CROSS-CURRICULAR EXTENSION

Science Ask a parent or teacher to help you find recordings of whale songs online. See if you can hear the difference between a blue whale and a humpback whale.

KEY VOCABULARY

complex (p. 23) having parts that go together in complicated ways

imitate (p. 24) to make or do something the same way as something else

clocked (p. 24) measured the speed of something

toxins (p. 25) poisonous substances, especially those that are produced by a living thing

PREPARE TO READ

Tell students that ocean animals have special abilities that help them survive. Preview the article photos with students and ask students to name any animals they know. Then choose 2-3 animals and discuss their physical appearance. Ask students to predict what amazing ability each one has.

CLOSE READING AND TEXT ANALYSIS

Key Ideas

- List the creatures that are amazing because of the way they can protect themselves. Support your answer with details from the text. *CCSS Reading 2*
- Which creatures could harm humans? Use details from the text to support your answers. *CCSS Reading 1*
- What physical trait do the creatures on page 25 have in common? Use information from the pictures to find and support your answer. *CCSS Reading 3*

Craft and Structure

- **Identify Author's Purpose** What do you learn about from this article? What makes the article both fun and entertaining? Work with a partner to answer these questions. *CCSS Reading 6*
- **Interpret Visual Information** Pick two photos from pages 24-25 of the article. Then explain which details from the text are shown in each photo. *CCSS Reading 7*

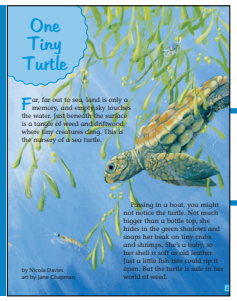
SPEAKING AND LISTENING

Collaborate Work in small groups to choose the most amazing animal in the article. First, choose the most amazing animal on each page. Then choose the most amazing animal overall from this smaller group. Compare your results with other groups.

ARTICLE: One Tiny Turtle

Magazine pages 27 - 33, Narrative Nonfiction

Lexile Score: 850



Loggerhead turtles are world travelers, covering thousands of miles in a lifetime. Learn about the life cycle of these adventurous sea turtles.

ESSENTIAL QUESTION

What special features help different creatures live under the ocean?

CORE CONTENT CONCEPT

Science Animals have predictable characteristics at different stages of development.

CROSS-CURRICULAR EXTENSION

Science The loggerhead turtle is one of the seven types of sea turtles. Use the library or the internet to learn about the other six turtles. List the names of the turtles and draw a picture of each.

KEY VOCABULARY

nursery (p. 27) a room where children sleep, play, and are sometimes taught (old fashioned)

shoals (p. 29) an area where the water in a sea, lake, or river is not deep

skitter (p. 33) to move quickly and lightly along a surface

PREPARE TO READ

Write the term "sea turtle" on the board. Ask students if they have ever seen a sea turtle and if they can describe what they look like. Encourage students to share what they know about sea turtles. Then explain that the next article tells about the life of a loggerhead sea turtle—from hatchling to adult.

CLOSE READING AND TEXT ANALYSIS

Key Ideas

- Why is it that people do not notice baby Loggerhead? Use details from the article to support your answer. *CCSS Reading 1*
- What is important about Loggerhead's memory? Use information from the text to support your answer. *CCSS Reading 2*
- What does Loggerhead do after she leaves her nursery? Support your answer with information from the text. *CCSS Reading 3*

Craft and Structure

- **Analyze Word Choice** The author compares Loggerhead's size to a bottle top, a dinner plate, and a barrel. Use the Loggerhead chart (p. 16) to record information about the turtle at each stage. *CCSS Reading 4*
- **Analyze Sensory Details** On page 31, the writer says Loggerhead's eggs look like "a hundred squidgy Ping-Pong balls." What do you learn from this description? Work with a partner to answer. *CCSS Reading 4*

WRITING

Write a Story Write a story as if you were Loggerhead. Use the words *I* and *me* to tell about Loggerhead's adventures growing up and wandering the ocean. Include details about her feelings and thoughts. Use information from the article to help you write. When you have revised and proofread your story, share it with the class.

