

PLEASE NOTE -

The audio player for this chapter sample (see lower right sidebar) is the embed player provided by Spotify. By default, it will only play a 30 second preview of each song, taken randomly from the middle of the song track. To hear the full tracks from the beginning, you must log in with a free Spotify account, then come back and refresh this page. This is important, because most of the musical elements being discussed occur at or near the start of each song. For ad-free listening you will need a Spotify Premium account.

Unfortunately, Spotify does not provide full tracks when you use their embed player with iPads or Safari. For this reason, you will need to use a laptop or desktop with either a Firefox, Chrome, or Edge browser to hear the full songs.

The audio player provided in the paid version of Spinning Gold is a much-improved CUSTOM AUDIO PLAYER, built exclusively for this website. It will always play the full song on any laptop, desktop, or tablet with all major browsers. The custom player also has a larger progress bar and larger time-elapsed number. This will allow easier navigating within the track when discussing musical elements that occur in the middle of the song.

Also note that the audio playlist only includes songs in the sample pages, and is not the full playlist from the paid version. Therefore, the playlist track numbers may not match up with the track numbers in the sample pages.

CHAPTER 1



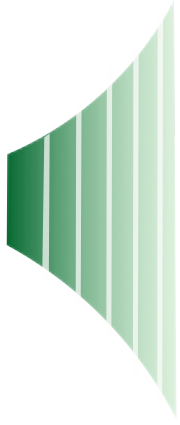
Elements of RHYTHM



When a song first comes through your headphones or speakers, how do you respond? Without conscious thought, many people start tapping their feet or moving their head. This is not surprising. Of all the basic ingredients of music (rhythm, melody, harmony, timbre, etc.), none is more important than rhythm in pop & rock. A strong “beat” or “groove” is essential, providing an underlying foundation for all other musical elements and inviting the listener to move with the music. When songs are recorded in the studio, the process often starts with the beat, mixing multiple layers of percussion — perhaps a dozen different tracks for the drum sound alone — until the all-important rhythm part finally takes shape.

This opening chapter will review some basic elements of rhythm, starting with fundamentals like locating, counting, and notating the beat, then progressing further into time signatures, subdivisions of the beat, syncopation, and swing rhythm. Even if you are a fluent sight-reader or accomplished performer, it is recommended that you read through this rhythm review and listen to the chapter’s song examples. This may fill in any gaps in your previous knowledge of rhythm. Hearing the numerous audio examples will also be a great tune-up for your ears as you selectively listen for various rhythmic elements and instrumental parts — an essential skill for would-be producers, sound engineers, and indeed all practicing musicians. If you have the appropriate software, you could even try programming some drum tracks based on the various rhythm patterns throughout the chapter.

Essential Concepts / Skills covered in chapter 1



- Beats, measures, note & rest values, time signatures (4/4, 3/4, 2/4)
- Listening for the backbeat in pop songs
- Beat divisions: listening for the 8th or 16th pulse carried by various instruments or vocal parts
- 12/8 and 6/8 meter, listening for the triplet 8th pulse
- Syncopation (both 8th and 16th note), listening for up-beat accents in pop songs
- Swing 8ths and swing 16ths

The Beat

When you tap your foot to music you are probably tapping out the basic **beat** that holds everyone and everything together. During a concert, members of a live band must keep track of the beat at all times in order to stay together on stage. In fact, performing musicians quickly learn that the rhythm takes precedence over all other musical elements. Many times you can cover a mistake in pitch (wrong note) by simply playing through it and maintaining the rhythmic flow.

Try tapping along with the following song. If you are unsure of where the beat is, listen for the steady thumps of the bass kick drum, starting at **0:14** (14 seconds) — this is the basic beat.

"I'm Alive" - Michael Franti & Spearhead - 2014



For AUDIO, see the "Song Examples" playlist in the right sidebar, and click on track 1 song title. To navigate within the audio track, slide the progress bar to the desired starting point.

