

UNIT 08 OPENER

▶ Preteach: Instructional Terms

A **biography** is a nonfiction story about the life of a real person. A biography generally follows the **sequence** of a person's life from birth until death, focusing on formative events that influence later life. The text usually features quotations by the subject and those who knew him or her as well as historical documents such as photographs or maps. Readers find inspiration and extended knowledge as well as historical perspective in a biography. **Say: List several people whose lives you would like to learn about, and explain why these people interest you.** Choose one person to feature in an **idea web** on the board. Write the person's name in the center circle. Then, **ask: What do you want to know about this person and where will you find the information?** Write students' responses in the radiating circles.

Science nonfiction is informational writing, focusing on explanations, factual details, and **steps in a process**. The structure of science nonfiction differs from fiction because it has features such as headings, diagrams, captions, lists, steps, and so on. Readers in this genre are able to access needed information or to expand their knowledge of a subject. Draw a sequence graphic organizer on the board. Invite students to suggest the steps in a simple process such as recycling plastic, paper, glass, and aluminum products in the home. Record students' responses in the appropriate areas of the graphic organizer.

Students should use dictionaries and glossaries to determine the definitions of **multiple-meaning words**. In addition to context clues, students can use the part of speech to select the correct definition for a word. Review with students the parts of speech as well as the SVO syntax of English. Write the following sentence on the board: *Ballard entered the hatch of a submersible for his first major undersea mission.* **Say: Hatch is a noun in this sentence. Find a meaning in the dictionary in which hatch is defined as a noun.**

▶ Summary of Primary Reading Passage

Robert Ballard, Modern Sea Explorer

Robert Ballard was a boy who fell in love with the ocean. He grew up to find a career designing mechanical submersibles and robots to unlock the mysteries of the sea. He and his crew were the first to photograph incredible animals living in deep-sea vents near the Galapagos Islands. He also discovered the wreckage of the *Titanic*. Today, Ballard continues his explorations and supports marine education through his foundation.

Lexile: 860

Word Count: 707

▶ Scope and Sequence at a Glance

Genre: Biography Procedural Text

Title: Robert Ballard, Modern Sea Explorer & Dive!

Cross-Curricular Connection: Science

Comprehension Strategy: Create and Use Graphic Organizers (Idea Web)

Comprehension Skill: Identify Sequence of Events

Vocabulary Strategy: Dictionary/Glossary (Multiple-Meaning Words)

Decoding Support: VV Pattern in 2-Syllable Words for Syllabication (neon, lion)

▶ Summary of Secondary Reading Passage

Dive!

A submarine is made up of a series of tanks. When the ballast tanks are filled with air, the submarine rises to the surface of the water. When the ballast tanks are filled with water, the submarine sinks. Trim tanks are adjusted to keep the submarine balanced and steady. The crew lives in another tank known as the sub's interior.

Lexile: 890

Word Count: 432



UNIT 08 OPENER (CONT.)

 **Learner Vocabulary**

Introduce the lesson's vocabulary words by reading the following sentences aloud. After you read each sentence, repeat the vocabulary word, and read its definition.

ballast Noun. Heavy material carried on a ship used to keep the ship stable.

Ballast kept the ship from tipping during the storm.

creature Noun. Living being; human or animal.

The tiny mouse was the only **creature** awake at dawn.

eventually Adverb. Finally.

The sun **eventually** set behind the mountains.

explore Verb. (1) Travel in order to discover new things. (2) Think about carefully; examine.

(1) The astronauts took three days to **explore** the moon's surface.

(2) Sophie is **exploring** how to use her new computer.

hatch Noun. (1) Covered hole or door in a floor, wall, or ceiling.

Verb. (2) Break out of an egg at birth. (3) Devise or come up with a plot.

(1) Pop the **hatch** so we can enter the submarine.

(2) Four tiny chicks **hatched** in their nest this morning.

