



# Music Theory: The Language of Sound by KarrArikh Tor

Music Theory: the Language of Sound (full textbook)



Index Sections: Notes on Guitar Fretboard \* Major Key Guitar Positions \* Major Key Bass Positions \* Chords in a Major Key

**Chords in a Major Key:** C Major, (Keys with sharp notes) G Major, D Major, A Major, E Major, B Major, F# Major (F sharp), C# Major (C sharp), (Keys with flat notes) F Major, Bb Major (B flat), Eb Major (E flat), Ab Major (A flat), Db Major (D flat), Gb Major (G flat), Cb Major (C flat)

## Chords in the Key of C Major

The Key of C Major is comprised of seven of twelve possible notes in an octave. They are spaced in patterns. From the root note they are spaced a whole step (2 frets) to the 2nd note, a whole step to the third note, a half step (1 fret) to the fourth note, a whole step to the fifth note, a whole step to the sixth note, a whole step to the seventh note, and a half step into the octave. Then the pattern repeats. There are seven octaves of C Major on a 88 Key piano. There are three octaves on a guitar.

← C - D - E F - G - A - B C - D - E F - G - A - B C →

The chords in a Major Key are chords which are comprised of notes in the key. Any two notes played together make an Interval. Two or more Intervals played together make a chord. Three note chords made from the root, third and fifth are described by their quality; Major, minor, diminished, and augmented. A Major chord (noted as 1 - 3 - 5) has a minor Interval (of 3 frets) placed on top of a Major Interval (of 4 frets). A minor chord (noted as 1 - b 3 - 5) has a Major Interval (of 4 frets) placed on top of a minor Interval (of 3 frets). A diminished chord (noted as 1 - b 3 - b 5) has a minor Interval (of 3 frets) placed on top on another minor Interval (of 3 frets). An augmented chord (noted as 1 - 3 - #5) has a Major Interval (of 4 frets) placed on top of a Major Interval (of 4 frets). Major and minor as terms refer to the quality of the third in a chord. Diminished and augmented refer to the quality of the fifth in a chord. A Major Key naturally has 3 Major chords (I, IV, and V), 3 minor chords (ii, iii, and vi), and 1 diminished chord (vii<sup>0</sup>). Both keys and chords have roots. The root of a key is the name of the key, and the root of a chord is the name of the chord. This may seem very confusing at first, but the more you learn about keys and chords, and the longer you study, it will make more sense. An "A" note as the root can then be built into an A Major chord, an A minor chord, an A diminished chord, or an A augmented chord, but only one of these chords will naturally occur in any given Key. In the Key of C Major, where "C" is the root of the Key, the A chord which naturally occurs is the A minor chord, with the notes A-C-E, where "A" is the root (1) of the chord, "C" is the flattened third (b 3) from the chord root, and "E" is the fifth (5) from the chord root. The root of the Major Key is always a Major chord. In the Key of C Major, the C chord is also a C Major (with the notes C-E-G, where "C" is the root, "E" is the 3rd, and "G" is the 5th).

<b>C</b>	<b>_</b>	<b>D</b>	<b>_</b>	<b>E</b>	<b>F</b>	<b>_</b>	<b>G</b>	<b>_</b>	<b>A</b>	<b>_</b>	<b>B</b>	<b>C</b>	<b>_</b>	<b>D</b>	<b>_</b>	<b>E</b>	<b>F</b>	<b>_</b>	<b>G</b>	<b>_</b>	<b>A</b>
root		2nd		3rd	4th		5th		6th		7th	8th		9th		10th	11th		12th		13th

Seventh chords (7th), ninth chords (9th), eleventh chords (11th), and thirteenth chords (13th) are counted by repeating the notes in the next octave. Notes in a key can have two numbers. A "D" note is the second and the ninth note in C Major. A three note C chord adding the "D" note would refer to the note as a second (2nd) in a 2 chord, like a C<sup>sus2</sup> or a C<sup>add2</sup>. A ninth chord always implies the chord being 1-3-5-7-9, where the "D" is considered the ninth in a CM<sup>9</sup> chord, not the second. This applies to eleventh and thirteenth chords as well, although with the 4th and 6th notes respectively. This will always seem confusing at the start, but the tables below will help in seeing the difference in chords and their names. A Major chord is written by the note, like C or G, meaning a C Major or G Major chord. A minor chord is written by adding a small "m", like in Dm or Am, meaning a D minor or A minor chord. A diminished chord is written by adding "dim" or "O", like in Bdim or B<sup>O</sup>, meaning a B diminished chord. A half-diminished chord is written with a "Ø", like a B<sup>Ø7</sup>, where a flattened seventh (b 7) is added to a diminished B chord. When a third in a chord is replaced by the second or fourth note, the chord is written by adding "sus", meaning a suspended chord, like in A<sup>sus2</sup> (where the 3rd

