

Name: _____

Date: _____

Decoding Sound Graphs



Amplitude is the height of a wave from the resting position. It relates to how loud a sound is.

Frequency is the number of waves that pass a point in one second. It affects pitch.

Wavelength is the distance between two consecutive crests or compressions.

Pitch is how high or low a sound seems, based on its frequency.

Part 1: Wave Properties

Use the word bank to complete the definitions of a sound wave's **properties**.

Amplitude

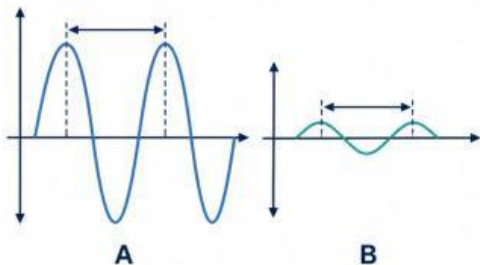
Frequency

Wavelength

Pitch

1. The distance from the resting position to the top of a crest is the _____. It determines how loud a sound is.
2. The number of waves that pass a point in one second is the _____.
3. The physical distance between two consecutive crests on a wave is the _____.
4. How high or low a sound seems to a listener, based on its frequency, is called _____.

Part 2: Analyzing Amplitude

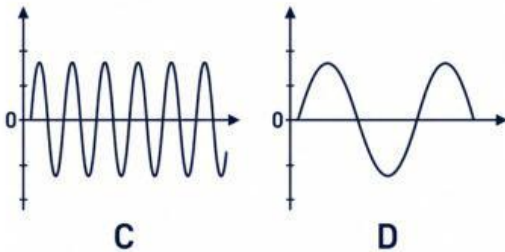


5. Compare Graph A and Graph B. Which **property** is different between the two waves?

6. Which graph represents a louder sound?

7. Explain how you know which sound is louder based on the visual evidence in the graphs.

Part 3: Analyzing Frequency



8. Compare Graph C and Graph D. Which **property** is different between the two waves?

9. Which graph represents a higher-pitched sound?

10. Explain the relationship between wavelength, frequency, and pitch as shown in Graph C.

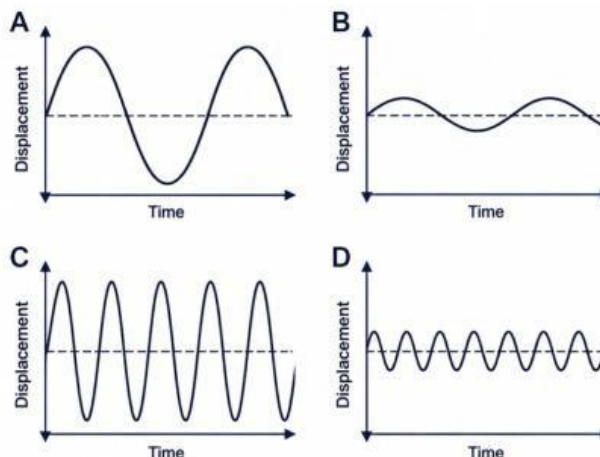
Part 4: Draw the Conclusion

11. A scientist records the sound of a whispering mouse and a roaring lion. Which choice best describes how the lion's roar would compare to the mouse's squeak on a graph?

- a) Higher amplitude and higher frequency
- b) Higher amplitude and lower frequency
- c) Lower amplitude and higher frequency
- d) Lower amplitude and lower frequency

Part 5: Multiple-Choice Graph Review

Use the wave diagrams below to answer Questions 12–16. Choose the best answer.



12. Which graph shows the greatest amplitude?

- a) Graph A
- b) Graph B
- c) Graph C

13. Which graph represents the highest-pitched sound?

- a) Graph A
- b) Graph B
- c) Graph C

14. Graph A and Graph C have the same amplitude. What **property** is different?

- a) Frequency
- b) Volume
- c) Wavelength height

15. Graph B and Graph D have the same amplitude. Which statement is correct?

- a) Graph B has a higher frequency and higher pitch.
- b) Graph D has a higher frequency and higher pitch.
- c) Graph B has a greater amplitude and is louder.

16. Which graph would represent the loudest sound with the lowest pitch?

- a) Graph A
- b) Graph B
- c) Graph C