New Standard Music Theory for General Purpose Songwriting

MUSIC PLANZ
Association of support to Making music&Songwriting&Programming

Produced by K Masera

Chapter 1: Introduction to Music Theory

Why Study Music Theory?

"Music theory" is a rare expression that has been misinterpreted and its meaning distorted. Let's begin by exploring why this is the case.

1. A group of music professionals allergic to music theory has strongly supported the view that "songwriting is about having good sense (i.e. innate talent) and theory is unnecessary."

2. Some detest the idea that theory alone is sufficient for songwriting.

3. Some believe that originality is lost by studying music theory.

4. As DTM/DAW developed, there is less need to study music theory.

All the reasons cited above are wrong and reflect misunderstanding.

We can write music while having fun for a certain period of time without studying music theory. As our ability increases, however, we begin to want to further freely create various types of music and sounds and boom! We hit a big wall.

These may be the sound of complex chords, some exuberant key changes, and elegant yet distinctive jazzy chord work. With the exception of a few geniuses, self- teaching these advanced techniques is nearly impossible. We could really try hard to learn such techniques on our own but we may constantly be unsure if we've learned them correctly and end up not utilizing them in songwriting.

This is a common experience to have.

Based on my working with many students, mastering music theory requires coming against this "big wall" and having a strong conviction to overcome it.

Let me tell you how songwriting truly works.

- Songwriting has nothing to do with having "good sense". Songs reflect the sum of necessary items learned and skills accumulated for songwriting. Music theory is one such item that is extremely useful.

- Music theory, however, only represents one tool for songwriting. Knowing the theory alone does not mean you can write songs.

- Not knowing music theory means you have fewer songwriting tools and may in turn, make songs sound more generic. You may also risk coming up with haphazard sounds. Music theory serves a guide to correctly stack different notes together laying the foundation to free imagination. Originality is built upon this solid foundation.

So, studying music theory is a short cut allowing you to fully and freely produce music as you please.

In reality, music theory is difficult to learn. We often hear things like, “I’ve studied music theory but didn’t understand it a bit.” There are many reasons why people get this impression.

- Music theory is not compatible with the type of music pursued
- The music theory book purchased was too difficult to understand
- The music theory course taken was too easy and not practical
- The music theory instructor was not fully versed with music theory
- The music theory contents offered was incorrect
- Unsure how much music theory needs to be studied

Some of the above may be surprising but all are true. Let’s go deeper into the first point about compatibility between theory and music pursued.

While there are countless music genres and categories, we only hear a single expression, “music theory.” It’s probably better to at least classify music theory into “classical music theory” and “commercial and popular music theory.” There are many books and articles that explain both types of music and often lead to confusion and a dead end. Going forward, let’s use analogies from cooking and languages as music has many similarities with them.

Discussing classical and commercial/popular music together is like learning cooking techniques at a French culinary school to become a sushi chef.

There are areas of overlaps in both music genres but there are also explanations that need to be clearly separated. Thus, it’s necessary to clarify the purpose of studying music theory. Music theory is for:

General entertainment and sale purposes - songwriting, arranging, music production, explanation, analysis and applications for commercial popular music

The following specific genres are dealt with in our music theory: pops, rock, blues, jazz, latin, world, most techno and partly classical music, encompassing a majority of “commercial music”.

Our music theory is not applicable for complex modern music and music that makes us feel uncomfortable and not entertaining. Also, it is not applicable for music genres that do not use the 12-tone technique, triads (set of three notes stacked vertically in thirds) or four-note chords, mathematical or semiotic songwriting, microtonal music, catastrophic music etc. These will be explained separately.

To distinguish our music theory, the appropriate name would be “general purpose, multiple new standard music theory exclusively for songwriting”.
Since this is too long, from now on let’s call ours -

“New Standard Music Theory.”

The World of New Standard Music Theory

As we begin to study music theory, it's important to imagine what we would be capable of doing and how much we need to study to be able to create the sounds we seek. Since many textbooks and educational organizations are ambiguous about goal setting, it becomes more difficult to set an objective for study.

An objective can be explained through song ingredients, techniques and structures by breaking music into various dimensions as follows.

Zero Dimensional Music

0 Dimensional=Dot

Music composed of a single ingredient. No music scale; only noise and beats.

Folklore, shamanism, techno archetype

One Dimensional Music

1 Dimensional =Line

Beat + Melody, unaccompanied music, monophony, Church mode (source of major scale), Gregorian chants

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Two Dimensional Music

2 Dimensional =Surface (Plane)

Music structure as defined by the major scale system, homophony, basis of tonality, Temporary key change ingredients (including micro key change) ←related keys

Over 80% of popular music, Classical Period

Three Dimensional Music

3 Dimensional=Solid (body)

Music with multiple tonalities, modulation to related keys, free modulation

Incoming real minor scale system, in-the-blues, fusion with blues
Use of four-note chords
Late Classical Period to Romantic Period; Impressionist to Modern music
Black contemporary, progressive rock, AOR etc.

Four Dimensional Music

4 Dimensional =Spacetime

Multiple tonalities exist simultaneously Approach harmonize Superimposition

Upper structure triad
Romantic – Impressionist – Part of Modern Periods; Disney Music, Soundtrack and music for drama/plays

Measurements in Music Theory

There are only two measures in music theory.

■ Whole tones (US: whole steps) and Semitones (US: half steps)

Semitone= one key on the keyboard symbol:∧
Whole tone=two keys on the keyboard symbol:⊓

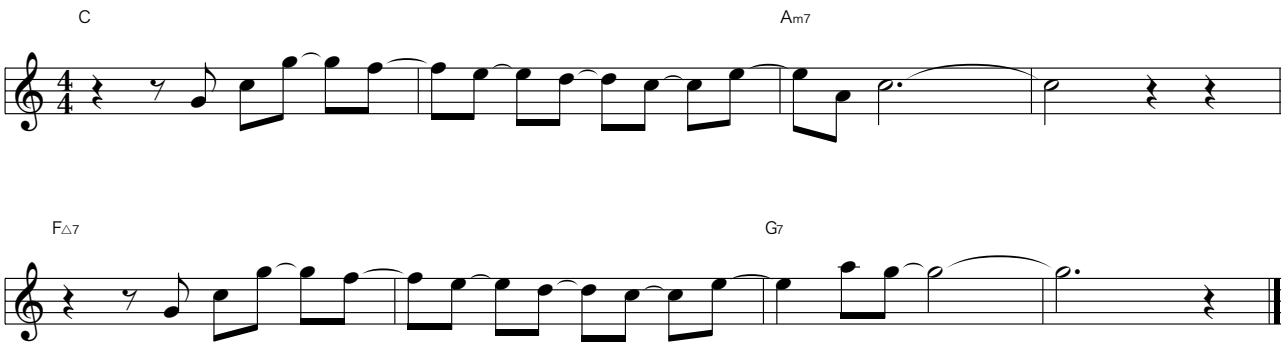
■ Intervals **MOST IMPORTANT ITEM**

[quality symbol] + [no. of degrees] Examples: m3 M6 +5
An interval accurately measures the distance between two notes.
Degrees (distance between notes) and the number of semitones are counted.

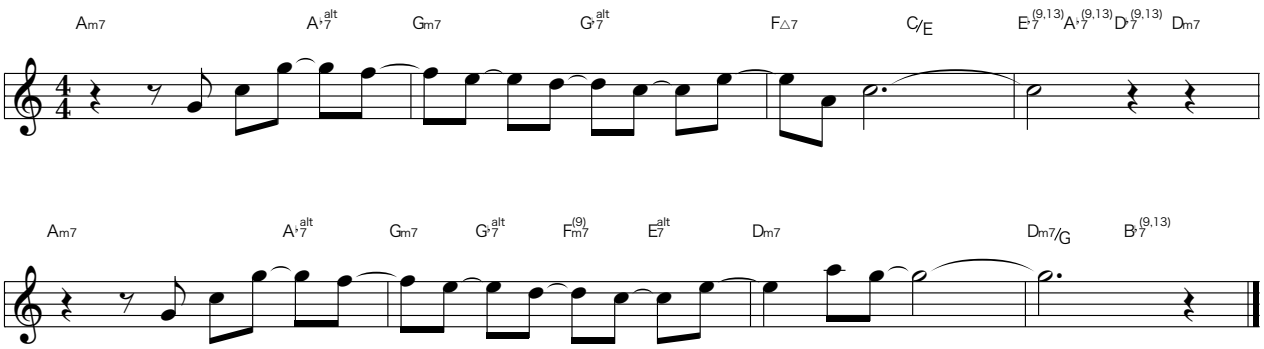
Only two measures are necessary to explain music theory.

(1)Whole tones and semitones are used for scale structures and (2) intervals are used to explain the notes composing scales and chords as well as to analyze melodies. These two measures are continuously used from the very beginning to the end of this course.

Etude1



Etude1-rehamo



Chapter 2: Sound – Components & Composition

Components of Music

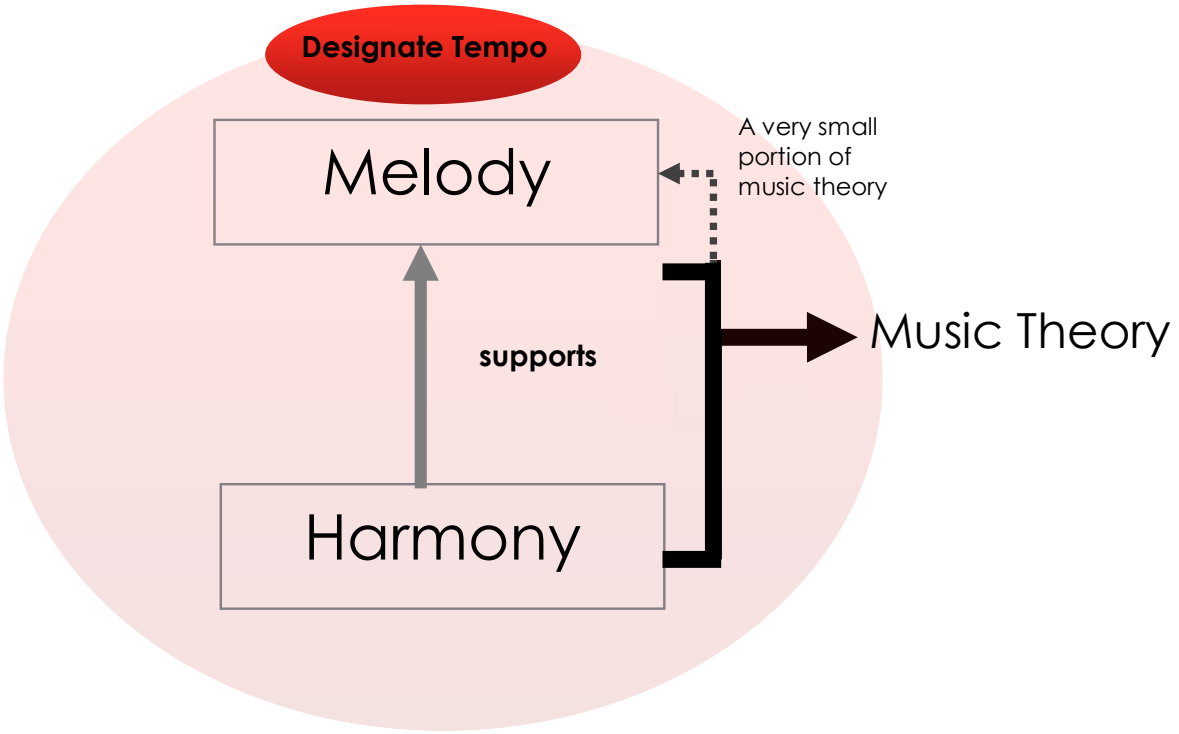
Three Major Components of Music

Rhythm	Melody	Harmony

Rhythm	Time, beat, periodic cycle or sound patterns **MOST IMPORTANT**
Melody	Continuous flow of changes in high/low & short/long notes
Harmony	Overlapping notes of various pitches changing and progressing

