

Hemiola: Switching from 6/8 to 3/4 Meter

By Douglas Niedt

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First, let's get the standard jokes out of the way. Yes, hemiola (pronounced "hem-ee-**oh**-luh") sounds like a disease. Or, it makes some people think of the medical condition called hemophilia where the blood does not clot properly.

- Guitarist #1: "My guitar teacher says I have a bad hemiola!"
- Guitarist #2: "Wow —that sounds serious!!!"

1. What do you call a musician or composer who really digs hemiola effects?

2. A hemiola-philiac.

What is a Hemiola?

Hemiola is a rhythmic effect produced by changing the grouping of beats. The most common is to change from groups of two to groups of three (or vice-versa). For guitar music, this corresponds most frequently to changing from 6/8 meter to 3/4 meter.

Higher Math

It takes advantage of the fact that $6=3+3$ and also that $6=2+2+2$.

This is How It Works

In music, there are 6 eighth notes (quavers) in each measure in 6/8 meter (Example #1):

Note to my American readers: "quaver" is the British term for our eighth note and "crochet" the term for our quarter note.

Example #1.

In 6/8 meter, there are six 8th notes (quavers) in each measure.



But there are also 6 eighth notes (quavers) in each measure in 3/4 meter (Example #2):

Example #2.

But in 3/4 meter, there are also six 8th notes (quavers) in each measure.



The difference is how they are grouped, accented, and counted. Notice that the notes are beamed into groups of 3 in 6/8. But they are beamed into groups of 2 in 3/4 (Example #3):

Example #3.

Both 6/8 and 3/4 meter contain six 8th notes (quavers) in each measure.

Only the grouping of the notes and which notes are accented change.

THE SPEED OF THE NOTES STAYS THE SAME.

A musical staff comparing 6/8 and 3/4 meters. The first measure is in 6/8 time, showing six eighth notes beamed in groups of three (1-2-3 and 4-5-6). Red boxes and arrows highlight the first and fourth notes, which are accented. The second measure is in 3/4 time, showing six eighth notes beamed in groups of two (1-2, 3-4, 5-6). Blue boxes and arrows highlight the first, third, and fifth notes, which are accented. The third measure is in 6/8 time, showing six eighth notes beamed in groups of three. The fourth measure is in 3/4 time, showing six eighth notes beamed in groups of two. Above the notes are the numbers 1, 2, 3, 4, 5, 6 for the 6/8 measures and 1, 2, 3 for the 3/4 measures. Red and blue beams and accents are used to distinguish the two meters. Text annotations explain the grouping and counting differences.

But the speed of the notes stays the same.

Beam In 6/8 the notes are beamed and accented in groups of three.

Beam In 3/4 the notes are beamed and accented in groups of two.

The 6/8 meter may be counted in different ways. Although the traditional way is most correct, when it comes to counting hemiola, do whatever is easiest for you (Example #4):

Example #4.

Traditionally, 6/8 is counted like this:



But it can also be counted like this as long as the notes are counted in groups of three:



The 3/4 meter can also be counted in different ways (Example #5):

Example #5.

Traditionally, 3/4 is counted like this:



But it can also be counted like this as long as the notes are counted in groups of two:



When faced with a hemiola rhythm, (most commonly switching back and forth from 6/8 to 3/4), it can be counted in any of the following ways. Do whichever is least confusing to you (Example #6):

Example #6.

Therefore, the switch from 6/8 to 3/4 could be counted traditionally:

The speed of the notes stays the same.

