

# Lesson 22

## Interpreting Visual Information



### Learning Target



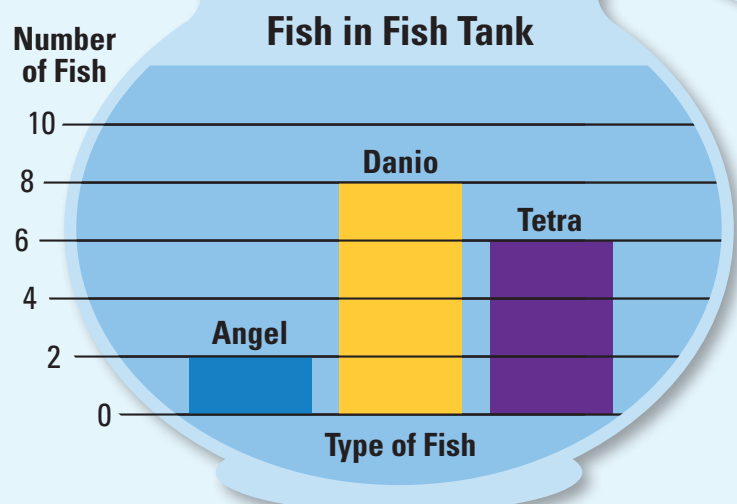
By figuring out information that is shown in charts or other visuals, you will gain a clearer understanding of a topic in an informational text.

- **Read** While reading informational texts, you often see photos, **diagrams**, and **time lines**. These **visuals** explain ideas about a topic that words alone cannot. You also might see **graphs** with **quantitative** information in the form of numbers or other data.

If you come across a special text feature, figure out its purpose. Ask yourself: What information does it give? How does it work together with text details to add to your understanding of the topic?

**Read the text, and study the bar graph. Figure out how the graph helps you understand the text.**

A few months ago, I helped my science teacher set up a fish tank. The tank has three types of fish. We put in just two of the largest type of fish and many of the smaller types of fish. The tank is large enough to follow this rule: Each fish needs about one gallon of water to be healthy.



► **Think** Were you able to **interpret**, or figure out, the information in the text and graph? From the details, you should have a good idea of how many fish are in the tank and what kinds of fish live in it. Use the passage and the graph to fill in the chart below.

What the Text Says	What the Graph Shows
"The tank has three types of fish."	

► **Talk** Compare the information in your charts. What inference can you draw about the minimum number of gallons the tank should hold? Use information from the text and the graph. Draw a picture of the fish in the tank to help you answer.



### Academic Talk

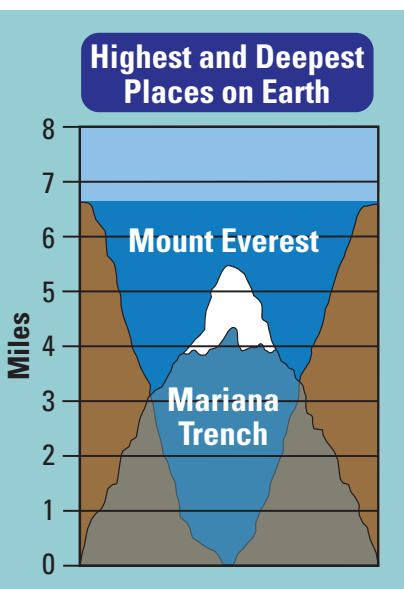
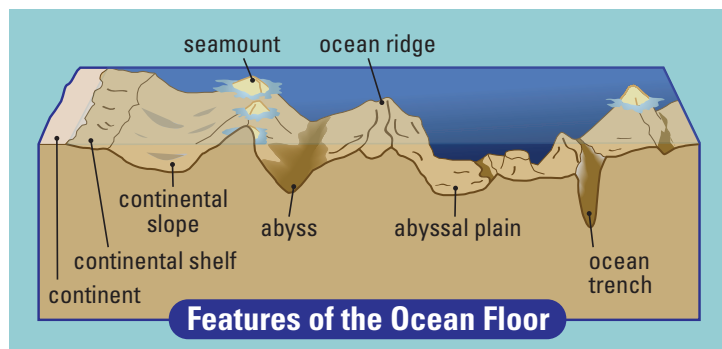
Use these words to talk about the text.

