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Why Do I Need Music Theory?

You don’t, as long as you have no interest in making a career out of music. That’s not to say that everyone who makes money by producing, beatmaking, or even playing an instrument is an expert on theory, but rather that your life will be much easier with a solid musical foundation. Have you ever had an incredible idea for a rhythm or melody, only to be unable to express your imagination through the speakers? With a basic knowledge in music theory, this will no longer be a problem. If you are a creative person, people will listen. Unfortunately, unless you know how to express that creativity, people just won’t feel your music, and you will be frustrated. Music theory will enhance your ability to communicate your art with others. Isn’t that the real purpose of music?

Is It Difficult To Learn?

Well, the answer to that question is up to you and your attitude. If you approach learning music theory with the idea that it is strange, super technical, and just plain hard, it will certainly be difficult. However, if you start the process with a positive mindset and realize that it is more than possible to become proficient, it will not be tough. Do you remember being very young and not knowing how to ride a bike? Did it seem difficult? Probably, but I bet you could hop on a bike right now and ride without a problem at all, couldn’t you? Music theory can certainly be challenging at times, but it can be done and it will be worthwhile.

I Have No Experience

You don’t need experience to learn something. No one was born with knowledge of how music works, and every artist you love and respect was once a beginner. Know this- there was a time when Stevie Wonder had no clue how to play a piano. It would be a hefty mistake to let inexperience keep you from ever trying, be it learning music or anything else in life. Don’t create limits around yourself. Wake up early, work hard, and you can accomplish great things.

Do I Need To Play An Instrument?

This book was written with those who do not play an instrument in mind. If you would like to learn to play an instrument, this guide will certainly be useful to in creating a solid foundation in music theory. Of course, you should also realize the distinction between “playing” an instrument and “performing” on an instrument. In a few weeks’ time you could certainly learn to form some basic chords on a piano or keyboard, and even play along to a click track. In such a short time frame, however, you probably wouldn’t be ready to play on stage with a band. That’s another ballgame. The aim of this book is not to get you to performance-level ability. The purpose is to give you a basic foundation in music theory so that you can produce great music.

What Style Is It Good For?

Pretty much any and all styles. You could use music theory in a dub step track to make sure the bass and the synth lines are in the same key, or you could use music theory to add instruments to sample-based loops in a 90s hip hop track. We’re going to go over lots of tricks and aspects of music theory that apply to many different styles of music. If you want to be
a pop producer, you can use this book. If you want to produce indie and alternative bands, this guide will be a major help. Of course, if you want to make hip hop beats, you’re going to find a lot of useful stuff in here.
What You Need

Some things you must have, and some things would be nice to have but aren’t entirely necessary. You need to have a good attitude about the process of learning music theory. Yes, it sounds pretty corny and existential, but if you come in with the idea that it is a “chore” or “boring”, it will be an unenjoyable experience. Music should be fun, right?

Since you’re a producer, it is probably safe to assume you have some sort of DAW on your computer (Ableton, ProTools, FL Studio, Logic, whatever). If not, you should consider investing in one. You could learn the basics of music theory by study alone, but you won’t have a firm grasp without some sort of sonic medium, be it a DAW, keyboard, piccolo, or the like. All DAWs will have a piano roll of some sort, which will allow you to click in notes with your computer’s mouse and form chords or melodies.

Speaking of keyboards, you should get a keyboard. You don’t need one, but it will be infinitely useful in both learning music theory with this book and your career moving forward. Fanciness is not required, and even the small ones will work for the purposes of learning and music production—you could pick up a usable MIDI keyboard from eBay or Craigslist for under $100. A lot of the music theory discussion in this guide deals with keys, chords, and chord progressions, and it will be much easier to understand with a keyboard. If you can’t spring for a MIDI keyboard, perhaps you can find a cheap Casio from the 80s at Goodwill or a pawn shop.

Can I use another instrument?

Sure. Music theory applies to just about any instrument, and this guide will be helpful with whatever you choose. Still, this was written using a piano keyboard to show examples, because it is the simplest to understand and familiar to most people. You can certainly use this guide with a guitar or a saxophone, but in order to keep it short we won’t be going over the fretboard or note fingerings or anything like that.
Music can be very complex or very simple, but either way it can usually be broken down into a few basic concepts. This (short) chapter is going to discuss those concepts. Even if you feel that you already know this stuff, at least give it a review.

**Building Blocks**

Most songs, and popular songs especially, can be broken down into three major components: Rhythm, Harmony, and Melody.

- **Rhythm**, or the “beat”, is the (usually) steady part of the song that provides the drive and keeps the groove going. Drums and bass usually comprise the rhythm section, although many other instruments can play a part (guitar, keys, other percussion, etc.)

- **Harmony**: to describe harmony in the most basic way would be to say that it provides the support and musical motion of the song. Think of it
as chords and chord progressions. Almost any instrument can provide the harmony, including background vocals.

