NAHRE SOL'S

Elements of Music

The Fundamentals of Music, *made easier*

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Edited by Julius Meltzer

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FOREWORD (My Perspective)

Dear Fellow Musician,

Thank you so much for giving me your trust by investing your time reading the thoughts, concepts, structures, and ideas I have come to develop and adapt over the last three decades of my life. There are plenty of tutorials, books, techniques, and much more available that help you learn about the many different aspects of music. The goal of the *Elements of Music* is to provide you with guidance through the jungle of musical knowledge and help you to find joy and success on your personal musician's journey faster than it took me.

This book is a compilation of musical explanations, tools, systems, and ruminations around analysis and music creation. Sometimes there are clickable links with audio examples in a video format to make what you are reading audible (the words appear in blue and are underlined). The assortment of subjects leans heavily on a perspective derived from my personal background and identity as a musician. My work contains a mixture of contemporary classical music composition, piano performance, and multi-genre music analysis.

All musicians have a unique combination of strengths, weaknesses, and knowledge. Therefore, it is impossible to organize this book in a manner that will suit most musicians. It is thus not imperative that this book is consumed in linear order. Make this guide your own. Use the glossary at the book-ends should you not know about a term that was not explained earlier. Use it in your own personal way to make it most valuable to you. Adapt it, change it, disagree. I distilled the key learnings that I've gained on my path, which will be different from yours.

The piano is central to the materials presented in this book. Even if you are not a pianist, I recommend the piano as a guiding tool for any musicians keen on analysis, composition, and production. Whether you are a jazz, pop, classical (or any kind of) musician, I believe you can get something out of it. Even if the piano is not your primary instrument, I promise that it is an immensely helpful tool to have at your disposal. It doesn't matter whether you are a professional pianist or have never touched the keys - you will be able to use the *Elements of Music* to its full extent either way.

Musicianship is not a static matter. As documented in online videos, I am constantly evolving as I cover more grounds in music and utilize hyperlinks throughout the book to reference different clips from my YouTube channel that relate to a given topic. The information I've gathered here is a reflection of how I can best describe the methods I use to seek new depths in music as a composer and performer.

My sincerest gratitude for taking me with you on your journey as a musician.

Sincerely
Nahre Sol

Chapter 1

WHY THE PIANO HELPS YOU UNDERSTAND MUSIC

The number one musician's tool

In this chapter, we will see how and why the piano is the most effective tool for understanding the fundamentals of music. We will use the layout of the piano as a way to understand what notes and pitches are.

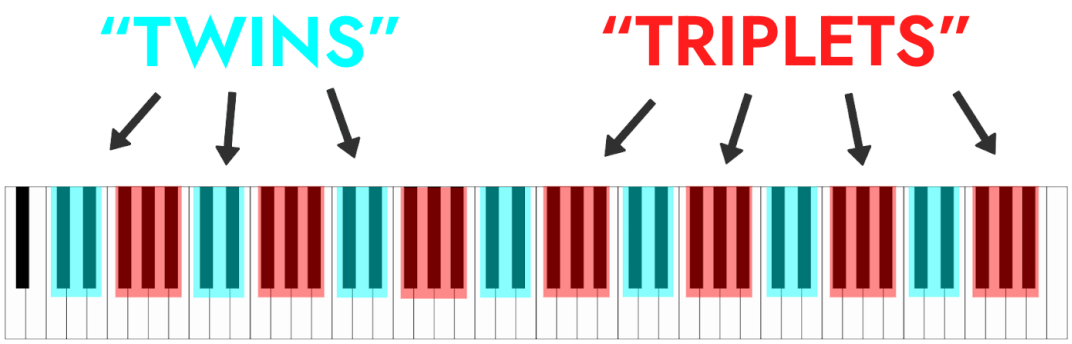
We are going to use the piano as our main reference instrument throughout this book. If there is one instrument that I would recommend all musicians to learn, it would be the piano. Countless composers – in fact, a majority, use the piano as a composition tool because it gives us the advantage of visualizing all of the possible notes at one glance and in a logical order (within the traditionally accepted 12 set of pitches). I may be biased because I am a pianist myself, but I cannot think of a more effective way to start this guide than at the piano. This will also allow me to stay true to my personal perspective on the fundamentals of music.

I recommend that you be close to a keyboard while reading this book. Even having an *image* of a keyboard handy will be better than nothing.

On the piano, the horizontal direction is consistent with the sounds produced. Notes to the right are higher and notes to the left are lower pitches. Therefore, "up and down" will be synonymous with "right and left" on the keyboard. This is an obvious statement, but it is worth noting because other instruments do not have this intuitive layout.

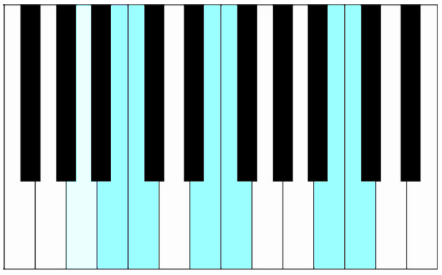
Each key, white and black, represents a different note in music. It does not take any training to be able to make sound from a piano. It will, however, take years and decades to gain the skills necessary for a pianist to play with ease, refinement, and consistency.

The most basic form of observation is to notice the pattern created by black vs white keys. There are alternating groups of two and three black keys – "twins" and "triplets."

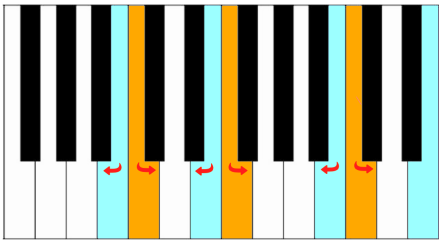


Both in terms of sight and touch, **I find it helpful to refer to the black keys to know where I am on the keyboard**. Eventually, finding one's way across the keyboard becomes second nature, but being aware of the layout still helps me navigate confidently through the piano.

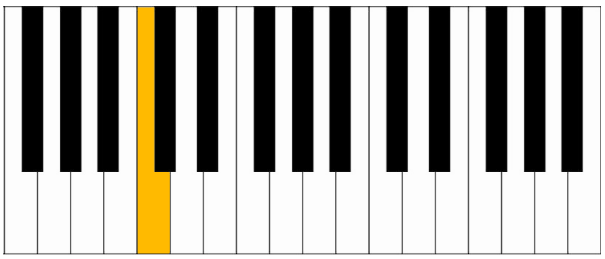
Note that each group is separated by two white notes.



They have a distinct shape that is angled outwards (like two "L" shapes back to back).

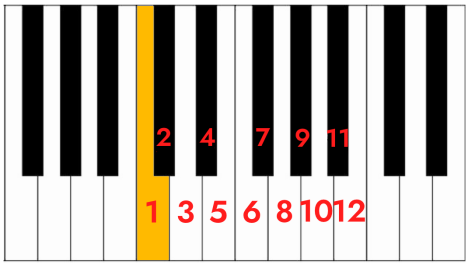


Play any white key that is shaped like a regular “L” to the left of a “twin” pair of black keys – this is called a “C.”



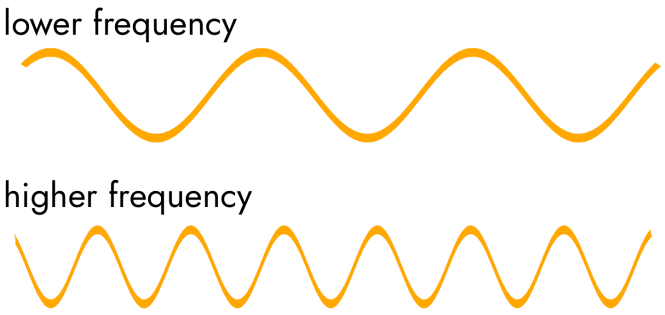
Try playing all of the C’s on the keyboard. These are what we call an “octave” apart and you will hear that the pitches sound alike, except some sound higher or lower.

