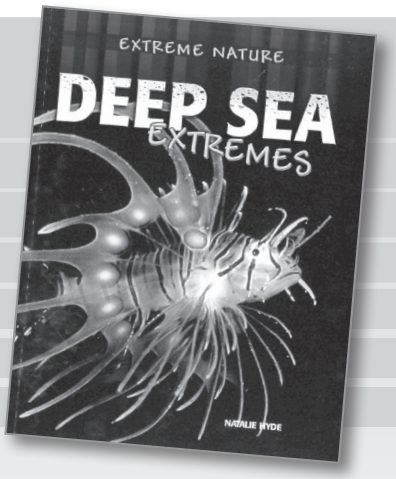
LEVEL N

Deep Sea Extremes

Synopsis: This book informs readers about deep-sea ecology: what it is like in the deepest parts of the ocean. It describes the deep sea as an extreme environment with conditions, geography, and inhabitants that are unlike anything anywhere else on the planet.



Author: Natalie Hyde

Genre: Informational Text

Guided Reading Level: N

TEKS: 2.2.H, 2.3.B, 2.5.D, 2.13, 2.15.B, 2.25.B

Introduction: Explore Informational Text

Explain to students that this is an informational book that informs readers about what it is like in the deepest parts of the oceans. Say, *This book describes what you would see and experience if you traveled to the deepest parts of the ocean. It gives you a close-up look at some of the strange creatures that live there and explains how they survive in the harshest environment on Earth. The word* extremes *in the title of the book is a clue that the world of the deep ocean is far from what we think of as normal. Almost nothing in the deep ocean would be normal to us.* Explain that the book also includes information about how scientists have found ways to explore these dark, mysterious places.

Vocabulary

Tier Two: adapted, atmosphere, computers, creatures, earthquakes, echo, icebergs, oxygen, poisonous, pressure, pupils, regions, scientists, submarine, survive, volcanoes

Tier Three: abyssal, bacteria, camouflage, cells, crust, dense, hydrothermal vents, invertebrate, magma, mammal, Mariana Trench, marine, methane, NASA, nitrogen, nutrients, parasite, petroleum, predators, prey, seabed, transparent, tunicates, vertebrates, volcanic eruptions

Word Work

2.5.D *Alphabetize a series of words and use a dictionary or a glossary to find words.*

2.25.B *Use text features (e.g., table of contents, alphabetized index, headings) in age-appropriate reference works (e.g., picture dictionaries) to locate information.*

Introduce vocabulary in context as it appears within the book before or during reading. Have students turn to page 9 in the book. Read the paragraph with the subtitle "Simple Relations." Discuss the meaning of *tunicates,* pointing out that its meaning is in the first sentence. Then call students' attention to the third sentence and read it again, emphasizing the word *vertebrates*. Explain that not all unfamiliar words are defined in the text. Say, *Sometimes, you will see a word that you don't know that is not defined in the text. When that happens, use a glossary or a dictionary to find its meaning. Let's turn to the Glossary on page 30 at the back of the book to see if* vertebrates *is defined there.* Have a volunteer read the definition, "animals with backbones." Read through the other content words and definitions in the Glossary before students read, since this informational book has so many content words.

English Language Support

Offer realia, gestures, or photos to support the introduction of the new vocabulary. Use a world map to point out the location of the five areas of ocean on Earth: the Pacific, Atlantic, Indian, Arctic, and Southern Oceans. Also point out the location of the Mariana Trench, which contains the deepest part of the oceans. It is located in the Pacific in an area south of Japan, east of the Philippines, and north of New Guinea. Display photos of volcanoes. Explain that these formations exist deep in the ocean, as well as on land. Use photos in the text to identify vocabulary words such as *submarine, icebergs,* and *pupils.*

Understanding the Text

Literal: *What is the name of the deepest seabed on Earth?* (Challenger Deep) *Why can't plants live in the deepest part of the ocean?* (There is no light there. Plants can grow only where there is light.) *Why do so many fish that live in the dark have big eyes with wide pupils?* (It helps them see any little bit of light coming from animals nearby.)

Interpretive: *Why do scientists spend time learning about the ocean?* (People get things they need from the ocean, such as food and oil. NASA astronauts train in a center deep underwater to get them ready for living in space. Scientists also study deep-sea creatures and use what they learn to improve human life.)

Applied: *Why is it important to study the deep ocean?* (Students may suggest that it is interesting to learn about the strange creatures that live there or that they are interested in becoming scientists but indicate that being a "sea scientist" is something they had never considered.)

Phonics and Word Recognition

2.2.H *Monitor accuracy of decoding.*

Have students turn to page 8 in the book. Read the last sentence in the first paragraph: *Deep-sea creatures must find other types of food.* Draw students' attention to the word *creatures.* Ask a volunteer to pronounce the word. Point out that the word has the *long-e* vowel sound in the first syllable. Then read the sentence again, and ask students for another two-syllable word that has a long vowel sound. (*deep-sea*) Ask what long vowel sound is present. (long *e*) Point out that there are two *long-e* sounds in the word: the first is spelled *ee,* and the second is spelled *ea.* Direct students' attention to the first sentence, and ask for two-syllable words with long vowel sounds. (*long-e* sound in *deepest* and *long-o* sound in *oceans*)

Text Features

2.15.B *Use common graphic features to assist in the interpretation of text (e.g., captions, illustrations).*

Remind students that a diagram is a drawing that makes something easier to understand. Have students turn to page 5 in the book. Draw their attention to the subhead titled "Into the Deep" and the caption below it. Read the text and caption. Then have students examine the diagram to the left of the text that shows the fives zones of the oceans. Say, *The diagram shows how the amount of light in the water decreases as you go deeper into the ocean.* Discuss the information provided in the labels. Say, *The diagram shows exactly how light gradually disappears. It tells you the names of the zones (*sunlight, twilight, *and* midnight*) in which some light exists. The diagram also tells you the depth of each of the five zones.* Remind students that diagrams not only make text easier to understand, but they also may contain information not in the text.

Reading Informational Text

2.13 *Reading/Comprehension of Informational Text/ Culture and History. Students analyze, make inferences and draw conclusions about the author's purpose in cultural, historical, and contemporary contexts and provide evidence from the text to support their understanding.*

Have students think about why Natalie Hyde wrote *Deep Sea Extremes*. Discuss the reasons people write books, including to entertain, to inform, to explain, and to persuade. Ask, *Why do you think the author wrote this book?* (She wants to inform readers about the deep sea and what it is like for the creatures that live there.) Then ask, *Do you think that an author can have more than one reason for writing a book?* Suggest that the author might have also intended to entertain her readers by describing the strange creatures that live in the mysterious depths of the ocean. Encourage students to share their favorite parts of the book.

Writing

2.3.B *Ask relevant questions, seek clarification, and locate facts and details about stories and other texts and support answers with evidence from text.*

Write the following question where all can see: *Where is the deepest part of the ocean?* If students can't recall the answer, direct them to page 5 under the subhead "In the Extreme" and explain that the deepest part of the ocean is in the Mariana Trench in the Pacific Ocean. Then have students work in pairs to write a question about an important detail in the book. Each question should begin with *Who, What, Where, When, Why,* or *How.* Students should also write the answer and the page in the book where they found it. Encourage students to share their questions and have the rest of the class answer them.