**Melody** is a unique series of notes, typically played one at a time. The melody is almost always the catchy part of the song that gets stuck in your head. It can be played with just about any pitch-based instrument, and sometimes the vocal provides the melody.

**Time Signature**

Sometimes called “Meter”, the time signature is like a bare-bones template for the rhythm. The most common time signature in popular music is 4/4. The top number (4) describes the number of beats per bar; in 4/4, there are four beats per measure. The bottom number (4) describes the note value of a beat. In this case, 1 beat = 1 quarter note. (Note: a measure and a “bar” mean the same thing.)

Confused? Think of it this way: in 4/4, the pattern might go Kick-Snare-Kick-Snare. Each drum hit is a beat, and they add up to equal four beats. Each hit will be a quarter-note in length, but that’s not terribly important when making a simple drum beat on your computer, since you can’t exactly “hold” a snare for a longer period of time like you can a note played on guitar or whatever. The most important thing is to know that 4/4 means there are four beats in a measure.

**Tempo**

Tempo is probably familiar to most up and coming producers, even if you’ve only been at it for a little while. Tempo is measured in BPM, or Beats Per Minute. A higher BPM means the track is faster, and a lower BPM is a slower song. Easy enough. Hip Hop is usually going to be somewhere between 70bpm and 120bpm. Electronic Music tends to play up around 100-160bpm, with the exception being slower stuff (Chillstep?)

**Whole Steps and Half Steps**

To understand how to build chords, you’ll need an idea of half and whole steps. The best way to learn this is by using a keyboard, or at least a picture of one. A half step is basically the musical distance from one key to the next. For example:

C - C♯

C♯ is one half-step above C
D♭ is one half-step below D
F is one half-step above E
What about E#? As you can see on the keyboard, there isn’t a black key in between E and F, so there isn’t really an E#. If you ever see E# written anywhere, just know that it is exactly the same note as F. Same deal for B to C.

A whole step is two half steps. If you pick a key on a keyboard, skip one key and the next will be a whole step in whichever direction you went. That’s about as tough as it gets.

<table>
<thead>
<tr>
<th>G</th>
<th>A</th>
</tr>
</thead>
</table>

A is a whole step above G
C is a whole step below D
F♯ is a whole step above E

Structure

Luckily, most popular music has a simple song structure. Here’s what it looks like:

- Intro
- Verse
- Chorus
- Verse Two
- Chorus
- Bridge
- Chorus

The number of bars for each section varies by song, but it’s usually in multiples of four. The intro usually isn’t much more than 4 bars, the verse is typically 8-16, and the chorus is probably 8. The bridge is almost always 8 bars.

Next, and for the rest of the guide, we’re going to take popular songs and break them down according to the principles we learn. The best thing you can do to become a great producer is to become a great listener; make a playlist of your favorite songs and write out an analysis. Start simply: how fast is the song? Is the music dark, or happy and bright? What are the most interesting parts? What gets stuck in your head? By learning to listen critically, you’ll be able to approach your music from the listener’s perspective and make the best tracks possible.
Song Analysis

_Elevators (Me & You)_
OutKast

This song is even more simple than the previous example. The beat stays pretty much the same throughout, so you have to listen to the vocals to distinguish between verses and choruses. Find the song on YouTube (assuming it's not in your library already) and listen along. It's about 85bpm, and the structure is as follows:

- **Intro:** 8 bars
- **Verse 1:** 20 bars (first 12 are André, then 8 for Big Boi)
- **Chorus:** 8 Bars
- **Verse 2:** 16 Bars (Big Boi)
- **Chorus:** 8 Bars
- **Verse 3:** 12 bars (André)
- **Chorus:** 16 bars and fades out

Not bad, right? It can get more complicated, but not much more. Hip Hop is usually the easiest structure-wise, and pop isn't too far behind. Any song you hear on the radio will more than likely be very easy to figure out. Try to write the layout of a few on your own, and then move on to the next chapter: Rhythm.
Why Is Rhythm Important?

The rhythm is the beat itself; it is what makes you bob your head and hit repeat. A catchy beat is sometimes all it takes to have a hit song, especially in Hip Hop. Quality music in all genres (Jazz, ’60s rock, modern hip hop, electronic, etc.) nearly always has a solid rhythm. Rhythm is the foundation of the song—without a solid one, your track will crumble.

Before we get into actual kicks and snares, we should discuss a few basic concepts. If this stuff seems like a foreign language to you, fear not. You only need to understand the simplest version of these ideas in order to use them to better your music.

Drums

Drum lines in modern music almost always have a kick, snare, and a high hat. It is also common to hear cymbals, toms, and maybe some other percussive instruments such as tambourines or hand claps.