CROSS-TEXT CONNECTIONS

SYNTHESIZE: Guide students to compare articles they read. Help students find the connections between pieces of information in multiple articles. Use prompts, such as the following examples, to have students work together to **Integrate Ideas and Information** *(CCSS.Reading.9)*.

- What are some ways that kids can learn about fish, animals, and other wildlife? Look through "Fishy Tale" and "Underwater Explorer, Sylvia Earle." Then make a list of the different things kids can do and places they can go to learn about nature.
- Make a list of your favorite sea creatures from the different articles in the magazine. Write a fact about each fish or animal on your list. Then share your favorites with a classmate.
- Make a two-column chart with the headings "Breathes Underwater" and "Comes Up for Air." Look through "Fishy Tale," "Underwater Garden," "I'm Amazing," and "One Tiny Turtle" to fill in your chart with the names of different sea creatures. Which column do humans belong in?
- Compare the underwater research labs in "Aquanauts" and "Underwater Explorer, Sylvia Earle." How are the Aquarius and Tektite II similar and different? Think about why the scientists go to these labs and how they eat, sleep, and live there. Use information from the text and pictures to help you compare.
- Create a three-column chart with the headings "Small," "Medium," and "Large." Look through "Fishy Tale," "Underwater Garden," "I'm Amazing," and "One Tiny Turtle" to find examples of small, medium and large sea creatures. Try to add at least three creatures to each column of your chart. Then share your chart in a small group.

EXPLORATORY LEARNING - FLEXIBLE MINI-UNIT DESIGN

ENGAGE | **READ FOR A PURPOSE** | **APPLY**

This mini-unit provides students with an opportunity to apply what they learned about sea creatures by having them create an annotated ocean mural. Begin with the Engage activity and then move on to the other mini-unit sections in the sequence that works best for your instructional goals.

ENGAGE: Engage students in the topic of life under the ocean by asking them to consider the Essential Question: What special features help different creatures live under the ocean? Next, display a chart like the one below. Help students review what they learned from the magazine articles by adding ideas and details to the chart.

	Sea Creatures	Humans Under the Ocean
How they breathe	gills, blow holes	lungs, special suits
What they eat		frozen food, human food
Places they live	coral reef, aquarium	Tektite II
What they do under the ocean		learn about the ocean, train for a space mission
Special features or equipment	poison, changing color and shape	
How do they affect the ocean?		some people hurt the ocean by polluting

READ FOR A PURPOSE

INTRODUCE THE ACTIVITY: Ocean Mural Explain to students that they will be creating an ocean mural filled with sea creatures from the magazine. Continue by telling students they will

- use their science skills to think about the special features the animals have.
- use their art skills to draw accurate pictures of the creatures.
- share interesting facts about their creatures.

RETURN TO THE TEXT: Explain to students that before they can create the mural, they must gather information about the creatures that live in the sea. Tell students that they will concentrate on fish and animals, not humans, for this activity. Display a chart like the one below. Work with students to go through the articles listed in the chart and identify the different creatures.

Next, have students choose the animals they will draw and describe for the mural. Have each student choose something different. Jot down student names next to the ocean creatures. Keep this chart handy in case you need to remind students which creatures they are researching.

"Fishy Tale"	"Underwater Garden"	"I'm Amazing"	"One Tiny Turtle"
Shark Dolphin Octopus Seahorse Starfish Seals	Coral Spotted moray eels Banded butterfly fish Queen parrot fish Spotted eagle ray Squirrelfish Sea anemone Tube sponge Vase sponge Sea star Rock-boring sea urchin Spiny lobster Longsnout seahorse Pillar coral Sea fan coral	Humpback whale Blue whale Mimic octopus Sailfish Angler fish Pufferfish Box jellyfish Leatherback turtle Tardigrades	Loggerhead turtle

APPLY: OCEAN MURAL Now that students have gathered information from the magazine articles, they are ready to begin creating the classroom ocean mural. Students should work independently to find information about their creatures and draw pictures. In preparation for the mural, cover a bulletin board or a section of wall with blue paper. This will represent the ocean.