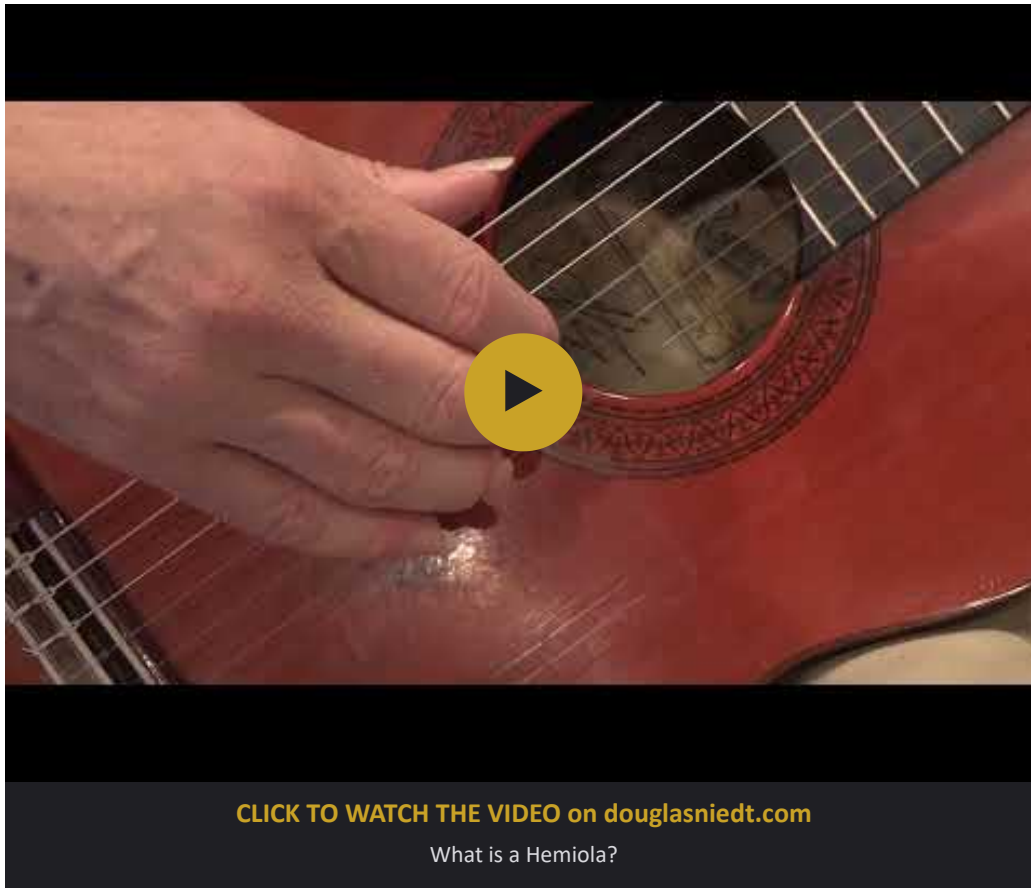
Or, simplified into groups of 3 and 2:

The speed of the notes stays the same.

If counting different sets of numbers is confusing, both meters could even be counted in 6. But you must be certain to clearly differentiate the accents.

The speed of the notes stays the same.

Watch me demonstrate the basics of hemiola (Video #1).



One of the most famous examples of the hemiola comes from Leonard Bernstein's song *America* from his Broadway musical, *West Side Story*. The primary rhythmic figure is:

Example #7. *America* from *West Side Story* (Leonard Bernstein)

The image displays two staves of music from the song "America" in F major. The first staff contains the lyrics "I like to be in A - mer - i - ca! O. K. by me in A - mer - i - ca!". The second staff contains the lyrics "Ev-'ry-thing free in A - mer - i - ca For a small fee in A - mer - i - ca!". The music is written in treble clef with a key signature of one sharp (F#). The first staff has a 6/8 time signature, and the second staff has a 3/4 time signature. Fingerings are indicated by numbers 1 through 6, with some notes marked with an accent (>). Blue boxes highlight specific notes, and red boxes highlight others. The lyrics are written below the notes, with hyphens indicating syllables across notes.

I like to be in A - mer - i - ca! O. K. by me in A - mer - i - ca!

Ev-'ry-thing free in A - mer - i - ca For a small fee in A - mer - i - ca!

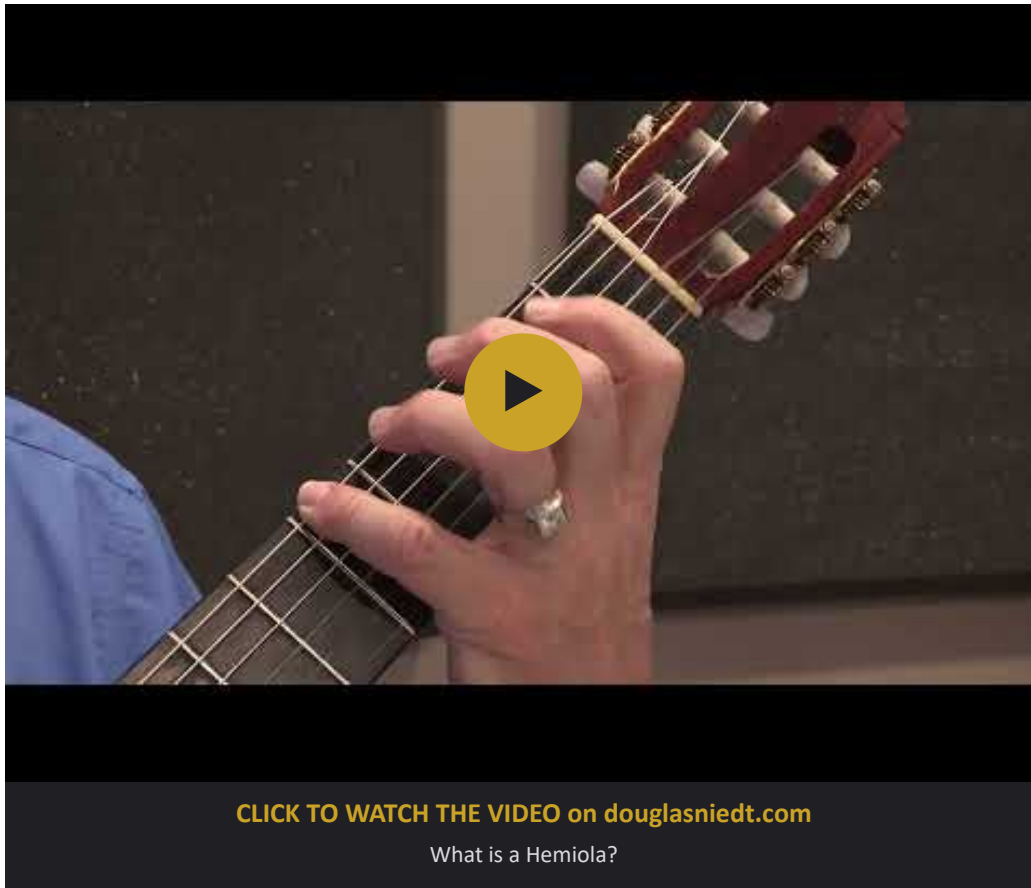
Watch this delightful clip from the movie version (Video #2).