Now, if you count the notes between each of these C’s, you will find 12:



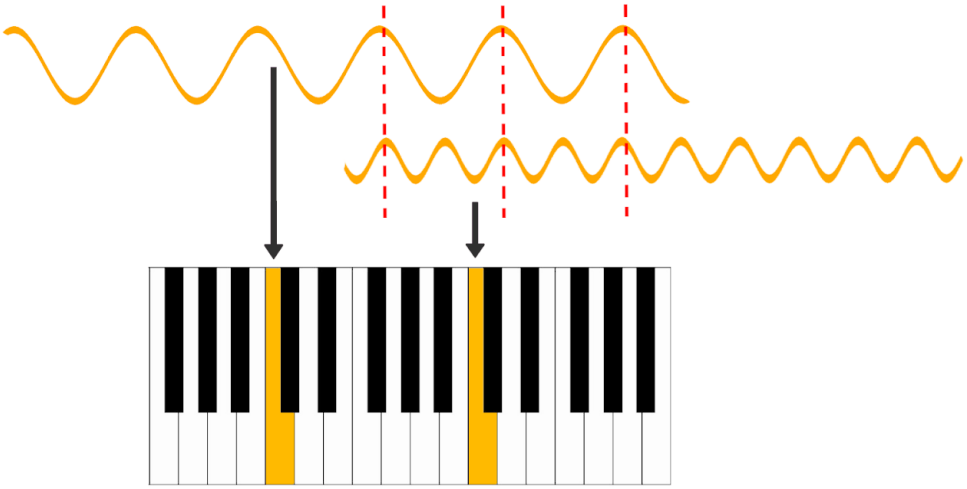
Why 12?

It aligns with the pitch system stemming from a combination of science and Western musical tradition. All sound is caused by vibration and contains a certain frequency.



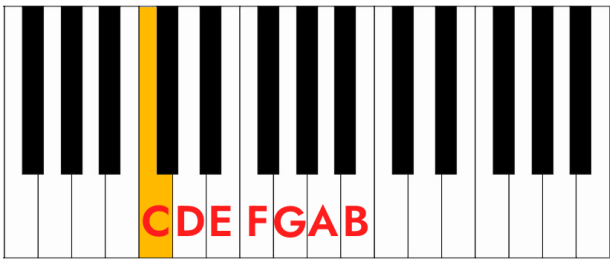
The reason why the "C's" on the piano, for example, all sound alike is because their vibration rates are related.

Roughly speaking, if you double the frequency of a note (doubling the number of waves per time unit), you will hear the same pitch an octave higher. As a rough example, if you have a C vibrating at 130 Hz, the C an octave higher is vibrating at 260 Hz.



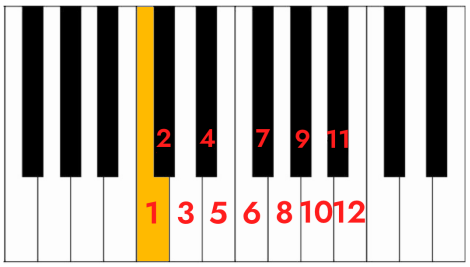
Now, the distance between those two notes can be divided in many ways. In Western music, it is systematically divided into twelve notches, as conveniently laid out on the piano.

Even more visually significant is that if you play only *white* keys between each C, you are playing what is called a "C Major scale," which is a combination of notes that is very significant to Western music and probably familiar to your ears:

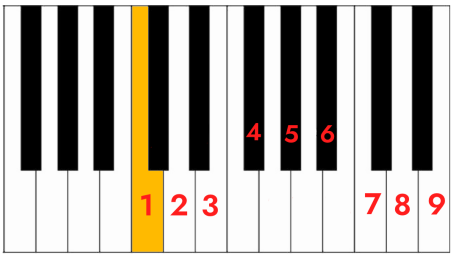


Even though we are consistently playing only white keys, the distance between each of these notes is actually not consistent. Notice that some notes are skipped.

If we were to play *all* of the notes, the pitches would be "half-steps" apart:



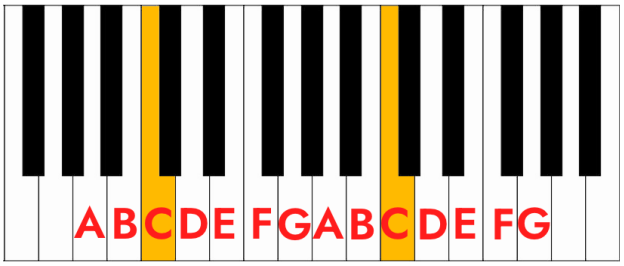
Playing every other note is what we call "whole-steps" apart:



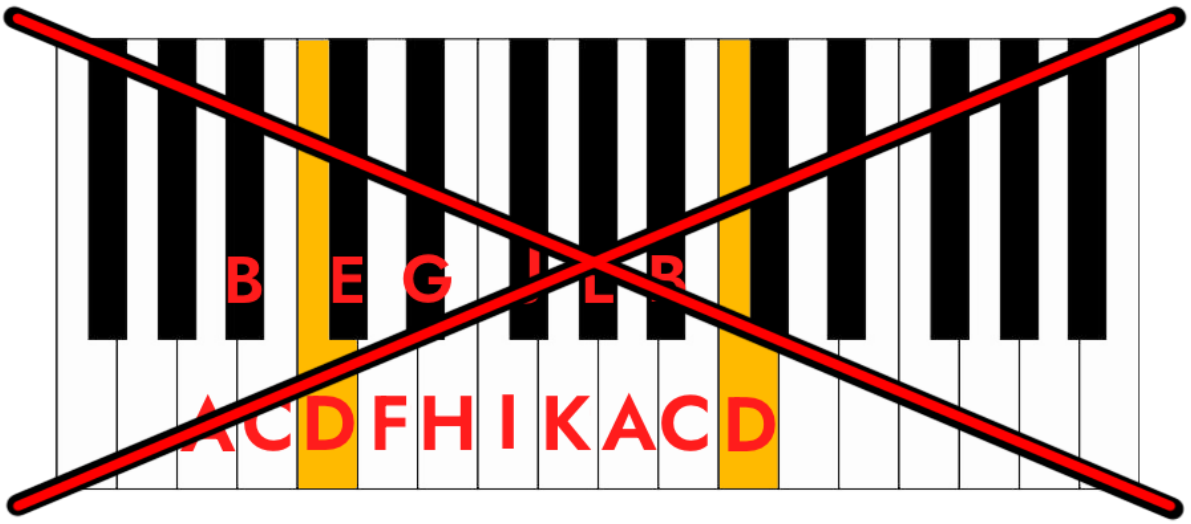
The C Major scale contains a unique combination of half and whole steps. The half steps conveniently occur between the white keys:

Furthermore, the layout of the keys supports how we name notes in Western music.

Notice as we go up the alphabet, each letter falls directly on a white key:



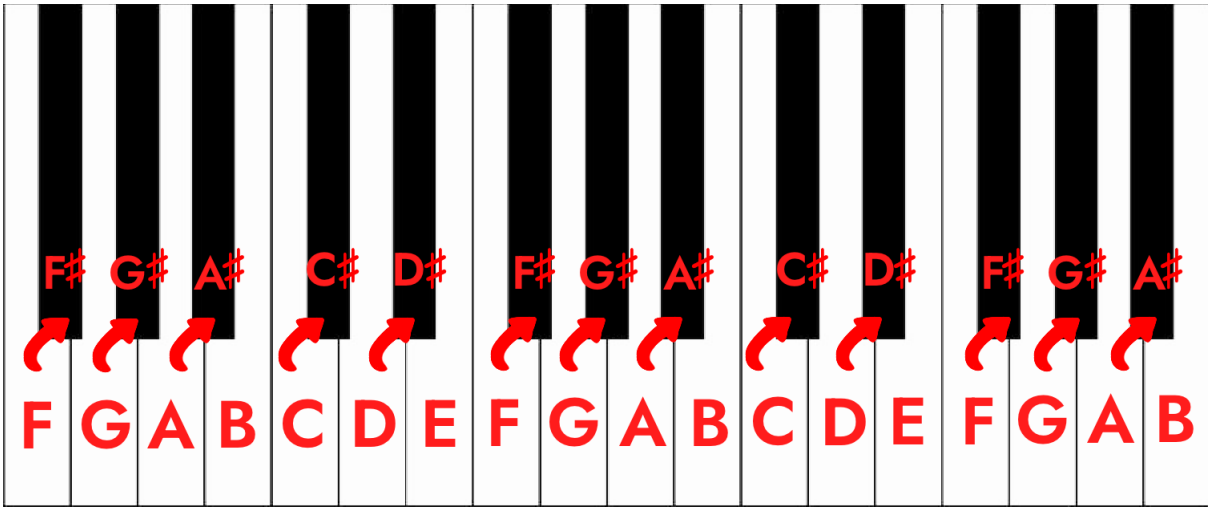
...instead of going up the alphabet as follows:



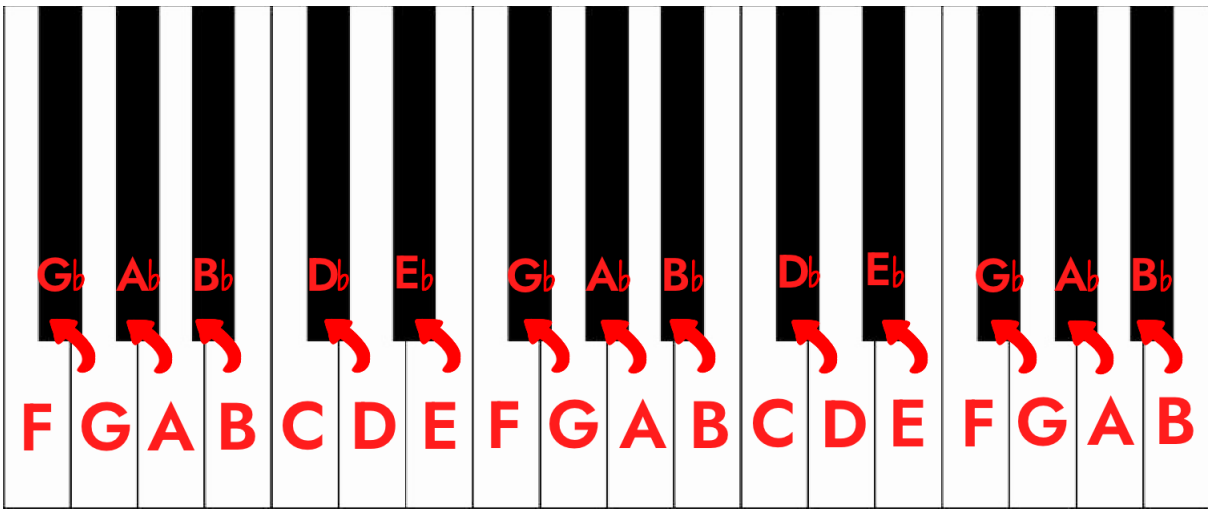
What do we, then, call the black keys?

We use symbols (♯ or ♭) that are anchored on pre-existing letters.

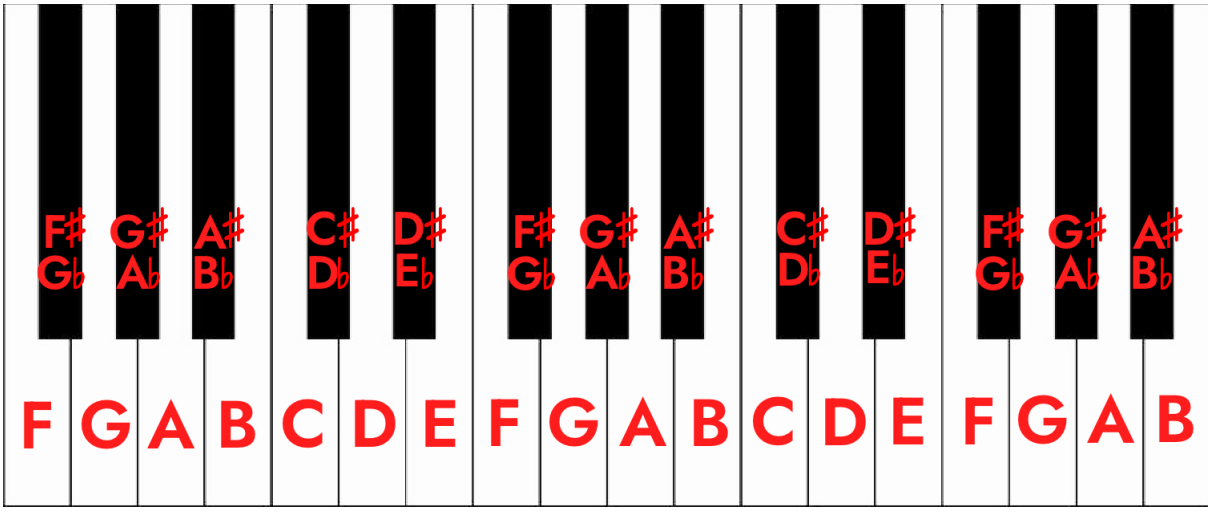
Sharps (♯) are added to the notes that are a half step above:



And flats (♭) are added to the notes that are a half step below:



Using this system, every note can be "spelled" or "named" in multiple ways. This can get slightly confusing, but for now, just know that each black key can be named in two ways: anchoring off of the note below or above.



The piano (as well as other keyboard instruments like the organ) has 88 keys in total, which gives you access to the widest range of all pitches compared to almost any other instrument.

With both hands, a pianist can play music that utilizes all of these notes. This is why the piano is the go-to instrument for orchestral reductions, for example. This proves that the possibilities for expression on the piano are extremely versatile. One can play everything from a single melodic line to chords with 10 (or in some cases, even more) notes in them.

The piano is extremely accessible because creating a sound on the piano is easy (all it takes is to press down a key in any fashion to create sound, compared to the difficulty of creating sound on a trumpet, for example). However, much practice is needed to become proficient. The pianist must become comfortable navigating the hills and valleys of this particular layout. Passages that have similar sounds and patterns (such as a passage or chord played in different keys) will feel drastically different. This is much easier to do on a guitar, for example, where one can learn how to play a passage in many keys using the same fingering patterns.

Visual and tactile cues based on the information above will give you more security. One must also keep in mind these contours of the keyboard when choosing the right fingering (which fingers to play which keys on a given passage).

Think of the piano as a tool for extended imagination, whether you are a pianist, a composer or you play any other instrument. Each note you play is contained within the limitations of the piano. It may not be able to sing or sustain a note like soprani can with their voices or violinist can on their violins, nor produce a myriad of different sounds like a synthesizer. However, you have immediate access to almost all of the notes that can represent the range of a full orchestra and you have the means to create the most expressive and beautiful sounds with just one instrument.

Chapter 2

LEARNING HOW TO (really) READ MUSIC

The key that unlocks so much understanding

In this chapter, I will go over why I think learning how to read music properly is *still* an invaluable skill. We will learn several techniques on how to efficiently memorize notes and symbols, and how to become fluent with clefs and key signatures.

What is the point of knowing how to read music these days? Countless musicians get by and even thrive without knowing how to read sheet music, especially with the emergence of MIDI notation, graphic scores, and other modern forms of music documentation. **I do not believe that it is imperative that a musician reads sheet music**; however, knowing how to read music will speed up your process of learning and studying a new piece of music exponentially. If you write your own music, having your pieces in the form of sheet music will help you communicate with musicians that may potentially play your music. Music notation allows one to "freeze" music and analyze it without hearing it back. You can also read through an abundant amount of music at once, rather than listening to everything (which requires more time, similar to speed-reading through a book versus listening to an audiobook).

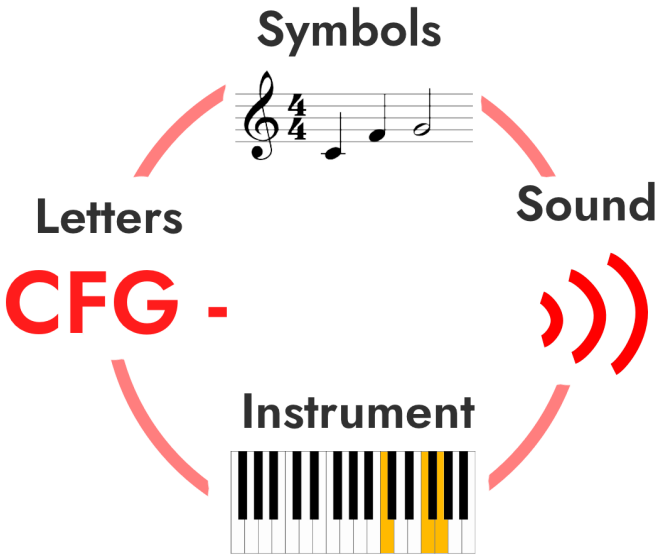
Whether or not you end up using music notation on a regular basis, simply knowing how to do so will increase your confidence as a musician. I have observed this impression amongst many musicians, professional or not. Trust me on this, it can only be a plus!