The kick will usually fall on beats 1 & 3. The snare will likely be on beats 2 & 4. The high hat can go pretty much any and everywhere, but in a super-simple track it will be on beats 1, 2, 3, and 4. From here, you have a lot of freedom to get creative. Here’s what it looks like on paper:

1 2 3 4
H H H H
S S
K K

Swing

Fortunately, all drum tracks aren’t as boring as the aforementioned example. A very common musical concept is the idea of a “swinging” drum part. This simply means that there are some additional “ghost hits” (usually a kick) played at a lower volume or velocity right before a hit on the 1st, 2nd, 3rd, or 4th beat. It would look like this:

1 2 3 4
H H H H
S S
K K K

[Remember that the second kick is going to be much quieter than the kicks on 1 & 3.]

Most sequencers within DAWs will allow you to adjust the velocity of individual hits. Play around and experiment with it. You could easily figure out how to get a solid groove going within about 30 minutes.

Points To Remember

If you are trying to create an authentic-sounding drum loop, be realistic. It sounds like common sense, but unfortunately it is not common practice. A drummer in real life cannot hit seven different drums at once, because he only has two hands and two feet. He or she would also have a difficult time hitting the crash, snare, and hi hat together for the same reason. Of course, if you’re going for some outer-space type stuff, anything goes, but if you want your drum parts to sound like a live player, keep this in mind.
Keep it simple. Again, don’t limit yourself creatively, but while sequencing your drums remember that there will be several more parts (keyboards, guitars, vocals, etc.) that will go on top of them. The fact is, most non-drummer listeners don’t listen to music for the drumming; they are in it for melodies, vocals, and/or lyrics. The best drumming is that which holds the funk down without being a huge distraction.

Song Analysis
The OtherSide
The Roots

When it comes to drumming, Questlove can do no wrong. His beat in The OtherSide is a prime example of simple drumming that makes itself known without taking away from the keys or the vocals, and it’s almost impossible to keep your head still while listening. The tempo is right around 83bpm, and of course it’s in 4/4 time. Try counting along (1,2,3,4) at first, and then take a shot at recreating it your DAW. Here’s the pattern for the verse:

```
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHHHHHHHHHHHHHH</td>
<td></td>
<td></td>
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<tr>
<td>C</td>
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<td>K</td>
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</tbody>
</table>
```

Here’s what it looks like in a sequencer:

Blow My High (Members Only)
Kendrick Lamar

Ah, this drum pattern is classic hip hop. It’s nice and sparse, and leaves plenty of room for the keys, synth parts, vocals, and background vocals. The producers kept this beat simple throughout the whole song, and just added a high hat fill every once in a while.

Here’s the piano roll for Blow My High:
Here’s another classic drum pattern that holds it down steady while the funk-esque guitar part and rhythmic vocals are laid overtop. Again, nice and simple.

Bass

Bass. You don’t hear a great low end part; you feel it in your loins. Bass lines can range anywhere from quick machine-gun slapping to long, thick, and greasy vibrations that rattle the window. The bass is a crucial part of the track, whether it is rock, rap, or dubstep, and luckily it isn’t too difficult to put together something solid.

Bass Instruments

You can get a nasty bass sound with a variety of instruments. Of course, bass guitar is a natural go-to. Beyond that, you can get the low tones you desire from an upright bass, piano, or even cellos and orchestral basses. If you’re producing on your computer, you’ll have some instrument sound banks with a healthy variety of choices. The only way to find out which is right for you is to mess around and experiment.

Writing The Bass Part

We are going to start simple and write a bass part in the key of G Major, which has the notes G, A, B, C, D, E, and F# (don’t worry if you don’t know what this means; we’re going to go over it in depth later). Here’s the swinging drum part we did earlier:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
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<tr>
<td>S</td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>K</td>
<td>K</td>
<td></td>
</tr>
</tbody>
</table>
Now, let's add bass:

It's not that exciting, but it's a start. Once you get the basics of writing the bass part down, you'll be able to get as creative and crazy with it as you want.

An important thing to remember is that the bass note is usually the root note (lowest note) of whatever chord is being played. We won't dive into chord progressions just yet, but in the above example the chords could be Gmaj, Cmaj, Emin, and Dmaj, corresponding with the bass notes.

Song Analysis

Xxplosive
Dr. Dre

This is a great bass line because it's a bit unique from other hip hop songs, but it still keeps it very simple. Bass is meant to be the foundation of a song, not the centerpiece, and this is an excellent example- you can appreciate the bass without being bored by it.

Here's the piano roll (listen and play along if you'd like):
Call Tyrone
Erykah Badu

Sometimes, the bass can actually be the melody. Call Tyrone is one such instance; depending on which version you listen to, the song is just drums, rhythm keys, bass, and vocals. It stays pretty consistent throughout the song, and actually doubles the chorus vocals. This type of bass part may or may not work for hip hop arrangements, but it is perfect for R&B or neo-soul songs.

