

Accelerated Introduction To Harmony (For All Musicians) Lesson One: Introduction, Basic Intervals, Building Major Scales and Triads, Inversions, The Circle Of Fifths

By Bill Graham

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Music is a language.

Playing music without understanding harmony is like speaking a language you don't understand. It is certainly possible to memorize phrases phonetically, and read notes off of a page, but without understanding the language, it's a tedious, frustrating process.

Learning this language is important for all musicians, whether you play classical music and want to make sense of the endless strings of black dots going by, or you play jazz, where a clear understanding of harmony is nonnegotiable in order to navigate through the chord changes. Maybe you play pop music, and you just want to understand where that seemingly unexpected chord came from. I especially encourage kids who are in their school's band, orchestra, or chorus programs to get these materials under their belts, as these students are traditionally under served in this area.

To get the most out of this series, always play every example at the piano (side note: all musicians need to be able to play at least a little bit of piano.) If you play a monophonic instrument (winds, strings, or voice,) and even if you play a polyphonic instrument (piano, guitar, vibraphone, accordion, etc,) for any examples which are written as block chords, simply play/sing them as arpeggios instead. If you can, get together with groups of your friends and sing the examples, singing them each several times, switching parts around as your vocal ranges permit. Play the examples in little instrumental ensembles, again switching parts around so everyone gets to play each line. If you have any recording software, try playing or singing the examples in, layering over yourself with each subsequent part.

Basic Intervals

An "interval" is just the distance between any 2 pitches. The smallest interval (and our basic unit of measure,) is called a "half step." A half step is the distance from any pitch to the very next pitch up or down, like C up to C#, or C down to B. The intervals inside of the octave are as follows:

0 Half Steps = Perfect Unison

- 1 Half Step = Minor 2nd, Also known as a Semi-tone
- 2 Half Steps = Major 2nd, also known as a Whole Step
- 3 Half Steps = Minor 3rd (or, depending on how it's spelled, an Augmented 2nd)
- 4 Half Steps = Major 3rd
- 5 Half Steps = Perfect 4th
- 6 Half Steps = Tritone. Depending on how it's spelled, it could be an Augmented 4th, or a Diminished 5th. Incidentally, it divides the octave exactly in half. It gets its name from being the equivalent of 3 Whole Steps, or 3 Tones.
- 7 Half Steps = Perfect 5th.
- 8 Half Steps = Minor 6th (or, depending on how it's spelled, an Augmented 5th)
- 9 Half Steps = Major 6th (or, depending on how it's spelled, a Diminished 7th)
- 10 Half Steps = Minor 7th
- 11 Half Steps = Major 7th
- 12 Half Steps = Perfect Octave

Play and sing each interval up and down. I have them written out from C, but try going through the intervals from each different note.

A trick to remembering the sound of each interval is to associate it with a melody you already know. Here are some examples. Try to find other examples by identifying the intervals when you hear them in whatever music you like to listen to and/or play.

Ascending Minor 2nd: The “Jaws” Theme , “Isn’t She Lovely” by the great Stevie Wonder is a good example because it starts on a note, ascends a half step, and then descends back to the original note. The first 3 vocal notes of “A Hard Days Night” by The Beatles do the same thing, as do the opening notes of “How Insensitive” by Antonio Carlos Jobim and “Nice Work If You Can Get It” by George and Ira Gershwin.

Descending Minor 2nd: “Stella By Starlight” is a great jazz standard by Victor Young that begins with a descending minor 2nd. Check out Miles Davis’s recording from his “58 Sessions” album. The melody of Mozart’s “Symphony #40 in G minor”. The “Jurassic Park” theme is a good example, because it starts on a note, descends a half step, and then ascends a half step back up to the starting note. The first vocal notes of the Beach Boy’s “God Only Knows” does the same thing. Jazz standard “The Midnight Sun” begins with a long string of descending half steps (Frank Zappa humorously quotes this phrase in “Don’t Eat The Yellow Snow” on his “Apostrophe(’)” album . The first notes that the incredible Charlie Parker plays on his classic recording of “Just Friends” on his “With Strings” album is also a string of descending half steps.

Ascending Major 2nd: Lots of examples of these. “Happy Birthday.” “Do Re Mi” from The Sound Of Music. “Linus and Lucy” (main melody,) jazz standards “Body and Soul” (check out Coleman Hawkins and John Coltrane’s recordings), “My Funny Valentine,” and “There Will Never Be Another You” (which has 2 in a row.) If you play a series of major 2nds until you get back to your starting note an octave higher, you’ve played something called the Whole Tone Scale, which was a favorite of impressionist composer Claude Debussy, jazz iconoclast Thelonious Monk, and anytime any cartoon goes to a dream sequence.

Descending Major 2nd: Again, lots of examples of these. “Mary Had A Little Lamb.” “Three Blind Mice.” The Beatles’ “Yesterday” and “Don’t Let Me Down,” among others. “Cheek to Cheek” by Irving Berlin. The chorus of Steely Dan’s “Bad Sneakers.” Duke Ellington’s “Satin Doll.” Miles Davis’s “Freddie Freeloader.”

Ascending Minor 3rd: The old “Spiderman” cartoon theme. Django Reinhardt’s “Minor Swing.” “Higher Ground” by Stevie Wonder has one in the bassline and the vocal melody. The slow movement from Dvorak’s “New World Symphony” (also known as “Goin’ Home.” The vocal melody of “A Day In The Life” by The Beatles starts with an ascending minor 3rd, and then descends back to the starting note. The first 2 notes of the melody of “Pure Imagination” from “Willy Wonka and The Chocolate Factory”

Descending Minor 3rd: “This Old Man.” “Frosty The Snowman.” “Hey Jude,” by The Beatles. The bassline to “Black Market” by Weather Report. Cole Porter’s “What Is This Thing Called Love?” The first 2 notes of the melody to “500 Miles High” by Chick Corea, from the wonderful Jazz/Brazilian Fusion album “Light As A Feather.”

Ascending Major 3rd: “When The Saint’s Go Marching In.” “Kumbaya.” The chorus of “Ob-la-di Ob-la-da” by The Beatles. “Rhyth-ma-ning” by Thelonious Monk.