Although the thumping bass rhythm of “I’m Alive” may be fairly common (especially in the dance-pop hits of recent years), the basic beat may not always be tied specifically to the bass drum: you may hear the basic beat emerge on any instrument, depending on the song. Here’s an example where the main beat is clearly carried by the steady **guitar strums** at the beginning. However, notice that later at the **1:30** time mark, the basic beat switches to the bass drum like the previous song.

“I Gotta Feeling” — The Black Eyed Peas — 2009



In the next example, the main beat is again heard in the bass drum, but the drum stops briefly when the trumpet enters (around **0:33**). When this happens, keep tapping! The basic beat does not stop, continuing on as an underlying feeling until the drum re-enters at **0:42** to reinforce it.

“Safe and Sound” — Capital Cities — 2014



When you listen to different songs, you may not always hear the basic beat carried by a single instrument or any instrument. It may simply be an underlying pulse that you feel, holding all the layers of instruments and voices together (as in the brief section of “Safe and Sound”). Often the instruments are playing smaller divisions of the main beat — something we will discuss later in this chapter. For now, just remember that once you find the basic beat to a pop/rock song, you should be able to keep your foot tapping throughout, regardless of any changes in instruments or texture. Here is a short list of other songs with the main beat heard in the bass kick drum. Use these songs as ear training exercises for more practice locating the beat.

Additional songs with BASIC BEAT IN BASS DRUM

| | | |
|------|------------------------------|---------------------------------|
| 1979 | <i>Hot Stuff</i> | Donna Summer |
| 1993 | <i>Dreams</i> | The Cranberries |
| 2008 | <i>Shut Up and Let Me Go</i> | The Ting Tings |
| 2012 | <i>Good Time</i> | Owl City & Carly Rae Jepsen |
| 2013 | <i>The Other Side</i> | Jason Derulo |
| 2013 | <i>I Love It</i> | Icona Pop feat. Charli XCX |
| 2014 | <i>Moves Like Jagger</i> | Maroon 5 ft. Christina Aguilera |
| 2014 | <i>Break Free</i> | Ariana Grande feat. Zedd |
| 2015 | <i>Make Them Gold</i> | Chvrches |
| 2018 | <i>One Kiss</i> | Calvin Harris, Dua Lipa |
| 2020 | <i>Love Again</i> | Dua Lipa |

Measures and Barlines

As mentioned, performing musicians must stay on the beat at all times. Of course the traditional way to keep track of the beats is to count them. Now you probably know that musicians don't keep counting into the tens and hundreds. Instead, beats are grouped into units called **measures** or **bars**. The most common grouping in pop & rock is four beats per measure. When music is written in standard notation (on a staff of five horizontal lines), the measures are marked by vertical **bar lines** on the staff. Slash marks are often used to visually represent each beat:



The following song by Carrie Underwood is written with four beats per measure. See if you can **count along in groups of four** starting at the **0:19** time mark. Once again, the basic beat is heard in the bass kick drum.

"Blown Away" – Carrie Underwood – 2012



Beats - 1 2 3 4 1 2 3 4 etc.

Dry lightning _ _ _ _ _ skies

0:19 VERSE

Those storm clouds _ _ _ _ _ eyes

If you weren't looking at the written example with lyrics above, how would you know which beat is "one" or where to start counting? Try to recognize the beats that have a little extra emphasis (ie. feel a little stronger). These should always be beat one. You may have noticed that when you first counted along while looking at the page, you were saying "one" a little louder than the other numbers for this reason. In "Blown Away" the first beat of every measure has a little extra "push" created by a chord strike in the background on piano/guitar.

If you want to test yourself, try listening to another spot in the song. Find the basic beat, but count every beat as "tick, tick, tick, tick, etc." After a few seconds you should begin to notice that you are periodically saying "tick" a little louder when the piano/guitar chord hits. These are the first beats of every measure.

This next song also has an extra chord hit on the first beat of every measure. As you try counting, listen for the **"wow" sound** in the background, created by a guitar running through a wah wah pedal.