(3) We **hatched** a plot for keeping the accident a secret.

mission Noun. (1) Special task or service. (2) Group sent to do a special task. (3) Type of church building.

(1) Brent was on a **mission** to get the highest grade in the class.

(2) A rescue **mission** was sent to help people after the hurricane.

(3) The beautiful San Fernando **Mission** was built in 1797.

person Noun. Human being.

Mark Spitz was the first **person** to win seven gold medals in a single Olympics.

submarine Noun. Long boat built to travel under water.

Passengers saw a variety of fish through the porthole of the **submarine**.

 **Quick Connect Activities**

Have students complete idea webs about the benefits of ocean exploration. Write *Ocean Exploration* in the center circle, and list benefits that might be gained in the outer circles.

 **Destination Journal**

Ask students to write journal entries on this topic: **You have been invited to join scientists who will explore the ocean floor. They will spend time aboard a small submarine. Will you join the team? Explain why or why not.**

 **Book Lists****Books of the Same Genre**

Students may choose from these selections for further reading.

***Amelia Earhart: Flying For Adventure* by Mary Dodson Wade. 1992. Millbrook Press.** (Below-level students.) A biography of the famous record-setting pilot who was lost at sea. **LEXILE: 710**

***Science Experiments with Simple Machines* by Sally Nankivell-Aston and Dorothy Jackson. 2000. Franklin Watts.** (On-level students.) Readers learn about simple machines through easy experiments. **LEXILE: 770**

***Chief Joseph: Nez Perce Peacekeeper* by Diane Shaughnessy and Jack Carpenter. 1997. Rosen Publishing Group.** (Above-level students.) The story of a famous Native American. **LEXILE: 910**

Books with Related Themes

Students may enjoy these books about ocean exploration.

***Deep Blue Sea Theme Digest*. Scholastic Inc.** (Below-level students.) An up-close look at the ocean. **LEXILE: 750**

***Exploring the Deep, Dark Sea* by Gail Gibbons. 1999. Franklin Watts.** (On-level students.) Describes underwater exploration. **LEXILE: 780**

***Big Blue Ocean* by Bill Nye. 1999. Hyperion Books.** (Above-level students.) Description of the ocean and suggested activities. **LEXILE: 870**



LESSON 1 PLANNER

 Genre Study

Assess students' prior knowledge of **biographies** by asking them to name their heroes. Ask students whether they have ever read a book about any of the people on the list. If they have, ask them to describe the features of the book. If not, ask students why they might want to read a book about one of these people. Record students' responses on the board. Add the following characteristics and purposes to the discussion.

Characteristics:

- covers birth to death
- explores early influences on later life
- contains quotations
- includes pictures, maps, photographs, and other historical documents

Purposes for Reading:

- understand history
- gain inspiration
- extend knowledge

Assess students' prior knowledge of **science nonfiction** by asking them whether they have ever followed the steps in a process to complete a task. Perhaps students have followed the steps in a recipe to cook a favorite food or followed the steps in a science experiment to mix secondary colors. Ask students to describe the features of such texts. Make sure that students include the following characteristics and purposes.

Characteristics:

- explanation
- facts
- steps in a process
- headings, diagrams, captions, lists, and so on

Purposes for Reading:

- find needed information
- expand knowledge

 Build Background

The subject of this short video in the courseware is ocean exploration, with an emphasis on Dr. Ballard's projects. Assess students' prior knowledge of this subject. **Ask: What do you know about the ocean? about sea life? about marine resources? How do humans use the ocean? What responsibilities do people have to the ocean?**

Tell students that ocean exploration is a relatively new science. **Ask: What may have kept scientists from exploring the deep sea prior to the mid- to late 1800s? What might people gain by the further exploration of the deep sea?**

 Learning Objectives

- Recognize distinguishing features of biographies.
- Recognize the author's purpose in writing biographies.
- Recognize distinguishing features of scientific nonfiction texts with procedures.
- Recognize the author's purpose in writing scientific nonfiction texts with procedures.
- Learn the meanings of grade-level and content vocabulary words in context.
- Use a dictionary to determine the appropriate definition of multiple-meaning words.
- Write sentences for a dictionary entry that illustrate the multiple meanings of a word or grade-level vocabulary.