is replaced by the 2nd) and D<sup>sus4</sup> (where the 3rd is replaced by the fourth). Don't let the names confuse you, look at the notes, see the patterns.

### triad chords in the Key of C Major

I	ii	iii	IV	V	vi	vii <sup>o</sup>
<b>C</b> C-E-G 1-3-5	<b>Dm</b> D-F-A 1- b 3-5	<b>Em</b> E-G-B 1- b 3-5	<b>F</b> F-A-C 1-3-5	<b>G</b> G-B-D 1-3-5	<b>Am</b> A-C-E 1- b 3-5	<b>Bdim</b> B-D-F 1- b 3- b 5

### seventh chords in the Key of C Major

<b>CM<sup>7</sup></b> C-E-G-B 1-3-5-7	<b>Dm<sup>7</sup></b> D-F-A-C 1- b 3-5- b 7	<b>Em<sup>7</sup></b> E-G-B-D 1- b 3-5- b 7	<b>FM<sup>7</sup></b> F-A-C-E 1-3-5-7	<b>G<sup>7</sup></b> G-B-D-F 1-3-5- b 7	<b>Am<sup>7</sup></b> A-C-E-G 1- b 3-5- b 7	<b>B<sup>ø7</sup></b> B-D-F-A 1- b 3- b 5- b 7
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### extended ninth chords in the Key of C Major

<b>CM<sup>9</sup></b> C-E-G-B-D 1-3-5-7-9	<b>Dm<sup>9</sup></b> D-F-A-C-E 1- b 3-5- b 7-9	<b>Em<sup>7 b 9</sup></b> E-G-B-D-F 1- b 3-5- b 7- b 9	<b>FM<sup>9</sup></b> F-A-C-E-G 1-3-5-7-9	<b>G<sup>9</sup></b> G-B-D-F-A 1-3-5- b 7-9	<b>Am<sup>9</sup></b> A-C-E-G-B 1- b 3-5- b 7-9	<b>B<sup>ø7 b 9</sup></b> B-D-F-A-C 1- b 3- b 5- b 7- b 9
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### added second chords in the Key of C Major

<b>Cadd2</b> C-E-G-D 1-3-5-9	<b>Dmadd2</b> D-F-A-E 1- b 3-5-9	<b>Emadd b 2</b> E-G-B-F 1- b 3-5- b 9	<b>Fadd2</b> F-A-C-G 1-3-5-9	<b>Gadd2</b> G-B-D-A 1-3-5-9	<b>Amadd2</b> A-C-E-B 1- b 3-5-9	<b>Bdimadd b 2</b> B-D-F-C 1- b 3- b 5- b 9
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### extended eleventh chords in the Key of C Major

<b>CM<sup>11</sup></b> C-E-G-B-D-F 1-3-5-7-9-11	<b>Dm<sup>11</sup></b> D-F-A-C-E-G 1- b 3-5- b 7-9-11-13	<b>Em<sup>11 b 9</sup></b> E-G-B-D-F-A 1- b 3-5- b 7- b 9-11- b 13	<b>FM<sup>9#11</sup></b> F-A-C-E-G-B 1-3-5-7-9-#11	<b>G<sup>11</sup></b> G-B-D-F-A-C 1-3-5- b 7-9-11-13	<b>Am<sup>11</sup></b> A-C-E-G-B-D 1- b 3-5- b 7-9-11- b 13	<b>B<sup>ø11</sup></b> B-D-F-A-C-E 1- b 3- b 5- b 7- b 9-11- b 13
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### added fourth chords in the Key of C Major