CLICK TO WATCH THE VIDEO on douglasniedt.com

What is a Hemiola?

Watch me play it on the guitar and explain the rhythm (Video #3).



Horizontal and Vertical Hemiolas

There are two types of rhythmic hemiolas: **horizontal hemiola** and **vertical hemiola**.

In the horizontal hemiola the meter changes in successive measures as in the examples above. The meter can change every measure. Or it might stay in one meter for several measures and then change for one or more measures. Or, it might only change once in the entire song.

In the vertical hemiola two meters are present simultaneously. The upper voice could be in 6/8 and the lower voice in 3/4 or vice-versa. The vertical hemiola is not nearly as common as the horizontal hemiola.

This technique tip will focus only on the horizontal hemiola

Hemiolas are Everywhere

The hemiola effect is present in much of Hispanic music. That includes music from Spain, Latin America, the Caribbean, and music from any other country or composer influenced by Hispanic music. It is also present in the music of Africa and the Middle East. It is found in many types of music: classical, pop, folk, and flamenco. If you play music by Albéniz, Granados, Brouwer, Villa-Lobos, Torroba, Turina, Morel, Lauro, Sanz, or many others, you will encounter passages of hemiola.

But it isn't limited to "Spanish" music. It is also found in Renaissance music, Bach, Beethoven, Schubert, Brahms, Tchaikovsky, Ravel, Chabrier and other "serious" music.

Canarios by Gaspar Sanz: The "Mother" of Hemiola

Canarios by Gaspar Sanz is probably the most often-played example of hemiola in the guitar repertoire. It also gives countless guitarists nightmares when they try to learn it. Playing the notes is not the problem. With a fair amount of practice, most intermediate guitarists can play the notes accurately. The biggest problem is counting the rhythm correctly.

By the way, [check out the Canarios webpage here](#), with four super arrangements of the song, videos, a video tutorial on adding rasgueados to the piece, the original manuscripts, and lots of fascinating information. And IT'S ALL FREE!

Canarios is a great piece on which to learn the hemiola effect because it is filled with so many changes of meter. For example, the meter changes every measure from measure #8 through measure #19 (Example #8):

