

Name: \_\_\_\_\_

Period: \_\_\_\_\_

## Sound WebQuest

Go to this website: <http://www.philtulga.com/MSSActivities.html>

1. What is the unit for volume or loudness: \_\_\_\_\_ How is it abbreviated: \_\_\_\_\_
2. According to this website, how fast can sound travel? \_\_\_\_\_
3. Will sound travel faster at 58°C or 88°C? \_\_\_\_\_  
Explain why this happens? \_\_\_\_\_  
\_\_\_\_\_
4. Based on what you learned from question #3, answer the following questions about the speed of sound by circling the medium in which you think sound would travel faster through:
  - a. Water **or** air
  - b. solid **or** air
  - c. water **or** solid
  - d. Explain why you think these are going to move faster? \_\_\_\_\_  
\_\_\_\_\_
5. Go to number 5 on the website titled Waves: read it and click on the hyperlink **Thunderstorm Stopwatch** activity.
  - a. If it takes 10 seconds for it to thunder after it lightning strikes how far is the storm? \_\_\_\_\_
  - b. If it takes 20 seconds how far is the storm? \_\_\_\_\_
6. Objects which vibrate faster produce a higher \_\_\_\_\_, and objects which vibrate more slowly produce a lower \_\_\_\_\_.
7. If you make a musical instrument shorter, will it have a **higher or lower** frequency?
8. Draw a tuning fork in the space below. Then draw a diagram similar to the one on the website that's shows how many waves will pass in 1 second if it has a frequency of 10 Hz

Go to this website: <http://library.thinkquest.org/10796/ch8/ch8.htm>

Scroll down to Section 1, "Types of Waves"

9. Mechanical waves require a material medium to travel (\_\_\_\_\_). These waves are divided into three different types.

- \_\_\_\_\_ cause the medium to move perpendicular to the direction of the wave.
- \_\_\_\_\_ cause the medium to move parallel to the direction of the wave.
- \_\_\_\_\_ are both transverse waves and longitudinal waves mixed in one medium.

10. Electromagnetic waves do not require a \_\_\_\_\_ to travel (light, radio).

11. Matter waves are produced by \_\_\_\_\_ and \_\_\_\_\_.

Scroll Down to Section 2, "Measuring Waves"

12. Any point on a transverse wave moves up and down in a repeating pattern.

13. The number of vibrations per second is called \_\_\_\_\_ and is measured in \_\_\_\_\_ (Hz). Here's the equation for frequency:

14. The shortest distance between peaks, the highest points, and troughs, the lowest points, is the - \_\_\_\_\_, draw the symbol for wavelength here: \_\_\_\_\_.

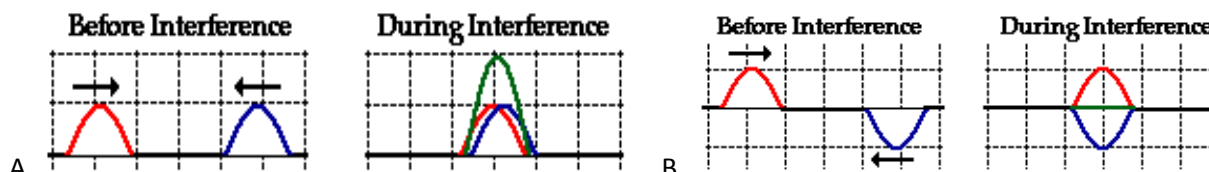
15. Scroll down to section 4, "Collision of Waves": When two waves traveling in opposite directions through the same medium collide, the amplitude of the resulting wave will be the sum of the two initial waves, this is called

\_\_\_\_\_.

16. \_\_\_\_\_ is when the amplitudes of the initial waves are in the same direction. The resulting wave will be larger than the original waves. The highest point of a constructive interference is called an \_\_\_\_\_.

17. \_\_\_\_\_ is when the amplitudes of the initial waves are opposite. The point in the middle of a destructive interference is called a \_\_\_\_\_ and it never moves.

18. Label the following diagrams as either **constructive interference** or **destructive interference**:



A.

B.

\_\_\_\_\_

\_\_\_\_\_

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Go to this website: <http://www.school-for-champions.com/science/sound.htm>

19. Does sound travel in a vacuum? \_\_\_\_\_

20. Light and \_\_\_\_\_ are \_\_\_\_\_ waves. They are completely \_\_\_\_\_ from sound waves, which is a vibration of \_\_\_\_\_.

21. Under the heading "Characteristics of Sound," copy the equation for the velocity of sound.

\_\_\_\_\_

22. Read the section "Creating Sound" and write a four sentence summary here.

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23. Read the section "Detecting Sound" and write a four sentence summary here.

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Follow this link:

<http://www.mysciencesite.com/optics4.html>

10. What is the virtual image?
12. What is a lens?
13. What are the two types of lenses?
14. Which type of lens is thicker in the middle?
15. Which type of lens is thinner in the middle?
16. What are concave and convex lenses used for?

Follow this link:

<http://www.pbs.org/wgbh/nova/tech/inventing-telescopes.html>

17. What did Galileo use to make a discovery about Venus?
18. What kind of telescope did Galileo use? Why is it called this?
19. What kind of Telescope did Newton use? Why is it called this?
20. Which type of telescope is more powerful?
21. How many lenses does a refracting telescope have and what are they called?