Even if you already know how to read music, there will likely be insights in this chapter that will improve your sight-reading.

The traditional symbols attached to "sheet music" have changed very little since the Baroque era. The system has its limitations, but it has remained the most adopted and universal form of musical documentation to this day.

It takes very little time to understand how it works, and a bit of consistency to become fluent. We will be using letter notation (*as opposed to a system known as solfege - "do re mi fa so la si").

When learning how to read music, **do not treat it like an isolated skill**. Include it as part of a larger combination of gears running as you are learning a piece of music. There will be a continuous association between symbols, letters, your instrument, and sound.

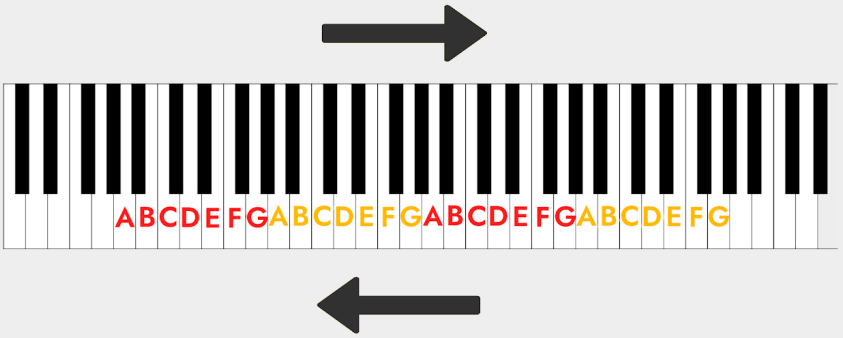


Before turning to symbols, we have to get used to using the first 7 letters of the alphabet.

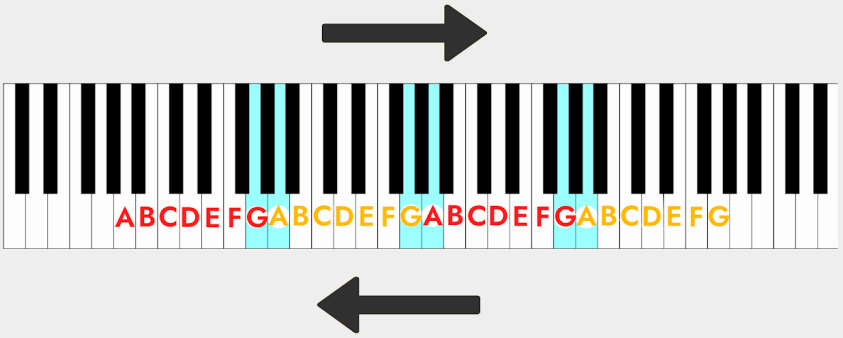
A B C D E F G H I J K L

EXERCISE

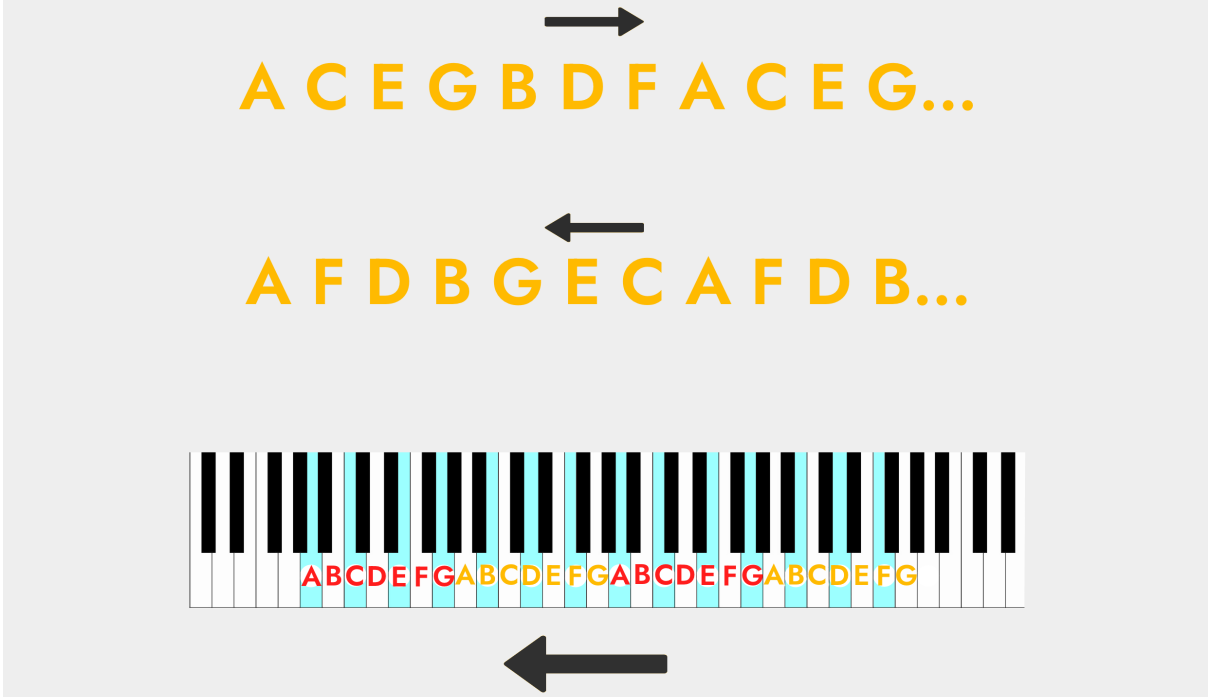
1. Practice reciting the note letters from A to G forwards and backwards while playing the piano physically or mentally. Hearing the actual pitches will start to cement the sound to letter association. Include four repetitions when going up and down. Take a small break, then repeat the exercise at least two more times.



Going from G to A will take some time to get used to.

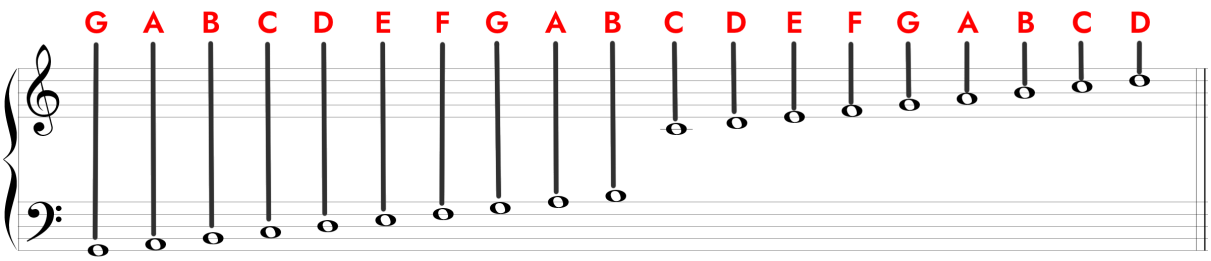


2. Next, try reciting every other note letter forwards and backwards while finding them on the keyboard. Include four repetitions when going up and down. Take a small break, then repeat the exercise at least two more times



DOTS

Now have a look at the following. There are two sets of five lines (which is called a "staff"), one for each hand on the piano. The dots you see represent different notes and they either have a line going through them, or they sit in the space between the lines.

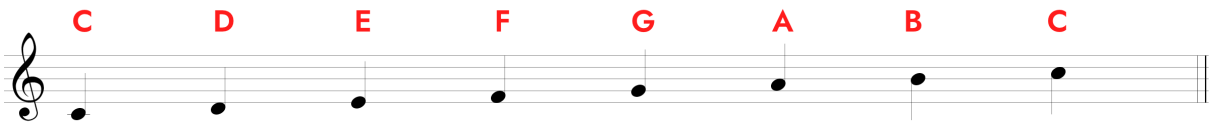


Practice reciting the letter names while viewing how and where it is plotted on these lines. This will help you get more comfortable associating the sound of these notes with how they look in written form.