Example #8. *Canarios* (Gaspar Sanz) arr. John Williams, measures 8-19

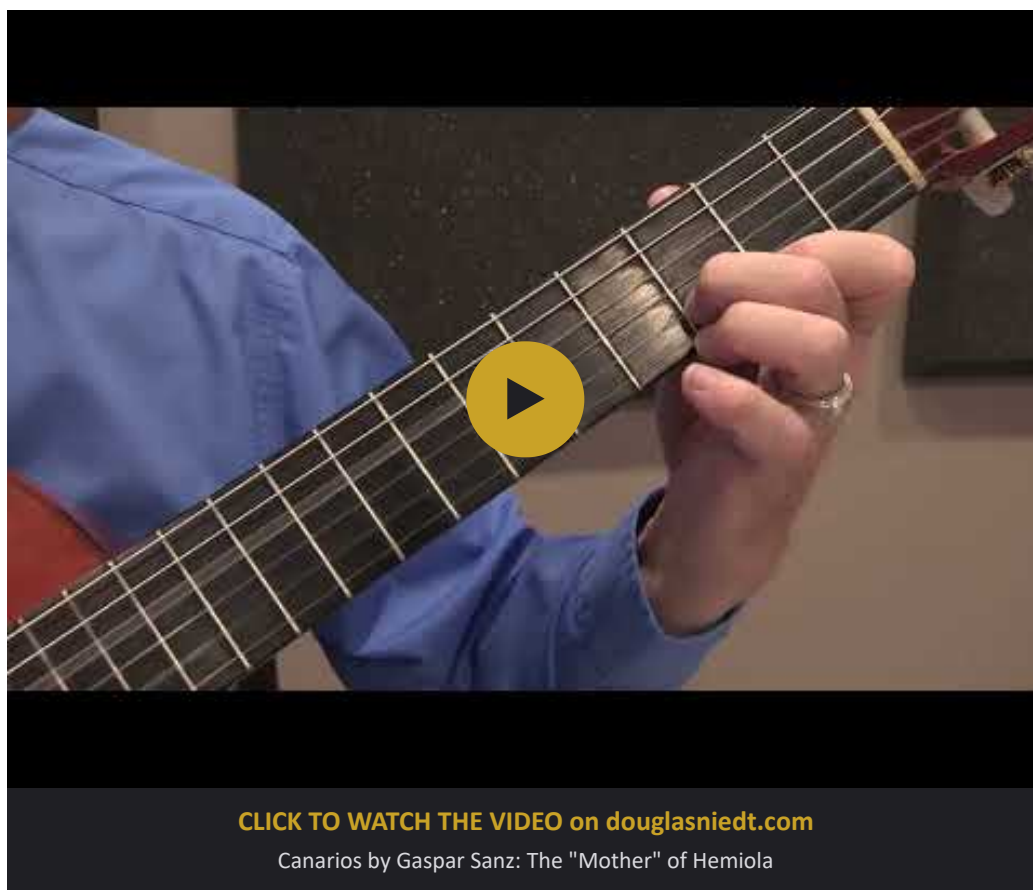
8

11

14

17

Watch me play it (Video #4).



Because it is a little easier to play, I am going to use the section from measures #23 through #28 to help you understand the rhythm and show you a few options on how to count the hemiola effect (Example #9):

Example #9. *Canarios* (Gaspar Sanz) arr. John Williams, measures 23-28

The musical score for Example #9, measures 23-28, is presented in two systems. The first system covers measures 23 to 25, and the second system covers measures 26 to 28. The notation includes a treble clef, a key signature of two sharps (F# and C#), and a time signature of 3/4. The score includes various musical symbols such as notes, rests, slurs, and fingerings. Below the staff, there are tablature lines labeled T, A, and B, with numbers indicating fret positions. The score is divided into measures by vertical bar lines.

Rule of Life: Whenever you must learn a complex or difficult rhythm, always omit ornaments and slurs. They usually confuse and obfuscate the learning process.

Therefore, here is our updated working example of measures #23-28 (Example #10):

Example #10. *Canarios* (Gaspar Sanz) arr. John Williams.
 Measures 23-28 without slurs and ornaments.

23

Musical notation for measures 23-25. The top staff is in treble clef with a key signature of two sharps (F# and C#). The time signature changes from 6/8 to 3/4 in measure 24, and back to 6/8 in measure 25. The notation includes eighth and sixteenth notes, rests, and an accent mark (>) over a note in measure 24. Below the staff are three lines labeled T, A, and B, containing fret numbers (0, 2, 3, 5) and fingerings (1, 2, 3, 4, 5).

26

Musical notation for measures 26-28. The top staff continues in treble clef with the same key signature. The time signature changes from 6/8 to 3/4 in measure 27, and back to 6/8 in measure 28. The notation includes eighth and sixteenth notes, rests, and a triplet of eighth notes in measure 28. Below the staff are three lines labeled T, A, and B, containing fret numbers (0, 2, 3) and fingerings (1, 2, 3, 4, 5).

Next, we write in the counting and accents (Example #11):

Example #11. *Canarios* (Gaspar Sanz) arr. John Williams.
Measures 23-28 without slurs and ornaments.

23

Accent 1 2 3 Accent 4 5 6

Accent 1 & Accent 2 & Accent 3 &

Accent 1 2 3 Accent 4 5 6

3 2 0 0 2 3 3 5 3 2 3 0 2 3

0 2 0 0 0 0 0 0 0 0 0 0 0 0

26

Accent 1 & Accent 2 & Accent 3 &

Accent 1 2 3 Accent 4 5 6

Accent 1 & Accent 2 & Accent 3 &

2 3 0 2 3 2 0 3 2 3 3 0

0 0 0 0 0 0 0 0 0 0 0 0 0 0

YOU MUST COUNT!

