

Name _____ Date _____ Period _____

Sound Web Quest

Find the links at www.thesciencequeen.net > student resources > physics > sound web quest

Site 1: BBC BiteSize <https://www.bbc.com/bitesize/guides/zwd2bk7/revision/1>

1. Sound waves are _____ which means they vibrate in the same direction as the direction of travel.
2. The sections of the sound waves where the particles are pushed together are areas of _____. The sections of the sound waves where the particles are further apart are areas of _____.
3. Sound waves can be reflected to form an _____.
4. Sounds with frequencies above about 20 kHz are called _____.
5. Why do we see lightening before the thunder? _____
6. The speed of sound in solids varies depending upon the solid. It is about _____ in rubber and about _____ in steel.
7. How can ultrasound check for cracks in metal?

8. An _____ is a machine that shows the wave shape of an electrical signal.



Site 2: Noisy Planet <https://www.noisyplanet.nidcd.nih.gov/parents/what-is-noise-induced-hearing-loss>

9. Noise induced hearing loss happens when

10. When stereocilia are damaged, the hair cells can't send _____ about the _____ to the brain

11. Is noise induced hearing loss permanent or temporary? _____

12. An increase of 10 decibels means that a sound is _____ times more powerful.
The sound of an ambulance siren at 120 decibels is about _____ more intense than the weakest sound the average person can hear.

13. What are three ways you can reduced noise induced hearing loss?

- i. _____
- ii. _____
- iii. _____

14. The _____ the sound, the _____ the amount of time it takes for possible hearing loss to occur.

Click on Science of Hearing Loss

15. Noise-induced hearing loss is related what three factors?

- i. _____
- ii. _____
- iii. _____



Click on Kids and Pre Teens and then Where's the Noise? Fill in the chart below

Decibels	Sound
0	
	Whisper
	Refrigerator
60	
75	
	Heavy City traffic, school cafeteria
90	
100	
	Music player at maximum volume
	Concert
120	
140	
	Firecracker

Site 3: Sound in the Sea <https://dosits.org/science/>

16. What affects the speed of sound in water?

17. How did they initially measure the speed of sound in water?



Site 4: Sound Wave Simulation to <https://phet.colorado.edu/en/simulation/legacy/sound>

Click "Run" to start the simulation.

In the Sound Waves simulation, go to the Listen to a Single Source tab.

18. If you notice in the far-right handed corner, under Frequency it says 500Hz.

What does 1 Hz represent? _____

What does 500 Hz represent? _____

19. What do the dark and light bands represent? (Remember, sound waves are longitudinal waves.) _____

Select the Audio enabled and 'Listener' features.

20. What happens when you move the man back and forth?

Why? _____

21. What happens to the waves and the sound when you keep the amplitude constant but increase and decrease the frequency? Try and be as descriptive as possible.

22. What happens to the waves and the sound when you keep the frequency constant increase and decrease the amplitude? Be descriptive!

23. Is there a relationship between frequency and sound waves? If so, what is it?

24. Is there a relationship between amplitude and sound waves? If so, what is it?