TREBLE CLEF

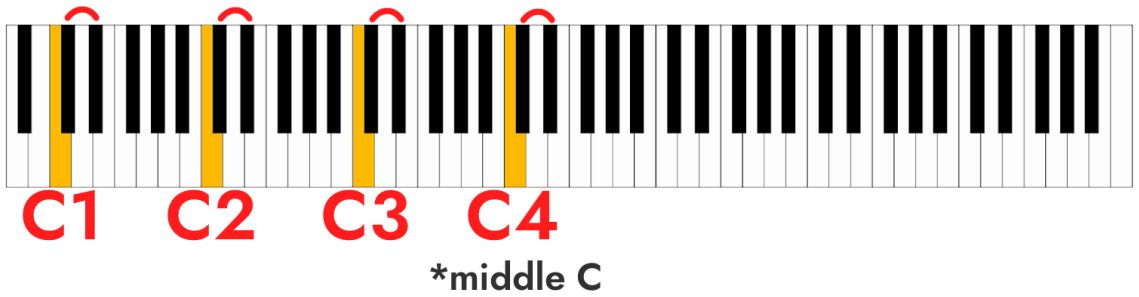
Depending on the symbol to the far left of the lines, the way the notes are plotted will be slightly different. They will also be different depending on where they are on the piano. For example, notice how all the G's you see above are plotted at different points along the five lines.

Let's first focus on the top half of the image you see above. The **symbol to the left is called a *treble clef*** and is used to write out the notes on the upper right half of the keyboard. Why is it called a "clef"? Clef is just the old French word for "key" - you can imagine it as the key, or maybe the filter, with which you read the following bars to come.



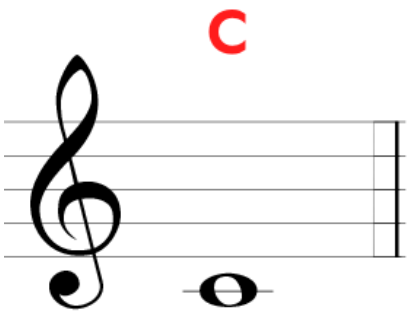
We are focusing on white keys for now (meaning notes that do not have a "♯" or " ♭ " before the note). Read how the letter names are plotted along the lines.

A note that is commonly referred to is "middle C." It is the fourth C from the left of an 88-key keyboard. (Note: Identify the "C's" as the white note directly to the left of "twin" black keys)



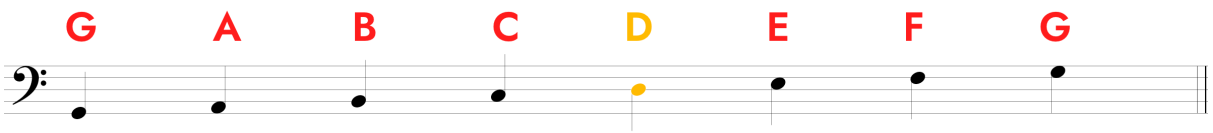
Having only 5 lines per staff does not limit the notes that can be represented. As many "lines" can be added to reach higher and lower pitches. They are called **ledger lines.**

For example, “middle C” is plotted as the following:



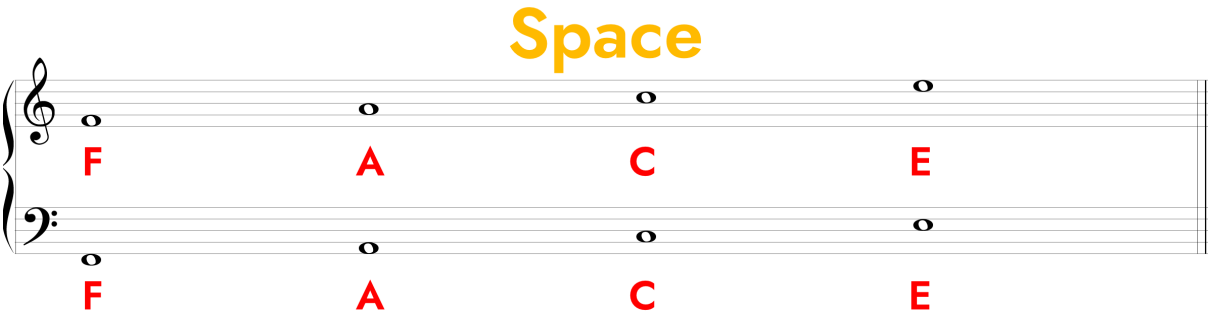
BASS CLEF

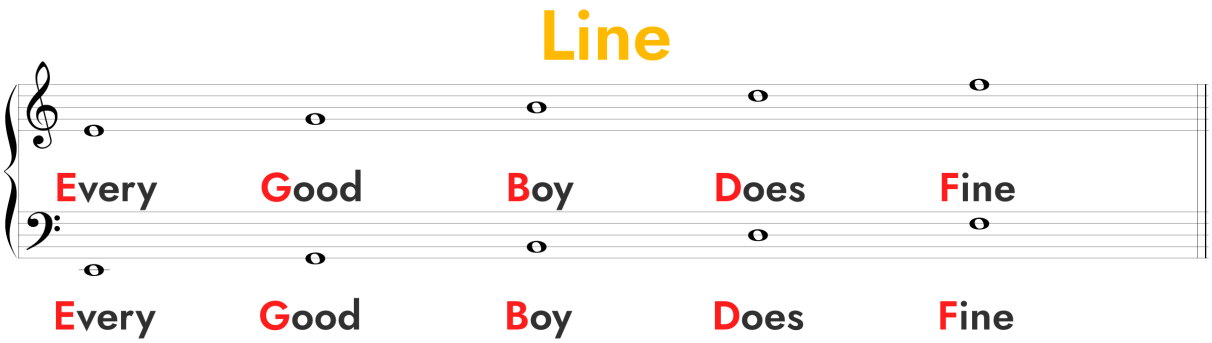
Now, let’s look at the bottom half of the image you have seen under the paragraph above called “Dots”. The symbol to the very left is a *bass clef*, and it is used to write out the notes on the lower right half of the keyboard. For bass clef, the **middle line note for reference is a D.** See the following:



REFERENCE POINTS

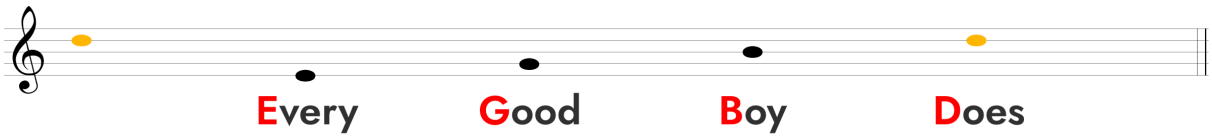
The word “FACE” and the acronym “Every Good Boy Does Fine” are commonly used to teach notation. Use them to identify notes in both clefs. With bass clef, take special note that these acronyms start at a lower space. An easy way to remember this is to think “bass clef = lower.”





What is more helpful than these acronyms is to **recognize a note at first glance.** Memorize notes as if you are memorizing new faces of people - each of them looks different. Do not try to memorize all of them at once - it is more useful to know a few and use them as reference notes, rather than knowing all of the notes vaguely.