 QuickFact: Information Center

The first person to see sea life in previously unexplored ocean depths was American Charles William Beebe. He and his partner, engineer Otis Barton, reached a depth of 1,425 feet in 1930 in a machine called a bathysphere that was lowered by cable from a ship into the water.



LESSON 1 PLANNER (CONT.)

Lesson 1: Genre and Vocabulary Study

Vocabulary Strategy

Review the parts of a dictionary entry with students. Point out the entry word, part of speech, and definitions. Also, explain that the parts of speech are often abbreviated. Make sure that students understand the abbreviations. Then, have students look up the following words: *bow*, *hatch*, *mission*, *state*, and *waves*. Have each student (or pair of students) write a sentence for each meaning of each word. For each use of the word, have students note the part of speech.

Differentiated Instruction

ELL: Multiple-meaning words can be especially difficult for ELL students. Encourage students to make reference note cards for each of the following words: *current*, *deal*, *express*, *kind*, *seal*, *tank*, and *watch*. On the front of each card, have students write the words. On the back of each card, have students write the multiple meanings of each word along with the part of speech. Have students include a simple sketch or a picture cut from a magazine with each definition. Students can refer to these cards as they complete the courseware.

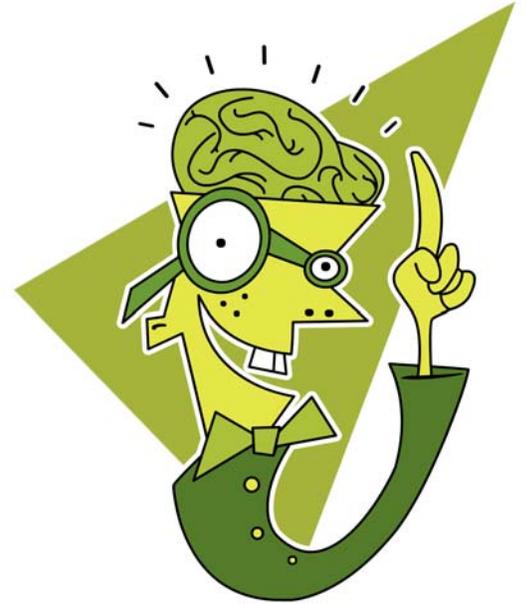
Special Needs: Provide students with primary dictionaries or picture dictionaries as resources to use while they complete the courseware.

Above-level Students: Suggest that students explore the Web site for Robert Ballard's *JASON Foundation for Education*. Have students compose e-mail messages that they may send to this site about ocean exploration. Tell students to use three to five multiple-meaning words in their e-mail messages. Have students read their classmates' messages.

Quick Connect Activities

Have students use multiple-meaning words to write about places that they would like to explore. Explain that the places might be grand, such as the floor of the Pacific Ocean, or simple, such as the woods behind an apartment building. Students should use sensory details to describe the places. Then, tell students to explain why they want to explore these places. Have students include any benefits for humankind that their explorations might yield.

Have students write the answer to this question: **Is decoding unfamiliar words a mystery to you, or have you learned one strategy to explore word meaning by using a dictionary and the part of speech to determine the correct meaning for a multiple-meaning word? Explain whether this strategy is helpful for you.** (*Metacognition*)



Lesson Resources: Assessment Toolkit

Check the **Practice** and **Apply** activities in this lesson for results you can assess.

