

Traveling Waves

Summative Assessment #5

For

A Television in My Room

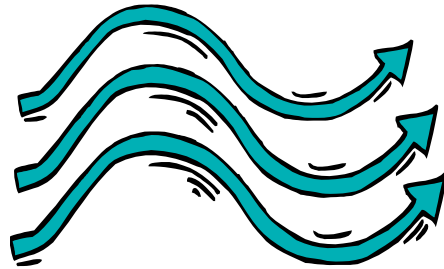


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Traveling Waves Summative Assessment #5

Type of Assessment:

Constructed Response, Selected Response

Duration:

30 minutes

Standard (s) Assessed:

SC.C.1.2.2.4.1, LA.A.1.2.3.4.3, LA.A.2.2.6.4.1, LA.A.2.2.7.4.1

Description of Assessment Activity:

The purpose of this assessment is for students to demonstrate their knowledge of wave behavior and the various language arts skills that have been taught in this lesson. Teachers will use this assessment to document mastery of the targeted standards. This is a two-part assessment. Part one addresses reading content and includes a text to be read by the teacher and student, four vocabulary words for which to write meanings, four statements from the text to be identified as fact, fiction, or opinion, including an explanation as to the reason for the identification, and three statements from the text to be categorized as cause or effect and the associated cause or effect identified. Part two addresses science content and consists of multiple-choice questions concerning wave behavior.

Teacher Directions:

Gain students' attention by reminding them of all the experiments that they have been doing with waves, and all the reading strategies they have learned. Tell them that the objective of this assessment is for them to have a chance to show what they know about waves and reading. Duplicate the assessment for each student. As students follow along, read the text aloud. Ask for questions and allow discussion of the text. Read all the directions aloud. Answer any questions students may have about the directions, but do not answer any questions specifically concerning the assessment items. Allow about twenty minutes for students to complete the assessment on their own.

Student Directions:

Listen and follow along as I read the story. Ask any questions that will help you understand the story. Listen as I read and explain the directions. Finally, reread the story and complete the assessment items.

Scoring Method and Criteria:

See the attached answer key for criteria. The reading section, part one, is scored by percentage correct with a total of **13** possible points. The science section is scored by percentage correct with a total of **7** possible points.

Name _____

Date _____

Traveling Waves

Listen and follow as the story is read. Then you read the story.

Have you ever watched a surfer sail across the waves? The surfboard seems to glide so smoothly. I wonder how surfing is possible.

A wave is a back-and-forth or up-and-down motion that travels. If the wave travels through matter, like water waves or sound waves, it is called a **mechanical wave**. Waves have high parts called crests and low parts called troughs. Surfers can ride either the crest or trough of a wave. Since surfers like to ride high on the wave, large **amplitude** is hoped for when picking a wave to ride.

Surfers paddle their boards out into the water. They watch how close together the waves are coming. This **frequency** of the waves helps the surfer choose just the right wave to ride. When there is time between waves to paddle and gain speed, the surfer begins the ride to shore. If the wave's **velocity** is great enough, the surfer stands up.

Now that I know about waves and how surfers use them, I think riding the wave would be easy.

Vocabulary:

Look for these words in the story. Use the story to discover the meaning of the words. Write a definition of each word below. (LA.A.1.2.3.4.3)

1. mechanical wave - _____

2. amplitude - _____

3. frequency - _____

4. velocity - _____

Comprehension:

Read the story again. Look for facts, fiction, and opinions. (LA.A.2.2.6.4.1)

5. Copy one sentence from the story that is a fact.

How do you know it is a fact?

6. Copy one sentence that is fiction.

How do you know it is fiction?

7. Copy one sentence that is opinion.

How do you know it is an opinion?

Each of these causes from the story has an effect. Find the cause in the story. Then copy the effect in the space below the cause. (LA.A.2.2.7.4.1)

8. When there is time between waves to paddle and gain speed,

9. If the wave's velocity is great enough,

10. Since surfers like to ride high on the wave,

Directions: Use what you have learned about waves to answer the following questions. Fill the circle by the correct answer. (SC.C.1.2.2.4.1)

11. Which type of material is easiest for waves to travel through?

- Solid
- Liquid

12. Which material lets wave travel continue with **little change** to the wave?

- Water
- Ice
- Snow

13. Which material will **not** allow a wave to continue?

- The air we breathe
- A heavy concrete wall
- Our eardrum

14. When soundproofing a room, what kinds of materials must be used? Why?

15. In a concert hall, it is important to stop sound waves so that the music is not mixed with the echoes. How can the sound waves be stopped?

Teacher Answer Key

The suggested answers below are a guide. Student answers must convey the same idea, but will not use the exact words.

Vocabulary:

Look for these words in the story. Use the story to discover the meaning of the words. Write a definition of each word below. (LA.A.1.2.3.4.3)

1. mechanical wave - _____

any wave that can travel through matter, such as water waves or sound waves

2. amplitude - **height of a wave** _____

3. frequency - **how close together the waves happen** _____

4. velocity - **speed** _____

Comprehension:

Read the story again. Look for facts, fiction, and opinions. (LA.A.2.2.6.4.1)

5. Copy one sentence from the story that is a fact.

Any fact from the story is appropriate; such as “Waves have high parts called crests and low parts called troughs.”

How do you know it is a fact?

Facts are true.

6. Copy one sentence that is fiction.

Any fictional statement from the story is appropriate; such as “Surfers can ride either the crest or trough of a wave.”

How do you know it is fiction?

Fiction is not true.

7. Copy one sentence that is opinion.

Any opinion from the story is appropriate; such as “Now that I know about waves and how surfers use them, I think riding the wave would be easy.”

How do you know it is an opinion?

Opinions are what people think and are not necessarily fact or fiction.

Each of these causes from the story has an effect. Find the cause in the story. Then, copy the effect in the space below the cause. (LA.A.2.2.7.4.1)

8. When there is time between waves to paddle and gain speed, **the surfer begins the ride to shore.**

9. If the wave's velocity is great enough, **the surfer stands up.**

10. Since surfers like to ride high on the wave, **large amplitude is hoped for when picking a wave to ride.**

Directions: Use what you have learned about waves to answer the following questions. Fill the circle by the correct answer. (SC.C.1.2.2.4.1)

11. Which type of material is easiest for waves to travel through?

Liquid

12. Which material lets wave travel continue with the **least** change to the wave?

Water

13. Which material will **not** allow a wave to continue?

A heavy concrete wall

14. When soundproofing a room, what kind of material must be used? Why?

A thick solid material will not allow the sound waves to continue and should be used to soundproof a room.

(Students answers may vary, but should convey this same concept.)

15. In a concert hall, it is important to stop sound waves so that the music is not mixed with the echoes. How can the sound waves be stopped?

The echoes are sound waves that are bouncing off the walls. To stop the echoes, material must be attached to the walls that will stop the sound waves instead of allowing them to bounce.

(Students answers may vary, but should convey this same concept.)