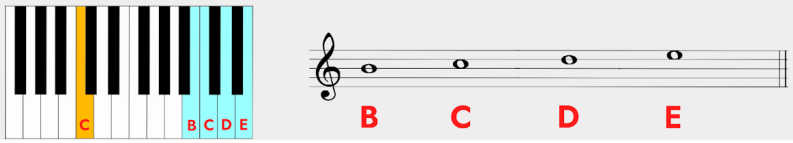
Utilize a **mixture** of acronyms, the order of the alphabet, and memorized notes to find the notes as you are first learning how to read. I recommend memorizing the *line* notes first in order to avoid using a verbose acronym. For example, to find "D" in treble clef, it is not efficient to go through the acronym like so:

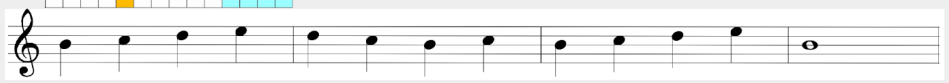


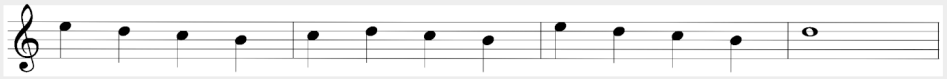
Refer to the "Find the Notes Exercise" to work on this further:

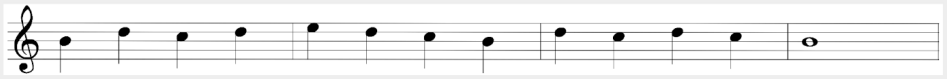
EXERCISE

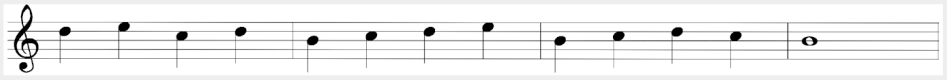
1. Practice finding the right note names by writing the correct note names under the following notes as exemplified on the top right of the following sheet. In orange you see middle C as a reference point. In blue you see all the notes (B to E) that are the potential notes/solutions to the exercise.

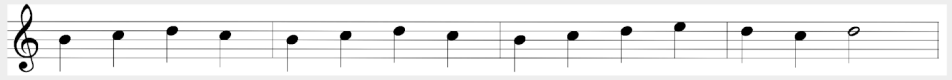


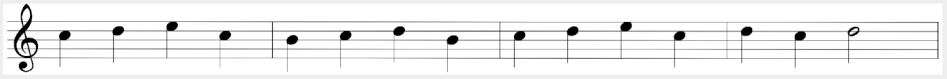


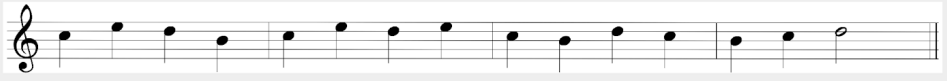






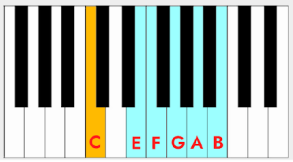


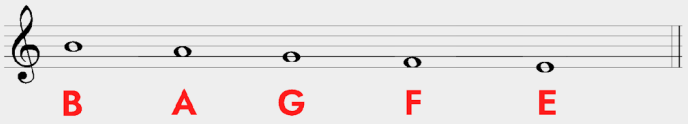


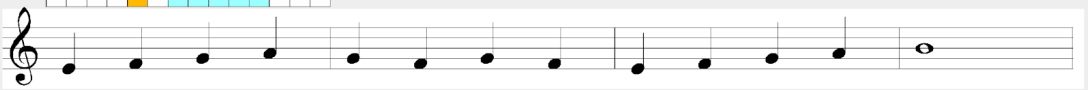


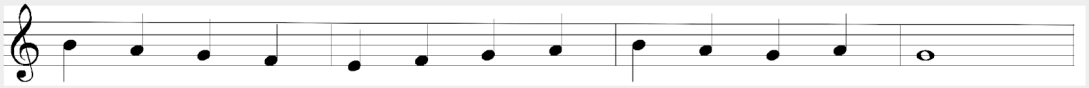
After you have inserted all the right notes (check with the correct placements on the top right), play each row of measures on the piano, mentally paying attention to the note names you are playing.

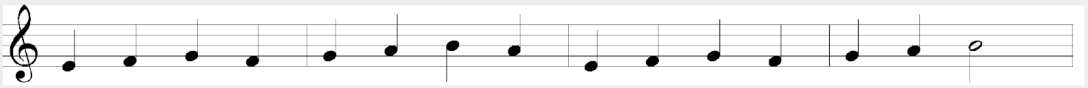
2. Now revert the exercise: Practice finding the right note names by first playing them on the piano, then writing the correct note names under the notes on the following sheet as exemplified on the top right. In orange you see middle C as a reference point. In blue you see all the notes (E to B) that are the potential notes/solutions to the exercise.

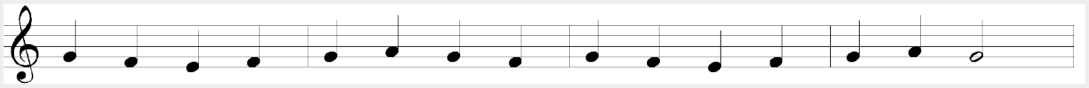


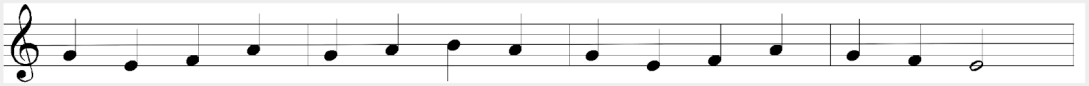


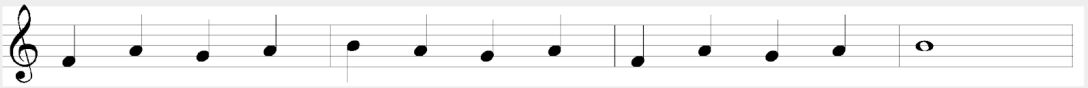


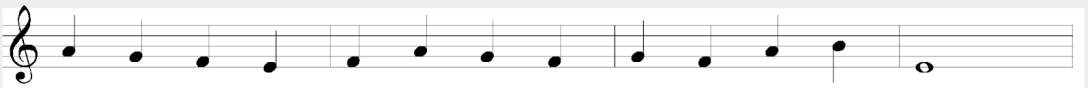


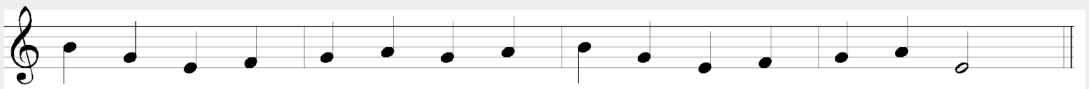






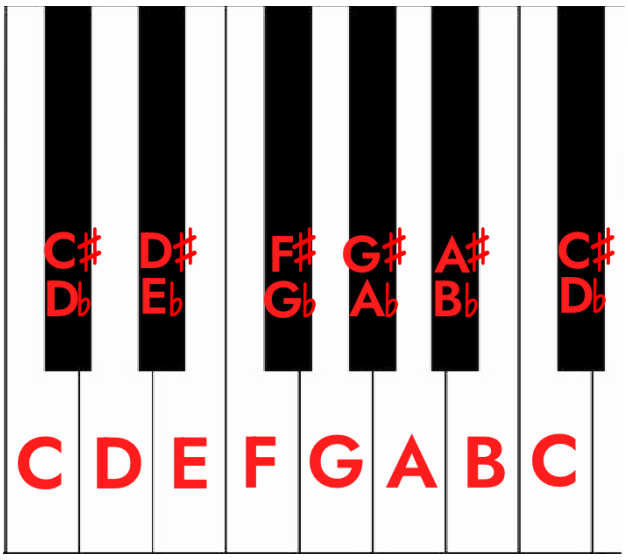




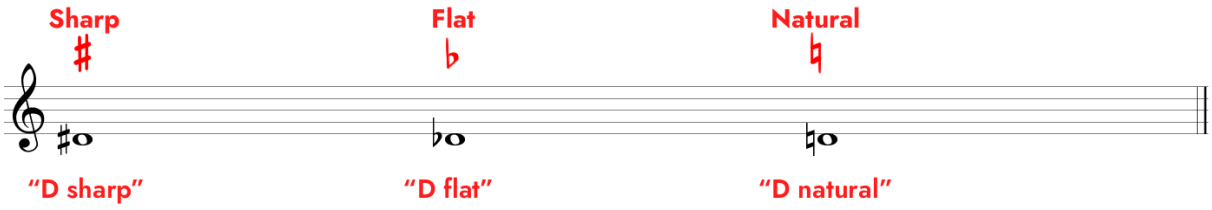


MAKING SENSE OF ACCIDENTALS

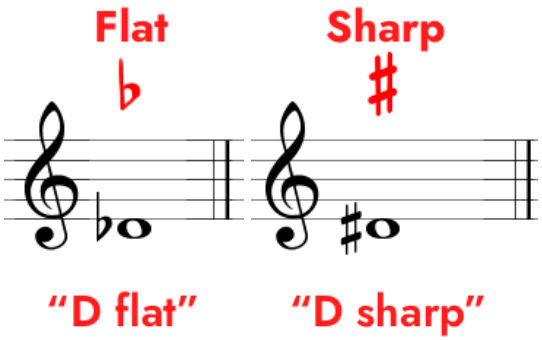
An "accidental" is a symbol that indicates a note's neighboring notes. They are often notes that are not naturally included in the scale being used.
Going back to the layout of the keyboard, the white keys make up the (C) Major scale, and the black keys represent all of the remaining notes (of the 12 chromatic pitches). Therefore, all of the names of the black keys have accidentals attached to them.