- diagrams
- time lines
- visuals
- graphs
- quantitative
- interpret

# Features of the Ocean Floor

by Connie Rather

- 1 Picture this: You're in a submarine right next to a continent. Looking down, you see a part of the ocean floor called the **continental shelf**. Now, head out to sea. The ocean floor drops away to form the **continental slope**. You might pass through a range of **seamounts**, or volcanoes rising from the ocean floor. In time, you'll reach the **abyssal plain**, a dark realm with deep valleys called **trenches**. Finally, you might encounter long, snakelike **ocean ridges** that rise from the ocean floor. They connect to form a long chain of underwater mountains around the planet.



- 2 The deepest ocean trench in the world is the Mariana Trench in the Pacific. It is one of the most difficult places to reach on Earth. It is so deep that if Mount Everest, one of the tallest mountains in the world, were picked up and put at the bottom of the trench, the mountain would still be covered with water!

## Close Reader Habits

Study the diagrams as you reread the text.

**Circle** the title of each diagram. Think of how the title connects the diagram to the text.

**Explore**

**How do the text and diagrams work together to provide information about the ocean floor?**



Look for information, data, or details in the diagrams that the text does not provide.

**Think**

- 1 Use information about the abyssal plain and the Mariana Trench to complete the chart below. Identify what you learned from the text and what you learned from each diagram.

What the Text Says	What the Diagram Shows
abyssal plain	"Features of the Ocean Floor"
Mariana Trench	"Highest and Deepest Places on Earth"

**Talk**

- 2 Share your chart with a partner. What information came from the text, the "Features of the Ocean Floor" diagram, and the "Highest and Deepest Places on Earth" graph? Why do you think the author presented certain information visually rather than in words?

**Write**

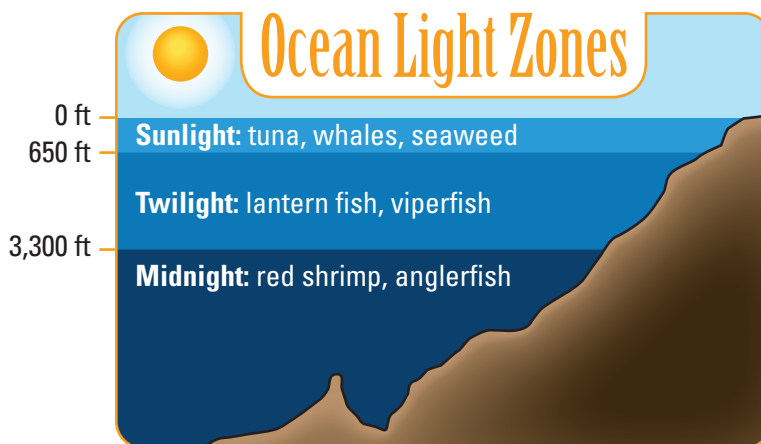
- 3 **Short Response** How do the diagram, graph, and text work together to give you information about the Mariana Trench? Use evidence from each to support your response. Use the space provided on page 360 to write your response.

**HINT** Make sure to clearly state where your evidence comes from, the text or a diagram.

# Going DOWN, DOWN, DOWN

by Justin Oh

- 1 The ocean has three main zones. These zones are distinguished by the amount of sunlight they receive.
- 2 In the sunlight zone, the sun's rays penetrate from the surface to a depth of 650 feet. The light lets plants grow here, and these plants provide food for animals. Here you will find sea mammals and schools of fish.
- 3 The twilight zone stretches from 650 feet to 3,300 feet below the ocean surface. There is almost no sunlight, so no plants grow. Animals that live here wait for dead plants and animals to drift down from the sunlit zone. The animals here have ways of surviving difficult conditions. Many can produce their own light, which helps them search for food.
- 4 Below 3,300 feet, the midnight zone lies in complete darkness. There is very little food, the water is cold, and the water pressure is enormous. Some animals at this level are soft, so the pressure doesn't affect them as much. Many are blind or have no eyes, but they can feel the smallest movement of food that might brush up against them.



## Close Reader Habits

What do you learn about the zones from the text? From the diagram? Reread the article.

**Underline** details shared by the text and diagram.





Visuals often help you “see” what is explained in a science text. Think about how the visuals support the topic.

**Think** Use what you learned from reading the science article to respond to the following questions.

- 1** This question has two parts. Answer Part A. Then answer Part B.