Descending Major 3rd: “Super Mario Brothers” theme (intro and turnaround.) John Coltrane’s “Giant Steps.” “Swing Low, Sweet Chariot.” Beethoven’s 5th Symphony, opening phrase. “Summertime” by George and Ira Gershwin.

Ascending Perfect 4th: “Here Comes The Bride.” “Amazing Grace.” “Someday My Prince Will Come,” which is of course from “Snow White and The Seven Dwarves” originally, but also check out jazz recordings by Miles Davis, Bill Evans, Keith Jarrett, and others. The slow horn fanfare from both the original “Star Trek” theme as well as the “Next Generation” theme begin with 2 ascending perfect 4ths in a row. The “Cantina” music from “Star Wars.” “Tarkus” by Emerson, Lake, and Palmer is full of fourths, both ascending and descending.

Descending Perfect 4th: “I’ve Been Workin’ On The Railroad.” “O Come All Ye Faithful.” Mozart’s “Eine Kleine Nachtmusik.” Charlie Parker’s “Yardbird Suite.” The first 2 background notes from the “Star Trek” Theme

Ascending tritone: “The Simpsons” Theme. “Maria” from “West Side Story.”

Descending tritone: “Black Sabbath” by Black Sabbath from the record “Black Sabbath”

Ascending Perfect 5th: “Star Wars” Main Theme, “Superman” Main Theme, “Oh Ee Oh” chant from “The Wizard Of Oz” (the guards at the wicked witch of the west’s castle)

Descending Perfect 5th: The bassline at the beginning of “My Girl.” The “Back To The Future” Main motif. Jerome Kern’s “The Way You Look Tonight.”

Ascending Minor 6th: Prelude to “Tristan und Isolde” by Richard Wagner. “In My Life” by The Beatles.

Descending Minor 6th: “You’re Everything” by Chick Corea. “Chega De Saudade” by the great Antonio Carlos Jobim.

Ascending Major 6th: “NBC” theme. “My Bonnie Lies Over The Ocean.” The “Han and Leia” Love Theme from Star Wars. Billy Strayhorn’s “Take The “A” Train.” The “Princess Unicorn” jingle from “The Office”

Descending Major 6th: “Nobody Knows The Trouble I’ve Seen.” “Down By The Riverside.” The chorus of “Man In The Mirror” by Michael Jackson.

Ascending Minor 7th: The main melody of the original “Star Trek” theme (not the slow intro, the uptempo part.) The beautiful Stevie Wonder song “Come Back As A Flower.”

Descending Minor 7th: George Gershwin’s “An American In Paris”

Ascending Major 7th: Norah Jones “Don’t Know Why.” “Take On Me” by A-ha.

Descending Major 7th: “I Love You” by Cole Porter is full of them.

Ascending Octave: “Somewhere Over The Rainbow.” “The Office” Theme.

Descending Octave: “Willow Weep For Me”

Interval Examples (from C)

Ascending Intervals

Minor 2nd Major 2nd Minor 3rd

4 Major 3rd Perfect 4th Tritone

7 Perfect 5th Minor 6th Major 6th

10 Minor 7th Major 7th Perfect Octave

Descending Intervals

13 Minor 2nd Major 2nd Minor 3rd

16 Major 3rd Perfect 4th Tritone

19 Perfect 5th Minor 6th Major 6th

22 Minor 7th Major 7th Perfect Octave

Building Major Scales

Later on, we're going to learn about building major scales from understanding key signatures, and how they are derived from the Circle of 5ths, but for right now we're going to learn a simple formula to build any major scale

First off, in any major scale, there going to be 7 notes. There is always going to be no more and no less than 1 iteration of each letter in the scale. Effectively, that means that you can't have a scale that goes F G A A# C D E. There are 2 forms of A, and no form of B. That scale has to be F G A Bb C D E.

Pick any note as your root, which the scale is going to grow out of. Play that root note, then go up a whole step, another whole step, a half step, a whole step, a whole step, another whole step, and a half step.

Let's try it on Bb.

Start on Bb. Go up a whole step to C. Go up another whole step to D. Now a half step, and since our last note was D, we can't call this note D#. We have to call it Eb. Up a whole step to F. Another whole step to G. Another whole step to A. Lastly, a half step back up to Bb.

If you take a look at the intervals in that scale, you have a Major 2nd, Major 3rd, Perfect 4th, Perfect 5th, Major 6th, and Major 7th. If we limit ourselves to just notes inside of the scale, we can call those intervals by their generic names, the 2nd, 3rd, 4th, 5th, 6th, and 7th.



Building Major Triads

A chord is a group of 3 or more notes that sound together at the same time. A triad is a chord with specifically 3 notes. The first kind of chord we're going to learn about is the Major Triad. There are a number of ways you can arrive at a major triad. We're going to look at 2 of them.

1. Stacking Intervals. Start with your root. Stack a note a major 3rd above it. Stack another note which is a perfect 5th above the root. That note (the 5th) also happens to be a minor third above the 3rd of the chord. If we keep to the key of Bb for these examples, the root is Bb. A major 3rd above that is D. A perfect 5th above Bb (and a minor 3rd above D) is F.

2. Playing the Root, 3rd, and 5th of a major scale.

As we will see many times over the course of this series, there are many paths to the same solutions. In music, as in life, you have to be able to see things from many different perspectives, very often all at once.

Before we go any further, it's important to understand that just because this is how we initially derived the chord, so long as you're still playing the same pitches, you can stack them up in any order you choose. This concept is called "Inversion." In close position, which is to say, playing the notes in the chord as closely as possible without skipping over any chord tones, the inversions of a triad look like this:

Root Position: Root on the bottom of the chord, 3rd in the middle, and 5th on top.

First Inversion: 3rd on the bottom, 5th in the middle, and root on top.