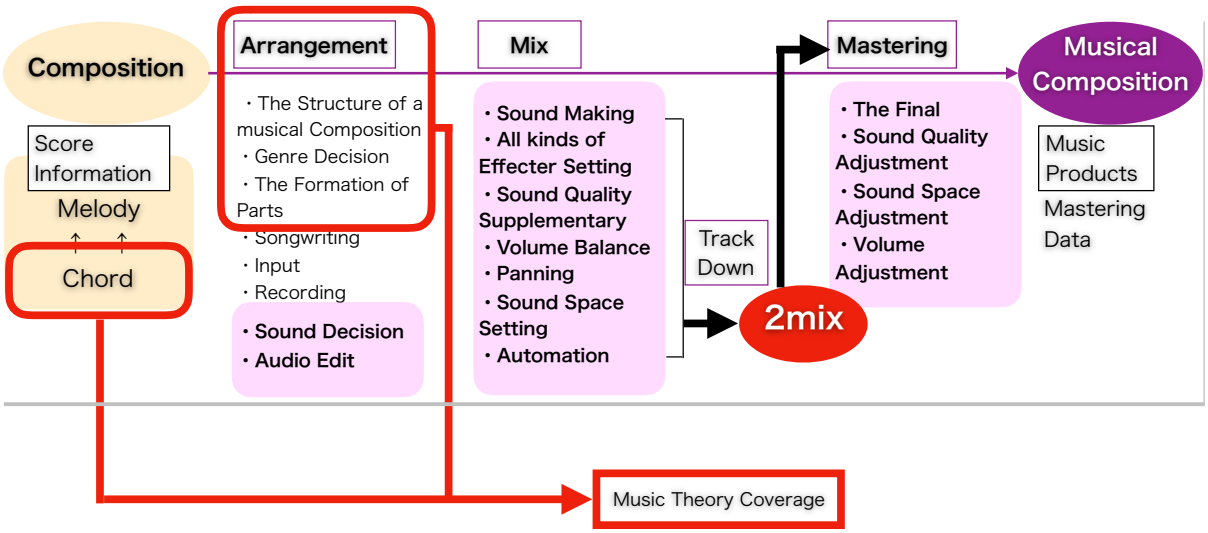
Definition of Songwriting and Coverage of Music Theory

Songwriting is about establishing chords that support the melody. When tempo is designated (i.e. rhythm) to this, a copyright is created. If the music has no melody, defining a copyright becomes somewhat difficult. Music theory covers the area of chords supporting the melody, developing chord progressions and using applicable scales to scrutinize melodies. When composing melodies, considering music theory is extremely effective but knowing music theory alone does not mean great melodies can be created.



Songwriting, Songs & Music Theory

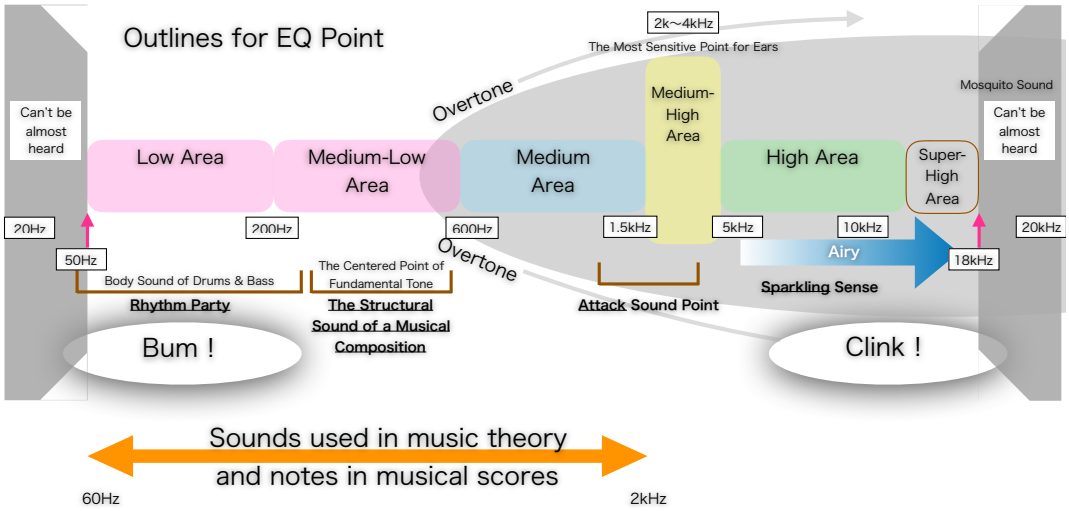
Let's take a look at music theory from a broader perspective. Music products are delivered in formats of CDs or various file data and are known as songs or musical compositions. Songs are arranged, recorded, undergo various processes and finally mastered to become completed musical composition data. Among these processes, music theory can be applied to songwriting and partially, arranging. While music theory appears to deal with only a small part of these processes, it is extremely important in forming the structural foundation of music.



Noises and "Sounds"

The human ear can detect frequencies between 20Hz-20000Hz (various theories exist) and this is often referred to as the audible range. Within this range, the 50Hz- 16000Hz range is typically used in music. For songwriting (and notes used in musical scores), the range is further limited to 60Hz-2000Hz.

When all frequencies in the audible range are played, they become a "noise." When specific frequencies are extracted from the noise, a scale is produced and can be written in the form of "notes" in musical scores.



“Pitch”, “Note Names” and Reference Tone

In music (and musical scores), there is a reference tone. This tone serves as the basis of the various pitches (high/low of a note) we see in musical scores.

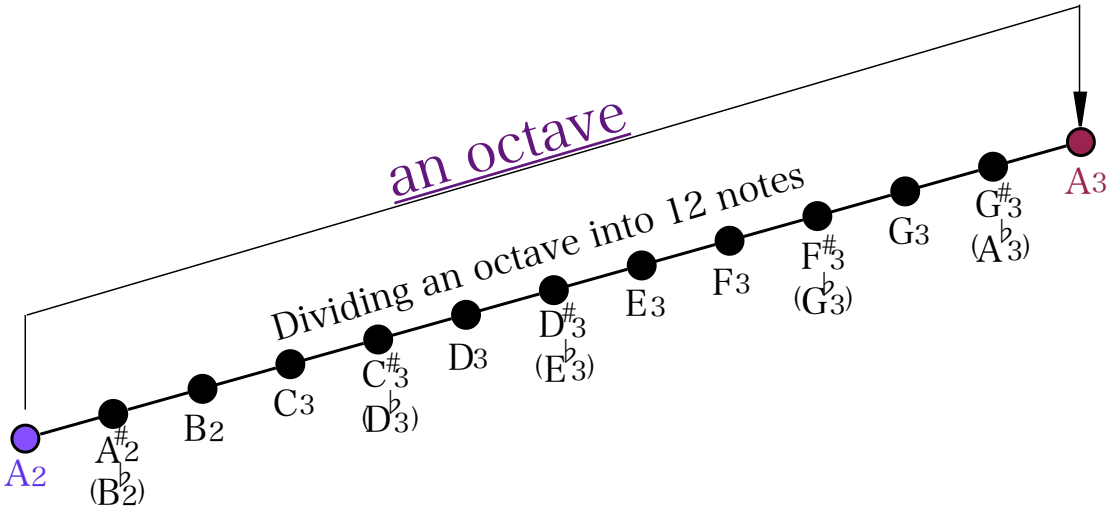
Reference tone:A4 = 440Hz (“A” is the same as “La” in do-re-mi)

440Hz (hertz) means that the sound wave oscillates 440 times in one second.

Sounds with double the number of oscillations are known as octaves.

One octave above A4:A5=880Hz
One octave below A4: A3=220Hz

A3, A4, A5 are all “A” notes but are given different numbers to represent how high the notes sound. Musical scores divide this octave into twelve tones. Each tone has a name as shown below



Notes are expressed by the seven alphabet letters 【A B C D E F G】as shown above. In popular music, there is a general rule to create music with these seven notes. The notes shown in this order are known as the diatonic scale of which, the major scale, is primarily used for musical scores.

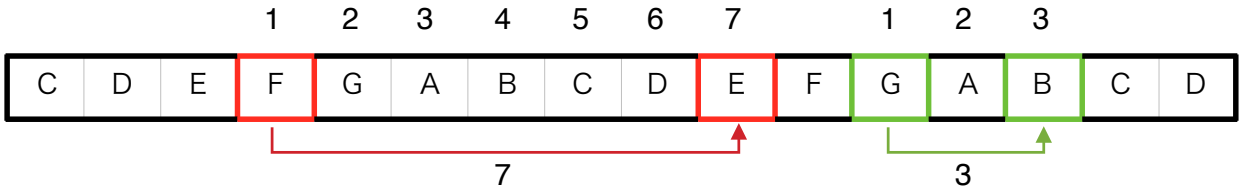
Note Names	English	C	D	E	F	G	A	B
	Italian	Do	Re	Mi	Fa	Sol	La	Si

Note Names and Degrees: Basic Rule for Chords

There are 12 notes (tones) that appear in musical scores (written music). Of these, seven notes which comprise the diatonic scale are generally used for music. Each of these seven notes has a note name. The number of spaces between two notes is known as a “degree”. A degree is the basic ingredient to understand and analyze the relationship of “melody” and “harmony,” the major components of music.

