

Ocean Motion

Interpreting Graphics and Text Features

Instructions:

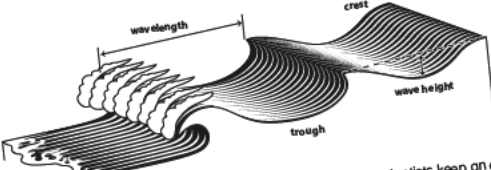
Read the passage and then answer the questions below. As you answer each question, go back to the text and underline or circle where you found the answer.

Helpful Hint:

Sometimes, nonfiction passages have graphics and text features such as photos, diagrams, charts, and graphs. These items often provide information that is not in the text—so pay close attention to them!



Ocean Motion



Water in the ocean moves constantly. It never stops. One type of ocean motion is the movement of waves. A wave is a swell that moves through a larger body of water before curling and crashing to the shore.

Earth's gravitational pull, wind, and earthquakes all cause waves. Wind, however, causes most of the waves that we see each day. First, wind blows across the ocean. The wind transfers energy to the water, causing the wave to start. This energy then causes the wave to move forward. The wave will continue moving until it reaches the shore.

Sudden underwater movement (such as an earthquake, volcanic eruption, or landslide) causes tsunamis. These disturbances release a burst of energy that is transferred to the ocean. This energy moves through the water in the same way energy from wind moves. When this powerful energy is transferred to water near the shoreline, it can cause waves up to 40 meters high, moving at speeds up to 300 miles per hour. While not all underwater disturbances

cause tsunamis, scientists keep an eye out for sudden movements such as these so that they can alert the public to stay away from the shoreline during dangerous times.

Want to discover more about waves? First, let's look at the terms used to discuss them. The top of each wave is its crest. The trough is the hollow area between the two crests. The wavelength is the distance between the two crests.

Far out to sea, wavelength is about the same across huge areas. This results in low, wide waves called swells.

Wavelength changes as the waves get closer to the shore. The movement grows slower and the wavelength gets smaller together. The wavelength gets smaller and the wave height grows larger. Then the waves crash into the shore.

After the surf crashes into the shore, the waves come back out to sea. This ocean motion never stops.

Questions

1. The highest part of a wave is called the _____.
Ⓐ trough Ⓒ ripple
Ⓑ wavelength Ⓓ crest
Underline the sentence where you found the answer.

2. _____ is the distance between two crests.
Ⓐ wave height Ⓒ stretch
Ⓑ swell Ⓓ trough
Circle the place that helped you answer the question.

3. How are surf and swells different?
Ⓐ Surf waves crash into the shore.
Ⓑ Surf waves get smaller in length but larger in height.
Ⓒ Swell waves are low and wide.
Ⓓ all of the above
Underline any place that helped you answer the question.

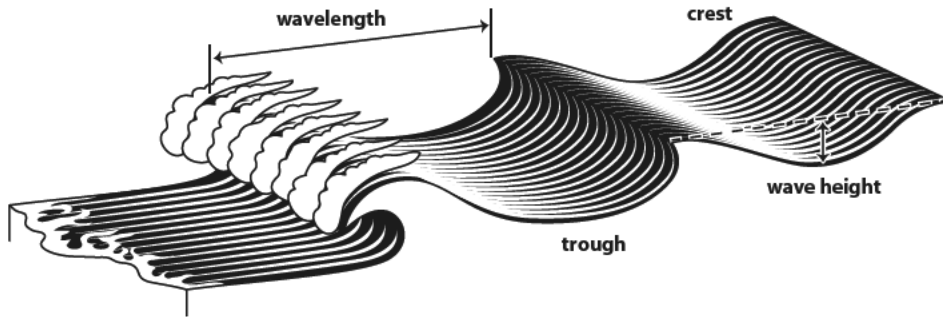
4. The lowest part of the wave is called the _____.
Ⓐ wave height Ⓒ trough
Ⓑ crest Ⓓ wavelength
Circle the place that helped you answer the question.

5. Explain what causes waves. Use details from the passage to support your answer.

4-77
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cause tsunamis, scientists keep an eye out for sudden movements such as these so that they can alert the public to stay away from the shoreline during dangerous times.

Want to discover more about waves? First, let's look at the terms used to discuss them. The top of each wave is its crest. The trough is the hollow area between two wave crests. The wavelength is the distance between the two crests.

Far out to sea, wavelength is about the same across huge areas. This results in low, wide waves called swells.

Wavelength changes as the waves get closer and closer to shore. The movement grows slower and the waves get closer together. The wavelength gets smaller as the wave height grows larger. Then the waves crash into the shore. The waves coming onto the shore are known as surf.

After the surf crashes into the shore, the water makes its way back out to sea. This will happen again and again. The ocean motion never stops.

Questions

1. The highest part of a wave is called the _____.

- (A) **trough** (C) **ripple**
(B) **wavelength** (D) **crest**

Underline the sentence where you found the answer.

3. How are surf and swells different?

- (A) **Surf waves crash into the shore.**
(B) **Surf waves get smaller in length but larger in height.**
(C) **Swell waves are low and wide.**
(D) **all of the above**

Underline any place that helped you answer the question.

2. _____ is the distance between the crest and the trough.

- (A) **wave height** (C) **wavelength**
(B) **swell** (D) **stretch**

Circle the place that helped you answer the question.

4. The lowest part of the wave is called the _____.

- (A) **wave height** (C) **trough**
(B) **crest** (D) **wavelength**

Circle the place that helped you answer the question.

5. Explain what causes waves. Use details from the passage to support your answer.