Materials

- Sea Creature handout on page 14 (one copy per student)
- writing pencils
- drawing paper
- crayons, markers, colored pencils
- scissors
- tape

STEP 1: Build Background Tell students that they are going to work on an ocean mural. Remind them that they have chosen (or been assigned) one sea creature to draw for the mural. Explain that they will also do research in the magazine to find an interesting fact about this creature, which they will share with the class.

STEP 2: Research Distribute a copy of the Sea Creature handout to each student. If necessary, remind students which sea creature they will work on.

Next, have students write the name of their creature on the handout.

Finally, have students go back to the magazine article that featured their creature to find and record an interesting piece of information about it. (Note: For students whose creature comes from the article "Underwater Garden," the interesting information might be simply "Its home is a coral reef.")

STEP 3: Draw Distribute drawing materials to students. Tell students to look at the magazine to help them remember what their creature looks like. Then, allow time for students to draw, color, and cut out their pictures.

STEP 4: Post and Present Gather in front of the ocean mural. One at a time, invite students to bring their picture and information up to the wall. Tape the picture to the wall and have the student present the information about his or her creature.

STEP 5: Extension Allow students to add plants or more fish to the mural as time allows. Invite other classes to view the mural.

NAME: _____

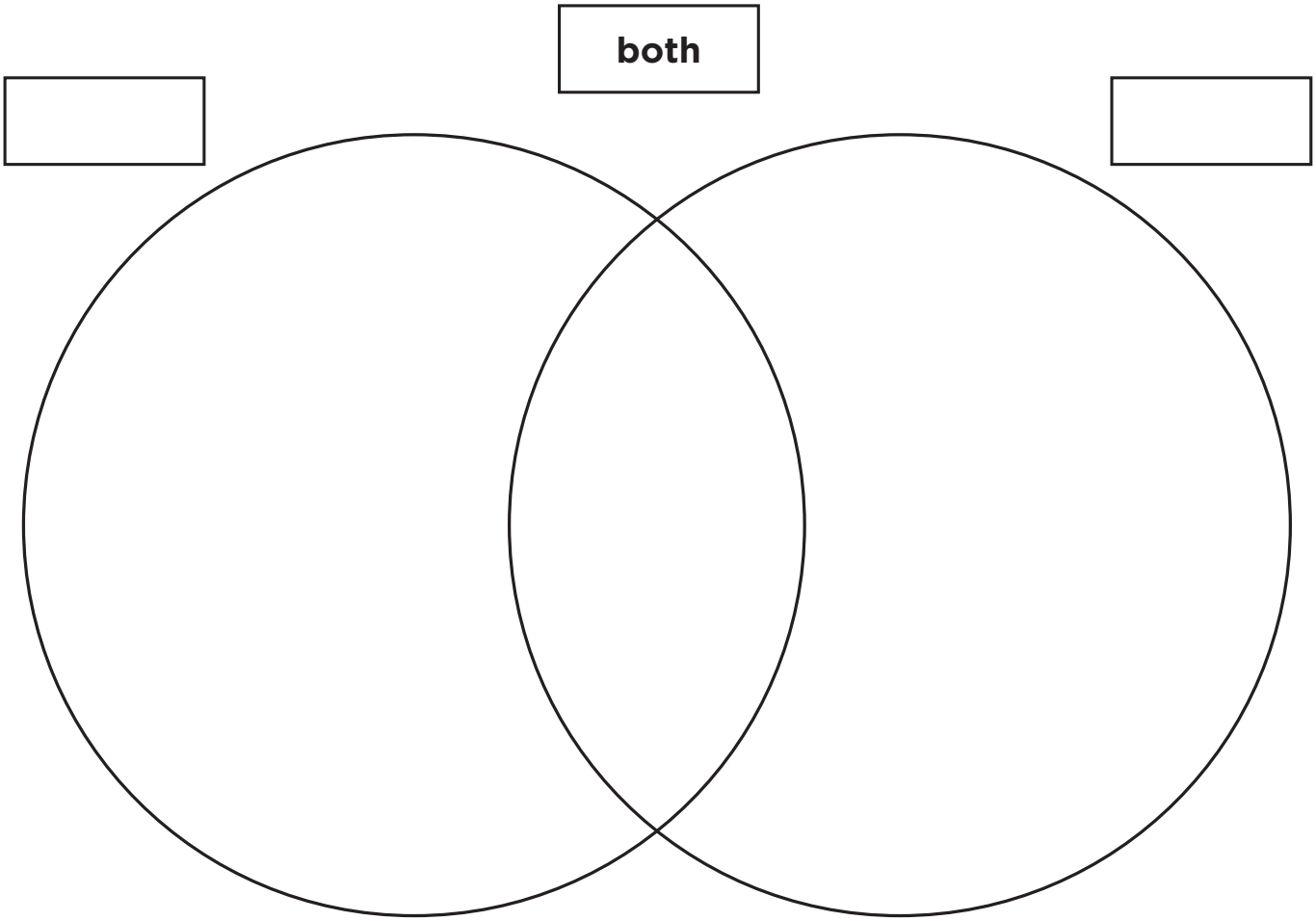
SEA CREATURE

Name of My Creature

Interesting Information about My Creature

NAME: _____

COMPARING MISSIONS



NAME: _____

LOGGERHEAD CHART

Size	How old is Loggerhead?	What is her shell like?
bottle top		
dinner plate		
barrel		

Appendix

Meeting State and National Standards: Core Instructional Concepts

The articles in this magazine provide a wealth of opportunities for meeting state and national instructional standards. The following pages contain charts listing Core Instructional Concepts for each of three curricular areas: English Language Arts, Science, and Social Studies.

USING THE STANDARDS CHARTS

ELA

Corresponding CCSS anchor standards have been listed next to each item on the Core Instructional Concepts chart. To customize the chart, add your own grade, state, or district standards in the last column. Match the concepts and standards from the chart to the activities on each page of the Teacher's Guide to complete your lesson plans.