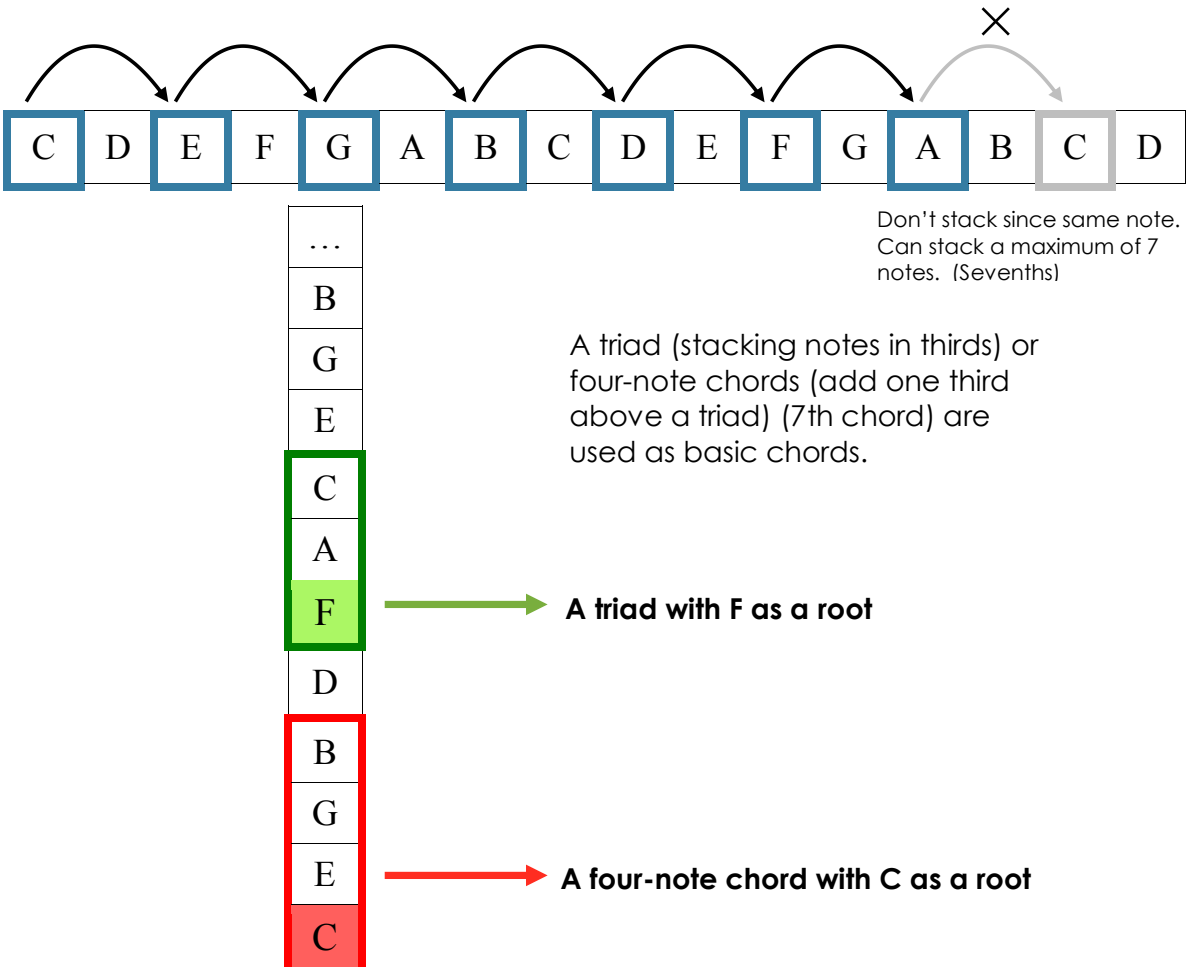
- **Measuring Degrees**

A degree indicates the number of notes counted from the starting note to the target note. The starting note is the 1st degree.



- Basic Rule for Chords – Triads

The basic rule for constructing chords is to “stack notes vertically in thirds.” This is called a triad and is a major premise when composing popular music. “In thirds” can also be expressed as vertically stacking two notes, skipping one note in between.



Chapter 3: The Staff and How It Works

Music continues to be written and recorded on a staff, a name for five horizontal parallel lines. With the development of DTM, it's possible to write music using the piano roll screen without being able to read the staff. The staff, however, remains the best for songwriting. It presents an objective and birds-eye view of music both "visually" in appearance and "diagrammatically" for analysis.

Also, understanding the staff is essential for learning music theory. For songwriting, using the staff is the fastest way to store melodies and chords that come to mind before we forget. Aren't you losing the opportunity to remember the wonderful melody that came up to your mind only because you don't know about the staff and how to write musical scores? Songwriting is possible anywhere with the staff.

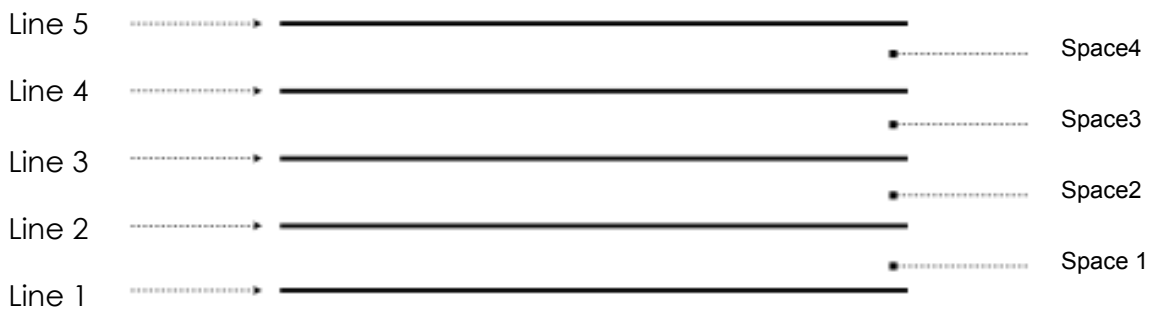
That doesn't mean that you need the skills to write a full orchestra musical score. For popular music, it's sufficient if you can read and write a "melody sheet," a score that contains the "melody, chord and structure." What's really fascinating about it is that the two basic components of a song, i.e. the melody and chords that just popped in your head, can be recorded at the same time.

The sheet can save more data accurately than a voice memo or some smartphone application. A voice memo can record the melody but then you wonder, "how did the accompaniment go again?"

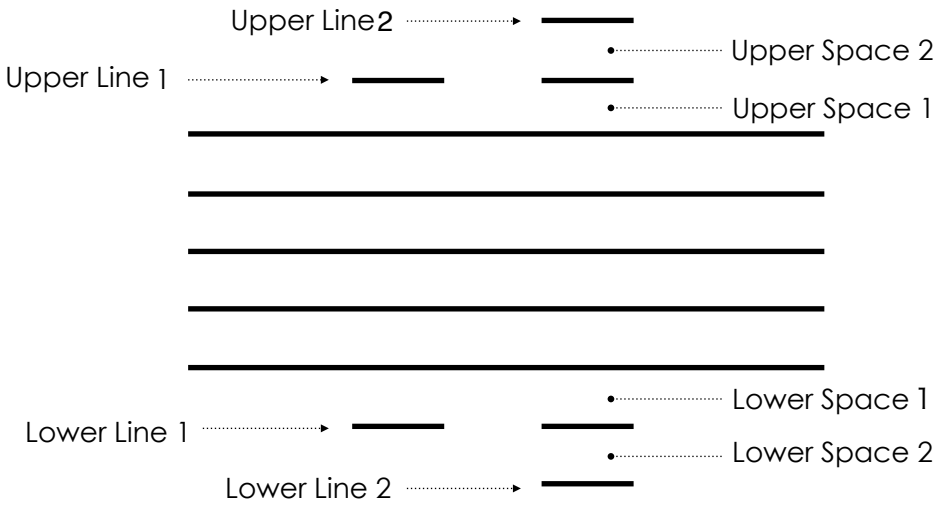
For recording purposes, musical scores are indispensable when communicating with vocalists and guitarists. It's especially true when you are dealing with vocalists online, which is becoming an increasing recent trend. They often request musical scores with lyrics. In your initial days of songwriting working on your own, you may not necessarily need musical scores but once you reach a certain level, not having musical score skills may risk your music business. Acquiring this skill is highly recommended at an early stage.

The Staff and Its Structure

The following names are given to each part of the five parallel lines.

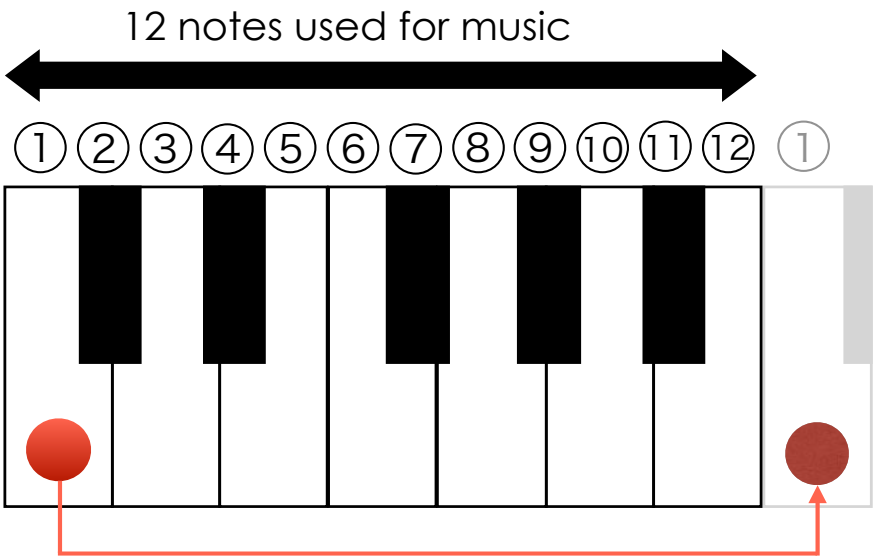


Leger Lines ... added lines to show notes that are higher or lower than the staff



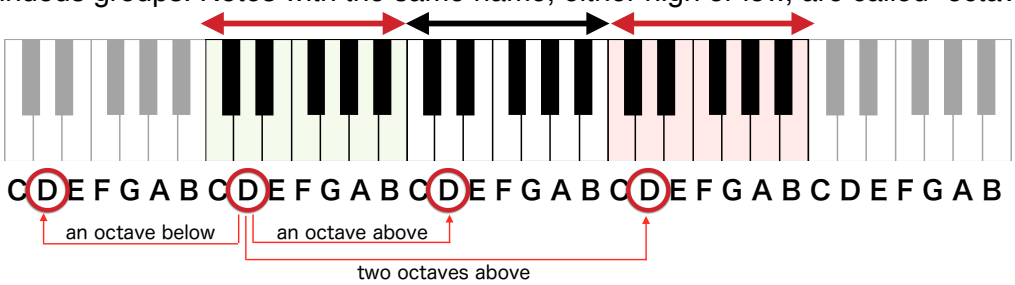
Keyboard Structure

The staff fully corresponds to the keyboard. It has developed as a means to record keyboard performances. Let's look at the keyboard to understand the staff.

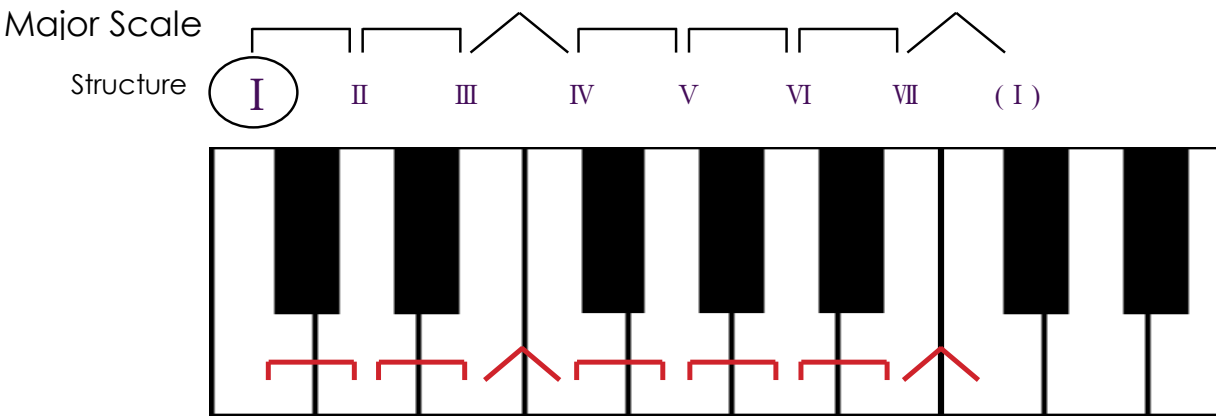


Use same note name for octaves.
Example: Note name is C = Do = Ha

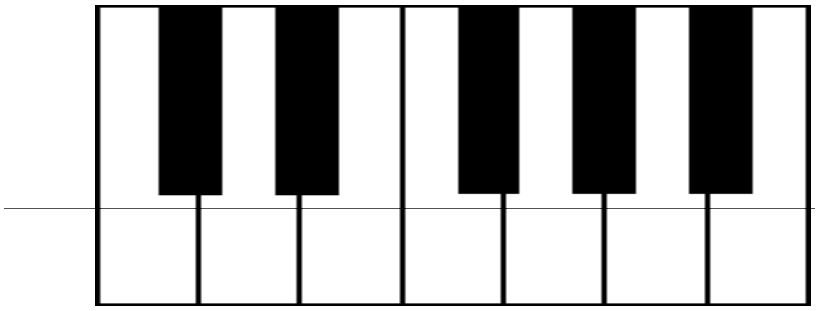
The 12 notes comprise one group. A keyboard instrument is made of many such continuous groups. Notes with the same name, either high or low, are called "octaves"



There are only 12 notes used in music. In the major scale, this is divided into 7 white keys and 5 black keys, inserted between whole notes (=two semitones).



