

SLINKY MINI-LAB

Name: _____ hr ____ /23

DIRECTIONS:

Stretch the Slinky across your table (or the floor if you need more space). Have each partner hold one end of the Slinky. For the first few trials, stretch the Slinky so that it's fairly taut – but don't pull it so hard that it gets bent.

Have one partner make sideways waves in the Slinky while the other partner holds it. Make slow waves, then medium, then fast. Draw the shapes of the waves below before moving on. (These will be your **Results**.-3pts)

SLOW

MEDIUM

FAST

2. Repeat your trials, this time keeping the Slinky very loose. How are the waves different when you have the slinky more loose? _____

Analysis: Put your Slinky back in the box and answer the questions below.

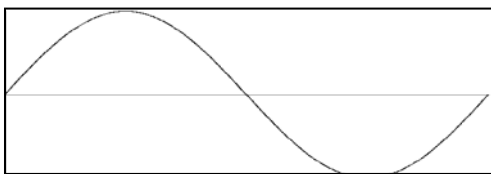
3. Compare the shapes of the waves in the first three trials. How did they change when you started to move the Slinky faster? (were they closer together, or farther apart?) _____
4. Compare the amount of energy that you had to put in to make the slow, medium, and fast waves. (How did your arm feel after each trial?) _____
- _____

5. The loose trials made the slinky have taller wavelengths. What is the tallness of a wavelength called?

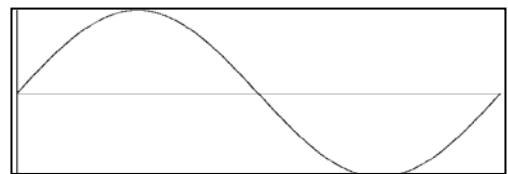
Conclusion: What are the major trends that you noticed in this lab? Summarize your findings below.

6. When it is moving slow the wavelengths are... _____
7. When it is moving fast the wavelengths are... _____
8. When it is moving fast the energy is _____

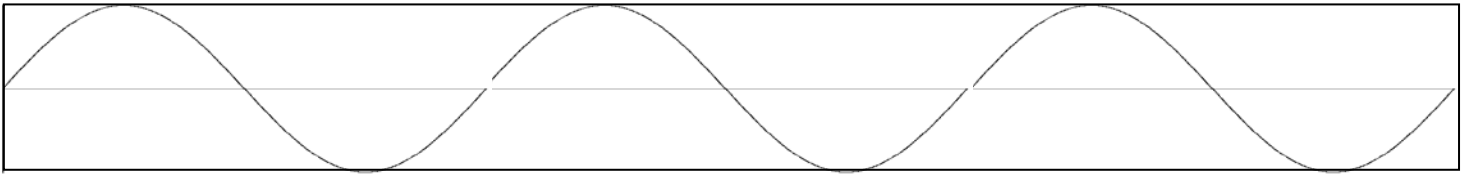
9. Draw a wave that has a shorter wavelength



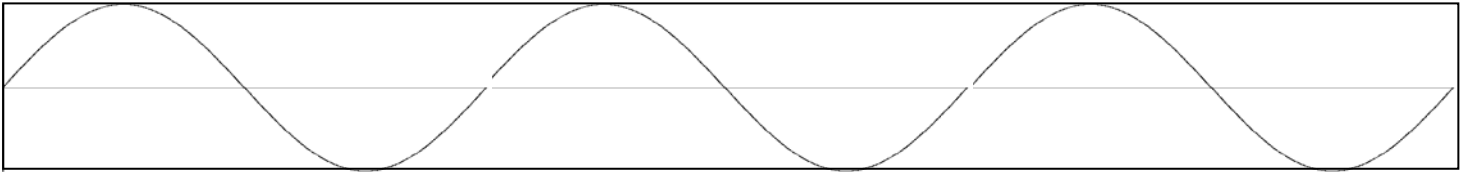
10. Draw one that has a longer wavelength



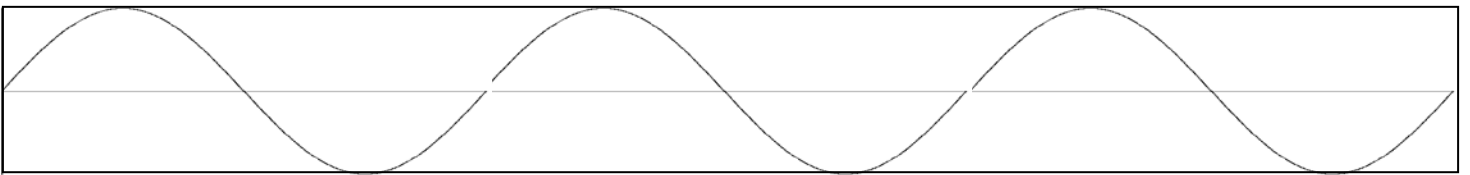
11. Draw a wave with higher amplitude, but keep the wavelength the same.



12. Draw a wave with lower amplitude, but keep the wavelength the same.

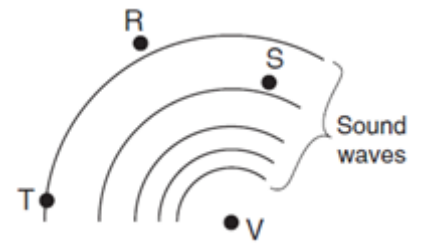


13. Draw a wave with higher energy



14. In the diagram on the right, at which point are the sound waves being generated?

- a. R b. S c. T d. V



15. Explain: I know this because...

16. A high-amplitude, short-wavelength wave has:

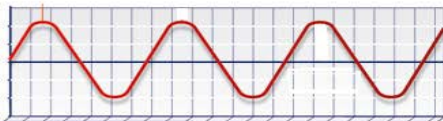
- a. Low energy
b. Medium energy
c. High energy
d. No way to tell

17. Explain:

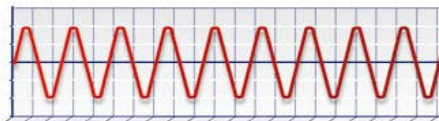
18. Waves cannot travel through:

- a. Air
b. Water
c. Walls
d. None of the above

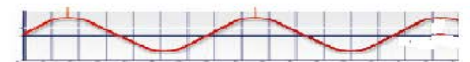
19. Explain:



WAVE A



WAVE B



WAVE C

20. Put the waves above in order of increasing energy. Explain how you got your answer in complete sentences using the following vocabulary words: (2 pts) wavelength amplitude frequency