<b>Cadd4</b> C-E-G-F 1-3-5-11	<b>Dmadd4</b> D-F-A-G 1- b 3-5-11	<b>Emadd4</b> E-G-B-A 1- b 3-5-11	<b>Fadd#4</b> F-A-C-B 1-3-5-#11	<b>Gadd4</b> G-B-D-C 1-3-5-11	<b>Amadd4</b> A-C-E-D 1- b 3-5-11	<b>Bdimadd4</b> B-D-F-E 1- b 3- b 5-11
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### extended thirteenth chords in the Key of C Major

<b>CM<sup>13</sup></b> C-E-G-B-D-F-A 1-3-5-7-9-11-13	<b>Dm<sup>13</sup></b> D-F-A-C-E-G-B 1- b 3-5- b 7-9-11-13	<b>Em<sup>11 b 9 b 13</sup></b> E-G-B-D-F-A-C 1- b 3-5- b 7- b 9-11- b 13	<b>FM<sup>13#11</sup></b> F-A-C-E-G-B-D 1-3-5-7-9-#11-13	<b>G<sup>13</sup></b> G-B-D-F-A-C-E 1-3-5- b 7-9-11-13	<b>Am<sup>11 b 13</sup></b> A-C-E-G-B-D-F 1- b 3-5- b 7-9-11- b 13	<b>B<sup>ø11 b 13</sup></b> B-D-F-A-C-E-G 1- b 3- b 5- b 7- b 9-11- b 13
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### added sixth chords in the Key of C Major

<b>Cadd6</b> C-E-G-A 1-3-5-13	<b>Dmadd6</b> D-F-A-B 1- b 3-5-13	<b>Emadd b 6</b> E-G-B-C 1- b 3-5- b 13	<b>Fadd6</b> F-A-C-D 1-3-5-13	<b>Gadd6</b> G-B-D-E 1-3-5-13	<b>Amadd b 6</b> A-C-E-F 1- b 3-5- b 13	<b>Bdimadd b 6</b> B-D-F-G 1- b 3- b 5- b 13
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### suspended chords in the Key of C Major

<b>C<sup>sus2</sup></b> C-D-G 1-2-5	<b>D<sup>sus2</sup></b> D-E-A 1-2-5	<b>E<sup>sus4</sup></b> E-A-B 1-4-5	<b>F<sup>sus2</sup></b> F-G-C 1-2-5	<b>G<sup>sus2</sup></b> G-A-D 1-2-5	<b>A<sup>sus2</sup></b> A-B-E 1-2-5	<b>B<sup>sus4dim5</sup></b> B-E-F 1-4- b 5
<b>C<sup>sus4</sup></b>	<b>D<sup>sus4</sup></b>			<b>G<sup>sus4</sup></b>	<b>A<sup>sus4</sup></b>	

**C-F-G**

1-4-5

**D-G-A**

1-4-5

**G-C-D**

1-4-5

**A-D-E**

1-4-5

Notice there is only one 13th chord in a key, with seven different names depending on the root of the chord when played. Also notice that when you add a 6th note to a triad, the new chord has the same notes as another triad with an added 7th,  $C^{add6}$  has the same notes as  $Am^7$ . Don't fear the names of the chords, but look at the intervals in blue, see the patterns to names, like a Major 7th chord, as in a  $CM^7$  (1-3-5-7), or a 7th chord (or dominant 7th chord), as in a  $G^7$  (1-3-5- $\flat$  7), or a minor 7th chord, as in a  $Dm^7$  (1- $\flat$  3-5- $\flat$  7), or a half-diminished 7th chord, as in a  $B^{\circ 7}$  (1- $\flat$  3- $\flat$  5- $\flat$  7). When playing in a Major Key, notes outside of the key may be added, creating chords not shown above. When a note outside of the Key is added to a chord, the note is considered an accidental note and would need to be marked in the name of the chord.

There is usually more than one place on a guitar where a chord can be played. To figure out places to play a chord, write the notes of the chord down in a text file (or on a sheet of paper) and then visit the Major Key position charts on guitar. Find the notes on the chart and think of how to play all three notes. You do not have to play all six strings to play a chord. The positions are shown in the key of C Major. Just remember that a sharp (#) is one fret up from a note, a flat ( $\flat$ ) is one fret down. On the sixth string of a guitar, the F is on the first fret.  $F\sharp$  is on the second fret. G is on the third fret.  $G\flat$  is on the second fret.  $F\sharp$  and  $G\flat$  are the same note on a guitar.

