

MUSICAL COLORS

Music Theory

A Beginners Color Coded Music Theory Reference Manual Copyright © 1991-2010 Musical Colors (MJW) All rights reserved.

I. Introduction:

A. What is Musical Colors?

This is a system for helping a musician begin to visualize, through the use of color, how notes are laid out on the surface of their musical instrument. It is a tool for aiding the musician in his or her musical studies, and does not substitute the process of understanding the Theory of Music itself or the practical realization of the mechanics of playing an instrument. Rather, it is a visual aid and tool that helps students uncover musical concepts and applications to improve their overall musicianship.

B. What can you do with MC?

With this system you can learn the basics of music theory and actually realize it on your guitar, piano or violin. The system will teach you about how music is made, what it is composed of, how to get around musically and will open up avenues for your own creativity. You will learn the basic building blocks of music, Melody and Harmony. Melody is based on musical scales and this manual will teach you the four basic scales in every musical key. You will be able to play Major and Minor scales quickly and accurately on your instrument in any position and or octave. Harmony is based on musical chords and this manual will teach you the four basic chords in every musical key. You will be able to play Major, Minor, Augmented and Diminished chords in any position and or octave. You will know how these chords are built and what scales they originate from. The manual was created in such a way as to facilitate the cross referencing of scale and chord information in order to begin to understand and realize music progression and modulation.

II. Music Theory for Beginners:

A. What is music?

The art of combining and regulating sounds of varying pitch to produce compositions expressive of various ideas and emotions is called music. Music is also a sequence of sounds or a composition produced according to this art. Music is many things on many different levels. Of course music only becomes music when it is played and heard. Music is not really notes on a page or some other form of notation such as tablature. Music is an audio expression that is experienced through the passage of time. The two main concepts to music are Melody and Harmony. Melody is a succession of musical tones as opposed to harmony (tones sounded simultaneously). Thus, melody and harmony represent the horizontal and the vertical elements of musical texture. More specifically, melody means a succession of tones forming a line of individual significance and expressive value. By its very nature, melody cannot be separated from rhythm. Each musical sound has two fundamental qualities, pitch and duration and both of these enter into those successions of pitch-plus-duration units, which constitute melody. To consider melody and rhythm as separate, or even as mutually exclusive elements - as is often done - is misleading. If a distinction between these two elements is desired, the proper terms are motion and rhythm. Melody may thus be said to consist of motion (up and down) and rhythm (long or short), and every melody can be separated into a motion formula and a rhythm formula. This system only deals with the motion formula of melody. In musical composition, melody may occur either without any addition (monophonic music), in combination with other melodies (polyphonic music), or supported by harmonies (homophonic music). This system will support all three styles. The simultaneous occurrence of musical tones, as opposed to melody (i.e., succession of tones) is harmony. Although the term suggests "pleasantness" of sound, it is properly applied to any combination of tones, whether consonant or dissonant. Such combinations, considered singly, are usually termed chords, while harmony denotes the "chordal aspect" of music, i.e., the succession and relationship of chords as they occur in a composition. Thus, harmony refers to the vertical structure of music, while melody (and counterpoint) pertains to its horizontal element.

1. Melody & Scale

a. Music Notes

1. Twelve-Tone System (The Chromatic Scale)

The name for the present-day system of tuning (especially pianofortes and organs),

based on the division of the octave into twelve equal parts, each part representing a half tone is called Equal Temperament. The great advantage of this system over earlier methods of tuning is that it makes playing in all keys possible. In the older systems it was possible to tune the simple keys (C, G, F, etc.) more correctly, but the keys with five or more sharps or flats could hardly be used. Each note that can be fingered and played on the guitar, piano or violin, has its own assigned Color. There are twelve possible Colored Spots, from whole colored ones to half colored ones. The Whole Color Spots are the Naturals and would be considered the white keys on a piano. The Half Color Spots are the Accidentals, Sharps and Flats, and would be considered the black keys on a piano. The twelve possible Color Spots and their corresponding musical notes are as follows:

		C	C#	D	D#	E	F	F#	G	G#
A	A#	B					(E#)	Gb		Ab
Bb	Cb	(B#)	Db		Eb	(Fb)				