SOCIAL STUDIES

Content Concepts in each Article Guide are based on Dimension 2 of the CS Framework for Social Studies: Applying Disciplinary Concepts and Tools. Use the last column in the accompanying chart to correlate these concepts to your state or district standards.

SCIENCE

Content Concepts in each Article Guide are drawn from the Three Dimensions of the Next Generation Science Standards. You will also find connections to these concepts within individual close-reading questions.

MATH

Content Opportunities for math activities are provided in the Cross-Curricular extensions on each Article Guide page.

CORE INSTRUCTIONAL CONCEPTS: READING, LITERATURE, AND LANGUAGE ARTS

SKILLS AND CONCEPTS	CCSS ANCHOR STANDARD	CORRESPONDING STANDARD
KEY IDEAS AND DETAILS		
Read closely to determine what a text says explicitly.	Reading 1	
Make logical inferences to determine what the text communicates implicitly.	Reading 1	
Cite specific textual evidence to support conclusions drawn from the text.	Reading 1	
Determine central ideas or themes of a text and analyze their development.	Reading 2	
Summarize key supporting details and ideas.	Reading 2	
Analyze how **individuals, events, and ideas develop and interact** over the course of a text.	Reading 3	
CRAFT AND STRUCTURE		
Interpret words and phrases as they are used in a text.	Reading 4	
Determine technical, connotative, and figurative meanings.	Reading 4	
Analyze how specific **word choices** shape meaning or tone.	Reading 4	
Analyze the **structure of texts** (sequence, cause/effect, compare/contrast, problem/solution)	Reading 5	
Recognize the **genre**, **key elements, and characteristics** of literary texts.	Reading 5	
Assess how **point of view or purpose** shapes the content and style of a text.	Reading 6	
Analyze how an **author's style and tone** affects meaning.	Reading 6	
INTEGRATION OF KNOWLEDGE AND IDEAS		
Integrate and evaluate content presented in diverse media and formats.	Reading 7	
Identify and evaluate the argument and claims in a text.	Reading 8	
Analyze how two or more texts address similar themes or topics.	Reading 9	
WRITING		
Write **arguments** to support claims, using valid reasoning and relevant and sufficient evidence.	Writing 1	
Write **informative/explanatory texts** to examine and convey complex ideas and information clearly and accurately.	Writing 2	
Write **narratives** to develop real or imagined experiences or events.	Writing 3	
Draw evidence from literary or informational texts to support analysis, reflection, and research.	Writing 9	
Conduct short as well as more sustained **research projects.**	Writing 10	

