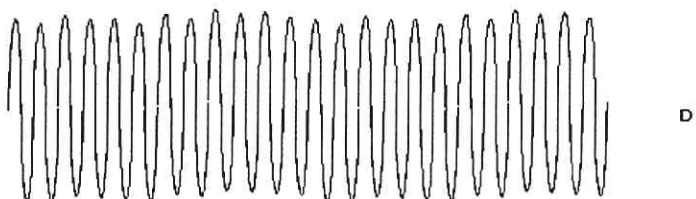
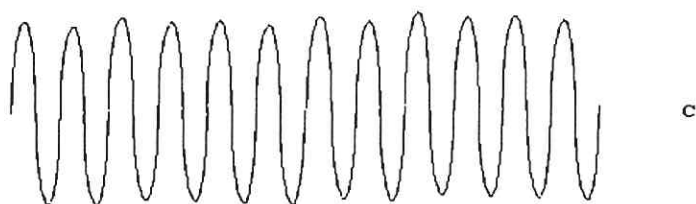
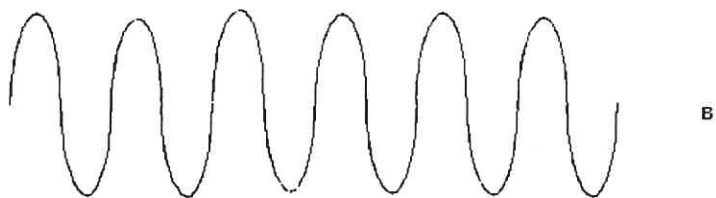
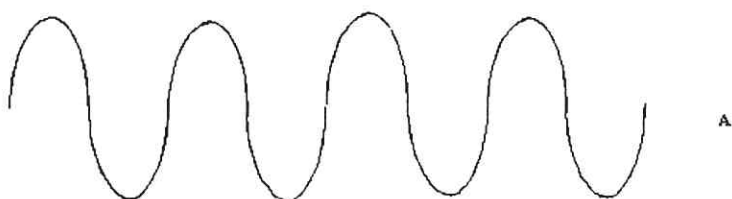


**WWMS 7th Grade Science Waves Unit Review****Multiple Choice**

*Identify the letter of the choice that best completes the statement or answers the question.*

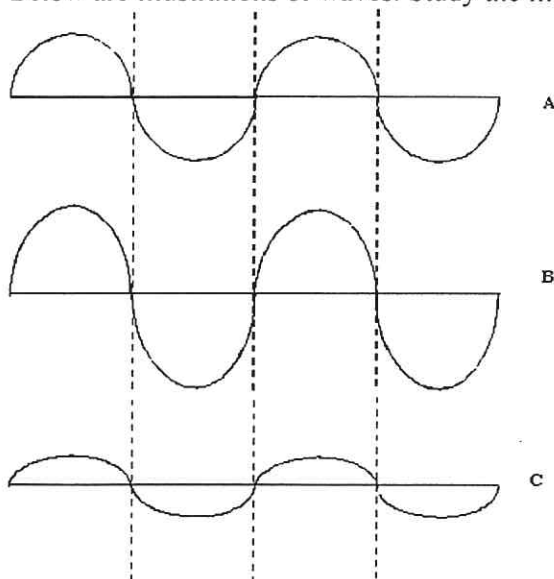
- \_\_\_\_\_ 1. \_\_\_\_\_ is the bending of waves around barriers or through openings.  
a. Resonance b. Diffraction c. Echolocation d. Reflection
- \_\_\_\_\_ 2. Which wave interaction explains why sound waves can be heard around corners?  
a. reflection b. refraction c. diffraction d. interference
- \_\_\_\_\_ 3. Because of their high energy, \_\_\_\_\_ can be used by radiologists to treat some forms of cancer.  
a. X rays b. gamma rays c. microwaves d. ultraviolet radiation
- \_\_\_\_\_ 4. You need protection from ultraviolet (UV) radiation on overcast days because UV radiation  
a. can travel through clouds. b. is blocked by clouds. c. combines with the atmosphere to form a toxic substance. d. None of the above
- \_\_\_\_\_ 5. Light is \_\_\_\_\_ when it strikes the glass in a window.  
a. transmitted b. reflected c. absorbed d. All of the above
- \_\_\_\_\_ 6. The bending of a wave as it passes at an angle from one medium to another is  
a. reflection. b. refraction. c. diffraction. d. interference.
- \_\_\_\_\_ 7. A(n) \_\_\_\_\_ is an example of a mechanical wave.  
a. ocean wave b. radio wave c. light wave d. X ray
- \_\_\_\_\_ 8. Electromagnetic waves are  
a. standing waves. b. longitudinal waves. c. mechanical waves d. transverse waves.