Before students take the lesson tests provided in the courseware, check their confidence in the skills:

- Have small groups of students explain the differences between biographies and science nonfiction.
- Have each student interview another student and then write a short biographical sketch of the student. Suggest that students include multiple-meaning words in their writing.
- Have each student write an example of science nonfiction by describing the steps in a simple process, such as how to plant a seed. Suggest that students include multiple-meaning words in their writing.

LESSON 2 PLANNER

Lesson 2: Comprehension Skill and Strategy

▶ Comprehension Skill: Sequencing and Steps in a Process

Explain to students that **sequence** words help them understand the order of events. Help students make a class word bank of sequence words such as *first*, *next*, *last*, *then*, and *finally*, as well as references to dates, times, ages, life events, seasons, and so on. Suggest that students use sequence words to narrate an event from early childhood.

Explain to students that one type of sequencing used in informational text includes **steps in a process**. In this case, sequence words are combined with visuals to explain or instruct. Suggest that students use sequence words and visuals to explain a simple process, such as planting a garden.

▶ Comprehension Strategy: Idea Web

Explain to students that an **idea web** is one type of graphic organizer that they can use while reading to enhance comprehension. In the courseware, students are instructed to write a main idea or topic in the center circle and to place important points, events, details, or steps in the radiating circles. On the board, create an idea web. Write *Sir Isaac Newton* in the center circle. For the radiating circles, ask students what information they would expect to read about in a biography of the scientist.

▶ Differentiated Instruction

ELL: Provide students with copies of a generic sequence graphic organizer. Suggest that students use these graphic organizers to help them isolate the order of events or the steps in a process as they read and work through the courseware.

Special Needs: Have students use sequence words to create annotated timelines for their lives beginning with their birth. Tell students to focus on major events, such as learning to ride a bicycle and starting school. Suggest that students include from ten to fifteen entries.

Above-level Students: Provide small groups of students with copies of pages from a biography and a technical or scientific manual. Ask students to highlight the sequence words. Then, have students compare and contrast how sequencing is used in each example. This process may help students organize their thoughts in Venn diagrams.

▶ Learning Objectives

- Recognize the importance of sequence in biographies and scientific nonfiction texts that include a procedure.
- Compare and contrast the use of signal words for sequencing in biographies and scientific nonfiction texts that include a procedure.
- Recognize that the purpose of using graphic organizers, including idea webs, is to improve reading comprehension.
- Determine information to record in an idea web.

▶ Assessment: Toolkit

Check the **Practice** activities in this lesson for results you can assess.

Before students take the lesson tests provided in the courseware, check their confidence in the skills:

- Have small groups of students compare and contrast sequencing and steps in a process.
- Have students read a short biographical passage. Then, ask students to use idea webs to record the main idea and supporting details.
- Provide students with a completed idea web on a famous person. Tell students to use the web to write short biographical paragraphs.



LESSON 3 PLANNER

Lesson 3: Summary and Journal Writing

 **Primary Story Summary**

In this **biography**, the author provides readers with a **sequence** of important events in the life of Robert Ballard, a sea explorer. As a child, Ballard's attraction to the sea was so strong that he called it his "best friend." In college, Ballard studied marine geology. In the navy, he worked for an oceanic research institute, where he developed a lifelong fascination with aquatic submersibles and robots. Although Ballard experienced some mechanical mishaps in the course of his ocean explorations, he continued to develop equipment and to explore the ocean's depths. He discovered incredible creatures living in deep-sea vents near the Galapagos Islands, and he discovered the wreckage of the Titanic. Today, his explorations continue both under the water and in the classroom through the efforts of his educational foundation.

 **Secondary Story Summary**

Submarines are made up of a series of tanks. Ballast tanks are filled alternately with air or water to make the submarine float or sink. When the tanks are filled with compressed air that is carried aboard the sub in other tanks, the air expands and becomes lighter. This air forces the water from the ballast tanks, causing the sub to rise. When the crew wants to submerge the sub, they use motors to force air out of the tanks as they draw in water, causing the sub to sink. The crew also adjusts trim tanks to keep the sub balanced and steady as they carry out their mission. The crew lives in yet another tank called the interior.