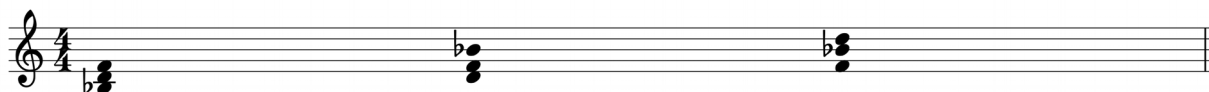
Second Inversion: 5th on the bottom, root in the middle, and 3rd on top.

Again, keeping with our Bb chord, the inversions are:

Root Position: Bb D F

First Inversion: D F Bb

Second Inversion: F Bb D

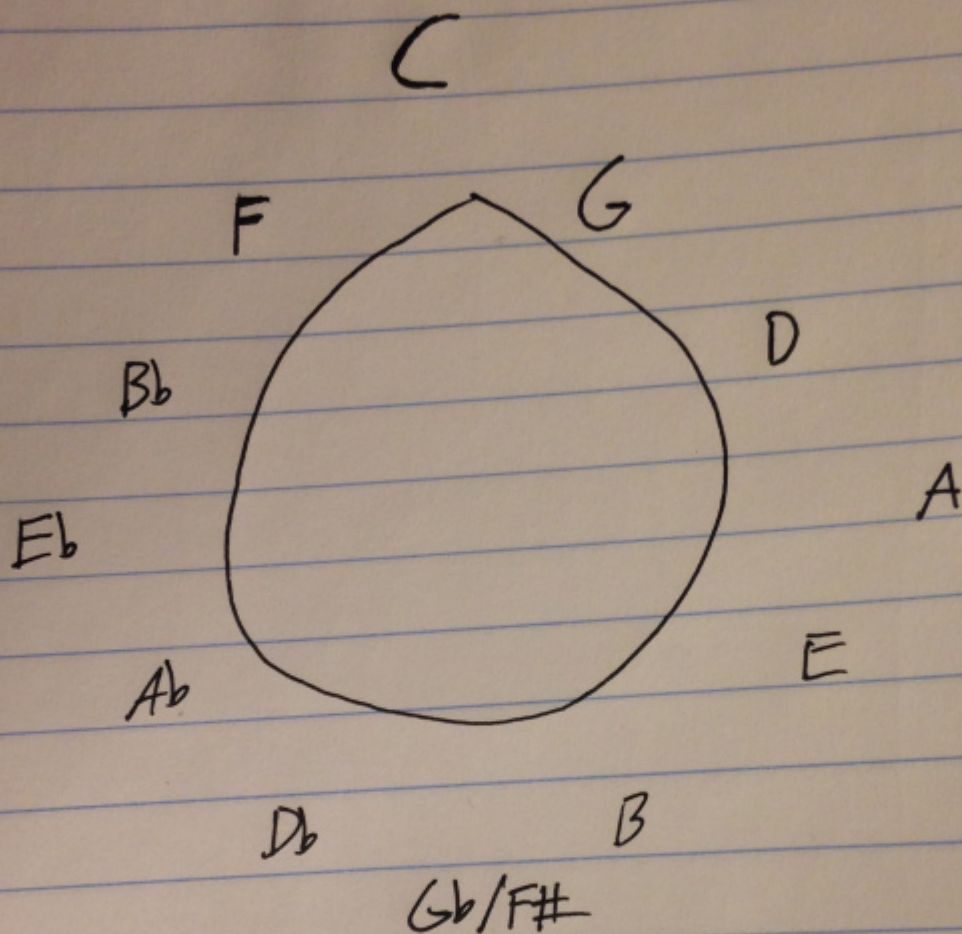


Try building some major scales and triads yourself using those formulas in various keys.