White keys have "note names". Black keys will be explained later.



English	C	D	E	F	G	A	B
Italian	Do	Re	Mi	Fa	Sol	La	Si
Japanese	Ha	Ni	Ho	He	To	I	Ro

Note Names

Music theory frequently uses English and Italian. For reference, Japanese note names are also provided.

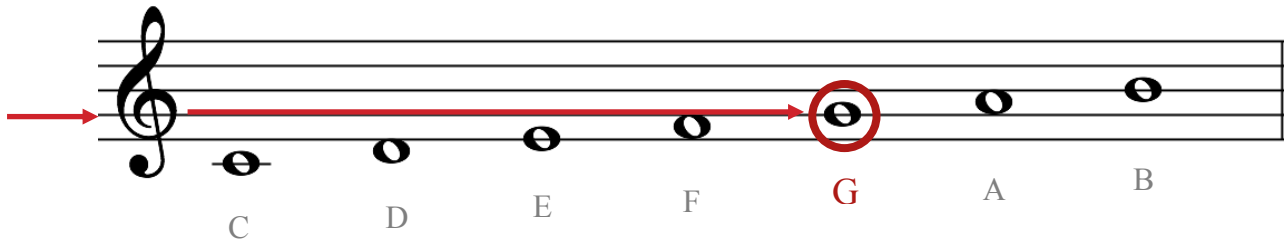
English	C	D	E	F	G	A	B
Italian	Do	Re	Mi	Fa	Sol	La	Si
Japanese	Ha	Ni	Ho	He	To	I	Ro

Note: In classical music, B in German is B ♭ in English and is quite confusing. These are not used in popular music theory.

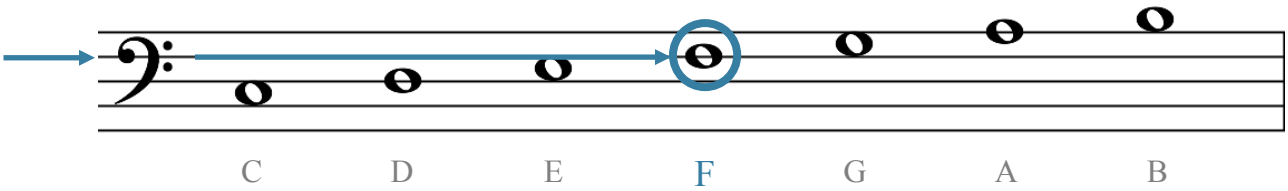
Clefs: G-clef (treble) and F-clef (bass)

In the staff, a clef is a musical symbol that tells which letter name goes with which line or space, i.e. how high the notes are. Depending on musical instruments, various clefs are used. The most common ones are the treble clef (for high pitches) and bass clef (for low pitches).

Treble Clef:Line 2 is the sound of G3. (Numbers showing the octave is not usually shown).

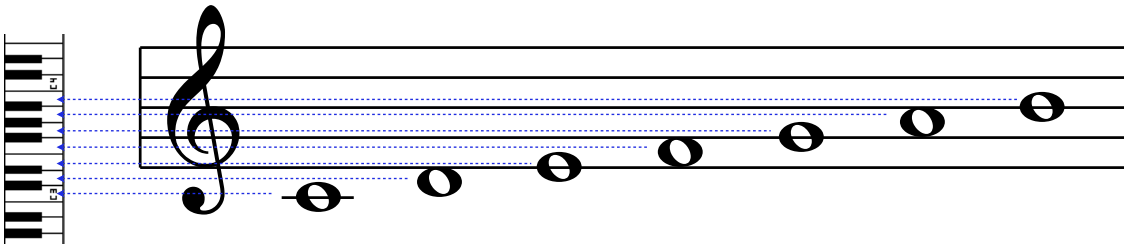


Bass Clef:Line 4 is the sound of F2. Mostly used for bass and piano's left hand.



The Staff and Keyboard Relationship

The staff basically corresponds to the white keys of a vertically placed keyboard.

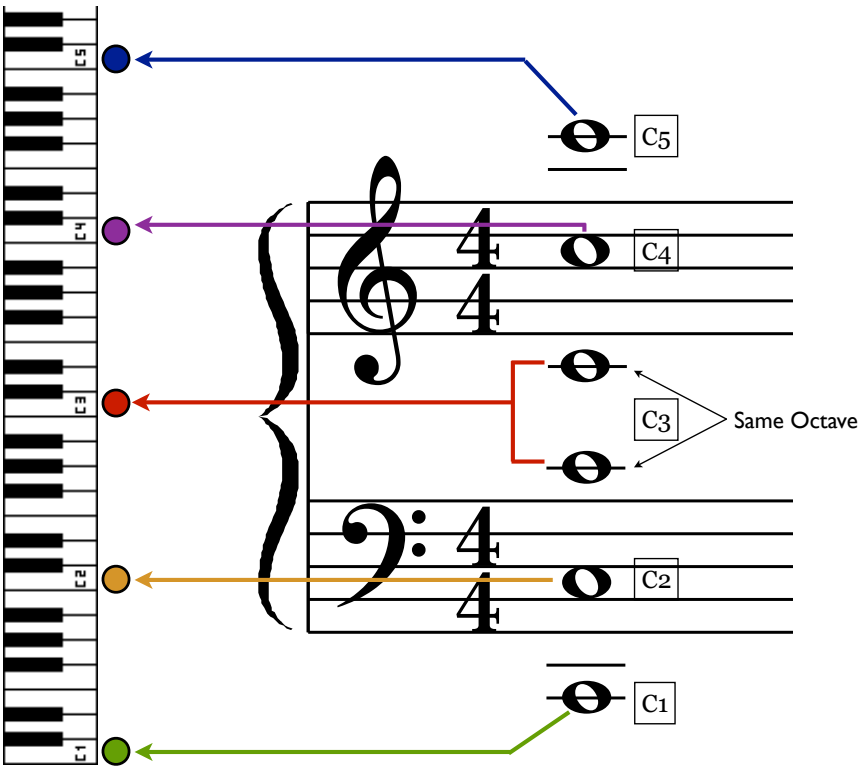


English	C	D	E	F	G	A	B
Italian	Do	Re	Mi	Fa	Sol	La	Si
Japanese	Ha	Ni	Ho	He	To	I	Ro

Diagram above: Note names in English/Italian/Japanese; Same as p.13
The high and low of the staff is based on the array of the white keys. Unless accidentals, i.e. sharps # or flats ♭ are used, all notes on the staff represent the white keys of the keyboard in the major scale, the most common scale structure used in music. In order to learn music theory, it's important to familiarize the sound the keys make.

Keyboard and Musical Score Positions

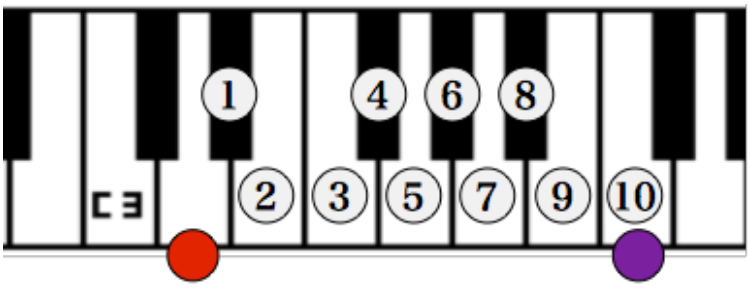
C3: Notes have the same sound



How high the notes sound is different but all of the above shows the note “C”. To indicate how high the note is, numbers are used, such as C2. Each number represents an octave. So between C2 and C4, there are two octaves.

Number of Semitones

In music theory, “the number of semitones” is another important element similar to the degree. The number of semitones is the number of keys counted from the low to high notes.



Number of semitones =10

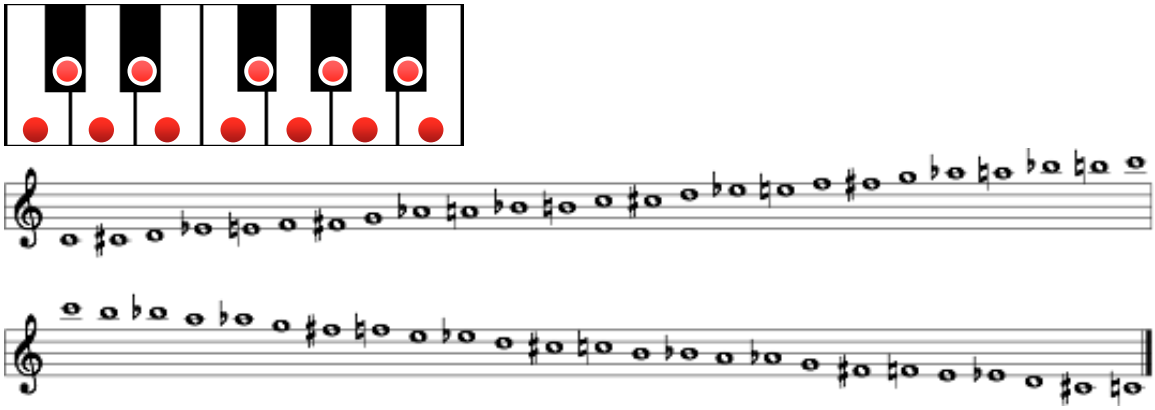
Note: The starting point of a semitone is counted as zero (unlike degrees starting from one).

Chapter 4: The World of Scales

The major scale is the basic framework for popular music. We'll discuss about the major scale for a while. As 95% of music that we hear uses the major scale, a good understanding of this scale system is closely linked to understanding music as a whole. The major scale extracts notes from the chromatic scale provided certain conditions. Let's start from the chromatic scale to further explain the major scale.

Chromatic Scale

A collection of semitones (half steps), the smallest unit in music theory, is the chromatic scale. This is the same as pressing all the keys (both white and black) on the keyboard in order and represents all notes in a musical score.