Let Me Watch
MF DOOM

While the bass has long notes (half a bar each), as is seen in many different types of music, this part is a bit different than the previous two examples. Instead of repeating over one or two bars, it repeats every five bars. This is somewhat uncommon, as most popular songs have rhythmic structures that repeat every four bars (or at least at multiples of two). DOOM may be unconventional in a lot of ways, but you can definitely learn from his work.

A note about tuning: If you play along with Let Me Watch, it will sound a little “off”. That doesn’t necessarily mean that the notes are wrong, but rather that the bass in the song is a slightly out of tune. This is not a bad thing. Many producers and beatmakers choose to detune certain instruments in order to make the tracks more interesting. If you’re using live guitars, you would detune using the tuning pegs on the guitar itself (obviously), but many DAWs and plugins have specific “detune” controls that allow you to pitch an instrument up or down as much as you’d like. As always, experiment and use your ears.
Other Instruments

You're probably going to want to use some other instruments in the rhythm section to give your tracks a full and lush texture. Some great choices are guitar, keys, horn or string ensembles, etc. We're not going to delve into part-writing for these instruments, since it will be covered in detail in the Harmony chapter. Just know that pretty much any instrument can contribute to the rhythm section (even background vocals).
Harmony can mean several things, but for the purposes of this guide, we’re going to cover keys, chords, and chord progressions. Harmony creates movement and is essentially the groundwork for the instruments. Learning keys and chords and all that goes along with harmony may seem a bit intimidating at first, but once you form a solid foundation you’ll be able to express yourself musically and communicate your art to other people. Without learning at least the basics, making music will be a struggle and you’ll likely suffer from “producer’s block” much more often than necessary.

**Keys**

**Major**

Have you ever heard someone say something like, “It’s in the key of D Major”, and wondered what the hell they were talking about? Wonder no more. For the sake of simplicity, a key is basically a combination of musical notes that sound nice when played together, whether part of a triad (three-note chord) or played in melodic succession (one at a time). Here’s the key of D Major:

If you have a keyboard, play the notes in order and listen to how it sounds. If you’re working from a DAW interface, click in the notes and listen to them played individually. Sounds pretty good, right? Now, do the same with these notes:

Does the F sound a little off? That’s because F is not in the key- F# is. If you want to get the happy sound that goes along with a major key, you’ll have to keep it in key.
That’s it, basically. While there are twelve different keys, the good news is that you don’t have to memorize them all. Here’s a handy chart called the Circle of Fifths— it shows you the notes in every major key:

Ok, here’s how you read the Circle of Fifths: First, pick a key. We’ll use A Major for this example. A is on the right side of the circle, and it says that there are 3 sharps (#) in the key. Then, we go to the “Order of Sharps” at the bottom and take the first 3 sharps— F#, C#, and G#. So we know that the key of A Major will have:

A  B  C#  D  E  F#  G#

Make sense? The order of sharps and flats will never change. All notes on the outside of the circle represent that particular Major key (Bb is Bb major, etc.) The Circle of Fifths with the relative minors is in the next section.

Order of Sharps
F#  C#  G#  D#  A#  E#  B#

Order of Flats
B♭  E♭  A♭  D♭  G♭  C♭  F♭
Minor keys work the same way as major keys. Luckily, the Circle of Fifths is also useful, if we add in the relative minors:

You read this the same way you did the previous chart. To find a minor key, just pick one of the letters within the circle. For example, G minor. According to the handy circle, G minor has 2 flats. So, proceed down to the order of flats and take the first two. G minor will have:

```
G A Bb C D Eb F
```

“Relative Minor” just signifies the minor key that will have the same notes sharped or flattened. For example, G Major just has F#, making it:

```
G A B C D E F#
```

E Minor is the “relative minor” of G Major, meaning that it will also have just F#: 

```
E G A B C D F#
```
The only difference between the Major Key and its relative minor is which note it starts on. It will have the exact same notes and the exact same chords. You can also use the Circle of Fifths to identify minor keys:

Chords

Alright, now we’re going to get into the fun stuff. Using any given key, we can form chords and chord progressions to go over our rhythm section and give the track a full-sounding body. A chord will contain two or more notes played at the same time, but the most common variety is called a “triad”. A triad simply means three notes played at the same time. Easy enough, right? Let’s check it out.

Major

Major chords are happy and bright-sounding, and it would be very hard to find a popular song without at least one major chord. Using the key of G Major, let’s construct a G Major chord:

G A B C D E F#

To build this three-note chord (triad), just start at G and play the 1st, 3rd, and 5th notes of the scale (key):

For every major chord, the second note will be two whole steps above the first. For every major or minor chord, the distance between the first note and the third note will be seven half steps. That being said, it is much easier and more productive to think of chord construction as 1-3-5, rather than in terms of half steps. If you keep a copy of the Circle of Fifths with you, you’ll always know what notes are in what key.