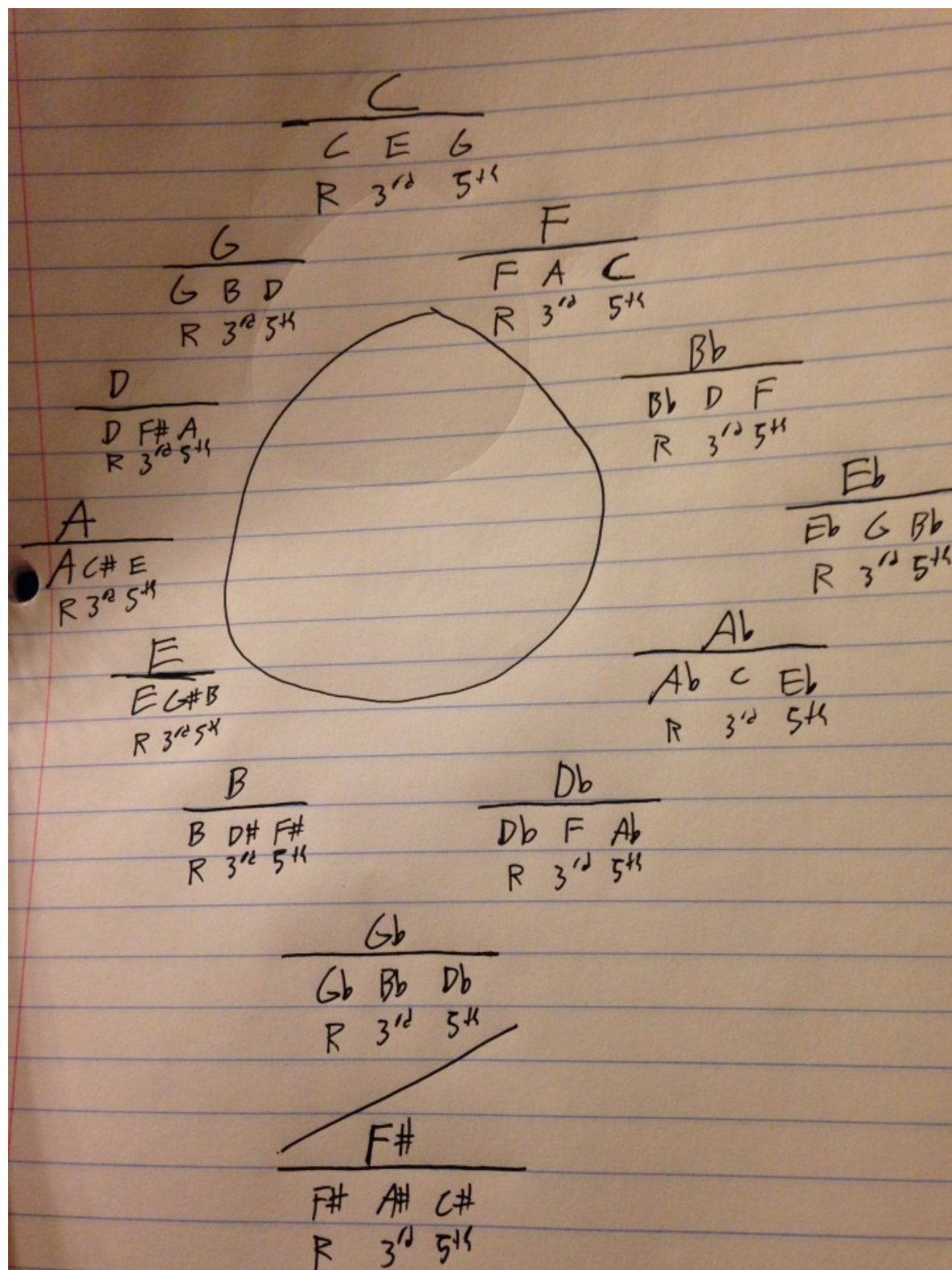
The Circle Of 5ths

The Circle Of 5ths is a very simple, but extremely helpful tool that every musician needs to know inside and out. Going clockwise, each step on the circle is a perfect 5th higher than the last step. That pattern repeats over and over until it arrives back at the starting pitch.

The circle of 5ths



Lets take a look at the 12 major triads moving around the circle. I've flipped the circle around because in actual music, DESCENDING 5th progressions are much more common than Ascending 5ths.

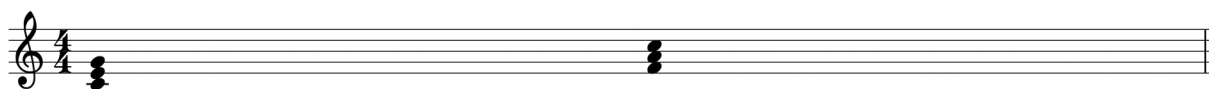


Play all of these triads in all 3 inversions. Really memorize the root, 3rd, and 5th of every chord.

The reason that it's so important to be comfortable with every inversion of every chord is something called Voice Leading.

Chords need to be understood as the vertical alignment that results from several melodic (horizontal) lines coinciding, rather than disconnected blocks jumping around.

Lets take the extremely simple chord change C to F and back. If you were to play a Root position C followed by a Root position F, there is no continuity. Try singing each voice of that chord change. Bottom voice C up to F and back. Middle voice E up to A and back, Top voice G up to C and back. It's certainly possible to sing each of those parts, but since they're all moving in exact parallel, there's no distinct identity to the voices.



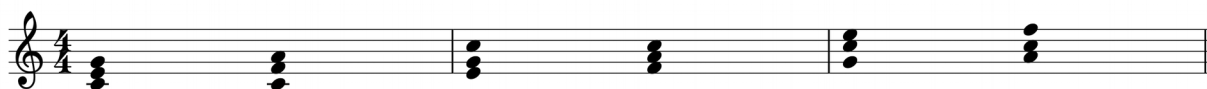
Instead, try going to the closest inversion of the second chord.

We can effectively do this by looking to see if there are any shared notes between the 2 chords. Indeed, they both have a C, so lets keep the bottom voice on C throughout. Next we look at our other 2 chord tones, and see what the closest path we can take is. From the middle voice of the C chord, E, the closest note in an F chord is the F a half step up. From the top voice of the C chord, G, the closest note in an F chord (and the only note left to pick from) is the A a whole step up.



Much more satisfying aurally, and easier to sing or play, it just takes a little more thought at first until you get used to it.

Even if you start from a different inversion of the first chord, the way those notes behave stays the same, regardless of a given voice's vertical position in the chord (C stays on C, E goes up to F and back, and G goes up to A and back).



To begin with, get comfortable voice leading each pair of chords around the circle (C and F, F and Bb, Bb and Eb, etc).

C F C F C F
 4 F B \flat F B \flat F B \flat
 7 B \flat E \flat B \flat E \flat B \flat E \flat
 10 E \flat A \flat E \flat A \flat E \flat A \flat

Once you can do that, you can move on to these exercises voice leading all the way around the circle.

Voice Leading Around The Circle Of Fifths

Starting From Root Position C

(in close position)

C F B \flat E \flat A \flat D \flat G \flat F \sharp B E A D G C

Starting From First Inversion C

14 C F B \flat E \flat A \flat D \flat G \flat F \sharp B E A D G C

Starting From Second Inversion C

27 C F B \flat E \flat A \flat D \flat G \flat F \sharp B E A D G C

You can practice these chords many different ways, including but not limited to:

- 1) Play block chords in the right hand, and the root of each chord in the bass register with the left hand.
- 2) Play block chords in both hands.
- 3) Play block chords in both hands, but offset which inversion each hand starts on. (LH starts on root position C while RH starts on 1st inversion, LH starts on 1st inversion while RH starts on 2nd inversion, etc.)
- 4) Play arpeggios (broken chords) in your right hand, and the root of each chord in the bass register with the left hand.
- 5) Play arpeggios in the right hand and block chords in the left hand.
- 6) Play arpeggios in both hands.
- 7) Play arpeggios in both hands, but offset the inversions.
- 8) Alternate the direction of the arpeggios every other chord (arpeggiate up C, then down F, then up Bb, down Eb, etc)
- 9) Switch the direction of the arpeggios to the opposite of that (down C, up F, down Bb, up Eb, etc)
- 10) Offset the direction of the arpeggios between the 2 hands (RH starts upwards while LH starts downwards, and the opposite)
- 11) Offset the direction of the arpeggios AND the inversions, in all permutations

There are obviously many chord progressions other than falling 5th progressions, but because they're so prevalent, it's definitely a good idea to go ahead and get these under your fingers and in your ears. By all means, try moving chords around in smaller cycles, like major and minor 3rds. Notice that you get back to your starting chord much sooner, and end up leaving a number of chords out, when you use those smaller cycles.