"Get the Party Started" – Pink – 2001



Beats - 1 2 3 4 1 2 3 4 1 2 3 4

I'm _____ comin up _____ started

0:10 CHORUS

For professional musicians, it is very important not only to keep track of the basic beat but also to know where “one” is. A player can get lost during a song, but if he or she recovers quickly and hits the next beat “one,” most listeners won’t notice any interruption.

For beginning musicians, counting the beat is a critical learning tool and often done out loud when practicing. However, you can’t count and sing the lyrics at the same time. Fortunately, the count eventually falls into the “back of your head,” becoming as second-nature as walking or breathing. This allows a musician to consciously focus on other things like remembering the lyrics or entertaining the crowd.

Note & Rest Values

As mentioned in the Preface, this book is not meant to teach or develop a high level of sight reading skill using written scores. To become a fluent reader of music, you will have to put in many hours of additional practice using outside sources. However, we will cover in this chapter a basic knowledge of note and rest values, since this knowledge is essential to explaining and understanding various rhythm patterns as we move forward.

Shown below are some basic types of notes. In pop and rock music, a **whole note** typically lasts for four beats, **half notes** last for two beats, and **quarter notes** get one beat each. If you divide the beat in two, you get **8th notes** (each 8th note lasts for only half of a beat). The first half of the beat is called the **down beat** (when your tapping foot or hand goes down), and the second half is called the **up beat** (when your foot or hand goes up). These notes are shown below as they appear in standard notation. Notice that the whole note has no vertical stem like the half and quarter notes. Also notice that the stem on the 8th note has an extra “flag” attached.

Typical Note Values



WHOLE NOTE = 4 beats



HALF NOTE = 2 beats



QUARTER NOTE = 1 beat



EIGHTH NOTE = 1/2 beat

Each type of note also has a symbol for the equivalent period of silence (called a **rest**). Notice below that the whole rest hangs below the second staff line, while the half rest sits on top of the middle line.

| | | | |
|-----------------------|-----------------------|----------------------|------------------------|
| 4 beats of silence | 2 beats of silence | 1 beat of silence | 1/2 beat of silence |
| | | | |
| WHOLE REST | HALF REST | QUARTER REST | EIGHTH REST |

Time Signatures

COUNTING IN FOUR (4/4 meter)

In Practice Drill 1 below, you can see what the note types look like when placed into measures on the staff. Notice the symbol 4/4 at the very beginning. This is called the **time signature** or **meter** of the piece. In this case, the upper number tells you the beats per measure (four), and the lower number indicates the kind of note that gets one beat (a quarter note). The beat count is written above the staff.

PRACTICE DRILLS

Listen to Practice 1 two times. The first time, **count the beats out loud** while listening to Audio Track 1-A (piano and metronome). On the last line, you will see that the eighth notes are counted “1 and, 2 and, etc.” The second time try **tapping the rhythm with your hand** while listening to Audio Track 1-B (metronome only). You will tap every time a note enters. On all practice drills in this book, you will hear a 4 – BEAT COUNT-DOWN before the drill begins.

Practice 1   **Tracks 1-A, 1-B**

For AUDIO, see “Practice Drills” on top-right sidebar, and click on Track 1-A

Beats - 1 2 3 4 1 2 3 4

whole notes

half notes

quarter notes

eighth notes

When two or more eighth notes occur back to back, the flags are usually connected together like a beam, as shown on the very last bar. As you can see, the notes are beamed together in pairs, rather than using one long beam across the entire measure. This visually highlights each beat grouping (two eighth notes), making the music easier to read.

(Pages 9 – 24 omitted from this sample)

16th-NOTE PULSE (dividing the beat into 4 parts)

If you can divide the beat into two parts, why not four? This is called a **16th note pulse**, and it turns out that this division is more common than 8th notes in modern pop and rock. The basic beat can be fairly slow, but four 16th notes are then played over each beat, creating extra energy and excitement.

As shown below, 16th notes have a **double** “flag,” compared to the single flag on an 8th note. Since four 16th notes = one beat, each individual 16th note represents 1/4 of a beat.



