

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**Physical Science B - Review for Sound Test 2014-2015**

1. If the teacher is standing at the front of the room and turns to face the board you can still hear the voice.

A. Write about how the sound starts and what does it have to do to get to your ear

B. Draw a small picture to go with your explanation.

2. The teacher sings a song with some high notes and some low notes. What makes some notes high and some notes low? Give details.

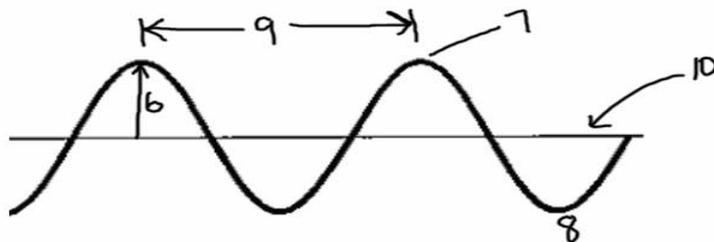
3. What is the equation relating the speed of sound, with wavelength, with... etc?

4. If you pluck the string lightly on a guitar it makes a sound. When you pluck the string harder the sound is louder. If we were drawing the wave on paper, what was changed about the **drawing** of the sound wave?

5. If you have two different sound waves, the wave that had a higher sound would have a different wavelength. How would the higher sound's wavelength be different from a sound that was lower?

**Label the wave**

- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_



11. From slowest to fastest, how does sound travel in **gas, solids, and liquid**?

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
Slowest Fastest

12. If swimmer A has one ear in the water and one ear out of the water, and swimmer B does a belly flop way at the other end of a very large pool, with which ear would swimmer A hear the splash first?

13. Sounds that are higher than human hearing are called \_\_\_\_\_

14. Sounds that are lower than human hearing are called \_\_\_\_\_

15. When ships use sound to show what is underwater, this is called \_\_\_\_\_

16. What is an echo?

When can we hear one?

17. What would be considered the low end for human hearing? \_\_\_\_\_ Hz

18. When the sound that a car makes is higher because it is coming towards you, and lower when it goes away from you, this is called \_\_\_\_\_.

19. About how fast is the speed of sound in air? \_\_\_\_\_ m/s

20. How can you estimate how far lightning is away from you?

21. If I increase the **frequency** of a sound, what effect do you notice about that sound?

22. In which kind of a wave does the matter or particles vibrate in a direction that is **different** than the energy travel?

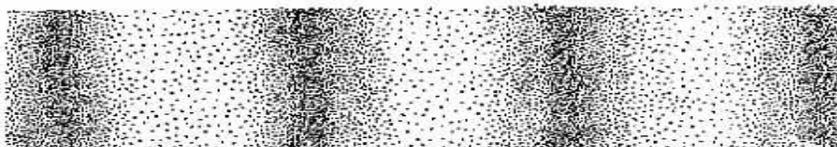
\_\_\_\_\_ Transverse      \_\_\_\_\_ Compressional      \_\_\_\_\_ Longitudinal

23. What are the units for the loudness, or intensity, of sound? \_\_\_\_\_

24. As you are standing on the side of the road, a fire truck goes by with its sirens blaring and you notice that a difference in the sound as it is driving away from you than it sounded when it was approaching you. Describe how they are different.

25. An echo can be used to calculate the distance of any object off in the distance. Fishermen use this technique all of the time to make their lives a little easier. They send down a sound wave through the water that reflects off the school of fish below their boat, and then the computer calculates how deep the fish are swimming. If the sound is sent out and it takes three seconds for the sound to travel there and back how deep are the fish? (Speed of sound in water is 1500 m/s)

26. Label a rarefaction, compression, and the wavelength of the wave below.



27. Explain why sound cannot be heard in a vacuum? (NOT a vacuum cleaner, of course!)
28. What is the wavelength of a 512 Hz sound in air? \_\_\_\_\_
29. If a 320 Hz wave was 1.34 m long, what would be the speed of the wave? \_\_\_\_\_
30. How many waves of frequency 15,000 Hz would fit into a 2 meter long tube in our classroom? \_\_\_\_\_
31. Instead of crests and troughs, as in an ocean wave, a longitudinal wave has compressions and \_\_\_\_\_.
32. To determine the speed of a wave, you must know the wave's wavelength and \_\_\_\_\_.
33. To compare the energy of different waves, measure the \_\_\_\_\_ of the waves.
34. If two waves collide and form a temporary larger wave, the interference is \_\_\_\_\_.
35. You note a 6.0-second delay for an echo in a canyon. What is the distance to the wall of the canyon? \_\_\_\_\_
36. Sounds that are higher than the range of human hearing are called \_\_\_\_\_
37. Sounds that are lower than the range of human hearing are called \_\_\_\_\_
38. If a plane flies at 700 m/s, what is its Mach speed? \_\_\_\_\_
39. What happens to pitch in a string if you:

Increase	Then pitch will:
String Length	
String tension (tightness)	
String Density (usually thickness)	