Falling Minor 3rds



Rising Minor 3rds



Lesson 2: Orders Of Sharps and Flats (Key Signatures,) Different Chord Qualities, Substructures in 7th Chords, Diatonic Triads and 7th Chords, Functional Harmony

From the last lesson, you remember that I said the circle of fifths is an extremely helpful tool that you really need to learn. We've already learned to play a bunch of falling 5th progressions, but the real magic starts to happen when you see how the circle helps you build and remember key signatures. A "Key Signature" is a set of specific sharps or flats which tell you which notes are in a given key.

The order of sharps consists of rising 5ths, beginning on F#:

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

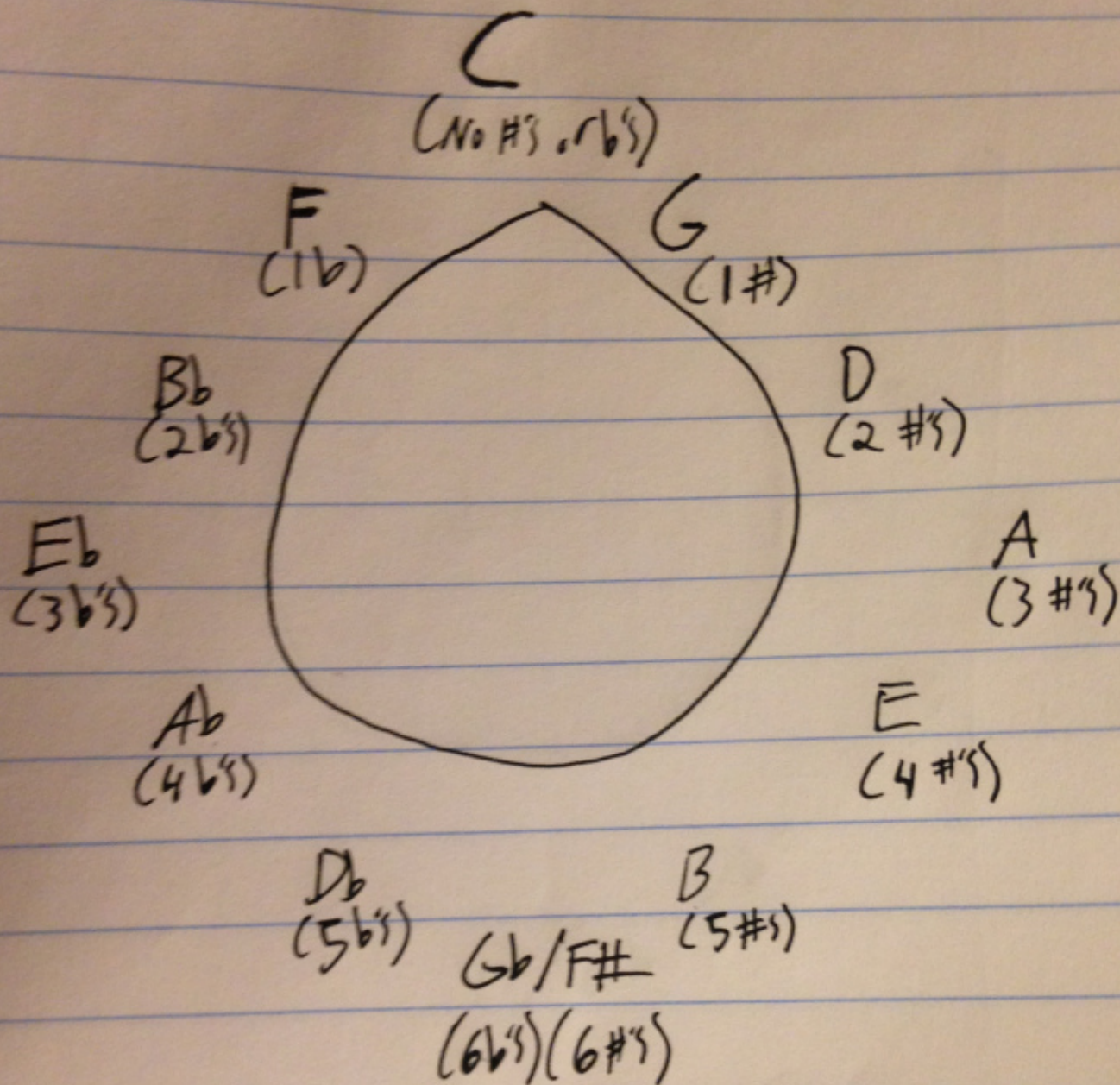
The order of flats consists of falling 5ths, beginning on Bb:

Bb, Eb, Ab, Db, Gb, Cb, Fb

They're just going around the circle in opposite directions. If you just look at the letters, ignoring the #'s and b's for a moment, they're palindromes of one another (which, due to the nature of circles, makes perfect sense.)

As you go around the circle, you add another sharp (or remove a flat) to get the key up a 5th, and add another flat (or remove a sharp) to get to the key down a 5th.

Put that around the circle, and you get this:



Lets write those scales out.

C \flat :	C \flat	D \flat	E \flat	F \flat	G \flat	A \flat	B \flat
G \flat :	G \flat	A \flat	B \flat	C \flat	D \flat	E \flat	F
D \flat :	D \flat	E \flat	F	G \flat	A \flat	B \flat	C
A \flat :	A \flat	B \flat	C	D \flat	E \flat	F	G
E \flat :	E \flat	F	G	A \flat	B \flat	C	D
B \flat :	B \flat	C	D	E \flat	F	G	A
F:	F	G	A	B \flat	C	D	E
C:	C	D	E	F	G	A	B
G:	G	A	B	C	D	E	F \sharp
D:	D	E	F \sharp	G	A	B	C \sharp
A:	A	B	C \sharp	D	E	F \sharp	G \sharp
E:	E	F \sharp	G \sharp	A	B	C \sharp	D \sharp
B:	B	C \sharp	D \sharp	E	F \sharp	G \sharp	A \sharp
F \sharp :	F \sharp	G \sharp	A \sharp	B	C \sharp	D \sharp	E \sharp
C \sharp :	C \sharp	D \sharp	E \sharp	F \sharp	G \sharp	A \sharp	B \sharp
	1	2	3	4	5	6	7

Different Chord Qualities

Now that we've learned the notes in the major scales, let's learn some different chord qualities. We'll use the major scale as our baseline for the alterations these different chord qualities are going to introduce. I'm going to give you the formulas, and one example for each chord type. Make sure to practice them all in all keys and all inversions.

