

Y4 Pitch

KS2 Y4 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Two guitar strings are the same thickness and tightness. One is shorter. Which plays a higher note?

Step 1 · What is different?

Only the length

Step 2 · What is the pattern for length?

Shorter vibrating string → higher pitch

Answer: The shorter string plays the higher note. That's why guitarists press strings down to shorten them.

Check: Only one thing changed, so it's a fair comparison.

2. Now try one with the steps

How does tightening an elastic band stretched over a box change its sound?

Step 1 · Pluck a loose band

Step 2 · Stretch it tighter and pluck again

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. What does 'pitch' mean?

2. Does a whistle make a high-pitched or low-pitched sound?

3. Does a big bass drum make a high or a low sound?

4. Which makes a higher note: a short string or a long string?

5. Which makes a higher note: a tight elastic band or a loose one?

6. Which makes a lower note: a thick string or a thin string?

7. Is pitch the same?

8. On a xylophone, do the short bars play high or low notes?

9. Glass bottles are tapped with a spoon. Does the bottle with the most water make the highest or lowest note?

10. How does a guitarist make a string play a higher note without changing the string?

11. Pan pipe tubes: 5 cm, 10 cm, 15 cm. Which tube plays the lowest note?

12. Complete the pattern: 'The shorter the string, the _____ the pitch.'

13. Sam wants to test whether string length changes pitch. Name ONE thing he must keep the same.

14. A violin and a double bass are both string instruments. Which plays lower notes and why?

4. Before you hand it in

High pitch means loud.

A mouse squeak is high and quiet. A lorry's rumble is low and loud.

Bigger instruments make higher sounds.

Bigger, longer, thicker or looser → lower pitch.

The bottle pattern is always the same whether you tap or blow.

Tapping: more water → lower note. Blowing across the top: more water → less air → higher note.

Testing pitch by changing the length AND the tightness of a string at once.

Change one feature at a time.