

Tuning Beats: Slower, Faster or the Same?

Compare the pulsing of two simultaneous tones. Keep the playback volume fixed. The reference is always 440 Hz.

First study Handout 421, Hear the Pulse Between Two Tones. Hz means cycles per second. For these steady pure tones, beat rate equals the distance between the two frequencies in Hz.

1 · COMPARE THE SECOND CLIP WITH THE FIRST

Play Items 1–6. Each has two six-second clips, separated by one second. Write **slower, faster or same** for the second clip’s beat rate. Rates used: 0, 1 or 3 beats per second. Zero means no pulsing. Listen for how often the sound swells, not how loud it is overall. A steady example may sound louder; no pulsing still means zero beats.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

2 · DOES THIS CONTROLLED MOVE GET CLOSER?

Play Items 7–10. Each clip combines the reference with the printed candidate. Write **closer or farther** for the second candidate, then both beat rates.

Item	Reference	Candidate move	Closer / farther	Rates (beats/s)
7	440 Hz	443 → 441 Hz	_____	_____ → _____
8	440 Hz	437 → 435 Hz	_____	_____ → _____
9	440 Hz	441 → 443 Hz	_____	_____ → _____
10	440 Hz	437 → 439 Hz	_____	_____ → _____

3 · EQUAL RATES, OPPOSITE SIDES

Play Items 11–12. Both compare 437 Hz and 443 Hz against 440 Hz, in a hidden order.

11. Beat rates: ____ and ____ beats/s. Does beat rate alone identify which candidate is above 440 Hz? _____
12. Beat rates: ____ and ____ beats/s. Does beat rate alone identify which candidate is above 440 Hz? _____
- Can you conclude that the two candidates are equally far from the reference in Hz? _____

Try it A pair beats 3 times per second. Does this alone prove the candidate is sharp? Explain using two candidate frequencies around 440 Hz.

My explanation:



Listen: tissimo.co/worksheets/ear-training-tuning-beats
Mono audio · use a comfortable volume · synthesized directly to preserve the exact frequencies.

Credit an explanation naming both candidates and their equal 3-beat/s rate.
differ by 3 Hz.
11–12: 3 and 3; no in both. Equal Hz distance: yes. Rate alone gives distance, not side. Try it: No. 437 Hz is below 440 Hz and 443 Hz is above it; both
7: closer (3→1) · 8: farther (3→5) · 9: farther (1→3) · 10: closer (3→1).
4: faster (1→3) · 5: slower (3→0) · 6: same (0→0)
1: faster (0→1) · 2: slower (3→1) · 3: same (1→1)