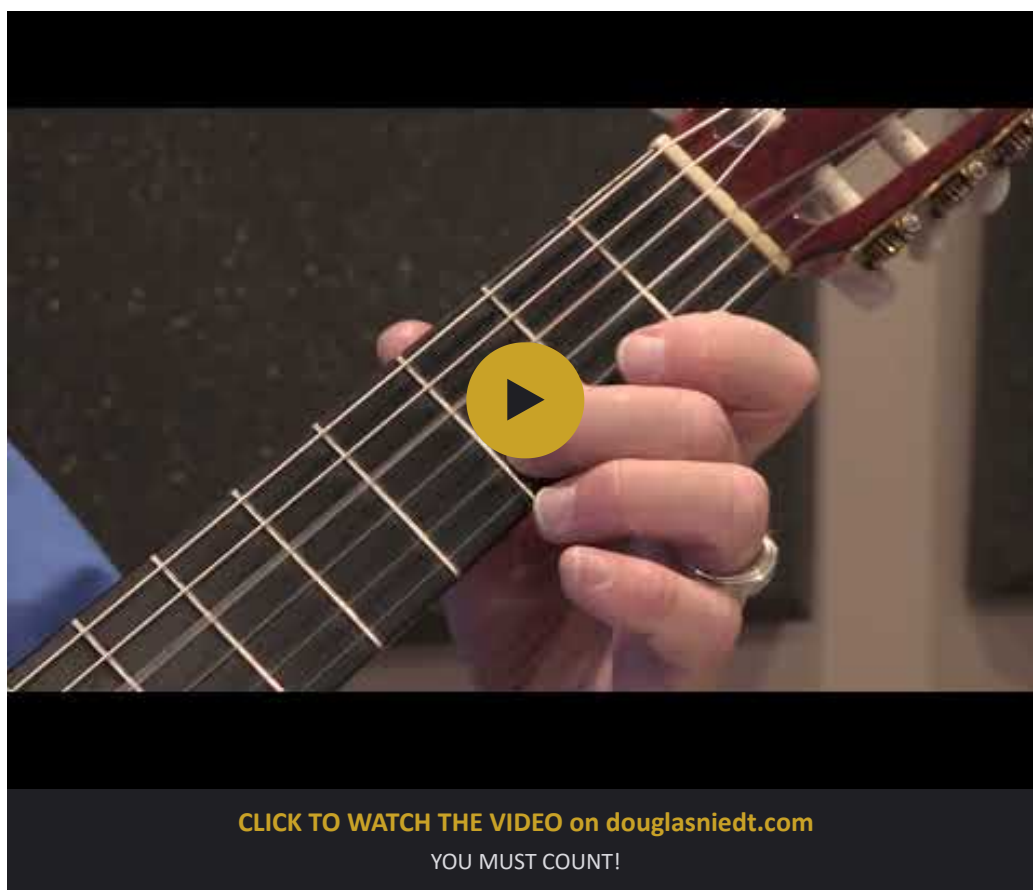
Count OUT LOUD

The most important requirement to playing a hemiola rhythm accurately is to count OUT LOUD. It doesn't matter whether you count the traditional way or one of the other options. But you must count out loud. If you count to yourself, it is almost certain you will not count accurately. When you count out loud you will immediately know if you leave out a number, say the wrong number, or slur your speech. *When any of those happens, it is a dead giveaway that you are playing that spot incorrectly and that it needs to be carefully fixed.*

The Speed of the 8th Notes (Quavers) Stays the Same

1. Set my [Free Online Metronome](#) (or your own) at 144 bpm (beats per minute). Each tick is an eighth note (quaver). Without the guitar, count the 6/8 to 3/4 rhythm out loud over and over: **1 2 3 4 5 6 1 & 2 & 3 &**. You should speak a syllable on each metronome tick.
2. Keep the metronome at 144. Count out loud: **1 2 3 4 5 6 1 & 2 & 3 &** and then begin playing example #11 above and keep counting as you play. You may need to work out a measure at a time. Or you may need to slow down the metronome. Work up to 200 bpm.
3. It is difficult to keep track of metronome ticks past 200 bpm. Continue to speed up without the metronome but keep counting out loud.

Watch me demonstrate in Video 5.



Using a Metronome

Some pieces (such as *Canarios*) are too fast to count every syllable out loud or to have a metronome tick each eighth note (quaver) at the actual performance tempo. The remedy for this is to change the metronome setting (usually by half or a third) and changing the note value we assign to each metronome tick.

For example, in a simple 4/4 meter, a passage can be played at MM=200 for an eighth note (quaver). But that is a lot of metronome ticks to listen to. It is easier if we cut the metronome setting in half so we play at MM=100 and reassign each tick to a quarter note (crochet). The result is that we are still playing the eighth notes (quavers) at the same speed but don't have to listen to so many ticks. It is easier to hear what we are doing (Example #12):

Example #12.