SIXTEENTH NOTE = 1/4 beat



SIXTEENTH REST = 1/4 beat

The 16th-note pulse was a hallmark of 70s funk and disco music, and eventually it became common across all genres of pop music — including dance, techno, EDM, hip-hop, modern r&b, rock, and even country. (Of the 4,000 total songs analyzed for this book, roughly 2,500 had at least one instrumental or vocal part based on the 16th-note pulse.)

To get the feel of a 16th note pulse, start with a slow quarter-note beat, and then quickly say “**1, ee, and, ah.**” “**2, ee, and, ah.**” etc. for each beat. If you want to know what it feels like to be a drummer, tap the basic beat with your foot and the 16th notes with your hand.

faster pulse -

slower pulse -
(basic beat)

(Once again, if you have drum software, try programming a rhythm like the one above with a steady 16th pulse.)

You will notice in the score above that consecutive 16th notes are beamed together to visually highlight each beat grouping (four 16th notes), just like 8th notes in previous examples. Since 16th notes have a double flag, the beams now have two lines instead of one. When beat groupings have a mixture of 8ths and 16ths, the 8ths and 16ths are often beamed together, and you must pay close attention to which part of the beam has a single line (8th note), and which has a double line (16th note). Shown below are some possible combinations of notes or rests that all equal one beat in 4/4 meter.

Beat Groupings with Beams (all = 1 beat)


| | |
|--|---|
| 1 ee and ah  | 1 ee and ah  |
| 1 ee and ah  | 1 ee and ah  |
| 1 ee and ah  | 1 ee and ah  |

PRACTICE DRILLS

The following drill includes 16th notes. Use the same two practice steps as in previous exercises (counting the beats with Track A and tapping the rhythm with Track B).

Practice 5   Tracks 5-A, 5-B

Beats - 1 + 2 + 3 + 4 + 1 e + a 2 + 3 + 4 +



1 e + a 2 + 3 + 4 + 1 + 2 e + a 3 + 4 +

1 e + a 2 e + a 3 + 4 + 1 e + a 2 + 3 e + a 4 +

(Practice Drill 6 omitted from this sample)

The next song example has a prominent 16th pulse, starting at **0:37**. The basic beat is carried by the bass kick drum, with the 16th pulse in the muted guitar. If you can count fast enough you will notice four 16ths for each bass thump.

"I Love You Always Forever" — Donna Lewis — 1995



— **0:38** **Bass kick drum** plays a slow, steady **QUARTER-NOTE PULSE**.

Muted guitar chugs along with a constant stream of rapid **16th-NOTE**

James Brown is sometimes credited with starting the trend towards the 16th pulse in mainstream pop. As the godfather of the funk style in the late 60s, Brown's music featured this high-energy 16th rhythm, distributed in a disjointed, "popcorn" texture among all the instruments in his band (drums, bass, guitar, etc.). Even the horns in Brown's band were used primarily as rhythm instruments, instead of their traditional role providing melody or harmony. Here's an example from 1968:

"Say It Loud (I'm Black and I'm Proud)" - James Brown - 1968



- All instruments (including the horns) play in short, staccato bursts, tapping into the underlying 16th-NOTE PULSE. Notice that no one instrument plays continuous, steady 16th notes. The 16th pulse is best defined by the overall sound and feeling. (The 16th pulse is very fast — almost too fast to count or tap)

In the next example from the 70s, the disjointed, "popcorn" texture of funk is again apparent. However, listen closely to the bass — it is the one instrument that maintains a steady 16th pulse throughout. This allows the other instruments like the horns, drums and lead guitar to play off the steady pulse with sporadic punctuations.

"What Is Hip?" — Tower of Power — 1973



Disco and later dance, techno and pop styles also routinely featured at least one instrument keeping a steady 16th pulse. On this 1971 hit from Isaac Hayes, the steady 16th pulse starts in the high-hat cymbal, followed by a choppy wah wah guitar strum that reinforces the pulse.

