

Max's Musical Mystery: The Pitch Investigation

Learning objective: To understand and identify pitch (high and low sounds) and how it changes in different instruments.

Max the Monkey has discovered a collection of musical instruments in the forest. Your task is to sort these instruments based on their pitch and help Max solve the puzzle of how sound works. Read each scenario carefully, decide whether the sound produced would have a high pitch or a low pitch, and provide a justification for your answer.

Word bank: Frequency · Vibration · High pitch · Low pitch · Tight · Loose · Short · Long

1. Max plucks a very thin, short guitar string. Will the pitch be high or low? Explain why the size of the string affects the sound. (2 marks)

2. Zara the Zebra is playing a large, heavy drum. Compare the pitch of this drum to a small, light tambourine. Which one creates a lower pitch and why? (2 marks)

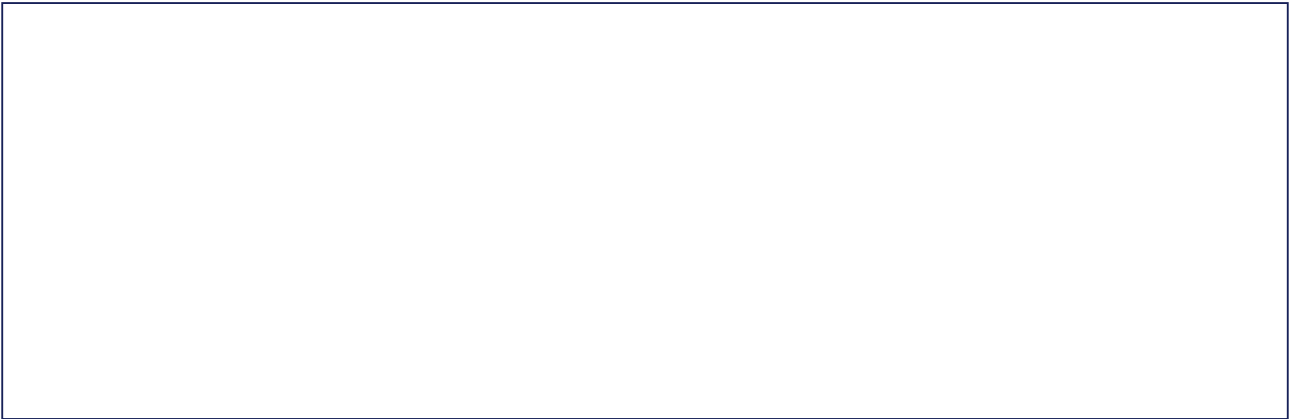
3. If Pip the Caterpillar shortens the length of a vibrating ruler on the edge of a desk, what happens to the pitch? Justify your answer using the word 'vibration'. (2 marks)

4. Nova the Owl is listening to a flute. If she covers all the holes to make the air column inside the flute longer, will the pitch rise or fall? Explain your reasoning. (2 marks)

5. Max wants to buy new strings for his harp. A thin string costs £2.50 and a thick, heavy string costs £4.00. Which string would produce a higher pitch? Justify your choice. (2 marks)

6. What might happen if you strike a glass bottle filled with a large amount of water compared to an empty one? Compare the two sounds. (2 marks)

Draw: Draw a diagram of two different instruments: one that makes a very high sound and one that makes a very low sound. Label the parts that vibrate to create the sound.



Extension challenge: Design your own musical instrument using recycled materials found at home. Write a short paragraph explaining how you can change the pitch of your instrument. Would it sound different if you used different materials? Justify your design choices.