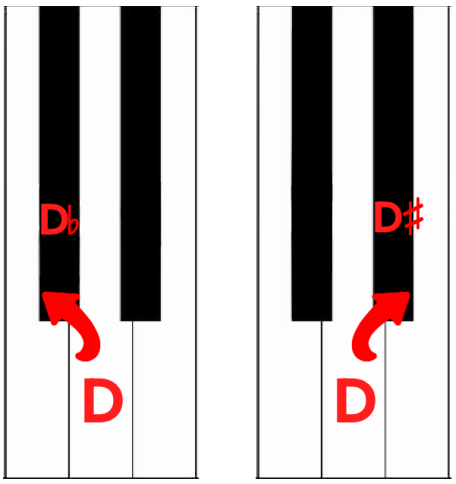


Here is how to read the symbols:



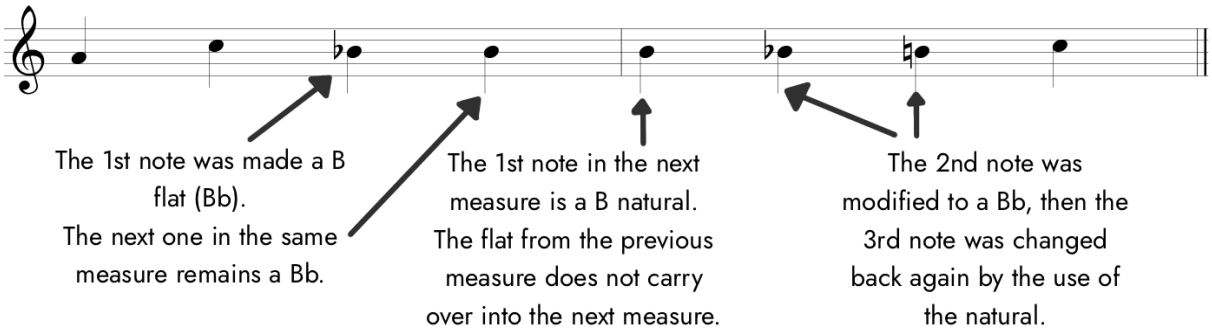
Whenever you have a symbol attached to the left of a note, it means for you to play the key immediately to the right (sharp) or left (flat) of the main note.





You can have double-flats and double sharps, which means to double the value of the distance from each note (double-flat = two half steps to the left, double-sharp = two half steps to the right). For example, a D double-flat will sound like a C and a D double-sharp will sound like an E.

A "natural" means that the note is not altered and is used to "cancel out" a symbol that was introduced earlier.

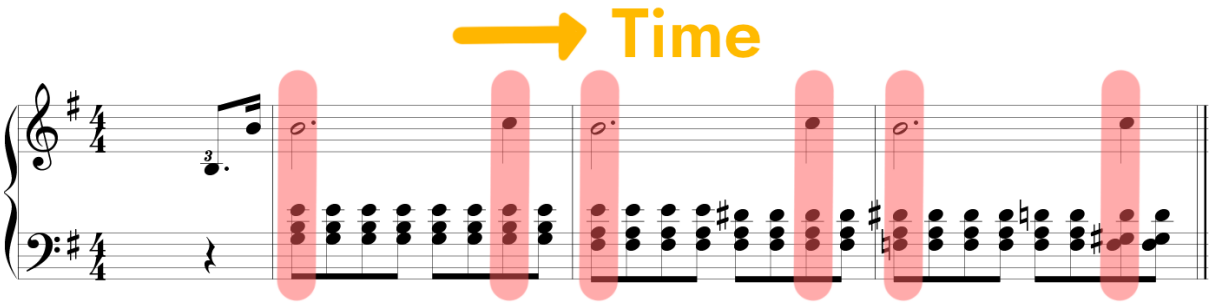


Accidentals can become confusing when we are no longer in the key of C Major.

This is because we start to run into more double-sharps, double-flats, and "enharmonics" (notes that are spelled/labeled differently but sound the same). In some instances, the music will have an E♯ and label it as such rather than an F due to the scale it is referring to. Getting used to this will require a bit more patience, but do not worry about this for now.

It is important to identify the pitches you see on the page vertically first, then horizontally.

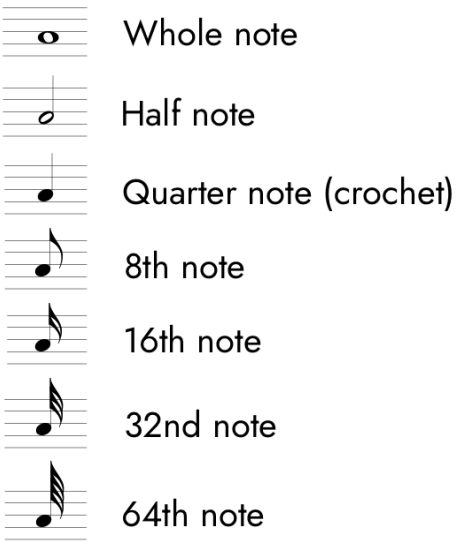
You read music as you do a book (left to right). Therefore, horizontal information represents time flow, and everything that is vertical happens simultaneously.



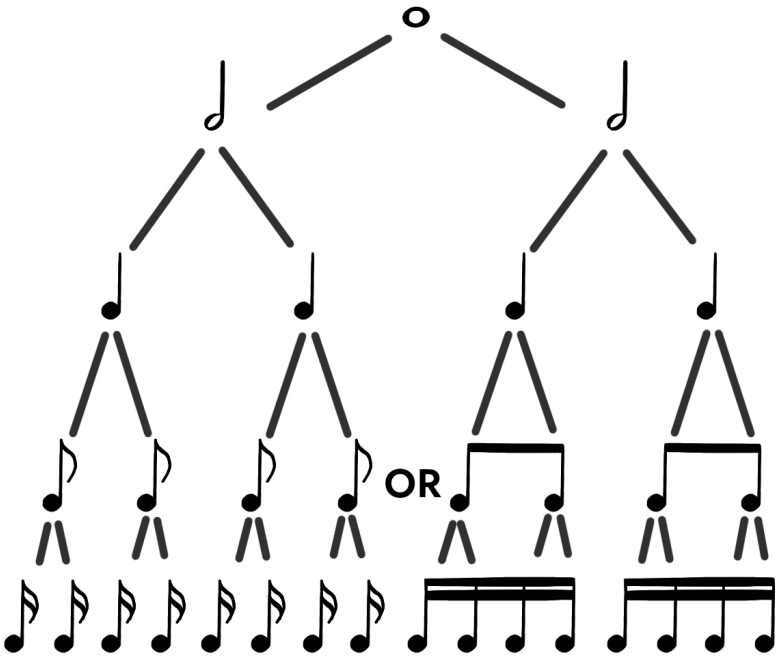
READING RHYTHM

Now, let us cover how to read *when* to play the notes. Observe the above image, and notice the lines attached to the noteheads.

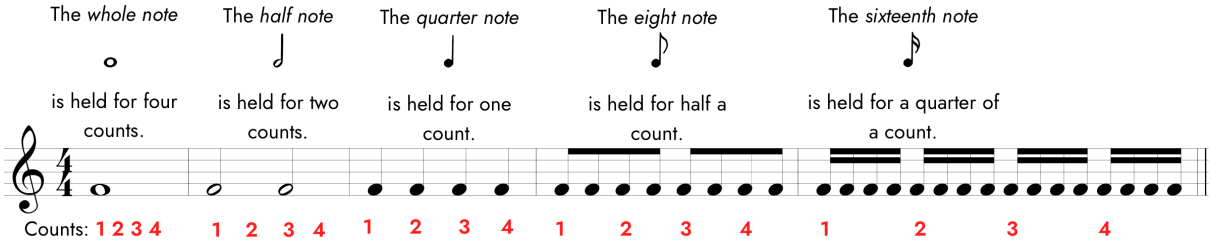
These look like golf clubs with or without things attached to them (with the exception of a whole note), and they can have a variety of appearances. Pay attention to whether or not the dot is black or white, and how the "flag" is shaped – is there one line, two, or three off of the golf club?