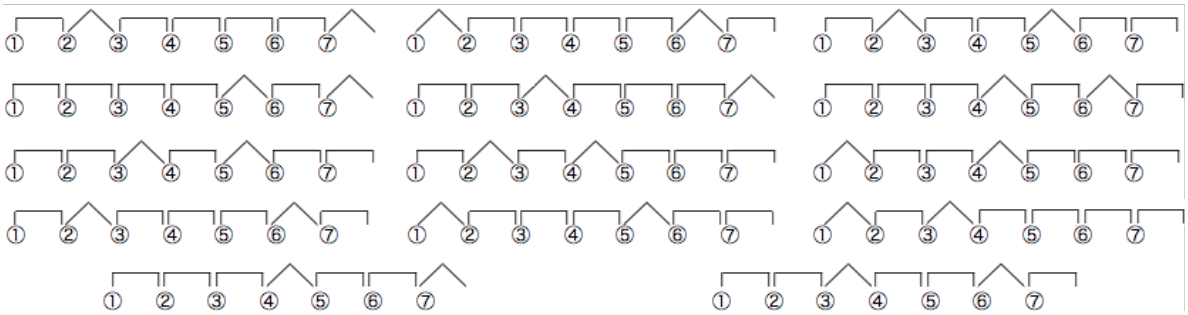
Diatonic Scale

The diatonic scale can be created from the chromatic scale with the following conditions.

【Conditions for Diatonic Scale】
・Composed of 5 whole tones and 2 semitones
・No consecutive semitones exist

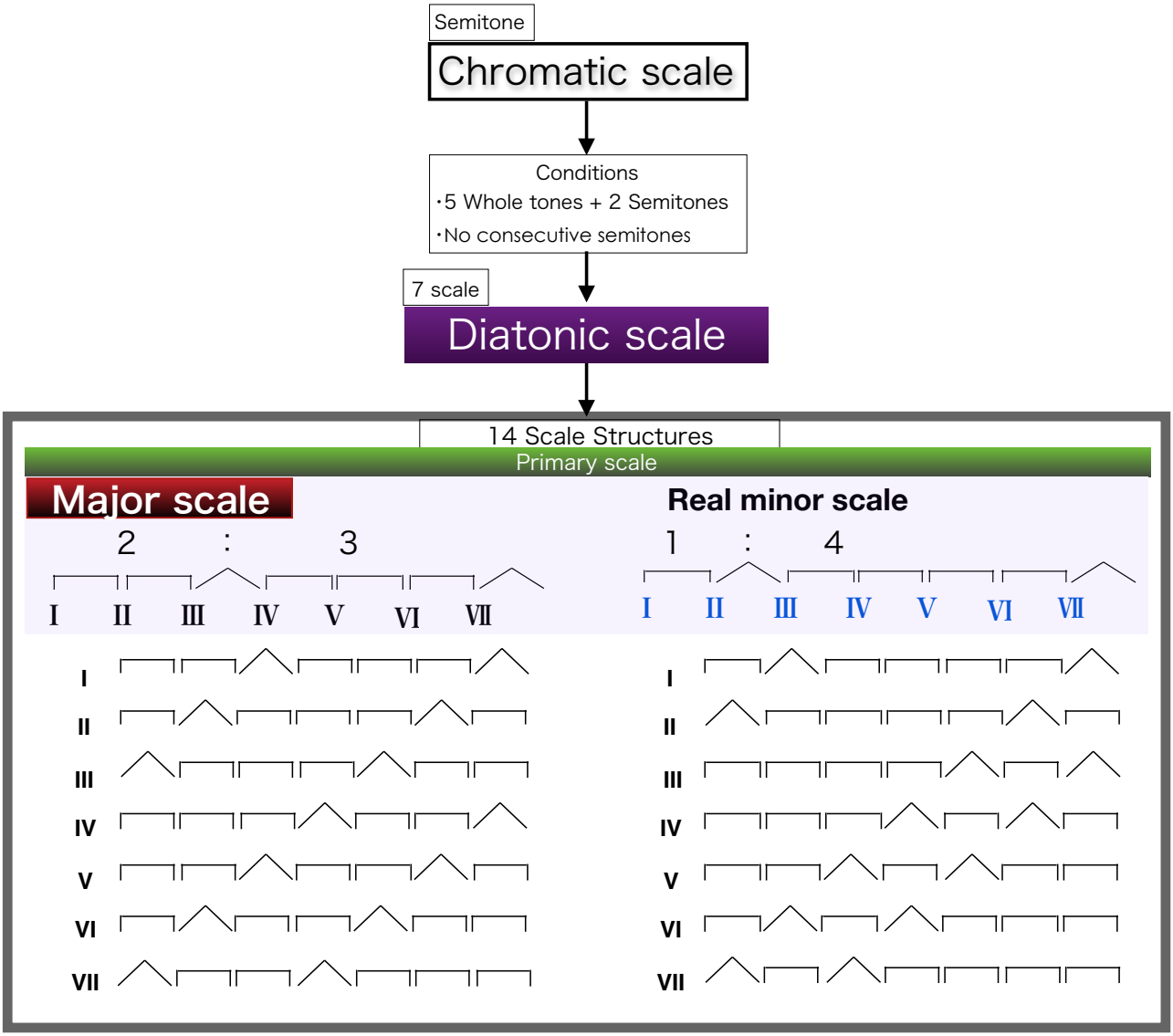
There are 14 such combinations that meet the above conditions. All the scales structurally have seven tones and this is called the diatonic scale. (The word diatonic has a different etymology but we'll not go into that here).

14 Scale Structures



Primary Scale: The Major Scale

The 14 scales mentioned earlier can be structurally divided into two groups, a group where whole tones are divided into 2:3 from semitones and another group, from 1:4. The major scale represents the former and the real minor scale represents the latter. These two scales, the major scale and real minor scale are together called the primary scale. The primary scale is like the parent scale and the children scales are created from changing notes, one by one, which in turn becomes the corresponding scale to each chord used in songs.



Definition of the Major Scale

The major scale is defined as notes placed in the order of [Whole] [Whole] [Semitone] [Whole] [Whole] [Whole] [Semitone] from a certain starting note. The “certain note” in a major scale is called the “I note.” From now on, notes will be notated in Roman numerals. This is called “relative degree notation.”

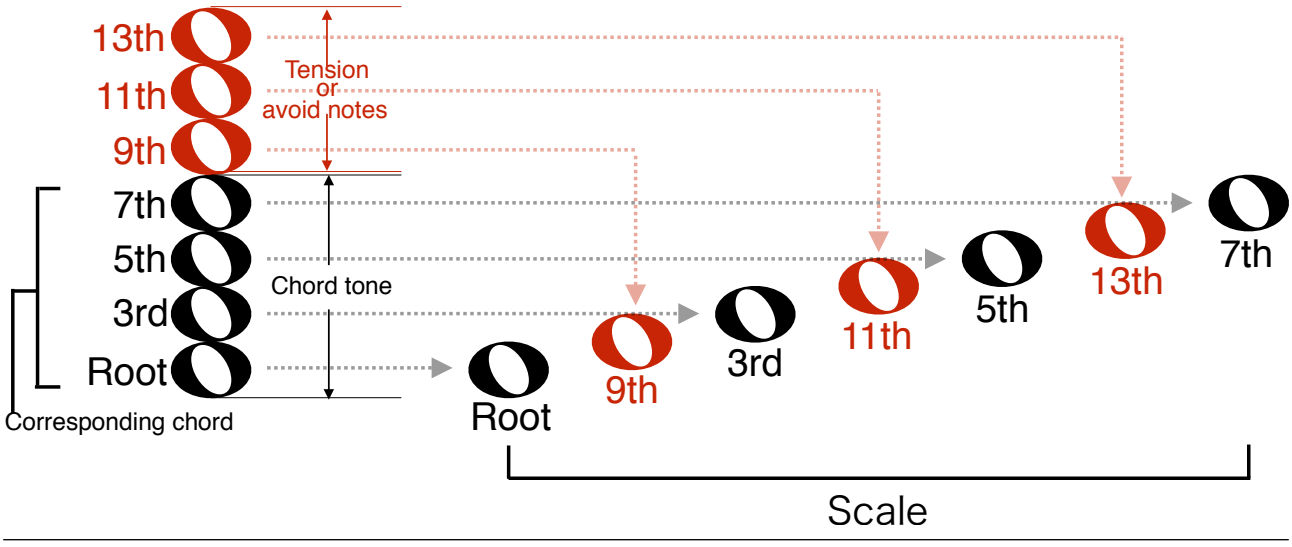
Popular Music and Its Boundary

Starting from the chromatic scale, the diatonic scale was produced by imposing certain conditions. The primary scale was further categorized on to the major scale. The conditions of the diatonic scale that were applied are extremely important in analyzing and understanding the structure of popular music.

Some music use scales that do not have the same structure as the diatonic scale. There are also special music categories with scales that have more complex structures. There is a clear difference between the diatonic scale and scales created with other conditions. The differences in scale structure and their uses have influenced various music genres and have provided a way to define the boundary of popular music. Popular music does not have consecutive semitones in the scale. Scales with such a structure will not be covered in new standard music theory.

Overview of Chords and Scales

New standard music theory is based on “chords supporting the melody, a scale corresponding to the chord and the scale providing the basic ingredient of the melody.” The central concept may be summarized in the diagram below..



Corresponding chord, chord tone, tension or avoid notes

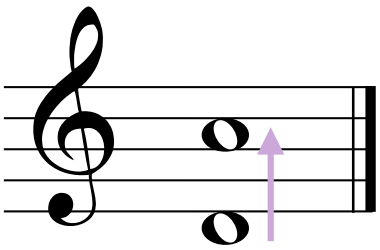
Separating the “chord tone” and “tension/avoid notes” in a chord is imperative. It is the only determining factor when melodies are written and songs are analyzed objectively. This is also useful upon choosing the genre of the song, controlling the melodic structures for targeted listeners and determining the complexity levels of melodic techniques used.

Chapter 5: Intervals Part 1 (MOST IMPORTANT) Intervals

Music theory can be explained by two measures alone. One is “semitone and whole tone” and the other, “intervals.” Theories for chords, scales, melody analysis and harmonization, all use intervals. It’s extremely important to learn intervals that without them, l earning music theory is impossible.

An interval is the distance between two notes. It is measured from the bottom to top.

(ex.1) Measured from the bottom to top

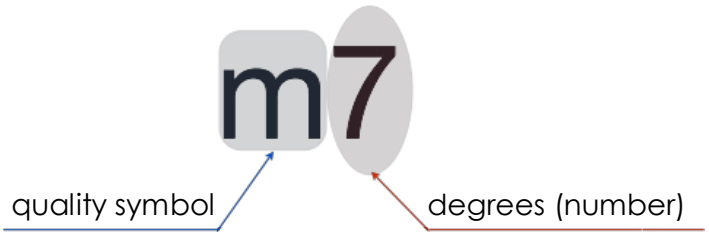


※Measured from the bottom to top

How are intervals expressed?

Intervals are expressed in terms of number of degrees and quality symbol.

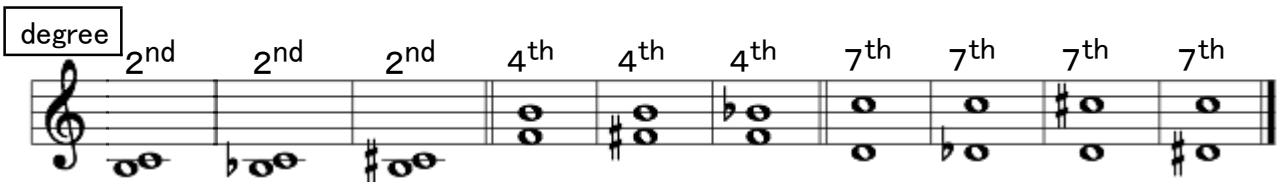
The interval (distance between two notes) shown above in (ex.1) is m7.