"Shaft" — Isaac Hayes — 1971



Additional songs with 16th PULSE IN HIGH PERCUSSION (cymbal, shaker, etc.)

| | | |
|------|--------------------------------|---------------------|
| 1978 | <i>Baby Come Back</i> | Player |
| 1985 | <i>Broken Wings</i> | Mr. Mister |
| 1991 | <i>Gonna Make You Sweat</i> | C & C Music Factory |
| 1992 | <i>Go Away</i> | Gloria Estefan |
| 2001 | <i>Opera Singer</i> | Cake |
| 2013 | <i>Weight of Living, Pt. 2</i> | Bastille |
| 2018 | <i>Graffiti</i> | Chvrches |

The 16th pulse is also often carried by **rolling tom toms**. Here's an early example from 1957 by Buddy Holly & The Crickets.

"Peggy Sue" — Buddy Holly — 1957



Almost 50 years later, Beck shows that the rolling toms never go out of style.

"Black Tambourine" — Beck — 2005



This time the 16th pulse is carried by a unique **electronic drum** sound.

"Poison" — Bel Biv DeVoe — 1990



In the hit “Starboy” the 16th pulse comes from a combination of electronic **hi-hat** **cymbal & congas**

“Starboy” — The Weeknd feat. Daft Punk — 2016



**Additional songs with
16th PULSE IN DRUMS (snare, toms, conga, etc.)**

| | | |
|------|----------------------------|--|
| 1962 | <i>Sheila</i> | Tommy Roe |
| 1965 | <i>I Want Candy</i> | Strangeloves |
| 1968 | <i>Bend Me Shape Me</i> | American Breed |
| 1974 | <i>Motherless Children</i> | Eric Clapton |
| 1986 | <i>Higher Love</i> | Steve Winwood |
| 1987 | <i>Big Love</i> | Fleetwood Mac |
| 2002 | <i>Everyday</i> | Dave Matthews |
| 2006 | <i>Belief</i> | John Mayer |
| 2010 | <i>Wide Eyes</i> | Local Natives |
| 2013 | <i>Blurred Lines</i> | Robin Thicke, feat. T.I. & Pharrell |
| 2017 | <i>Strangers</i> | Halsey |

(Pages 31 - 43 omitted from this sample)

We now move on in our discussion of rhythm to one of the most important characteristics of pop and rock - the frequent use of syncopation.

Syncopation

8th NOTE SYNCOPATION

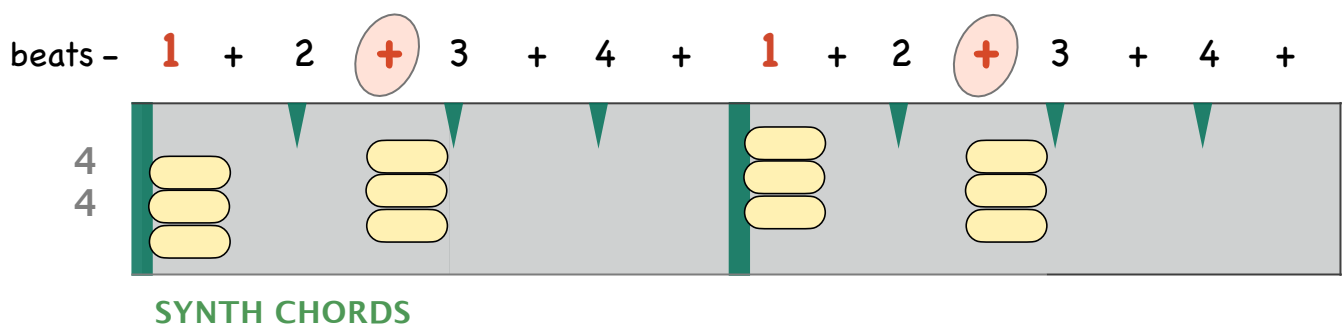
Listen very closely to a typical pop or rock song and count the beats “1 and 2 and, etc.” You will notice that many phrases and rhythmic accents start on the “and” of a beat (the upbeat), rather than the stronger downbeat. This is not your imagination or error. When rhythmic accents fall on the upbeat instead of the downbeat, it is called **syncopation**. This type of rhythm is a hallmark of the pop & rock style, as we will hear in the following examples.