♩=200

Metronome Ticks at 200 bpm (beats per minute)

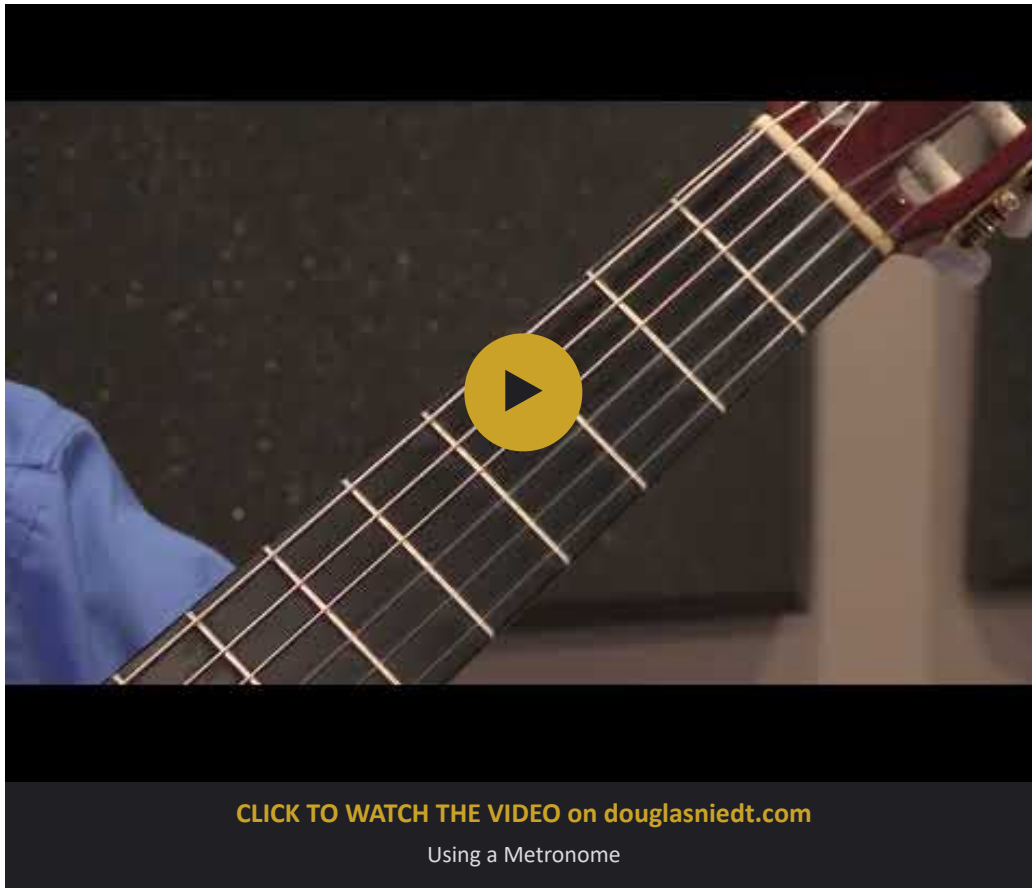
This is a lot of ticks.
Difficult to hear and follow.

♩=100

Metronome Ticks at 100 bpm

Same speed, but easier
to hear and follow.

Watch me demonstrate in Video 6.



We Have a Problem

John Williams plays *Canarios* at about 360 bpm for the eighth note (quaver). Even if we had a metronome that could tick that fast, it would be difficult to follow. Instead of ticking on every eighth note (quaver), we can change the metronome setting and assign each tick to a larger note value.

In 6/8, it is very convenient to have the metronome tick dotted quarter notes (dotted crotchets) (Example #13):

Example #13.

Metronome ticks on dotted quarter notes (dotted crochets)



or

A dotted quarter note (dotted crochet) equals three eighth notes (quavers).



So, for the first seven measures of Canarios, it works very well and is very natural to have the metronome tick dotted quarter notes (dotted crochets), playing in groups of three notes (Example #14):