Triads

Major: 1 3 5 (C Major: C E G)

Minor: 1 b3 5 (C Minor: C E^b G) Note that the minor is a little bit darker sounding in comparison to major.

Diminished: 1 b3 b5 (C Diminished: C E^b G^b) The diminished is a bit darker still. Due to the presence of the tritone between the root and b5th, it is an inherently unstable chord which wants to resolve elsewhere. We'll deal much more with this in the next section.

Augmented: 1 3 #5 (C Augmented: C E G[#]) The augmented chord has an ambiguous sound. It's not necessarily as tense as the diminished, but it still generally wants to resolve somewhere else.

Suspended 4th (Sus4): 1 4 5 (Csus4 : C F G) In common practice harmony, the 4th in a sus4 resolves down a step to the 3rd. In more modern music, it's a perfectly normal sound on its own.

Suspended 2nd (Sus2): 1 2 5 (Csus2: C D G) Sort of the opposite of the Sus4. The 2nd can resolve up to the 3rd. In more modern music, it's a perfectly normal sound of its own. It's a pretty neutral sound.

Seventh Chords

Now that you've got those triad types under your fingers and in your ears, let's move on to some more complex chords. Note that these 4 note chords are going to have 4 inversions each.

Major 7th: 1 3 5 7 (Cmaj7: C E G B) Very pretty sound.

Dominant 7th (also just known as "7") – 1 3 5 b7 (C7 – C E G B^b) This is a tense chord. Its instability comes from the tritone between its 3rd and b7th. In most music it wants to resolve. The Resolution that it wants is for the 3rd to rise a half step and for the 7th to resolve down either a half step or a whole step, depending on whether it's resolving to a major chord or a minor chord. It should be noted that in music influenced by the blues, it does not necessarily feel tense or seek resolution.

Minor 7th: 1 b3 5 b7 (Cm7: C Eb G Bb) Like a less austere version of a minor triad

Half Diminished (also known as Minor 7 Flat 5): 1 b3 b5 b7 (Cm7b5: C Eb Gb Bb) A beautiful sound. Poignant. Bittersweet. It contains a tritone between the root and b5th, and as such, wants to resolve somewhere.

Diminished 7th: 1 b3 b5 bb7(6) (Cdim7 : C Eb Gb Bbb(A)) Quite a tense chord. It contains not 1, but 2 tritones. Between the root and b5, and between the b3 and bb7(6). The diminished 7th chord is formed by stacking all minor 3rds on top of one another, so even though the 7th looks like an A, it's technically a B double-flat. Now that you're aware of that, don't worry about it. You can for all intents and purposes just think of it as an A. Because the intervals are all the same, when you invert the chord, the internal interval structure doesn't change. In a dim7 chord, any of the 4 notes therefore can be seen as the root. Also because of this, there are only 3 unique dim7 chords to learn. All of the others are just inversions of those 3. There's lots to talk about on the topic of diminished chords, and there will certainly be a whole lesson on just that topic in the future.

Substructures in Seventh Chords

If you look closely at those 7th chords, you might notice that you can see triads inside of them. Take Cmaj7 for example. C E G B. There's an E minor triad stacked over the root C. Try playing a C in the bass, and the 3 inversions of E minor over it. These are some more open sounding voicings than the close position voicings we've been dealing with so far. These are what are called Drop Voicings, the idea being that one note from a close position voicing is dropped down an octave in order to open the chord up. We'll deal with that in more detail later, for now let's just learn some formulas for building 7th chords by stacking triads over a root.

Major 7: Root + Minor triad on the Major 3rd (C maj 7: C + Em triad)

Dominant 7: Root + Diminished triad on the Major 3rd (C7: C + Edim triad)

Minor 7: Root + Major triad on the Minor 3rd (Cm7: C + Eb major triad)

Half Diminished: Root + Minor triad on the Minor 3rd (Cm7b5: C + Ebm triad)

Diminished 7th: Root + Diminished triad on the Minor 3rd (Cdim7: C + Ebdim triad)

Now get all of these under fingers and in your ears in all keys and in all inversions.

Diatonic Triads and 7th Chords

Now that you've learned how those different chord qualities sound and feel under your fingers, its time to learn about the different chords that live inside the scale. These are the diatonic triads and 7th chords. Diatonic means inside the scale. To find the diatonic triads, stack up the intervals of a root, 3rd, and 5th over each of the 7 scale degrees, making sure to only pick notes from inside the scale.

Lets try in the key of F. F G A Bb C D E. The chord we find on the 1st degree is F A C, or F major. The chord on the second degree is G Bb D, or G minor. The chord on the 3rd degree is A C E, or A minor. The chord on the 4th degree is Bb D F, or Bb major. The chord on the 5th degree is C E G, or C major. On the 6th, D F A, or D minor. Finally, on the 7th, E G Bb, or E diminished.

This pattern is universal to all major keys.

The triads on the 1st, 4th, and 5th scale degrees are Major. The triads on the 2nd, 3rd, and 6th degrees are minor, and the triad on the 7th degree is diminished. We represent these chords with Roman numerals. Uppercase for major, lowercase for minor, lowercase with a degree symbol for diminished.

I ii iii IV V vi vii°

Memorize that pattern. What's the iii chord in the key of E? How about the V chord in Db? What about the IV chord in A? Get to the point where you can both call them out and play them without having to think about it.