Let’s start with an iconic example of 80s dance pop. “Billie Jean” opens with just drums, then the bass line enters with a chugging 8th-note pulse. Listen for the entrance of the **treble synthesizer chords** at **0:20**. As you can see in the graphic notation below, the synth chords join the 8th-note pulse at two places every measure — on the downbeat of “one” and the syncopated upbeat of “two”.

“Billie Jean” – Michael Jackson – 1983



- **0:00** Alternating **kick drum and snare** create the steady **QUARTER-NOTE PULSE**. (Kick drum on beats 1 & 3, snare **BACKBEAT** on 2 & 4.) **High hat cymbal** plays the faster **8th-NOTE PULSE**.
- **0:04** **Chugging bass line** joins on **8th-NOTE PULSE** with a steady stream of 8th notes. (Count along with the 8th-note pulse “1 and 2 and 3 and 4 and.”)
- **0:20** **Treble synthesizer chords** punctuate the 8th-note pulse as follows:



This type of syncopation is extremely common in pop & rock — two chords per measure in 4/4 time, but they don't divide the measure exactly in half. Many times the second chord comes in a half beat "early," giving the rhythm an extra push. When you count along with the 8th-note pulse, you probably say the "and" of beat 2 much louder.

"REGULAR" RHYTHM

beats - **1** + 2 + **3** + 4 +

SYNCOPATED RHYTHM (extra energy)

beats - **1** + 2 **+** 3 + 4 +

Syncopation can occur on any beat. Here's another example with syncopated chord hits, but the accents are on the upbeats of "three" and "four."

"Real World" — Matchbox 20 — 1998



beats - **1** + 2 + 3 **+** 4 **+** **1** + 2 + 3 **+** 4 **+**

0:09 INTRO

(Pages 46 & 47 omitted from this sample)

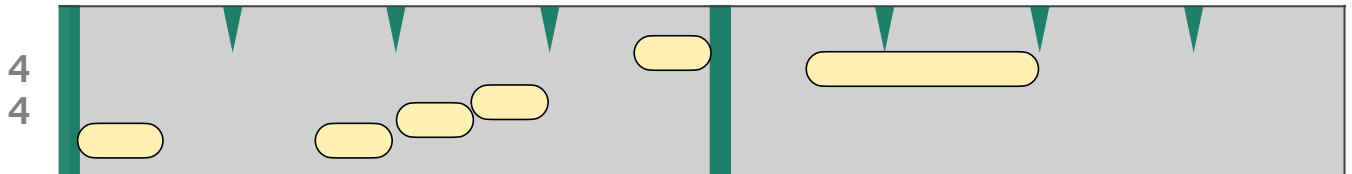
Here's a more recent riff with syncopation, courtesy of the Gorillaz.

"Feel Good Inc." – Gorillaz – 2005



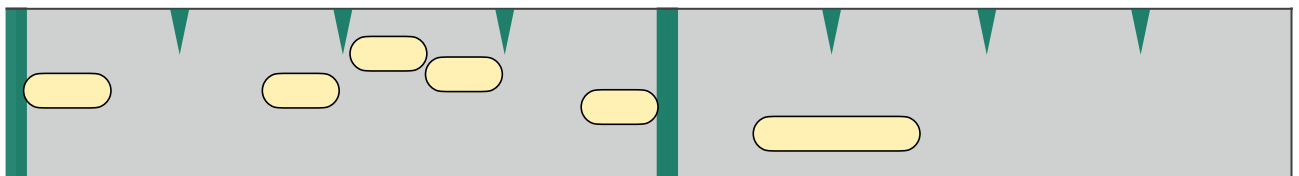
beats -

1 + 2 + 3 + 4 + 1 + 2 + 3 + 4 +



0:06 INTRO

1 + 2 + 3 + 4 + 1 + 2 + 3 + 4 +



Our next example is deliberately deceiving.