Elements of an Interval

Intervals are determined by two elements – “semitone” and “number of degrees”
Semitone.....number of keys from the bottom to the top note
Number of Degrees...distance between note names = distance between notes in staff

Note: number of degrees does not change for notes with sharps (#) or flats(♭)



Interval Quality Symbol

Normal Symbol

P ---------- Perfect

m ---------- Minor

M ---------- Major

Abnormal Symbol

o (dim) ---------- Diminished

+ (aug) ---------- Augmented

Normal and Abnormal

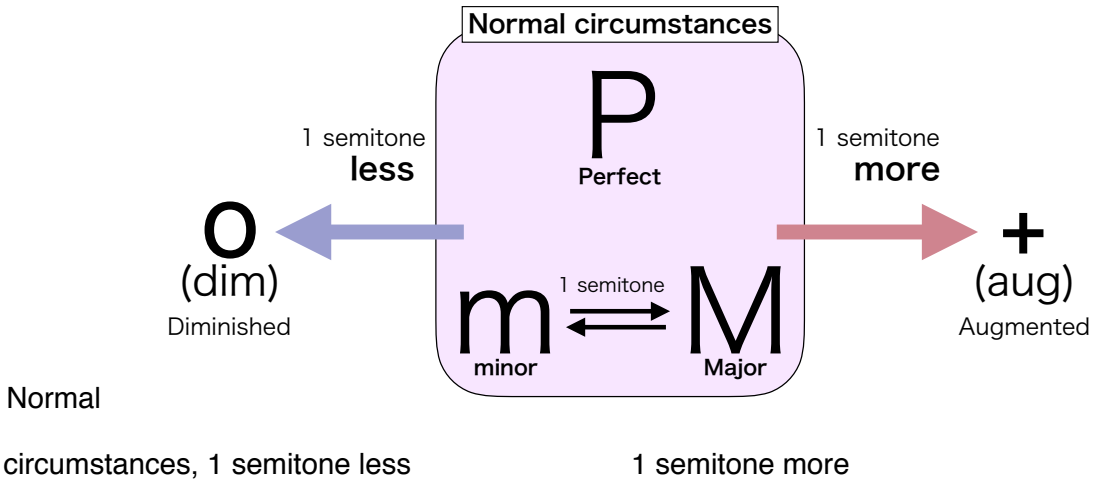
Normal means music is produced in the major scale.
Abnormal means music either deviates from or attempts to deviate from the major scale.
The sound always changes when symbols “o” and “+”are used with intervals.

Under normal circumstances, interval names are determined by the number of degrees and semitones. Any other combinations of number of degrees and semitones that do not fall under the “normal circumstance” use abnormal symbols in interval names.

Normal Circumstance – Fits in the Box

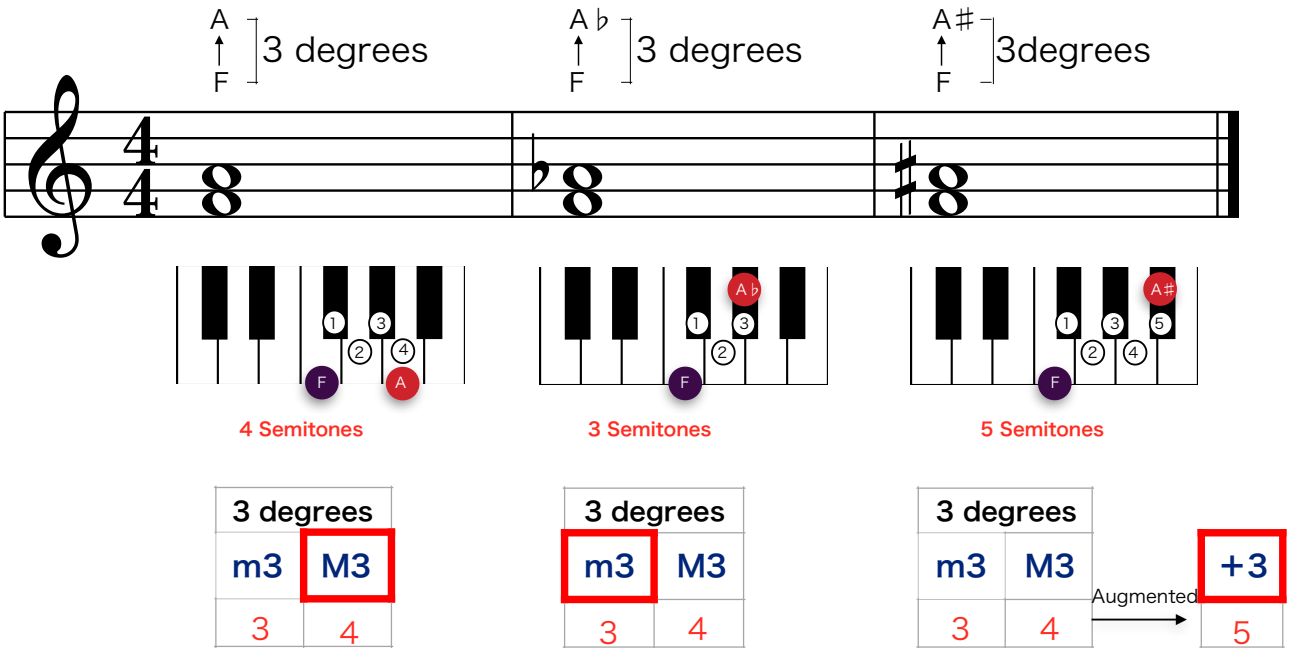
For the 4th and 5th, the symbol “P” is used. For the 2nd, 3rd, 6th and 7th,” the symbols “m↔M” are used. For the 2nd, 4th and 6ths, due to the structure of chords and scales, as these belong to “tensions and avoid notes”, they are more commonly called the 9th, 11th, and 13th.

No. of Degrees	2nd		3rd		4th	5th	6th		7th	
Interval	♭9 (m2)	9 (M2)	m3	M3	11・P4	P5	♭13 (m6)	13・M6	m7	M7
No. of Semitones	1	2	3	4	5	7	8	9	10	11



【Example】

Starting from F, let's identify the intervals for ①[A] ②[A♭] ③[A♯].

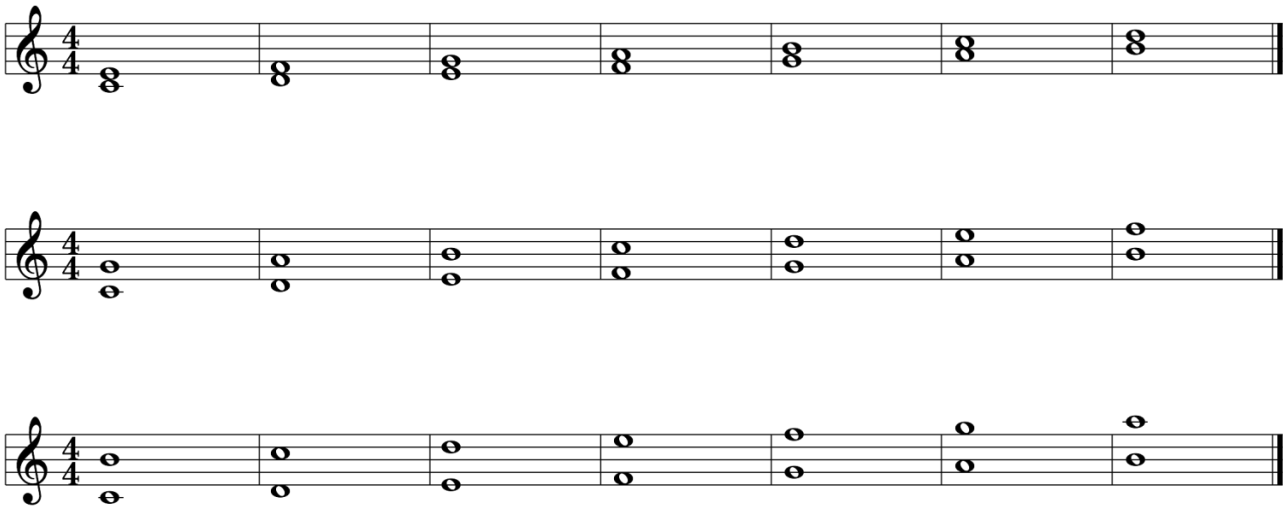


While there are ♯and ♭, all three cases show notes from F to A and the number of degrees is 3. Since the number of semitones is the number of keys on the keyboard from the starting to ending note, ① is 4, ② is 3 and ③ is 5. ① is within the box so is M3, and ② is m3, while ③ deviates from the box with one extra (5 semitones), so is notated as "+ 3".

【Practical Exercise】

Interval 1-Q1

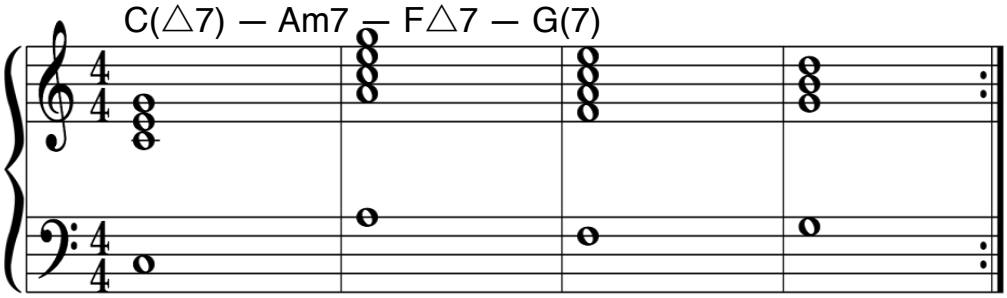
Please identify the interval below.



Practical Keyboard Exercise 1

Let's practice the "cyclic chords," the most commonly used chord progression. Being able to play chords on the keyboard is a great advantage for songwriting.

Cyclic Chords

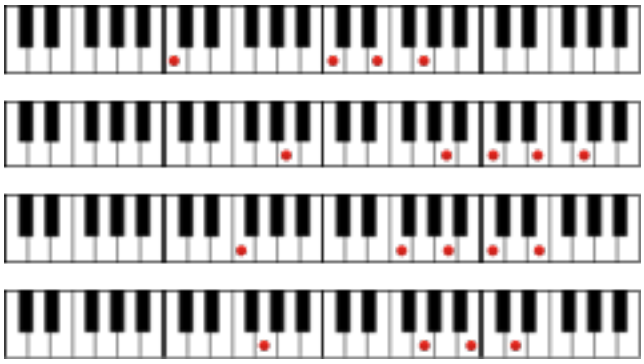


C=CEG　　Am7=ACEG　　F△7=FACE　　G=GBD

Basic Position

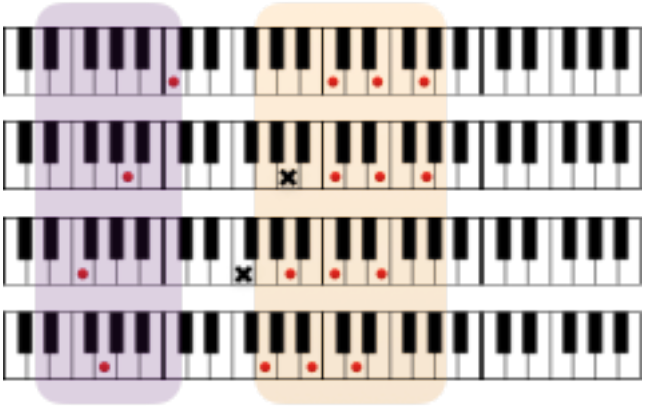
Right Hand → Play chord

Left Hand → Play root (R) =Bass



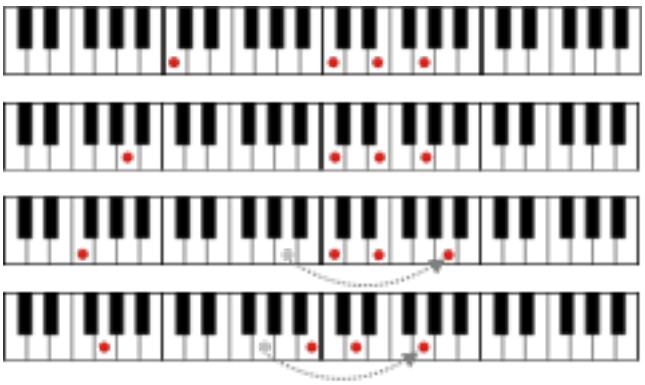
Make adjustments for notes too far apart within an octave.