Minor

Minor chords have a distinctly dark sound. If you’re watching a movie and someone dies (in the movie), you’re going to hear some minor chords, unless that character was a total ass. Despite their brooding tone, minor chords can be quite beautiful and add to the richness of your tracks. Using the same 1-3-5 formula, let’s use the key of E Minor to construct a good ‘ol E minor chord:

E F# G A B C D

1 3 5
So, an E minor chord is E G B. The reason we went over half and whole steps earlier is so that we can now understand the difference between a minor and a major chord. The distance between the first and second notes (1 and 3) in a minor chord is three half steps, rather than the major chord's four half steps (two whole steps). The distance between the first and last note (1 and 5) is still seven half steps. So, if you're playing minor chord, all you have to do is move the middle note up one key and you've got a major chord.

**Inversions**

We're not going to go into great detail about inversions, but you should know what they are to avoid confusion. A chord inversion simply means playing a chord with the notes in a different order. For example, you can play E minor as:

E G B

You can also play E minor like this:

G B E

or

B E G

1 3 5

35

36
You’ll notice that in the B E G example, the distance between the first note (B) and the second note (E) is five half-steps. Don’t let this confuse you. It is still E Minor, because there isn’t really a B chord like that; B major is B D# F#, and B minor is B D F#. Playing around with inversions can spice up your progressions, so go ahead and try them out once you get comfortable. The notation for inversions is pretty easy to understand. For the example above, E minor would be written as Em. For the “G B E” inversion, we would write Em/G. Sometimes these are called “slash chords”, which just means that the note after the slash will be the root. The “B E G” example above would be written as Em/B.

**Diminished**

Diminished chords are very off-sounding (dissonant). We’ll explain them, so you can experiment, but they’re pretty rare in popular music and you probably won’t need them. Using the key of G major again, we’ll build an F# diminished chord using the same 1-3-5 formula:

G A B C D E F# G A B C

1 3 5

The distance between the first note (1) and the second note (3) is three half-steps in a diminished chord, just like in a minor chord. The difference with a diminished chord, however, is that the distance between the first note (1) and the last note (5) is six half-steps, not seven.

**How do I know whether a note within a key will have a major, minor, or diminished chord?**

There are three simple ways to figure out the chord type of a specific note within a key.

1. You can play it. Once you’re familiar with major and minor-sounding chords, you’ll have no trouble hearing the difference.

2. You can count half-steps. For example, if you are working in the key of G major and want to play the A chord, you would play A C E. Remembering our half and whole step descriptions from earlier, you would count three half-steps from A to C, and seven half-steps from A to E. Therefore, it would be a minor chord.

3. You can memorize chord order. Memorization can seem a bit intimidating at first, but it’s actually the easiest way to learn the types of chords within a key. Here’s the chord order for any major key:

   1. Major
   2. Minor
   3. Minor
   4. Major
   5. Major
   6. Minor
   7. Diminished
For example, the key of G major has:

1. G Major
2. A Minor
3. B Minor
4. C Major
5. D Major
6. E Minor
7. F# Diminished

But what about minor keys? Since the relative minor has the same notes as its corresponding major key, it will also have the same chords. That’s not so hard, is it? Going back to E minor, which is the relative minor of our friend G major...

1. E Minor
2. F# Diminished
3. G Major
4. A Minor
5. B Minor
6. C Major
7. D Major

Guess what- you don’t even have to memorize the chord order. You’ll find it in the cheat sheet at the back of the guide. Print it out, stick on your wall, and no one will know the difference.

7th Chords

Knowing about 7th chords isn’t a total necessity, but you can definitely use them to add variety to your music. There are three different types of 7th chords:

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Notation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major 7th</td>
<td>maj7</td>
<td>Gmaj7</td>
</tr>
<tr>
<td>Minor 7th</td>
<td>min7</td>
<td>Emin7</td>
</tr>
<tr>
<td>Dominant 7th</td>
<td>7</td>
<td>D7</td>
</tr>
</tbody>
</table>

To play a 7th chord, all you have to do is add the 7th note to the major or minor triad. Let’s build a G major 7:

```
G A B C D E F#
```

```
1 3 5 7
```

So, Gmaj7 is G B D F#. You can also leave out D, the 5th note, if you’d like. It would still be a major 7th. A minor 7th works the same way.
Here’s Emin7:

\[
\begin{array}{cccccc}
E & F# & G & A & B & C & D \\
1 & 3 & 5 & 7
\end{array}
\]

Emin7 is E G B D. Finally, let’s construct a dominant 7th, D7 is:

\[
\begin{array}{cccccc}
G & A & B & C & D & E & F# & G & A \\
1 & 3 & 5 & 7 & 9
\end{array}
\]

D7 is D F# A C. Once again, you’re more than welcome to leave out the third note (5) in any 7th chord.