**Part A**

Which ocean animals listed in the diagram are most likely to live among creatures that have soft bodies and no eyes?

- A** red shrimp and anglerfish
- B** viperfish and lantern fish
- C** tuna and whales
- D** red shrimp and tuna

**Part B**

Circle **one** detail in the diagram on page 358 that supports the answer to Part A.

- 2** Which fact about the twilight zone is given in both the passage and the diagram? Write it on the lines.

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**Talk**

- 3** Describe at least one type of information you can find in the diagram that the passage does not give you. How does the diagram help you better understand the differences in the three zones?

**Write**

- 4 Short Response** Compare and contrast information about the ocean zones that is provided by the text and the diagram. Use at least **one** detail from both the passage and the diagram to support your response. Use the space provided on page 361 to write your answer.

**HINT** Reread the text for details that explain what is shown in the diagram.



## Ocean Floor

**3 Short Response** How do the diagram, graph, and text work together to give you information about the Mariana Trench? Use evidence from each to support your response.

**HINT** Make sure to clearly state where your evidence comes from, the text or a diagram.

[illegible]

Don't forget to check  
your writing.



**Write** Use the space below to write your answer to the question on page 359.

## Going DOWN, DOWN, DOWN

- 4 Short Response** Compare and contrast information about the ocean zones that is provided by the text and the diagram. Use at least **one** detail from both the passage and the diagram to support your response.

**HINT** Reread the text for details that explain what is shown in the diagram.

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### Check Your Writing

- ☐ Did you read the prompt carefully?
- ☐ Did you put the prompt in your own words?
- ☐ Did you use the best evidence from the text to support your ideas?
- ☐ Are your ideas clearly organized?
- ☐ Did you write in clear and complete sentences?
- ☐ Did you check your spelling and punctuation?





## WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

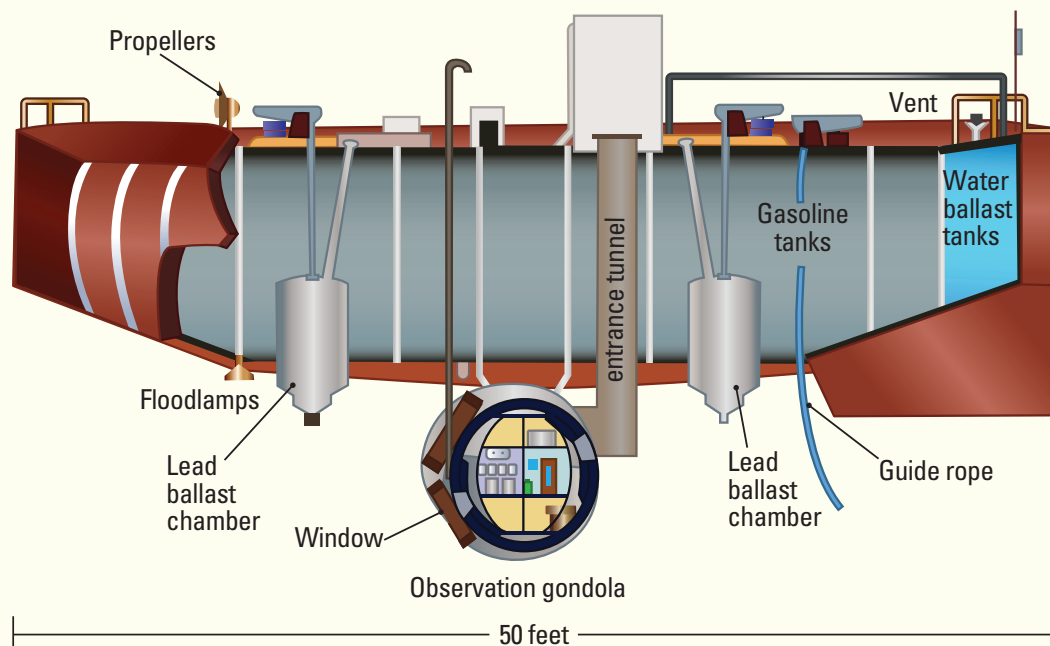
- descent
- emerge
- released

# VOYAGE to the Bottom of the SEA

by Martine Costi

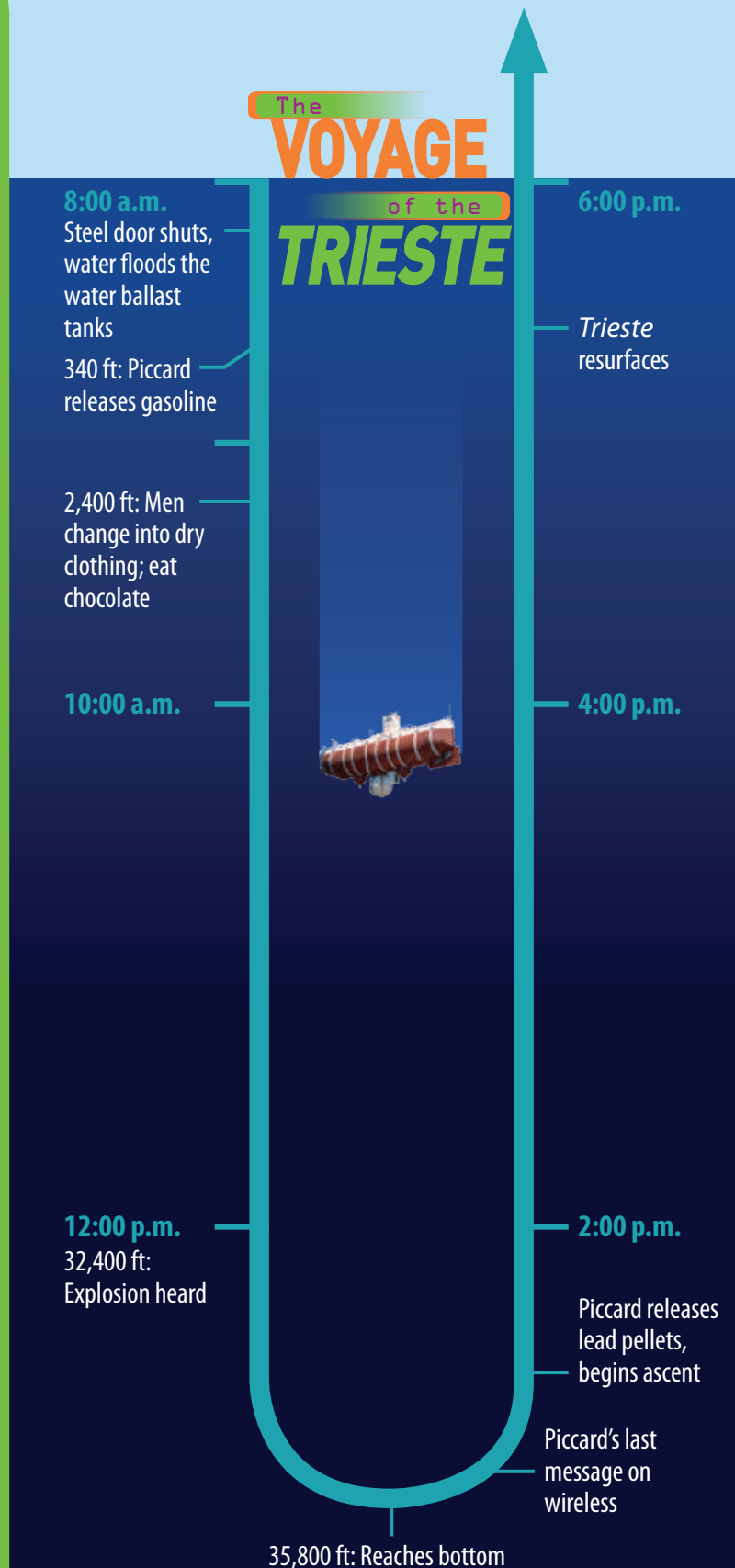
- 1 On January 23, 1960, six-foot waves rocked the surface seven miles above the Mariana Trench in the Pacific Ocean. Carefully, Jacques Piccard and Donald Walsh rowed a small rubber boat toward the *Trieste*. This craft would soon take them almost seven miles down to the deepest part of the ocean's floor.
- 2 No one had ever explored the Mariana Trench before. It was so deep that the weight of the miles of water above it would crush most crafts. The *Trieste* was built to withstand such pressure, however, so the men inside should be safe on their underwater journey. During the descent, the men on the *Trieste* would communicate by radio with the surface.