Lets extend that concept out to 7th chords. The chords on the 1st and 4th degree are Major 7ths. The chord on the 5th degree is a Dominant 7th. It's going to be very important to know that the 5th degree is the only place a Dominant 7th chord is found. The chords on the 2nd, 3rd, and 6th degrees are Minor 7ths, and the chord on the 7th degree is a Half Diminished, or Min7b5.

Now we get to see how all of these chords work together in a system.

Functional Harmony

Functional Harmony tells us that even though there are 7 different chords in a key, there are really only 3 meanings that a chord can have.

I need to point out before we go any further that not all harmony is functional, but since the vast majority of western music from the last 400 years or so is functional, it's a good idea to know about it and be conversant

in the system. Even if you want to make music which avoids these functional sounds, you still ought to know about them in order to avoid them.

I'd also like to point out something that needs to be a mantra for everybody who studies theory. Music Theory is DESCRIPTIVE, not PRESCRIPTIVE. That is to say, music theory is not a set of rules you must follow. Music theory is a set of observations that can be made about the choices creative musicians throughout history have made, which can inform our own choices. That being said, let's learn about the 3 functions.

Tonic

Tonic is our home base. Our place of rest. Our place of resolution. The I chord is the primary Tonic chord. vi is used a substitute very often. The I will also quite often go straight to vi as a tonic prolongation, which is to say, a change in the harmony without moving to a different function. Just a little bit of a change in color. Notice that the I chord and the vi chord are quite closely related, with 2 notes in common. The iii is sometimes used for the same purpose as the vi, but not nearly as often.

Dominant

The Dominant function serves to set up the tonic. The V chord is the primary dominant chord. The V-I progression is of course a falling 5th, so you actually have already practiced all of your V-I progressions. The V-I is the most common chord progression in western music. It dates back to the renaissance period, before the theory of chords as we understand them had even been developed, as a result of voice leading. When the V chord has a 7th (V7) it has some extra tension that especially pulls it towards Tonic. The vii° is a substitute for V, and in fact, can be seen as a V7 chord which is missing it's root. In classical music, the vii° chord generally appears with it's 3rd in the bass.

Predominant

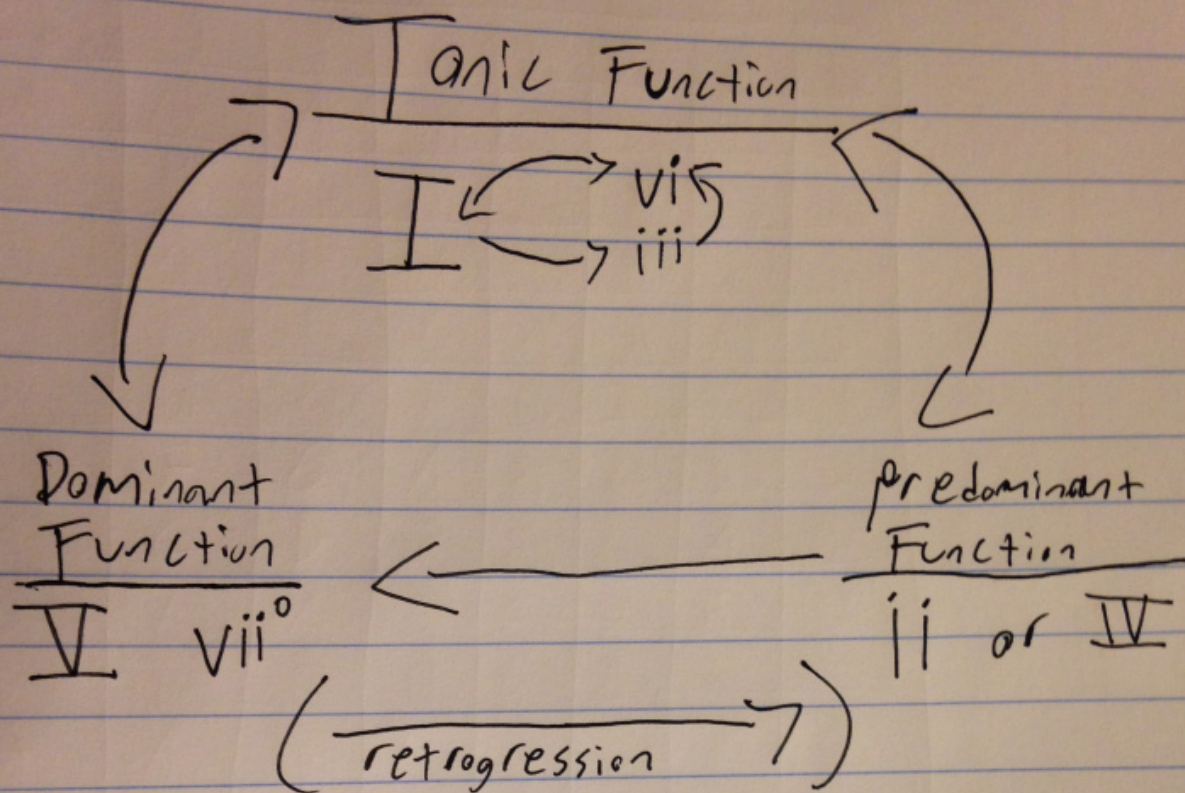
The Predominant function's job is, as the name implies, to set up the dominant chord. The predominant chords are ii (generally with a 7th, ii7,) and IV.

Some other resolutions

Sometimes the sound of Dominant to Tonic is too strong, so the choice is made to approach the Tonic from the Predominant instead. Listen to how much softer a sound that is.

In music which is influenced by the blues, very often the Dominant will walk back to the Predominant instead of moving forward to the Tonic. This is called a Retrogression, because it's walking away from the tonic, rather than progressing towards it (which, by the way, is where the term "Chord Progression" comes from.)

Take a look at all of that on this flowchart



Try playing around with these patterns in various keys. Make sure to always think about voice leading, not just moving static shapes up and down the keyboard. You should be able to recognize these sounds as the basic building blocks of pieces you've heard your whole life.

“But,” I hear you asking, “what about chords that aren't inside the key?” Well, there's a whole world of discussion on that subject, and that's what we're going next.