All twelve notes within the span of an octave are said to be the chromatic scale. Chromatic or chromaticism is the use of raised or lowered notes, instead of the normal degrees of the scale, e.g., in C major: C-D-D#-E or C-D#-E, instead of the diatonic progression C-D-E. The chromatic scale is the scale including all of these altered degrees in addition to the normal ones. It consists of twelve tones, each a half tone higher (ascending) or lower (descending). Chromaticism often serves to heighten the emotional tension of music. In connection with tonality, key means something like "tonal center" or "main note" of a composition and, by extension, all of the notes related to this central note and forming the tonal material for the composition. To a certain extent, key is identical with scale. To each scale there is a corresponding key, e.g., C Major, C minor, C# Major, C# minor, etc., resulting in a complete system of 24 keys (or more, if enharmonic equivalents are added, e.g., Db in addition to C#). Actually, however, key has a considerably wider meaning than scale, admitting not only chromatic variants of the notes of the basic scale but also modulation into other keys.

2. The 7 Note System (Diatonic Scales & Circle of

The arrangement of the twelve keys in ascending fifths (C, G, D, A, etc.) and on a circle showing that after twelve such steps the initial key is reached again is called the Circle of fifths. It presents the keys in their natural order, that is, increasing by one the number of sharps or flats in the signatures.

Fifths)

The sharp keys appear to the right side, the flat keys to the left side of the "neutral" key, C. The transition from the sharp to the flat keys, made at one of the bottom points of the circle (e.g., C#=Db) is called enharmonic change. The circle for the minor keys starts with A at the origin point, continuing similarly in ascending fifth (A, E, B, F#, etc.). In this arrangement a major and a minor key having the same signature (relative keys) appear at the same place on the diagram.

b. Music Scales

A succession of notes, normally either a whole tone or a half tone apart, arranged in ascending or descending order is a scale. The basic scales of most music heard today are the major and the minor scales, both consisting of seven different notes forming five whole tones (w) and two half tones (h), the former in the arrangement (w w h w w h), the latter (w h w w h w w). Starting from C, the tones of the major scale (C Major) are: C D E F G A B C, those of the minor (C minor): C D Eb F G Ab Bb C. The minor scale given is the natural minor. In actual melodic usage the sixth and seventh tones of the minor scale are raised in an ascending motion (. . . G A B C), but retained in the descending scale (C Bb Ab G . . .). Since this minor scale results from melodic considerations (upward and downward movement), it is called melodic minor. There exists a third type of scale which, ascending as well as descending, combines the flat sixth (Ab) with the natural seventh (B). This is called Harmonic Minor because it includes the tones contained in the main harmonies of the minor key (C-Eb-G; G-B-D; F-Ab-C). A scale is identified by the name of the first note on which it starts, for example, D Major scale: D E F# G A B C# D; B-flat minor scale: Bb C Db Eb F Gb Ab Bb. All of the tones required by these scales are found in the Chromatic Scale, consisting of twelve different tones, all at the distance of a half tone. A chromatic scale, therefore, represents a "ladder" with the steps all having equal distance, and this scale can be conveniently used for the schematic representation of all the other scales, Major and minor, in all the keys.

1. Major
2. Natural Minor
3. Harmonic Minor
4. Melodic Minor

To play in a certain key, only with the seven notes given to that specific key is to be Diatonic in that key. Lets say that one wishes to play a Harmonic Progression in the key of C Major. One would first look at the list of Musical Keys and locate C: (C Major). Notice that in the key of C Major there are no Sharps and no Flats (no Accidentals). This would mean that in order to remain in the key of C Major one would play only with notes that denote a Whole Color Spot and not notes that denote a Half Color Spot, as with other keys. With practice, one can learn to remain in any given key, therefore increasing his or her confidence, even while improvising.