Example #14. *Canarios* (Gaspar Sanz) arr. John Williams, measures 1-7

⑥ = D

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

3

6

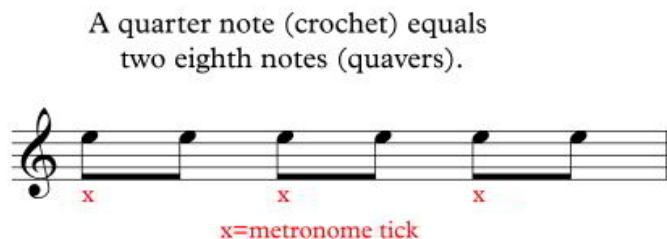
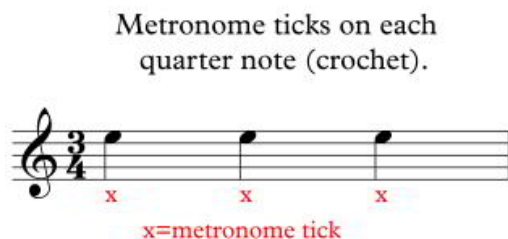
The musical score is presented in three systems, each with a guitar staff and a corresponding tablature staff. The guitar staff uses a treble clef and a key signature of one sharp (F#). The time signature is 6/8. The tablature staff is labeled with 'T', 'A', and 'B' for the treble, alto, and bass strings, respectively. Fingerings are indicated by numbers 1 through 6. A 'Metronome Tick' (x) is placed above the first measure of each system. The score is divided into three systems, each containing a guitar staff and a tablature staff. The first system covers measures 1-2, the second system covers measures 3-4, and the third system covers measures 5-7. The guitar staff shows the melody with various ornaments and fingerings. The tablature staff shows the fretting for each string and includes fingerings and a 'Metronome Tick' for each measure. The score is arranged by John Williams.

Watch me demonstrate in Video 7.



On the other hand, in 3/4 meter it is very convenient to have the metronome tick quarter notes (crotchets) (Example #15):

Example #15.



And this works great for all the 3/4 measures in *Canarios*. But now we have A BIG PROBLEM! Because the hemiola changes the meter back and forth between 6/8 and 3/4, how are we supposed to set our metronome? Do we set it to tick dotted quarters (dotted crochets) or quarter notes (crotchets)?

The answer is to learn to play the piece or passage *both* ways. It is essential to begin at a relatively slow speed and count out loud. It will feel very awkward at first because when the metronome is set to tick on dotted quarters (dotted crochets) it will be ticking the 3/4 measures as if they were in 6/8 and vice-versa. Let's have a look.

Setting the metronome to tick on the dotted quarter notes (dotted crochets) and playing our passage from measure 23-28 will look like this. In essence, you are playing the entire passage in 6/8, playing the notes in groups of three regardless of whether the meter says 6/8 or 3/4 (Example #16):

Example #16. *Canarios* (Gaspar Sanz) arr. John Williams.
Measures 23-28 with metronome ticking 6/8 meter.

23

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

26

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Metronome Tick x 1 2 3 4 5 6

Watch me demonstrate in Video 8.



Alternatively, setting the metronome to tick on the quarter notes (crochets) and playing our passage from measure 23-28 will look like this. Now you are playing the entire passage in 3/4, playing the notes in groups of two regardless of whether the meter says 6/8 or 3/4 (Example #17):

Example #17. *Canarios* (Gaspar Sanz) arr. John Williams.
Measures 23-28 with **metronome ticking 3/4 meter**.

23

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

26

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
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Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

28

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
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Tick
x
1 2 3 4 5 6

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1 2 3 4 5 6

Metro-
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1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Metro-
nome
Tick
x
1 2 3 4 5 6

Totally confused?

Watch and listen to me make sense of it all in Video #9.



The point is, learn to play a hemiola passage with a metronome in both 6/8 AND 3/4 meter. It will help you understand the hemiola, feel it, and play it precisely.

When you turn the metronome off, you may be able to automatically maintain the correct rhythms without counting. However, some guitarists must always maintain an internal count in their head to keep the rhythm changes accurate.

Other Hemiolas

The most common hemiola in guitar music is the change from 6/8 to 3/4 meter. A less common meter change is from 6/4 to 3/2 meter. It is found in *Prelude No. 5* by Heitor Villa-Lobos. Villa-Lobos does not actually notate the change of meters but it is obvious (I will explain this more in the next section). Example #18:

Example #18. *Prelude No. 5* (Heitor Villa-Lobos)
Use of Hemiola from 3/2 to 6/4 meter.

Play notes in groups of two:

TAB

Play notes in groups of three:

TAB

Sometimes Hemiolas are Written in Secret Code

A key thing to understand is that in a piece of music, the meter and other musical notational elements (beaming and accents) are SUPPOSED to tell you how to group, accent, and count the beats when you encounter a hemiola passage. Unfortunately, that is often not the case. In fact, I would say that in much of the repertoire I encounter, the music is notated incorrectly or inadequately. When music is properly notated, you should easily be able to identify hemiolas simply by the notational elements on the page. My notation of

the Sanz *Canarios* is a good example. I specify every meter change and the notes are correctly beamed according to the meter.

But the problem goes beyond inadequate or incorrect notation. For the Hispanic and African cultures, hemiola is such an integral part of the music that the composers assume any idiot can feel or hear when the meter changes and therefore it is not necessary to notate it. They will either notate the entire piece in 6/8 or in 3/4 and let the performer change the meter as needed. Or, some will acknowledge that the meter changes in the piece by putting a double or composite meter at the beginning of the piece but not indicate the actual changes of meter within the piece.