9th Chords

Like a 7th chord, a 9th isn’t necessarily essential, but it can be interesting. 9th chords are used a lot in neo-soul type songs, so keep that in mind if you’re into slow jams. Just like with a 7th chord, a 9th chord can be a major 9th, minor 9th, or dominant 9th:

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Notation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major 9th</td>
<td>maj9</td>
<td>Gmaj9</td>
</tr>
<tr>
<td>Minor 9th</td>
<td>min9</td>
<td>Emin9</td>
</tr>
<tr>
<td>Dominant 9th</td>
<td>9</td>
<td>D9</td>
</tr>
</tbody>
</table>

To build a 9th chord, all you have to do is start with the 7th and add the 9th. Here’s Gmaj9:

\[
\begin{array}{cccccc}
G & A & B & C & D & E & F# & G & A \\
1 & 3 & 5 & 7 & 9
\end{array}
\]

Gmaj9 is G B D F# A So, the formula is 1-3-5-7-9. Feel free to drop the 5 if you’d like, which would make it 1-3-7-9. Same deal for Emin9:

\[
\begin{array}{cccccc}
E & F# & G & A & B & C & D & E & F# \\
1 & 3 & 5 & 7 & 9
\end{array}
\]

Emin9 is E G B D F#. This is pretty simple stuff, but for the sake of practice we’ll go ahead and do D9:

\[
\begin{array}{cccccc}
G & A & B & C & D & E & F# & G & A & B & C & D & E \\
1 & 3 & 5 & 7 & 9
\end{array}
\]

D9 is D F# A C E. Here’s some handy formulas that will make building 9th chords a breeze:

\[
\begin{align*}
\text{maj9th} &= \text{maj7th} + 9 \\
\text{min9th} &= \text{min7th} + 9 \\
(\text{dominant}) \ 9th &= (\text{dominant}) \ 7th + 9
\end{align*}
\]
**Chord Progressions**

Once you’ve figured out how to form chords within a key, you can start the creative process of building chord progressions. This can be both the most fun and most challenging, but with practice you’ll be banging out masterpieces in no time.

Let’s take our chords from the key of G Major:

1. G Major
2. A Minor
3. B Minor
4. C Major
5. D Major
6. E Minor
7. F# Diminished

You have seven chords from which to choose, and therefore thousands of possible combinations. If that seems daunting, don’t worry. Most popular songs have predictable chord progressions, so you can start there while you’re learning and branch out as you see fit. The most common chord progression in popular music is 1, 4, 5. All major chords. Here’s what it would be in the key of G Major:

G Major  C Major  D Major  G Major

Play it on your keyboard or click it into the piano roll and take a listen. It probably sounds familiar. Another one you’ll hear a lot in popular music is 1, 5, 6, 4. The 6 is a minor chord, so it is a nice added flavor. Here’s the progression in G Major:

G Major  D Major  E Minor  C Major

Of course, you can switch up the order and the starting place (5, 1, 4, 6):

C Major  G Major  D Major  E Minor

Gee, that one sounds an awful lot like “Let Her Go” by Passenger. I guess you don’t need to be a creative genius to get played on the radio thousands of times a day.

To get better at chord progressions, practice and experiment. Start with 1, 4, 5, and then expand. Throw a couple minor chords in there if you’d like, or maybe even a diminished. Since you’ve learned the technical parts (keys, chord order, etc.), you’ll now be able to actually express your musical ideas.
Putting It All Together

Alright, so you've read the chapter, and you're ready to start writing hits. Here are three simple steps to jump start your music making:

1. Pick a Key
2. Write out the Notes & Chords
3. Experiment with the Chord Progression

Pretty straightforward, right? Let's give it a try. For step 1, let's pick the key of A Major. For step 2, we'll use the Circle of Fifths to find out that A Major has the notes:

A  B  C#  D  E  F#  G#

Then, using our chord order cheat sheet from earlier in the chapter, we know that the chords will be:

1. A Major
2. B Minor
3. C# Minor
4. D Major
5. E Major
6. F# Minor
7. G# Diminished

Now that the technical part is done, let's play around with some progressions. We can start with the standard 1, 4, 5:

A, D, E

[Note: If a chord is just a letter, that means it is the basic major chord. You won't see anything like “Amaj” unless it is Amaj7 or Amaj9.]