Root Notes of a C: Scale:

B
A

G
F
E
D
C

c. Music Intervals

An interval is the distance in pitch between two notes. If the notes are sounded successively, it is a melodic interval; if sounded simultaneously, a harmonic interval. The smallest interval of our musical system is the half tone or semitone (A-A#, C-C#, or E-F), of which there are twelve to the octave. The distance of two half tones is called a whole tone or simply tone (A-B, C-D, or E-F#), of which there are six to the octave, for example, C-D, D-E, E-F#, F#-G#, G#-A#, A#-C. The names for intervals refer to the number of scale steps from the lower to the higher note, as follows:

C-C Unison C-D Second C-E Third C-F Fourth C-G Fifth C-A Sixth C-B seventh

Intervals larger than octaves are called compound intervals, in contradistinction to simple intervals, which do not exceed an octave and a second (simple). Intervals leading downward are called "lower," e.g., the lower fifth of C is F. If two intervals sum up to an octave (C-G and G-C), each of them is said to be the complement or the inversion of the other. Thus the fourth is the complement (or inversion) of the fifth, the third that of the sixth, and the second that of the seventh. The same names are applied to intervals starting on notes other than C. Thus, the intervals D-F, E-G, F-A, G-B are all thirds. Since, however, they are not all alike (D-F and E-G are whole, the others, whole with a half), it is necessary to distinguish between various types of thirds, fourths, etc., according to the number of half tones found between the outer notes. The fourth, fifth, and octave exist in three varieties, diminished, perfect, and augmented, while each of the other intervals has four varieties, diminished, minor, major and augmented.

2. Harmony & Function

a. Diatonic Chords

1. Major Triad
2. Minor Triad
3. Augmented Triad
4. Diminished Triad

When three or more notes are grouped together and played, a musical chord is formed and a harmony is sounded. The basic chord structure in music is called a Triad, as it is composed of three notes. Chords that have four or more notes become progressively more complex and for all practical purposes, this manual will only deal with traditional three note harmonies (Triads). A set of lists of all possible Triads, in Root Position, has been provided. Chords in Root Position denote that the lowest sounding pitch is the root of the chord. This system does deal with Chord Inversions for that is an aspect of Music Theory that is quite involved. In connection with both lists of color coded chords, are all their possible and corresponding, Functional Chord Sonorities. These sonorities denote all the possible functions each individual chord could serve as, in any given musical key. Also, a list of all possible Major and Minor keys has been provided. Together, both of these lists will allow the student to become familiar with any musical key and chord anywhere on a guitar, piano or violin. They will also help the student to understand and musically realize some of the principles of Modulation in order to get from one key to another, through the use of Pivot Chords in a Harmonic Progression. A list of Modulation Types is provided. Please note that Augmented chordal functions are denoted by an upper case Roman Numeral followed by a (+), Major chordal functions are denoted by an upper case Roman Numeral alone, minor chordal functions are denoted by a lower case Roman Numeral alone, diminished chordal functions are denoted by a lower case Roman Numeral followed by a (°), and half-diminished chordal functions

are denoted by a lower case Roman Numeral followed by a (°). There are seven possible root notes in the key of C: and therefore seven possible Triad chords that can be formed and played in C Major. This also holds true for every other key, Major or minor. All seven Diatonic Chords are built with only the given notes in a C Major scale, by using traditional chordal stacking of Thirds (3rd). It is important to note that in music, notes are read from bottom to top, and the provided lists are no exception.

Example:

Scale Degrees 1 - 7 are:

Chord"	7	Subtonic (Leading Tone)	vii°	"Seven
Chord"	6	Submediant	vi	"Six
Chord"	5	Dominant	V	"Five
Chord"	4	Subdominant	IV	"Four
Chord"	3	Mediant	iii	"Three
Chord"	2	Supertonic	ii	"Two
Chord"	1	Tonic	I	"One

Chord Notes for all seven chords are:

5th	G	A	B	C	D
E	F				
3rd	E	F	G	A	B
C	D				
Root	C	D	E	F	G
A	B				
Chord	1	2	3	4	5
6	7				

Triad Functions and Sonorities in C:

vii°	B°
vi	am
V	GM
IV	FM
iii	em
ii	dm
I	CM

C. Music is Rhythm (The Driving Element to Music)

1. Long versus Short
2. Syncopation

III. Reference for Beginners (Chords & Scales)

A. Diatonic Harmony Classifications

7th Chord Functions and Sonorities in C:

vii°7	B°7
vi7	amm7
V7	GMm7
IV7	FMM7
iii7	emm7
ii7	dmm7
I7	CMM7

Chord Notes for all fourteen chords are:

7th	B	C	D	E	F	G
A						
5th	G	A	B	C	D	E
F						
3rd	E	F	G	A	B	C
D						
Root	C	D	E	F	G	A
B						
Chord	1	2	3	4	5	6
7						