 **Destination Journal**

Ask students to write journal entries on this topic: **Robert Ballard called the ocean his "best friend." He turned a childhood love into a lifelong career. Write about a hobby or sport that you enjoy. Why do you enjoy this activity? How does it make you feel? How might you turn this enjoyable activity into a job in the future?**

 **Learning Objectives**

- Read a biography to build vocabulary, fluency, and comprehension.
- Use graphic organizers, including idea webs, while reading a biography to assist comprehension.
- Identify the sequence of events while reading a biography.
- Use a dictionary to determine the appropriate definitions of multiple-meaning words while reading a biography.
- Demonstrate comprehension of a biography.
- Read a scientific nonfiction text, including a procedure, to build vocabulary, fluency, and comprehension.
- Identify the sequence of steps in a procedure while reading a scientific nonfiction text.
- Use graphic organizers to assist comprehension while reading a scientific nonfiction text, including a procedure.
- Use a dictionary to determine the appropriate definitions of multiple-meaning words while reading a scientific nonfiction text, including a procedure.
- Demonstrate comprehension of a scientific nonfiction text, including a procedure.

 **Assessment: Toolkit**

Use the **Comprehension Quiz** to assess students' understanding of the passage.

Before students take the lesson tests provided in the courseware, check their confidence in the skills:

- After students read, ask them to make an idea web for each passage. Remind them to include main ideas and important details.



LESSON 4 PLANNER

Lesson 4: Comprehension Skill and Strategy

▶ Comprehension Skill: Sequencing and Steps in a Process

Review **sequence** clue words with students. Write the following statements on the board. Ask students to put them into the correct sequence.

- Today Robert Ballard continues to explore the sea depths all over the world.
- In 1942, Robert Ballard was born in Kansas.
- In college, Ballard studied marine geology.
- In 1985, Ballard searched the ocean floor for the Titanic.
- In 1973, Ballard went on his first major undersea mission.

Ask: How do you know the correct sequence for the sentences?

▶ Comprehension Strategy: Idea Web

Review with students when and why they might use an **idea web**. Explain that for science nonfiction that describes a process, students should write the process in the center circle and important steps in the radiating circles. Model this strategy with students on the board, using the following topic for the center circle: *how a submarine works*.

▶ Differentiated Instruction

ELL: Using the biography of Robert Ballard, have students make timelines of important events in Ballard's life. Before students begin, review sequence clue words.

Special Needs: Provide students with sentence strips that contain important events in Robert Ballard's life. Have students work in pairs to arrange the sentence strips in the correct order. You may want to highlight or underline sequence clue words for students.

Above-level Students: Have students conduct Internet research on another ocean explorer such as Pierre Simon de Laplace, Sir James Clark Ross, Charles William Beebe, or Otis Barton. Have students create idea webs that could be used to write biographies of these explorers.

▶ Learning Objectives

- Use knowledge of sequence words to analyze a sequence of events or steps from a biography and a procedure.
- Select statements after reading to record in an idea web for a biography and scientific nonfiction text.
- Evaluate how graphic organizers can improve comprehension of a biography and a scientific nonfiction text.

▶ Assessment: Toolkit

Check the **Practice** and **Apply** activities in this lesson for results you can assess.

Before students take the lesson tests provided in the courseware, check their confidence in the skills:

- Have small groups of students create tips for reading biographies.
- Have small groups of students create tips for reading science nonfiction.
- Have students create idea webs for the steps in a simple process, such as making a paper boat.



UNIT 08: Robert Ballard, Modern Sea Explorer & Dive!

Name: _____

Date: _____

 **Comprehension Strategy: Using an Idea Web**

Directions: You have learned that using an **Idea Web** as you read can help you keep track of text information. As you read, use the **Idea Web** to record the important ideas that you discover in the text.