That sounds OK, but it's a little boring. Let's throw in a C#min and expand the progression a little bit:

A, D, C#m, A, D, E, A

That's about it. There's no need to get super fancy when creating chord progressions, unless you want to. Some of the biggest and best songs of all time were just 3 or 4 simple chords. Also, when writing harmony parts, don't forget to leave room for the rhythm section, melody part, and vocals (if you have a vocalist). If you get too crazy, playing lots of chords very quickly, it will be distracting to the listener. Subtlety is your friend; the audience should be able to hear the harmony, but not necessarily notice it.
Song Analysis

*Get Lucky*
*Daft Punk*

This is an interesting chord progression. Instead of being in a major or minor key, it's actually in a B dorian mode. "Modes" go beyond the scope of this book, but it just refers to different types of musical scales (like major or minor). B dorian has:

B  C♯  D  E  F♯  G♯  A

Therefore, we know that it will have these chords:

B minor
C♯ minor
D major
E major
F♯ minor
G♯ diminished
A major

The progression for *Get Lucky* is 1, 3, 5, 4; or Bm, D, F♯ minor, E.

Here's what it looks like on the piano roll:

*Ms. Jackson*
*OutKast*

This is a classic song with a classic beat that made Big Boi and Dre heaps of cash. The progression is pretty simple and repeats every four bars throughout the track: E, F♯, G♯ m. In your DAW, it looks like...
Another hip hop song, albeit more recent, with a nice and smooth chord progression. This time, we have some 7 chords, which give the track just a slight neo-soul feel. The verse portion of *Poundcake* is Am7, Bm7, Cmaj7, Em, D.

Then, the chords for bars 5-8 are C, F/C, Am, repeat:
Remember, the forward slash in the chord means that it is an inversion. So, when you see “C/G”, you know that it is C major with G as the root. Refer to the piano roll for a visual representation and try it out on your keyboard at home.
Whereas a chord is several notes played at the same time, melody is just a series of notes played one at a time. The melody is often the catchy part of the song that gets stuck in your head (you don’t really hear people humming chord progressions). A melody gives the song character, and makes it unique. There could be dozens of songs that have the exact same chord progression, but they will all (usually) have different melodies. Also, you can copyright and protect a melody that you write, rhythms and chord progressions cannot be copyrighted.

**Why is it Important?**

Melody is important because it keeps the song interesting and likeable. It is part of the experience of music - you might tap your feet to the rhythm and hum or whistle the melody with even noticing. Melody is important, but not necessarily essential, especially if you’ve got a vocalist on your track. Many times, in hip hop especially, the vocals constitute the melody, rather than an actual instrument lead.

**Constructing Melodies**

Constructing a melody might be the part of music creation that relies the most on creativity. You could get away with using formulas for the rhythm and harmony parts, but there is no formula for melody. All you need to do is play notes within the key over the chord progressions and see what you can come up with.

---

The best way to learn how to write melodies is to listen to songs you like and pick apart the lead lines. So, we’re just going to analyze songs for the majority of this chapter.

**Song Analysis**

*Hol’ Up*

Kendrick Lamar

This is a great example of a hip hop song with a prominent melody. It’s on YouTube, so listen and play along if you can. It’s in the key of F Major, which has:

F G A B C D E

The tempo is about 78bpm, and the numbers below represent the beats (it’s in 4/4 time). Here’s the piano roll:
Seventeen Years
Ratatat

This melody is quite a bit faster than *Hol’ Up*, but it’s still clear and interesting. A lot of electronic and dubstep music is drum and bass-driven, but this is an example of the melody carrying the song. Here’s the piano roll for the intro—plugging it in your DAW is highly recommended:

---

Big Poppa
Notorious B.I.G.

Classic hip hop, classic melody. This is the type of track that puts you in the mood as soon as it starts, and perhaps the most recognizable part is the melody. This repeats every two bars on the choruses:
You might love this song, or you might hate this song, but you can’t deny that it’s catchy. This is yet another example of a melody that is simple, but still enticing. Exercise caution when replaying this one, because it will probably get stuck in your head. Pay attention to the length of the notes in the first two bars; they’re very short. This is often referred to as “staccato” playing.

Do I Really Need a Melody?

Actually, there are some songs that won’t need an instrumental melody. Many hip hop songs are simply rhythms and chord progressions, and the vocals will form a pseudo-melody over the beat. In other words, you don’t always need a melody, but it’s good to practice writing them anyway.
This part of the guide is going to be less lecture, and more of a look at the constructions of actual songs. The best way to gain an understanding of how these and other songs work is to program the parts into your DAW and/or play along.

\textit{Stan}

Eminem

The Marshall Mathers LP (2001)

Stan is one of those timeless songs that succeeds not only in the hip hop genre, but also appeals to a very wide audience. Pretty much everyone and their mother listens to Eminem, and this song is one reason why.