CORE INSTRUCTIONAL CONCEPTS: SOCIAL STUDIES

C3 INQUIRY ARC DIMENSION 2: APPLYING DISCIPLINARY CONCEPTS AND TOOLS	STATE OR DISTRICT STANDARD

CIVICS

Analyze the **origins, functions, and structure of different governments** and the **origins and purposes of laws** and key constitutional provisions.	
Summarize core **civic virtues and democratic principles.**	
Evaluate **policies** intended to address social issues.	

ECONOMICS

Evaluate the **benefits and costs of individual economic choices.**	
Analyze **economic incentives,** including those that cause people and businesses to specialize and trade.	
Explain the **importance of resources** (i.e. labor, human capital, physical capital, natural resources) in **methods of economic production.**	
Explain the **functions of money** in a market economy.	
Explain the importance of **competition** in a market economy.	
Apply economic concepts (i.e. interest rate, inflation, supply and demand) and theories of **how individual and government actions affect the production of goods and services.**	
Analyze economic patterns, including activity and interactions between and within nations.	

GEOGRAPHY

Construct and use maps and other graphic representations (i.e. images, photographs, etc.) of different places.	
Explain cultural influences on the way people live and modify and adapt to their environments.	
Analyze places, including their physical, cultural and environmental characteristics and how they change over time.	
Analyze **movement of people, goods, and ideas.**	
Analyze regions, including how they relate to one another and the world as a whole from a political, economic, historical, and geographic perspective.	

HISTORY

Interpret historical context to **understand relationships among historical events or developments.**	
Evaluate historical events and developments to identify them as **examples of historical change and/or continuity.**	
Analyze perspectives, including factors that influence why and how individuals and groups develop different ones.	
Evaluate historical sources, including their reliability, relevancy, utility, and limitations.	
Analyze causes and effects, both intended and unintended, of historical developments.	

CORE INSTRUCTIONAL CONCEPTS: SCIENCE

DIMENSION 1: SCIENTIFIC AND ENGINEERING PRACTICES

Dimension 1 focuses on the practice of science, and how knowledge is continually adapted based on new findings. The eight practices of the K-12 Science and Engineering Curriculum are as follows:

- Asking questions (for science) and defining problems (for engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations (for science) and designing solutions (for engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

DIMENSION 2: CROSSCUTTING CONCEPTS

Dimension 2 provides an organizational schema for integrating and interrelating knowledge from different science domains. The eight NGSS Crosscutting Concepts are as follows:

- Patterns
- Similarity and Diversity
- Cause and Effect
- Scale, Proportion, and Quantity
- Systems and System Models
- Energy and Matter
- Structure and Function
- Stability and Change

DIMENSION 3: DIMENSIONS AND DISCIPLINARY CORE IDEAS

Dimension 3 presents a contained set of Disciplinary Core Ideas to support deeper understanding and application of content. The following chart details Core Ideas for curriculum, instructional content, and assessments within four domains.

LIFE SCIENCE

- Structure and Function of Living Things
- Life Cycles and Stages
- Reproduction & Inherited Traits
- Animals
- Plants

PHYSICAL SCIENCE

- Forces and Interactions
- Energy
- Light
- Sound
- Electricity/ Magnetism
- Matter
- Waves
- Heat
- Chemistry
- Information Processing

EARTH SCIENCE

- Weather
- Climate
- Rocks & Soil
- Erosion and Weathering
- Landforms
- Water
- Oceans
- History of Earth
- Plate Tectonics
- Volcanoes, Earthquakes, and Tsunamis

SPACE SYSTEMS

- Solar System
- Planets
- Moon
- Sun