Lesson 3: Minor Scales and Keys, Chromaticism I: Secondary Dominants, Modal Interchange, Tritone Substitution

Minor Scales

So far we've been focusing on major scales. Let's spend some time examining minor scales now.

There are 2 ways to look at minor scales in relation to major scales. There are Parallel Major/Minor scales, which share the same root, and Relative Major/Minor scales, which share the same key signature.

To find the Parallel Minor scale, lower the 3rd, 6th, and 7th degree.

G Major: G A B C D E F#

G Minor: G A Bb C E Eb F

To find the Relative Minor scale, stay in the same key signature, but rotate the scale to begin on the 6th degree.

G Major: G A B C D E F#

E Minor: E F# G A B C D

The Three Forms Of The Minor Scale

The topic of the 3 forms of the minor scale has caused much confusion over the years, with much misinformation spread around, so let me try to clear some things up.

The chords that you find in the minor scale are (compared against the major scale): a minor triad on the 1st degree (i,) a diminished triad on the 2nd degree (ii°,) a major triad on the lowered 3rd degree (bIII,) a minor triad on the 4th degree (iv,) a minor triad on the 5th degree (v,) a major triad on the lowered 6th degree (bVII,) and a major triad on the lowered 7th degree (bVII.)

In the Renaissance period, as a matter of voice leading, the 7th degree would be raised when approaching the 1. This has been misinterpreted as something called the "Harmonic Minor Scale," a formation that looks like this:

1 2 b3 4 5 b6 7

Notice the augmented 2nd between the b6th and natural 7th. This funky interval certainly sounds cool, but was not historically used by western composers. When the 7th was approached by step, the 6th would also be raised, to give us what is called the “Melodic Minor Scale”

1 2 b3 4 5 6 7

Effectively, what that raised 7th means is that the V chord is major (dominant if it has a 7th,) rather than minor. In other words, it provides a true dominant chord, instead of the weak minor v. When only the minor v is employed, the music is in what's called the “aeolian mode.” When the raised 7th, and therefore the dominant V chord is also used, it can be truly said to be in a minor key. The true minor key is the free interchange of all 3 of the forms.

Chromaticism

Now that we've learned all about minor scales, we can get back to where we left off last time. Chromaticism refers to the use of non-diatonic (or, “Chromatic”) notes (notes from outside of the scale.) The first use of chromaticism we're going to learn about is the use of “Tonicization” and “Secondary Dominant” chords.

You can “tonicize” any chord in any key by preceding it with the V7 chord from the key of the chord you're tonicizing. Lets take for example, the simple progression I vi ii V7 I in the key of Eb major, so Eb, Cm, Fm, Bb7, Eb.

We can tonicize the Cm by preceding it with it's V7 chord, G7. When we play the G7, we are momentarily in the key of Cm, but as soon as we hit the Cm chord, we're back in the key of Eb major. We call that G7 the V7 of vi, or V7/vi. Continuing on, let's precede the Fm chord with it's dominant, or C7, V7/ii. Lastly, lets tonicize the Bb7 chord by preceding it with it's dominant, or F7, V7/V.

Look at all of that chromatic movement in there now. Instead of Eb Cm Fm Bb7, Now we have Eb G7 Cm C7 Fm F7 Bb7 Eb. Make sure you're resolving the 3rds of your dominant chords up and your 7ths down.

The only chord that you don't see tonicized is the vii°, just because it's too unstable to resolve to.

We can extend this concept back another step, and precede the secondary dominants with their associated predominant chords. Let's apply this to that same example.

Eb Dm7b5 G7 Cm Gm7b5 C7 Fm Fm7 Bb7 Eb

Now we start on I, move to the ii/vi to V/vi leading to vi, another ii-V into ii, and ii-V-I back into the tonic.

Modal Interchange

Earlier I said that the true minor key is the free interchange of all of the different forms of the minor. Well guess what, the major key really includes all of those forms of the minor also, through the process of modal interchange.

Modal interchange says that, you know what, C major, C minor, the tonic is still C. You can freely borrow chords back and forth between the parallel major and minor keys. i and bIII are tonic chords. bVII is a dominant function chord. iim7b5, iv, and bVI are predominant chords. The bVII and minor iv are particularly common chords to borrow.

A favorite move of the Beatles is going from IV to iv back to I. They also like the slightly darker variation ii to iv to I.

bVII is an extremely common sound in pop and rock music. It's also known as the "backdoor dominant" chord, because of how it resolves up a step to tonic.

Try bVI bVII I. You just beat a level of Super Mario.

A related sound is the so called "backdoor ii-V." It looks like iv7 to bVII7 to I (in C, Fm7 to Bb7 to Cmaj7.) You can see it as a ii-V in the key of the (bear with me here,) relative major of the parallel minor.)

iim7b5 to V7 to I (or Imaj7) is a nice surprise, resolving a minor ii-V to a major I.

Try these all out in different keys.

Tritone Substitution

Another form of chromaticism is the tritone substitution.

The tritone substitution takes advantage of the fact that the tritone embedded inside of the dominant 7th chord is actually embedded inside of 2 dominant 7ths chords, which also happen to be a tritone apart from one another.

Let's take a look at C7 for example. the 3rd and 7th, E and Bb, are also the 7th and 3rd of Gb7. As a result, those 2 dominant chords can substitute for one another. This is a way to have a chromatic bassline on a ii-V-I. In the key of C, Dm7 Db7 (instead of G7,) Cmaj7. You could also play G7 and follow it with Db7 before resolving to C.

Consider this progression: CMaj7 Bb7 Am7 Eb7 D7 Ab7 G7 Db7 Cm6

It starts on the I, then moves to the tritone sub for V7/vi leading to vi. Then it goes to the tritone sub for V7/ii. Instead of the expected ii (Dm,) it goes straight to another secondary dominant, V7/V, followed immediately by it's tritone sub, then V7 followed by it's tritone sub, before finally resolving to a surprise borrowed minor tonic.

With all of these additional colors, it's easy to feel overwhelmed by all of the choices. The most important thing is to get each of these sounds in your ear, so that you can make these choices intentionally.