Rhythm

The drums for Stan are pretty straightforward, and the pattern stays about the same throughout the song. Here's two bars of the drum part written out:

\begin{center}
\begin{tabular}{ccccccccccc}
1 & 2 & 3 & 4 & 1 & 2 & 3 & 4 \\
H & H & H & H & H & H & H & H & H & H & H \\
K & K & KK & K & K & K & K & K & K & K & K \\
\end{tabular}
\end{center}

This repeats throughout the whole song. Keep in mind that sometimes there's an extra high hat at the end of a bar, and sometimes the
beat drops out entirely. Listen to the song and you’ll hear it. Here’s a screenshot of the sequencer:

Bass
The bass part is pretty simple too. Here’s a few bars that repeat throughout:

Harmony
The harmony is a guitar part (sampled, of course) that isn’t terribly complex either. The chord progression is just G#m, E, F#, B, F#/A# repeated every two bars:

Melody
Stan doesn’t really have an instrument melody, but rather the sampled vocals on the chorus serve as the ear-catching part of the arrangement. The simplicity of this song is proof that you don’t need to be a music theory genius to sell millions of records.
Breaking Away
Ratatat

This is a classic track from Ratatat's 2004 self-titled debut album. Definitely smooth and relaxing, especially for an electronic song.

Rhythm

Unlike Stan, the drum pattern for Breaking Away is pretty unusual. It is in 4/4 time, but the hits don't always fall on 1, 2, 3, and 4. When you listen to the drums specifically, it's pretty clear that the pattern is abnormal. Listen to the song, and plug in the rhythm on your piano roll:

During the intro, another bass line doubles the “plucks” or “stabs” from about 0:05-0:10 on the CD version. This is pretty common in a lot of music because it tends to give the track an overall “fatter” sound.

The more melodic bass part is quite lovely, so here's the piano roll for that too (starts at about 0:16 in the song):

Bass

Ratatat tracks always have a thick, beautiful bass, and this song is no exception. The intro bass is a more melodic, and when the chords come in the bass just plays the root note.
As we mentioned earlier, the intro has some “plucked” notes that repeat at a few different places. It’s really nothing complicated, just single notes playing on each beat.

During the next section, a somewhat more interesting chord progression appears and lays the foundation for the melody. It is simply straight eighth notes of Dm, C, Am/C, B♭/D, Gm, Dm, Am, C.
Melody

There are a lot of musical phases in Breaking Away that could be called melody, but we're going to look at the synth lead at 1:00-1:10 (it also repeats). This melody is perfect for the laid-back feel of the song as a whole. Plug it in as such:

This is one of those songs that has lots of different progressions and parts throughout, but these transcriptions will help you understand the basics of the track. As you plug it in and play along, try to think imagine their creative process: why is the harmony quicker eighth notes, while the melody is nice and slow? Why do the abnormal drums make sense for this song? Since you have the piano roll data, an interesting thing to try is to keep one or two of the original parts (ex. rhythm and harmony) and substitute a part of your own (ex. melody). This way you can experiment with the track and see what works and what doesn’t. Hell, you might come up with an even better version.

Girl
Destiny's Child

Oh yes. Produced by 9th Wonder, this beat is entirely sampled, but we can still analyze the theory behind the music.

Rhythm

It is hard to imagine a more simple drum pattern than this one. Kick, snare, high hat (rinse and repeat):
Bass

What little bass there is in Girl is made up of the root notes of the chords, repeated every four bars. For the sake of completeness, here's the piano roll:

Harmony

The chords for Girl are more interesting, but still pretty straightforward. The entire song is simply F#m7, G#maj7, A#maj7, F#m7, G#maj7:

Note: the above piano roll is quantized, meaning that the notes were aligned perfectly on time by the DAW's software. Obviously, people are not computers, so feel free to loosen up when creating your own tracks to give them a more "human" feel.
Melody

This melody is simple, but still complements the song and contributes to the “catchiness”. Play this along with the harmony and you’ll notice that the notes are almost identical to the chords.

That’s it. *Girl* is a great example of the beauty of simplicity. Many new producers (especially in hip hop) make the mistake of getting too intricate and complex in their tracks. This might be an advantage in dub step or other instrumental music, but if there are vocals going on top- less is more.
Here’s the essential music theory we went over in this book. Print it out and stick it on your wall so you don’t have to memorize it all. You’re welcome.

**Circle of Fifths** (relative minors are inside the circle)

**Chord Formation**

Major, Minor and Diminished chords are 1, 3, 5 (using the notes within the scale).

7th chords are 1, 3, 5, 7; or 1, 3, 7.

9th chords are 1, 3, 5, 7, 9.

**Chord Order**

<table>
<thead>
<tr>
<th>Major Key</th>
<th>Minor Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Major</td>
<td>1. Minor</td>
</tr>
<tr>
<td>2. Minor</td>
<td>2. Diminished</td>
</tr>
<tr>
<td>3. Minor</td>
<td>3. Major</td>
</tr>
<tr>
<td>5. Major</td>
<td>5. Minor</td>
</tr>
<tr>
<td>7. Diminished</td>
<td>7. Major</td>
</tr>
</tbody>
</table>

**Popular Chord Progressions** (for major keys)

1, 4, 5  
1, 5, 6, 4  
6, 4, 1, 5
The End
Proof

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