Leonard Bernstein uses this method to notate the aforementioned *America* in the orchestral score to *West Side Story*. He notates both a 6/8 and 3/4 meter at the introduction to the song (Example #19):

46 **Tempo di Huapango (fast)**

col legno saltando

The musical score for 'Tempo di Huapango (fast)' consists of five staves. The first two staves are marked *col legno saltando* and *f marcato*. The third and fourth staves are marked *pizz.* and *f marcato*. The fifth staff is marked *(pizz.)* and *f marcato*. The score is divided into three measures. The first measure is in 6/8 time, the second in 3/4 time, and the third in 6/8 time. The dynamics *f marcato* and *dim.* are indicated throughout the piece.

But from then on, no meter changes are indicated (for clarity, I added them in red). Example #20:

6/8 3/4 6/8 3/4 6/8

Anita

GIRLS*

I like to be in A - mer - i - ca! O. K. by me in A - mer - i - ca! Ev - ry - thing free in A -

I like to be in A - mer - i - ca! O. K. by me in A - mer - i - ca! Ev - ry - thing free in A -

50

naturale *sim.*

Vlns.

naturale *sim.*

Vcs.

unis. *arco spicc.*

Cb.

* Except Rosalia

Antonio Lauro uses the same notation at the beginning of his Vals Venezolano No. 3 (Example #21):

Vals Venezolano No. 3

Antonio Lauro
Revisado por Alirio Diaz

Allegro ritmico

Arm. 12

mf

1 0 3 0 2 1 3 0 1 0 2 1 3 0 2 4 3

② ③ ② ③ ② ③

2 2 0 2 7

Within the piece he switches freely back and forth between 6/8 and 3/4 without indicating changes of meter (Example #22):

Example #22. *Vals Venezolano No. 3* (Antonio Lauro)

Switching from 6/8 to 3/4 without indicating changes of meter.

Notations in red and blue have been added. They are not present in the original score.

The musical score for Example #22, *Vals Venezolano No. 3* by Antonio Lauro, is presented in two systems. The first system consists of five measures, and the second system consists of five measures. The notation includes a treble clef, a key signature of one sharp (F#), and a common time signature of 8va. The music features a mix of 6/8 and 3/4 time signatures, indicated by red and blue annotations above the staff. The first system starts with a 6/8 time signature, followed by a 3/4 time signature, then a 6/8 time signature, then a 3/4 time signature, and finally a 6/8 time signature. The second system starts with a 3/4 time signature, followed by a 6/8 time signature, then a 3/4 time signature, then a 3/4 time signature, and finally a 3/4 time signature. The notation includes various musical symbols such as notes, rests, and accidentals. The first system has a total of 11 measures, and the second system has a total of 12 measures. The score is written for a single melodic line, with a bass line indicated by 'T', 'A', and 'B' staves.

Finally, we have this famous example from the first movement of the *Concierto de Aranjuez* by Joaquín Rodrigo (Example #23):

Example #23. *Concierto de Aranjuez*, First Movement (Joaquín Rodrigo)

Notated only as 6/8 but clearly switches between 6/8 and 3/4.

Notations in red and blue have been added. They are not present in the original score.

1

6/8

3

6/8

5

3/4

6/8

T
A
B

2	2	2	2	2	2	2	2	2	2	3	0
3	3	3	3	3	3	3	3	3	3	5	2
2	2	2	2	2	2	2	2	2	2	2	2
0	0	0	0	0	0	0	0	0	0	0	0

T
A
B

2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2	2	2	2
0	0	0	0	0	0	0	0	0	0	0	0

T
A
B

2	3	0	2	2	2	2	2	3	0
3	5	2	3	3	3	3	3	5	2
2	4	2	2	2	2	2	2	4	2
0	0	0	0	0	0	0	0	0	0

Sometimes, when the composer has not clearly indicated the meter, it is up to the performer to decide which meter they need to play in depending on how they want the passage to sound.

Important Points

1. Hemiolias are everywhere in the guitar repertoire so it is important to understand how to play them correctly.

2. Counting out loud is crucial to learning the rhythms.

3. Playing with a metronome is very helpful especially if you learn to play the passage in both meters.

My [Free Online Metronome](#) will do this for you. Open **Hemiola and Polyrhythm Practice** and choose the "6/8 then 3/4" pattern. It plays one bar of six eighth notes grouped in threes, then one bar of three quarter notes, over and over, so you hear the regrouping instead of having to manufacture it yourself. Turn on the Talking Voice Count and it counts each bar out loud for you — which is exactly the "count out loud" I've been nagging you about all through this article.