- 3 Shortly after 8:00 A.M., Piccard and Walsh sat jammed in the *Trieste*'s observation gondola. The space was so small that they could barely move, but they were ready. Water from the ocean filled the water ballast tanks. Slowly, the *Trieste* began traveling down to the trench.
- 4 At 340 feet, Piccard released gasoline from the tanks, letting water fill them instead. Water weighs more than gasoline, so this made the craft sink farther into the darkness.
- 5 An hour later and a mile farther down, the men saw plankton. These are tiny ocean creatures that glow in specks of yellowish green. Two hours later, they were more than five miles down, and there was no sign of life.
- 6 A little past noon, they were about a half-mile from the bottom. Then they heard a small explosion. Tension flooded the observation gondola, but nothing seemed wrong, so they agreed to keep going. Just before one o'clock, they reached the bottom of the Mariana Trench. They had landed where no other human had ever been.
- 7 They flashed lights and saw a flat, white fish about a foot long that Piccard described as a sole. Little red shrimp swam in front of their window. Both discoveries were groundbreaking. Now humans knew that animals lived on the deepest part of the ocean floor.

Diagram of *Trieste*

8 Then the men turned on an inside light. Piccard spotted the cause of the earlier noise—it was a cracked window. Now he became more worried about their safety. Piccard released 800 pounds of lead pellets from the ballast chamber. Releasing this weight caused the *Trieste* to move upwards. Piccard and Walsh could hear people speaking on the radio, but for some reason no one could hear them speaking back.

9 At 5:00 p.m., the *Trieste* emerged. No one had heard Piccard on the wireless for hours, so the people above did not know what to expect. The crews on both ships watched breathlessly for movement from the *Trieste*. They waited for fifteen long minutes. Then suddenly, the two men emerged unharmed. They had traveled to the deepest part of the ocean and made history.



**Think** Use what you learned from reading the science article to respond to the following questions.

- 1** From the text, you could infer that the voyage of the *Trieste* was a dangerous research project. Which **two** details from the time line **best** support this inference?

- A** 8:30 A.M.—340 ft: Piccard releases gasoline
- B** 9:15 A.M.—2,400 ft: Men change into dry clothing . . .
- C** 12:00 P.M.—32,400 ft: Explosion heard
- D** 1:00 P.M.—35,800 ft: Reaches bottom
- E** 1:15 P.M.—Piccard’s last message on wireless
- F** 5:00 P.M.—*Trieste* resurfaces

- 2** This question has two parts. First, answer Part A. Then answer Part B.

**Part A**

Which detail from the diagram of the *Trieste* is supported by the text?

- A** A small window in the observation gondola allowed the crew to see outside the *Trieste*.
- B** The observation gondola of the *Trieste* was large enough to fit several crew members comfortably.
- C** The flood lamps were too far away for the crew members of the *Trieste* to see outside.
- D** The propellers allowed the crew of the *Trieste* to steer the craft underwater.

**Part B**

Underline **two** sentences from the text that support your answer in Part A.

They . . . saw a flat, white fish about a foot long that Piccard described as a sole. Little red shrimp swam in front of their window. Both discoveries were groundbreaking. Now humans knew that animals lived on the deepest part of the ocean floor.



**3** In paragraph 7, what is the meaning of the word groundbreaking?

- A** underground
- B** underneath the ocean
- C** new and important
- D** very destructive

**4** The box below includes details about the voyage of the *Trieste*.

#### Details

- The designers of the *Trieste* only meant for it to be used one time.
- Releasing lead pellets helped the craft rise to the surface of the ocean.
- After entering the *Trieste*, the crew changed into dry clothes and had a snack.
- The crew saw shrimp at the bottom of the Mariana Trench.
- Gasoline powered the *Trieste's* motor as it pushed the craft to the ocean floor.

Complete the chart by using details from the box. Write **one** detail that only appears in the text, **one** detail that only appears in a visual, and **one** detail that appears in both the text and in a visual.

What the Text Says	What a Visual Shows	What the Text Says and a Visual Shows



**Write**

- 5 Short Response** How did the diagram and the time line support the details in the passage? Explain how these visuals added to the text information. Describe **one** example of a fact you learned from the “Diagram of the *Trieste*” that was not in the passage. Describe **one** example of a fact you learned from the time line “Voyage of the *Trieste*” that was not in the passage.

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**Learning Target**

**In this lesson, you interpreted information that was presented in images, charts, graphs, and other visuals. Explain how this information gave you a deeper understanding of the text topic.**

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