Also, for 7th chords (4 note chord) Omitting the right hand root note makes the sound tighter.

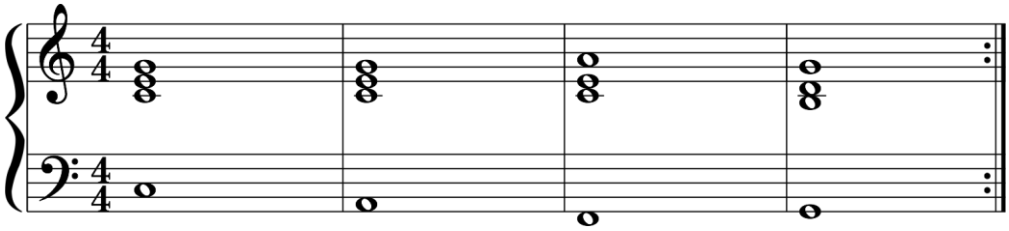


To further tighten the sound, move a part of the chord tone by one octave. This is called an inversion.

We've completed **Pattern 1!**



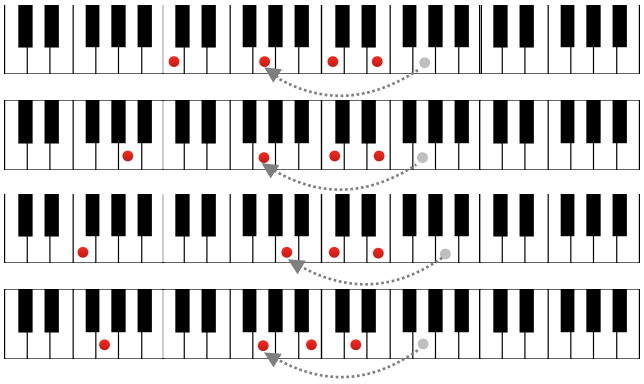
Pattern 1: Musical Score

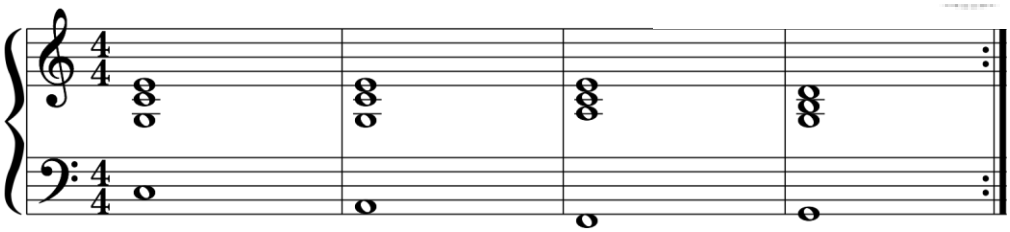


In a similar fashion, Patterns 2 and 3 can be created.

Pattern 2

The top note of Pattern 1 is inverted downward (inversion).

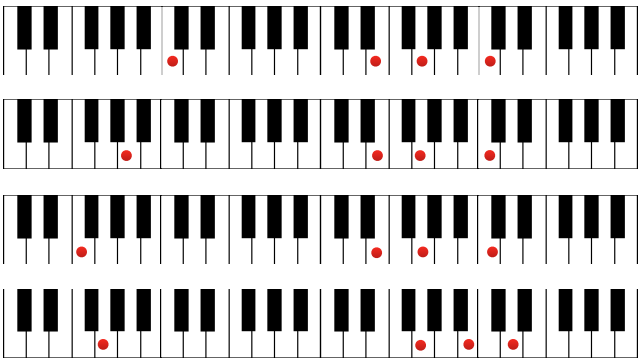


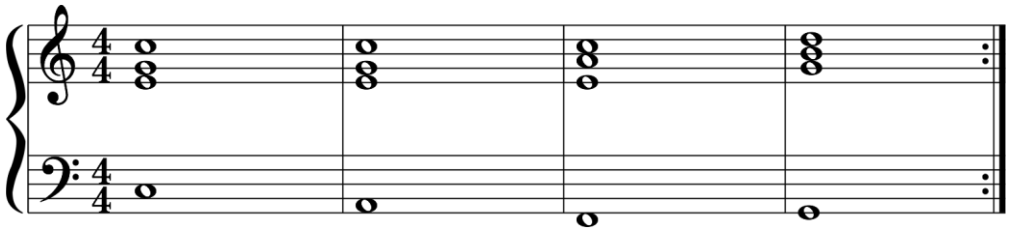


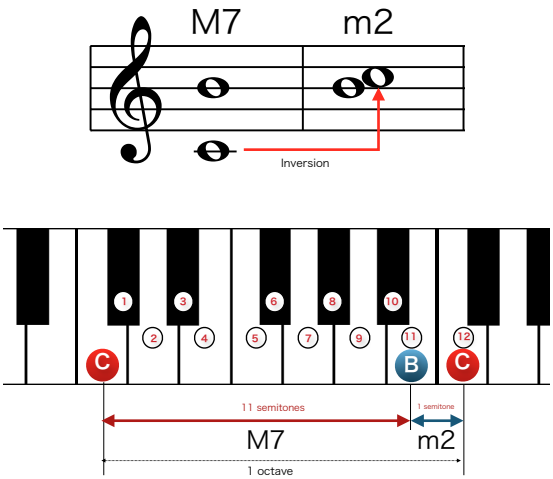
Pattern 3

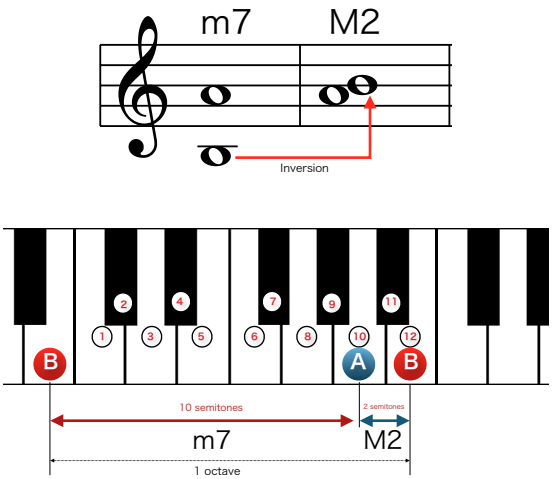
Bring (Invert) the bottom right hand note upward.

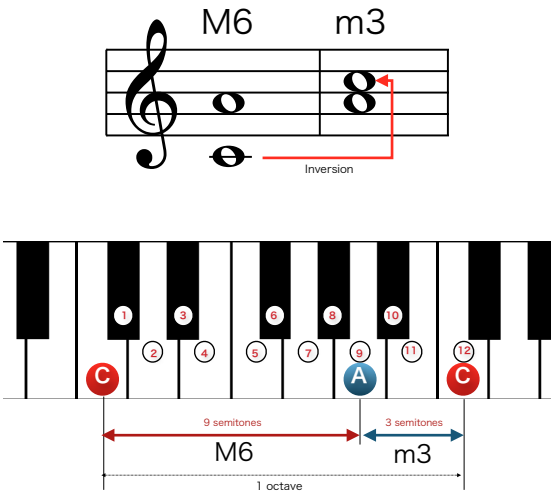
It's best not to bring IV (note F) or VII (note B) in the major scale as a top note.

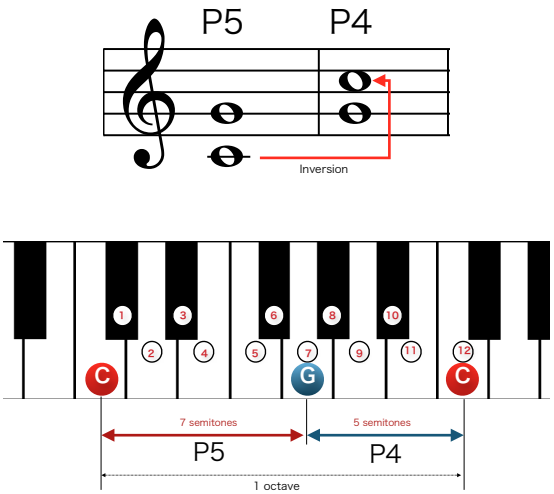






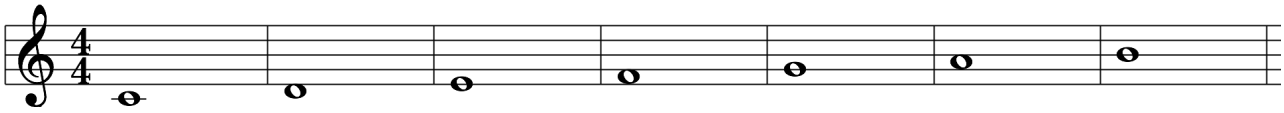




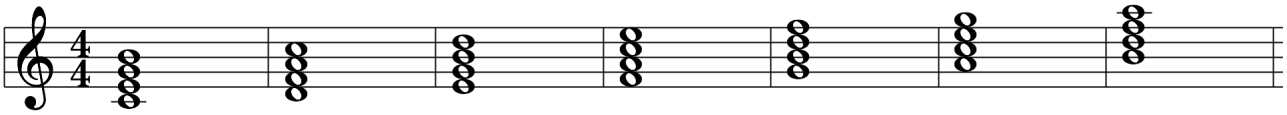


Chapter 6: D7C Intervals Part 2

Major Scale



Inversions

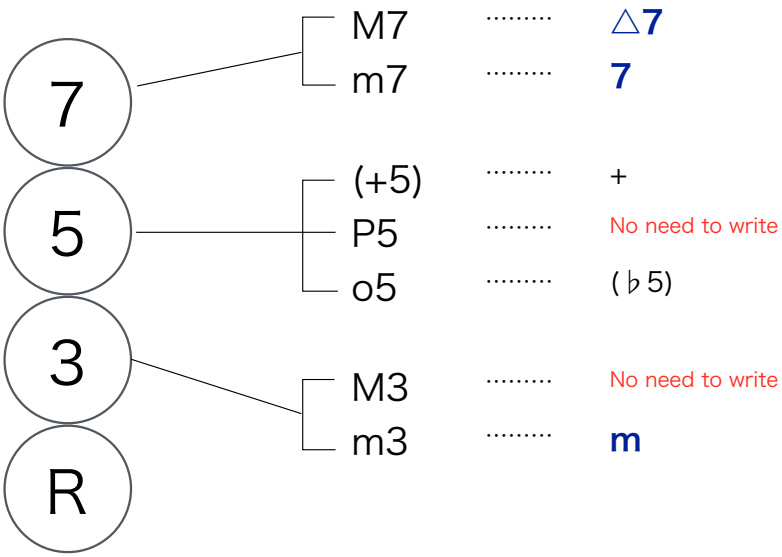


C△7 Dm7 Em7 F△7 G7 Am7 B⌀7

Moving notes one octave is known as “inversion”. Semitones of the 6th and 7th degrees are easy to count when seen as inversions. Also, in order to adjust the sound of chords, shifting the position of notes within a chord, is also called an inversion.