B. Chromatic Harmony Classifications

To play in a certain key, and also play notes that are out of that specific key is to be Chromatic in that Key. When chords contain one or more notes that are out of a given key, they are said to be Chromatic as well. There are six specific classifications for Chromatic Chords and these are, by their musical nature, quite advanced. Some of these appear as chords in some other Inversion and not in Root Position, so again, a background in Music Theory would be greatly beneficial. Never the less, the list is still provided, and goes as follows:

1. Secondary Dominant Chords: are a Dominant relationship to any scale degree other than the Tonic. The Triad is Major (M) and the Seventh is Major Minor (Mm7) in quality. The most common is the V7 of V, which is always a Mm7 chord built on the Supertonic note of the scale.

Example: DMm7 (D - F# - A - C) is a V7 of V (G - B - D - F) in C:

Example: DMm7 (D - F# - A - C) is a V7 of V (G - B - D - F) in c: (Harmonic, Melodic)

2. Secondary Leading Tone Chords: are Leading Tone Chords to any scale degree other than the Tonic. Triads are diminished and Sevenths are fully-diminished, sometimes half-diminished. The most common is the vii°7 of V.

Example: F#°7 (F# - A - C - Eb) is a vii°7 of V (G - B - D) in C:

Example: F#°7 (F# - A - C - Eb) is a vii°7 of V (G - B - D) in c: (Harmonic, Melodic)

3. Borrowed Chords: are chords used in a Major key that are "borrowed" from that key's Parallel minor. C Major borrowing from c minor.

Example: Dmm7 (D - F - Ab - C) as a ii°7 in C:

Example: Fm (F - Ab - C) as a iv in C:

Example: AbM (Ab - C - Eb) as a bVI in C:

Example: B°7 (B - D - F - Ab) as a vii°7 in C:

4. Neapolitan Chords: are Major Triads or Major minor Sevenths built on the lowered Supertonic and are denoted by a (N). They can appear in either Major or Minor. Are most common in minor and are usually in First Inversion. These are used like a ii6 or ii65.

Example: DbM (Db - F - Ab) a bII in C: or c: is a N (F - Ab - Db) in C: or c: (Natural, Harmonic)

Example: DbMm7 (Db - F - Ab - C) a bII7 in C: or c: is a N7 (F - Ab - C - Db) in C: or c: (Nat., Har.)

5. Augmented Sixth Chords: There are three types and all originate in minor.

Italian Sixth: are Subdominant Triads (iv) in the Natural and Harmonic form of Minor, in First Inversion with a raised root and are denoted by a (It6). They can appear in either Major or Minor. They move to a Tonic Chord in First Inversion (I64) or a Dominant (V).

Example: #ivb3 (F# - Ab - C) as an It6 (Ab - C - F#) in C:

Example: #iv (F# - Ab - C) as an It6 (Ab - C - F#) in c: (Natural, Harmonic)

German Sixth: are Subdominant Seventh Chords (IV7) in the Natural and Harmonic form of Minor, in First Inversion, with a raised root and are denoted by a (G6). They can appear in either Major or Minor. Usually they move to a Tonic Chord in First Inversion (I64) before moving to the Dominant (V).

Example: #ivb3#6 (F# - Ab - C - D#) as a G6 (Ab - C - D# - F#) in C:

Example: #iv7 (F# - Ab - C - Eb) as a G6 (Ab - C - Eb - F#) in c: (Natural, Harmonic)

French Sixth: are Supertonic Seventh Chords (ii7) in the Natural and Harmonic form of Minor, in Second Inversion with a raised Third and are denoted by a (Fr6). They can appear in either Major or Minor. They move to a Tonic Chord in First Inversion (I64) or to the Dominant (V).

Example: ii#3°7 (D - F# - Ab - C) as a Fr6 (Ab - C - D - F#) in C:

Example: ii#3°7 (D - F# - Ab - C) as a Fr6 (Ab - C - D - F#) in c: (Natural, Harmonic)

6. Augmented Dominant Seventh Chords: are Dominant Seventh Chords (V7) with a raised fifth. The Augmented 5th is usually above the 7th.