Below are illustrations of waves. Each illustration represents 1 s. Study the illustrations and answer the questions that follow.



- \_\_\_\_ 9. Which wave has a frequency of 6 Hz?  
a. **A** b. **B** c. **C** d. **D**
- \_\_\_\_ 10. Which wave has the highest energy?  
a. **A** b. **B** c. **C** d. **D**
- \_\_\_\_ 11. When white light shines on a white object,  
a. the color white is reflected. b. the color white is absorbed. c. all colors are reflected. d. all colors are absorbed.

Below are illustrations of waves. Study the illustrations and answer the questions that follow.

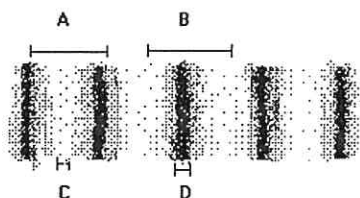


- \_\_\_\_\_ 12. Which wave has the largest amplitude?  
a. A b. B c. C d. They all have the same amplitude.
- \_\_\_\_\_ 13. Waves that do NOT require a medium are  
a. longitudinal waves. b. electromagnetic waves. c. surface waves. d. mechanical waves.
- \_\_\_\_\_ 14. A wave is \_\_\_\_\_ when it strikes a barrier and bounces back.  
a. compressed b. diffracted c. reflected d. resonated
- \_\_\_\_\_ 15. Compressions and rarefactions are sections of  
a. TV waves. b. radio waves. c. transverse waves. d. longitudinal waves.
- \_\_\_\_\_ 16. You feel warm when you sit outside on a sunny summer day because the sun emits  
a. radio waves. b. microwaves. c. infrared waves. d. visible light.
- \_\_\_\_\_ 17. \_\_\_\_\_ results when the crests of one wave overlap the troughs of another wave.  
a. Diffraction b. Refraction c. Constructive interference. d. Destructive interference.
- \_\_\_\_\_ 18. The speed of a sound depends on  
a. its source. b. the force of its compressions. c. the number of waves per second. d. the medium through which it travels.
- \_\_\_\_\_ 19. Sound travels as a(n)  
a. longitudinal wave. b. transverse wave. c. electromagnetic wave. d. All of the above
- \_\_\_\_\_ 20. Refraction occurs when a wave enters a new medium at an angle because  
a. the frequency changes. b. the amplitude changes. c. the wave speed changes. d. None of the above
- \_\_\_\_\_ 21. \_\_\_\_\_ occurs when a wave bounces back after striking a barrier.  
a. Reflection b. Refraction c. Diffraction d. Interference
- \_\_\_\_\_ 22. Waves in the ocean are 6 m apart and pass a surfer every 2 s. What is the wave speed?  
a. 0.33 m/s b. 3 m/s c. 6 m/s d. 12 m/s

You attend a July 4<sup>th</sup> firework celebration in your town. You find a seat that has a good view of the fireworks display, where you are 700 m away from the point the fireworks are being set off.

- \_\_\_\_ 23. During the show, you notice that you see the lights of the fireworks before you hear the explosive sounds. This happens because the speed of  
a. light is faster than the speed of sound in air. b. sound is faster than the speed of light in air. c. the speed of light and sound are the same in air. d. None of the above
- \_\_\_\_ 24. Although thunder and lightning are produced at the same time, you  
a. see lightning before you hear thunder because sound travels faster than light. b. see lightning before you hear thunder because light travels faster than sound. c. hear thunder before you see lightning because sound travels faster than light. d. hear thunder before you see lightning because light travels faster than sound.
- \_\_\_\_ 25. X rays are used by doctors because  
a. exposure to X rays does not damage or kill living cells. b. X rays travel easily through bones. c. X rays travel easily through skin and muscle and are absorbed by bones. d. All of the above
- \_\_\_\_ 26. Constructive interference occurs when  
a. the rarefactions of one wave overlap the rarefactions of another wave. b. the compressions of one wave overlap the rarefactions of another wave. c. the compressions of one wave overlap the compressions of another wave. d. Both (a) and (c)
- \_\_\_\_ 27. When white light shines on a black object,  
a. the color black is reflected. b. the color black is absorbed. c. all colors are reflected. d. all colors are absorbed.

Below is an illustration of the behavior of air particles near a vibrating drumhead. Examine the illustration and answer the questions that follow.



- \_\_\_\_ 28. Region **D** illustrates a \_\_\_\_ of air particles.  
a. compression b. rarefaction c. refraction d. diffraction
- \_\_\_\_ 29. \_\_\_\_ results when the crests of one wave overlap the crests of another wave.  
a. Refraction b. Diffraction c. Constructive interference d. Destructive interference
- \_\_\_\_ 30. Microwaves are often used for  
a. cooking. b. broadcasting AM radio. c. cancer treatment. d. All of the above