

Max's Musical Pitch Investigation

Learning objective: To understand, identify, and describe high and low pitch in sounds and musical instruments.

Use your knowledge of sound vibrations and musical instruments to answer the questions below. Think about how the size and tension of an object affect the pitch it produces.

Word bank: Pitch · High · Low · Vibration · Frequency · Tension · Melody · Interval

1. Max is comparing the sounds of a large double bass and a tiny flute. Explain why the double bass produces a lower pitch than the flute. Refer to the size of the instruments in your answer. (2 marks)

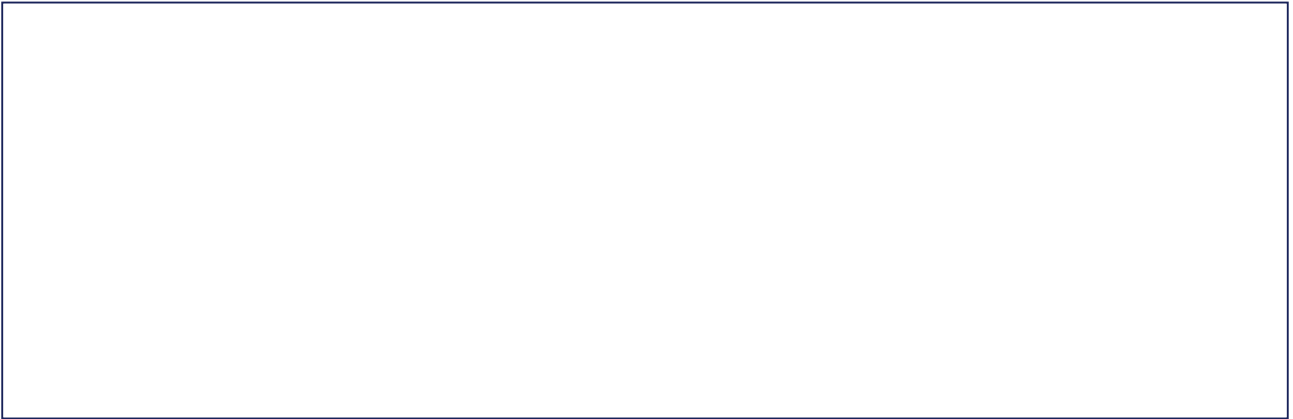
2. If you pluck a guitar string and then tighten it (increase the tension), what happens to the pitch? Justify your answer using the concept of vibrations. (2 marks)

3. Compare and contrast a 'high' pitch sound and a 'low' pitch sound. How would you describe the difference in the way they feel or sound to the human ear? (2 marks)

4. Max has a set of glass bottles filled with different amounts of water. If he hits them with a spoon, which bottle—the one nearly empty or the one nearly full—will produce the highest pitch? Explain why. (3 marks)

5. What might happen to the pitch of a drum if you replaced the tight skin with a loose, floppy piece of fabric? Explain your reasoning. (2 marks)

Draw: Draw two musical instruments of your choice. Label them 'High Pitch' and 'Low Pitch' and add arrows to show how the size of the vibrating part creates that specific sound.



Extension challenge: Imagine you are designing a brand new musical instrument. How could you change the pitch while playing it? Write a short paragraph describing your invention and the mechanism you would use to shift between high and low notes.