



Tempo, Meter, Beat Units, and Subdivision

<https://musicreason.com/resources/tempo-meter-beat-units-and-subdivision/> · Last updated 2026-09-06

A BPM number by itself does not describe a tempo. "120" could mean 120 quarter notes per minute or 120 dotted-quarter notes per minute, and those are genuinely different speeds. Meter adds a second layer on top of tempo: how beats are grouped, not just how long each one lasts.

BPM only means something with a stated beat unit

120 BPM in 4/4 is almost always counted as 120 quarter-note beats per minute, 500 ms each. 120 BPM in 6/8 is conventionally counted as 120 dotted-quarter beats per minute (two big beats per bar), even though the bar also contains six eighth notes. The numerator and denominator of a time signature describe grouping and note value, not the metronome's actual beat unit, which is why [Time Signature Explorer](#) states the conventional beat unit explicitly for each meter instead of assuming quarter notes everywhere.

A worked subdivision, at your own tempo

At 120 BPM, a quarter note lasts 500 ms. A dotted eighth note lasts 187.5 ms. A triplet eighth note lasts 166.7 ms.

The dotted and triplet relationships never change: a dot always multiplies a duration by $3/2$, and a triplet always multiplies it by $2/3$, regardless of tempo. What changes with BPM is only the base quarter-note duration ($60,000 / \text{BPM}$ in milliseconds) that every other value scales from. [Subdivision Trainer](#) and [Tempo-Synced Delay Calculator](#) both use this identical relationship for different purposes: one for rhythmic practice, one for tempo-locked studio timing.

Tap Tempo's limits are about your taps, not the math

[Tap Tempo](#) averages the intervals between your taps and discards statistical outliers, so a few uneven taps at the start pull the running estimate before it settles on a stable value. The tool reports the same averaging method every time; the variability you see reflects your own tap consistency, not a hidden device or browser quirk.

Why the Metronome does not use a plain JavaScript timer

A naive repeating timer can drift under browser load, since the browser only guarantees a timer fires no earlier than requested, never exactly on time. MusicReason's [Metronome](#) instead uses a look-ahead scheduler that queues each click slightly ahead of when it should sound, locked to the audio

clock rather than to JavaScript's own timing, which is what keeps a long metronome session from slowly drifting off tempo.

Frequently asked questions

Is 120 BPM in 4/4 the same speed as 120 BPM in 6/8?

The beat duration is identical, 500 ms, but the felt pulse usually is not. 6/8 at 120 BPM is normally counted in two dotted-quarter beats per measure, not six eighth-note beats, so the practical feel is closer to a fast two than a moderate six.

Why does Tap Tempo sometimes disagree with my metronome app?

Tap Tempo averages the intervals between your taps and discards outliers, so a few uneven taps at the start pull the estimate before it settles. It reports the same statistical average method every time, not a device-specific timing quirk.

What limits does browser scheduling put on tempo accuracy?

A browser timer alone can drift under load. MusicReason's Metronome uses a look-ahead audio-clock scheduler instead of a plain timer, scheduling clicks slightly ahead of when they play so the beat stays locked to the audio clock rather than to JavaScript's own timing.

Where this shows up

RHYTHM AND TEMPO

Metronome

RHYTHM AND TEMPO

Tap Tempo

RHYTHM AND TEMPO

Tempo Conversion Calculator

RHYTHM AND TEMPO

Time Signature Explorer

RHYTHM AND TEMPO

Subdivision Trainer

RHYTHM AND TEMPO

Measure Duration Calculator

RHYTHM AND TEMPO

Count-In Builder

PRODUCTION AND AUDIO MATH

Tempo-Synced Delay Calculator