Example : G+7 (G - B - D# - F) is a +V7 (G - B - F - D#) in C:

Example : G+7 (G - B - D# - F) is a +V7 (G - B - F - D#) in c:
(Harmonic, Melodic)

IV. Progression & Modulation for Beginners

A. Diatonic vs. Chromatic

In order to change keys in a Harmonic Progression and make it sound musical, Modulation is recommended. There are six types of Modulation and they can be Diatonic as well as Chromatic, and can include a Pivot Chord or not. Diatonic means that all the notes in a chord or musical passage are in key. Chromatic means that at least one note in a chord or musical passage is out of key. A Pivot Chord would be a chord that two keys have in common although it would function differently in each key. These six Modulation types become progressively more difficult to understand and therefore will require further study by the student. The list goes as follows:

1. Pivot Note - Only one note is involved. Normally, it is held out from a preceding chord in the first key and eventually becomes part of a chord in the second key.

2. Diatonic Pivot Chord - A Diatonic Chord in the first key is also a Diatonic Chord in the second key. Often, it is just a chord or two before the new Dominant (V).

Example: DPC

(I - IV - V - I - iii - vi) in C:

(iii - vii° - IV - V - I) in F:

An example of a Diatonic Pivot Chord modulation could be as follows: Let us say that the established key is C: (C Major) and a Harmonic Progression of (I - IV - V - I - iii - vi) is being played, and we wish to make the transition on the Six Chord (vi) chord in C: First we would find out the root of a Six Chord (vi) chord in C: by looking at the Musical Keys list under Key of C; locate the (vi) and get the Root Note of the Scale. In this case it is A. We would then look at the list of all possible Triads under the Root of A. By looking under the "Functions as:" for the Quality of minor we would see that the chord (A-C-E), a vi in the key of C; is also a iii in F; a i in a: (Natural, Harmonic, Melodic), a ii in G: and g: (Melodic), a iv in e: (Natural, Harmonic), and a v in d: (Natural). If we wanted to modulate to the key of F; we could continue with a Harmonic Progression of lets say, (iii - vii° - IV - V - I) in F: Thus we pivoted from C: to F: using an A minor chord which is both functional as a vi in C: and a iii in F:

3. Deceptive Cadence - In a Deceptive Cadence, the Sub-Mediant Chord (vi, VI) in the old key becomes the Tonic chord (I, i) in the new key.

Example: DC

(I - IV - V - I - iii - vi) in C:

(i - iv - V - i) in a: (Harmonic)

Example: DC

(i - iv - V - i - III+ - VI) in c: (Harmonic)

(I - IV - V - i) in A:

4. Enharmonic diminished Seventh Pivot Chord - Through the enharmonic possibilities of the half-diminished Seventh Chord (°7), the chord can have a logical function in both the old and new keys.

Example: Enh.°7 PC

(I - IV - V - I - iii - vii°7) in C:

(ii°7 - iv - V - i) in a: (Harmonic)

5. Diminished Seventh to Major Minor Seventh - The lowering of any note in a fully-diminished Seventh Chord (°7) changes the sonority to a Major minor Seventh (Mm7). This can be the Dominant Seventh chord (V7) in the new key.

Example: °7 to Mm7

(i - iv - V - i - III+ - vii°7 - bVII7) in c: (Harmonic)

(V7 - IV - V - i) in eb:

(Melodic)

6. Third Relation - A functional chord in the first key moves by Third Relation (a Major 3rd away, up or down) to a functional chord in the second key. No Pivot Chord is present.

Example: 3rd Rel.

(I - IV - V - I - iii) in C:

Moves a Major 3rd up to (v - III - iv - v - i) in c#:
(Natural)

7. Enharmonic Major Minor Seventh Pivot Chord - Through the enharmonic possibilities of the Major Minor Seventh chord (Mm7), the German Sixth (G6) in the first key can be the Dominant Seventh Chord (V7) in the second key or vice-versa.

Example: Enh. Mm7 PC

(I - IV - V - I - G6) in C:

(V7 - I - IV - V - I) in Db:

8. Chromatic Pivot Chord - The Pivot Chord is Chromatic in the first, or second keys.

Example: CPC

(I - IV - V - ii°) in C: (d° is Chromatic in C; but Diatonic in eb: (Harmonic)

(vii° - iv - V - i) in eb: (Harmonic)

9. Linear Motion - Is none of the above eight. There is no Pivot Chord, Third Relation or enharmonic means present. This technique is not conventional or traditional.