C to B represents a 7th, and is the 11th semitone of major 7th (M7). Counting 11 semitones is tedious. When C is moved one octave upward, i.e. from B to C, it’s only one semitone. This is a minor 2nd (m2) and is easy to identify. So if you remember that the inversion of a M7 is m2, you wouldn’t need to count the number of semitones and can easily find out the interval.

Notes: With an inversion, the number of degrees adds up to 9 (example above 7+2). Interval quality switches from M to m (vice versa) and P remains unchanged.



Interval quality symbols of “o(dim)” and “+(aug)” can also change. Check for yourself.

Diatonic 7th Chord (D7C)

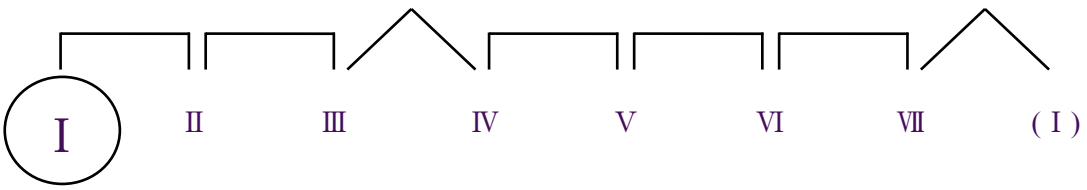
Chords are created from notes in thirds (triads) from the major scale. These chords are collectively called “Major Scale Tone 7th Chord” or “Diatonic 7th Chord.”

Chord names are based on the notes and intervals used. The chord name can tell us which notes it is composed of. Let’s look at this further.

Relationship between Intervals and Chord Names

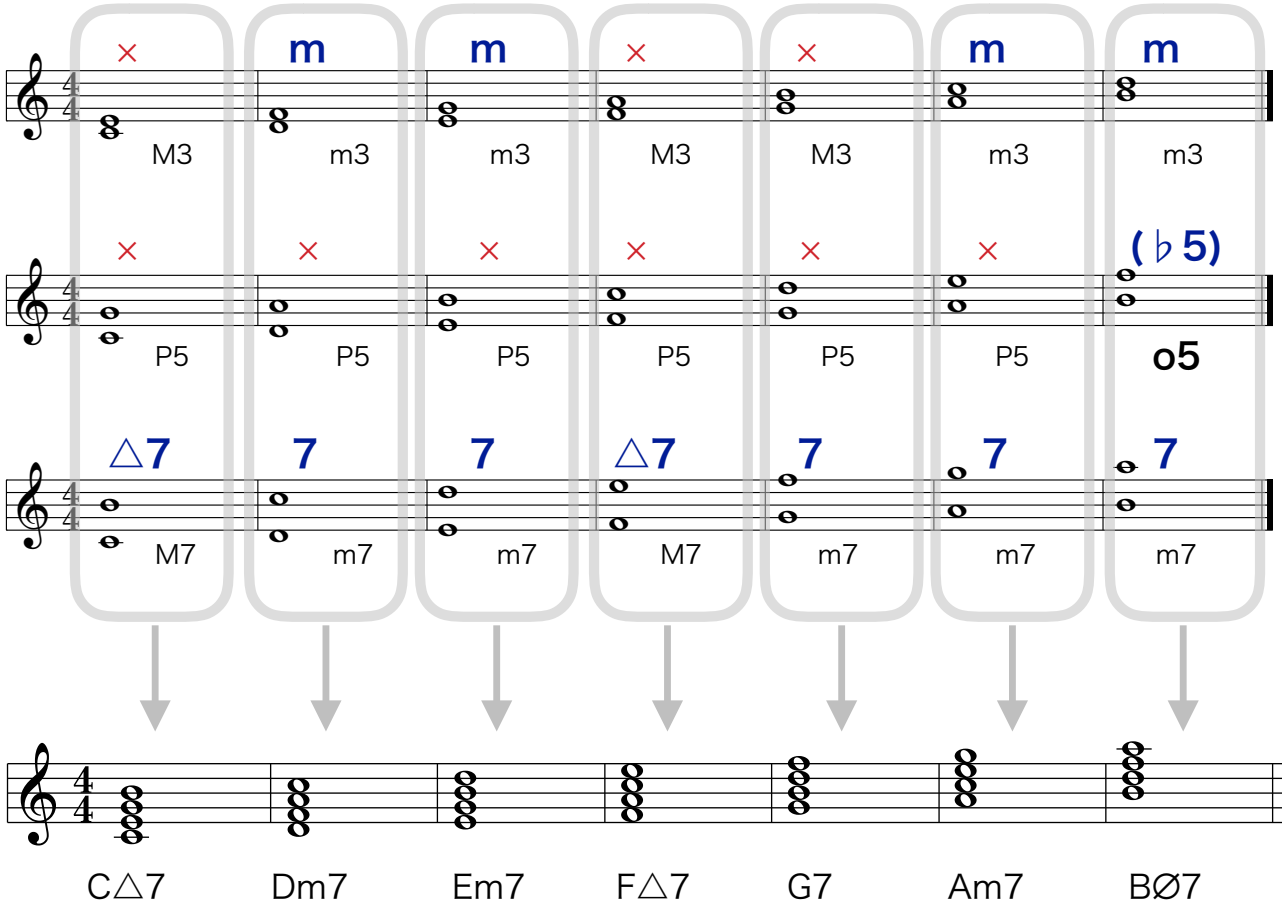
Chords are composed by stacking in thirds from the root note, i.e. the 3rd, 5th, 7th. Each interval determines which symbols are used in the chord name.

In a chord, the root note is shown by a capital letter. While the chord may include the structure of M3 or P5, these would not be expressed in the chord name. The capital letter in a chord name indicates the structure (R + M3 + P5). In D7C, + 5 does not appear but will do so more frequently in the intermediate course. While it is more common to start learning from triads, learning four-note chords (7th) makes it easier later as all you need is to omit one note from a triad.



More on D7C Structures

D7C is made of notes in the major scale stacked from the root note, in thirds, composed of 3rd, 5th and 7th as shown below.



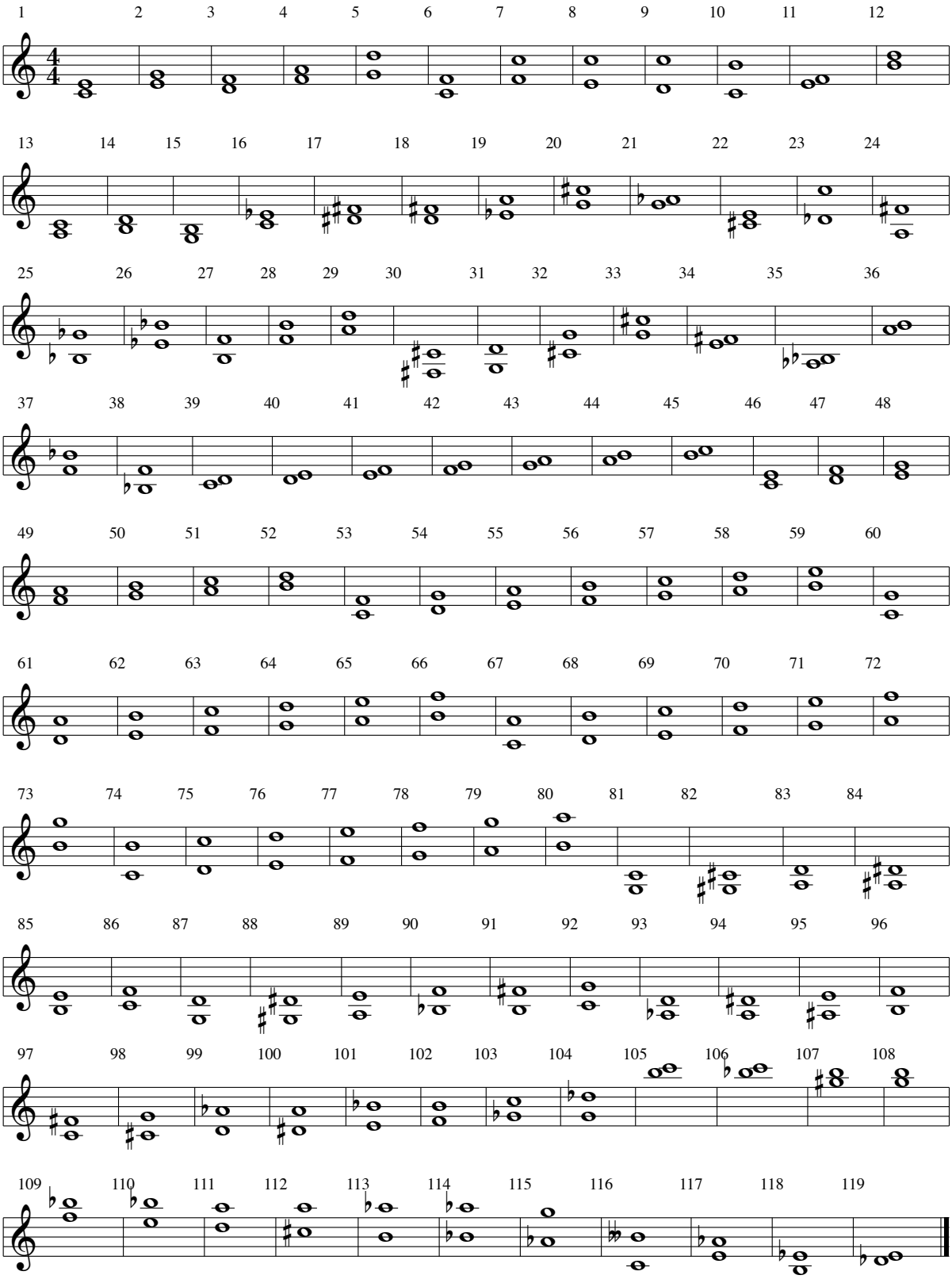
The major scale is defined in the following structure using Roman numerals where “I” is a given note. The note assigned to “I” determines the key. This notation method is called “relative degree notation” whereas using note name is called “absolute note name notation.” In relative notation, D7C is shown as

Ⅰ△7　　Ⅱm7　　Ⅲm7　　Ⅳ△7　　Ⅴ7　　Ⅵm7　　ⅦØ7

When applying various keys, relative degree notation becomes quite useful. For example, in a G key, the IV note is C so the chord for IV is CM7. By learning in relative terms, it becomes easier to change from one key to another.

The next page gives 120 exercises to familiarize you with intervals.

Interval exercise books



o = dim

Interval exercise books