

Year 5 Music Assessment: Exploring the Science of Pitch

Learning objective: To demonstrate an understanding of pitch, frequency, and how different musical instruments produce high and low sounds.

Read each question carefully. Use your musical knowledge to answer in full sentences where required. Ensure you use technical vocabulary correctly.

Max the monkey is investigating sound in the jungle. He notices that when he plucks a thin, tight rubber band, it makes a high-pitched 'ping'. When he plucks a thick, loose rubber band, it creates a low-pitched 'thrum'. Meanwhile, Nova the owl is observing the science behind the music, noting that the speed of the vibration determines the pitch we hear.

Word bank: Frequency · Vibration · Oscillation · High pitch · Low pitch · Sound wave · Amplitude · Interval

1. Explain the relationship between the speed of a vibration and the pitch of the sound produced. (2 marks) (2 marks)

2. Compare and contrast a high-pitched sound and a low-pitched sound in terms of their frequency. (3 marks) (3 marks)

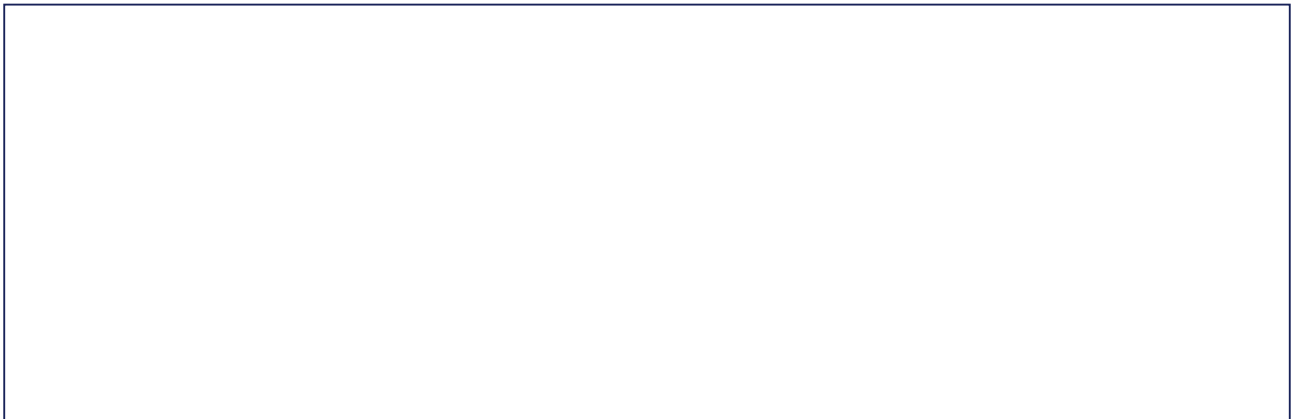
3. Max finds a set of metal chimes. The shortest chime makes a high sound, and the longest chime makes a low sound. Justify why the length of the chime affects the pitch. (4 marks) (4 marks)

4. If you were to tighten the strings on a guitar, what happens to the pitch? Explain why this occurs. (3 marks) (3 marks)

5. What might happen to the sound produced by a drum if you replaced the skin with a much thicker, heavier material? Explain your reasoning. (3 marks) (3 marks)

6. Extended Response: Describe how a sound travels from an instrument to your ear. Include the terms 'vibration', 'air particles', and 'frequency' in your answer. (5 marks) (5 marks)

Draw: Draw two sound waves: one representing a high-pitched sound and one representing a low-pitched sound. Label the frequency of each wave.



Extension challenge: Imagine you are designing a brand-new musical instrument. Write a short proposal (approx. 100 words) describing how your instrument produces sound and how a musician can change the pitch during a performance. Use the vocabulary from the word bank to justify your design choices. Total: /25