"It's a Mistake" – Men At Work – 1983



- 0:00 When the choppy **guitar chords** come in at the beginning, it sounds like they are all quarter notes on the **DOWNBEAT**. (Try counting along in groups of four.)
- 0:08 As the **bass** starts bubbling underneath, there seems to be something odd about the rhythm. You may have trouble counting.
- 0:18 By the time the **drums** kick in, we realize we have been fooled. The beginning guitar chords now seem to have shifted to the **UPBEATS!** (If you are still counting, the chords should now fall on the "add" of each beat for the rest of the song.)

(Pages 49 – 55 omitted from this sample)

SWING 16ths

While the swing feeling is traditionally created with 8th notes, it can also be found in the 16th-note pulse. In fact, in the late 1980s, a new hip-hop style called “New Jack Swing” emerged on the charts, featuring very prominent swing 16ths on dozens of hits.

The swing feeling for 16ths is created in the same manner as previously described for 8th notes — ie. the 16th notes are not spaced equally apart, but shifted into a series of “long, short, long, short” segments for each beat. However, because a 16th pulse generally moves faster than an 8th pulse, the sense of swing may be a little harder to hear.

Recalling our earlier discussion of how to find a 16th pulse, start tapping a slow basic beat and then quickly say “1, 2, 3, 4” for each beat. Now shift your count so that the numbers are not equally spaced. “1” should be longer than “2,” “3” should be longer than “4,” etc. Hopefully you will sense the same “galloping” feeling of long, short, long, short that was heard in earlier 8th-note swing examples, but at a faster pace.

Our first song example comes from Paula Abdul, and her 1989 hit “Straight Up.” This song features the swing 16th pulse mainly in the drums.

“Straight Up” — Paula Abdul — 1989

On the next example, the swing 16ths are heard mainly in the vocal melody and the snare drum. Start listening at **1:06**.

"Diggin' on You" — TLC — 1996



Here's another example of prominent swing 16ths in the drums, but at a faster tempo.

"Every Little Step I Take" — Bobby Brown — 1989



Not all songs with swing 16ths are from hip-hop artists. Here's a jazzy alternative pop song from Edie Brickell that has the 16th pulse mainly in the electric guitar part.

"What I Am" — Edie Brickell — 1989



Jack Johnson's "Good People" is another guitar-based song, but this time the swing 16ths are heard from a combination of both acoustic and electric instruments.

"Good People" — Jack Johnson — 2005



Swing 16ths can even be heard from hard rock bands, as on this 1989 song from Motley Crue. Once again the swing feeling comes mainly from the electric guitar part.

"Sticky Sweet" — Motley Crue — 1989



The following list is a bit lengthy, but it is included to show how common swing 16ths are in modern pop among a variety of artists:

Additional songs with SWING 16th NOTES

| | | |
|-------------|--|-------------------------|
| 1990 | <i>Lil Jack Horny</i> | Extreme |
| 1990 | <i>Poison</i> | Bel Biv Devoe |
| 1991 | <i>Around the Way Girl</i> | LL Cool J |
| 1992 | <i>I Love Your Smile</i> | Shanice |
| 1993 | <i>That's the Way Love Goes</i> | Janet Jackson |
| 1995 | <i>Thank You</i> | Boyz II Men |
| 1997 | <i>Sunny Came Home</i> | Shawn Colvin |
| 1997 | <i>Tearin' Up My Heart</i> | NSYNC |
| 2002 | <i>Complicated</i> | Avril Lavigne |
| 2004 | <i>Heaven</i> | Los Lonely Boys |
| 2005 | <i>Sunday Morning</i> | Maroon 5 |
| 2007 | <i>Many the Miles</i> | Sara Bareilles |
| 2017 | <i>Miss Me More</i> | Kelsea Ballerini |
| 2020 | <i>Break My Baby</i> | KALEO |

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