### about Major Keys

There are fifteen Major Keys in Western music. The Key of C Major, which has no sharps or flats. The Key of G Major, which has one sharp,  $F\sharp$ . The Key of D Major, which has two sharps,  $F\sharp$ , and  $C\sharp$ . The Key of A Major, which has three sharps,  $F\sharp$ ,  $C\sharp$ , and  $G\sharp$ . The Key of E Major, which has four sharps,  $F\sharp$ ,  $C\sharp$ ,  $G\sharp$ , and  $D\sharp$ . The Key of B Major, which has five sharps,  $F\sharp$ ,  $C\sharp$ ,  $G\sharp$ ,  $D\sharp$ , and  $A\sharp$ . The Key of  $F\sharp$  Major, which has six sharps,  $F\sharp$ ,  $C\sharp$ ,  $G\sharp$ ,  $D\sharp$ ,  $A\sharp$ , and  $E\sharp$ . The Key of  $C\sharp$  Major, which has seven sharps,  $F\sharp$ ,  $C\sharp$ ,  $G\sharp$ ,  $D\sharp$ ,  $A\sharp$ ,  $E\sharp$ , and  $B\sharp$ . The Key of F Major, which has one flat,  $B\flat$ . The Key of  $B\flat$  Major, which has two flats,  $B\flat$ , and  $E\flat$ . The Key of  $E\flat$  Major, which has three flats,  $B\flat$ ,  $E\flat$ , and  $A\flat$ . The Key of  $A\flat$  Major, which has four flats,  $B\flat$ ,  $E\flat$ ,  $A\flat$ , and  $D\flat$ . The Key of  $D\flat$  Major, which has five flats,  $B\flat$ ,  $E\flat$ ,  $A\flat$ ,  $D\flat$ , and  $G\flat$ . The Key of  $G\flat$  Major, which has six flats,  $B\flat$ ,  $E\flat$ ,  $A\flat$ ,  $D\flat$ ,  $G\flat$ , and  $C\flat$ . The Key of  $C\flat$  Major, which has seven flats,  $B\flat$ ,  $E\flat$ ,  $A\flat$ ,  $D\flat$ ,  $G\flat$ ,  $C\flat$ , and  $F\flat$ .

Three of the keys share notes with three other keys, they are called enharmonic. They may look the same on a guitar or piano, but look very different in sheet music.  $C\flat$  Major and B Major are enharmonic,  $C\sharp$  Major and  $D\flat$  Major are enharmonic, and  $F\sharp$  Major and  $G\flat$  Major are enharmonic, sharing notes on a guitar. C Major is the best key to study the patterns of chords, as there are no extra sharps and flats to contend with, counting out notes in the scale is easier. It is nice to have all fifteen keys for reference, but in practical use a guitarist may only play a few of these keys. Guitar is easier to play when at least some of the open strings are in the key.

### about author

KarrArikh Tor has been playing guitar for over 40 years. He is the guitarist in Infinisynth, Deemed Psychotic, Future Dialogue and Tor's Angst. Being autistic with ADHD, he has a unique logical approach to things. He chooses to use colours to help define information. His book, **Music Theory: The Language of Sound**, demystifies guitar and bass guitar in a straightforward, easy to read manner. The Quick reference version contains all the incredible full color graphics from Music Theory: The Language of Sound in one place! The full color graphics tie the fretboards of a guitar and bass guitar to the piano keyboard and sheet music, making it a valuable tool not just for guitarists and bassists but for every member in a band. Fast and handy for any music theory student. Dutch language version of the reference guide available now.

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Muziektheorie: De taal van het geluid-Naslaggids

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**Music Theory: The Language of Sound-Quick Reference**

Music Theory: The Language of Sound, the book and quick reference are based on the information on this site, which KarrArikh Tor used to teach his students. The new book explains how these charts and information can be used. This website was designed only to be a quick reference resource, and was originally titled "The Dark World International Experimental School of Music".

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