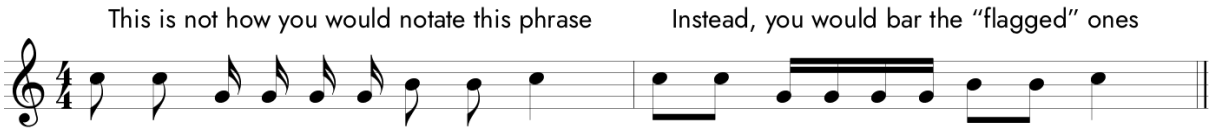
The more lines that are a part of the "flag," the shorter the note value. The longest note value that is used is a whole note (the first one at the top):



It represents four beats, and as outlined in the chart above, it can be divided into different numbers of notes.

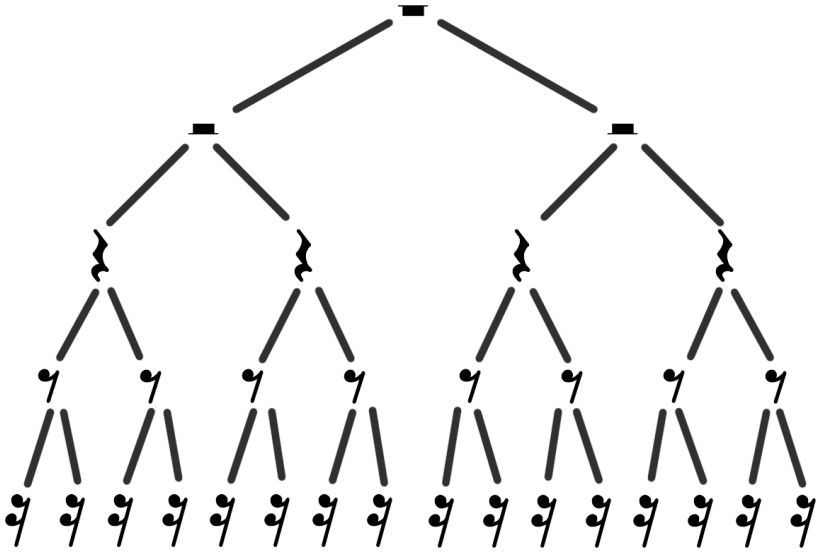


When there are multiple notes, the notes that have "flags" attached (8th, 16th, 32nd, etc) will be barred together:

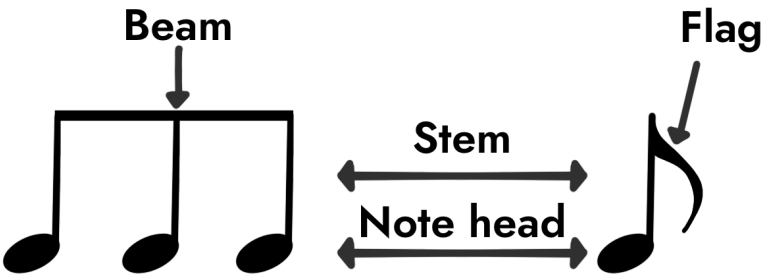


Whether the stem of a note points up or down depends on whether the note is above or below the center of the staff. If the note is above the center, the stem points down, and vice versa. If stems are barred, the position of the majority of the notes is used as a guide.

Everything is notated, including the silences (rests):



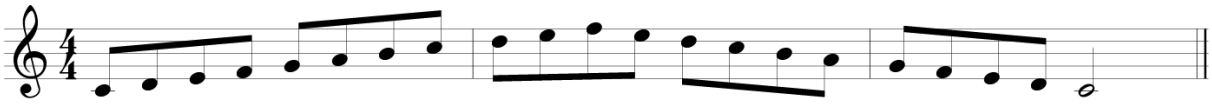
The proper nomenclature for the components is the following:



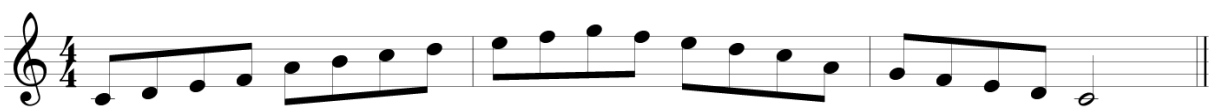
Getting better at reading music is about being able to recognize how common musical patterns look differently when there are inconsistencies.

For example, observe the following, where the notes are going in stepwise motion up and down:

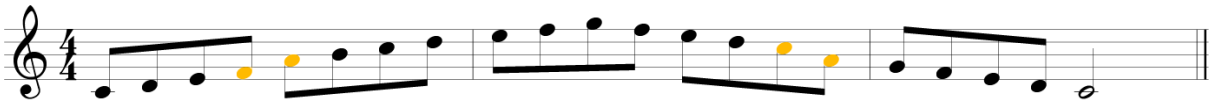
This is called a scale (more on the different types of scales in later chapters).



Now, observe the following and see if you can spot any differences in the pattern:



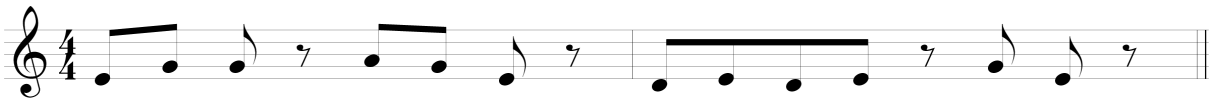
If you didn't see them, here they are highlighted:



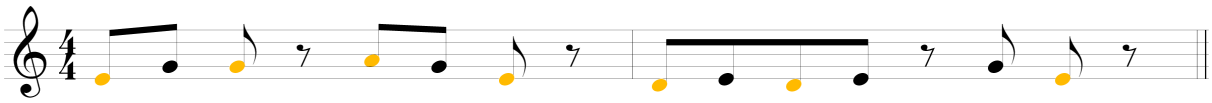
Eventually, the goal is to see all of the notes in black as groups of notes that you read together as a scale, and then engage more in reading separate notes where there are breaks from the scale pattern (as highlighted).

Also, when reading passages that have notes and rests, it helps to mentally highlight the points where the beats occur.

For example, with something like the following:

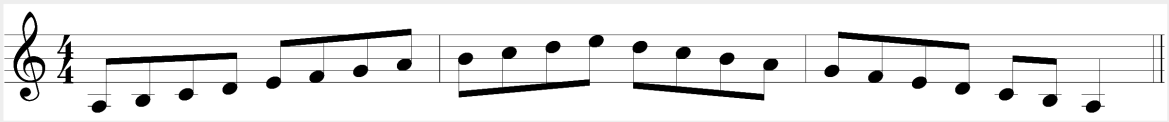


I would mentally highlight these points:

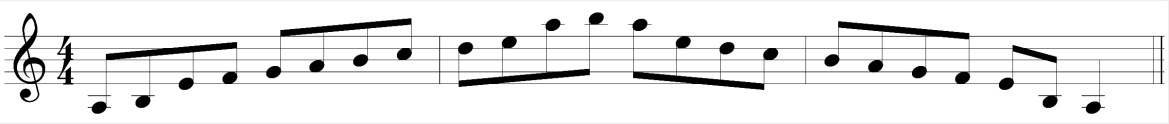


EXERCISE

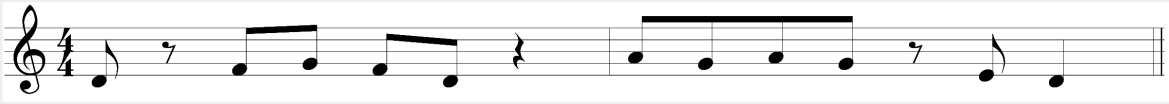
1. Play the following scale on the piano, or - if no other key instrument is available to you - on any other instrument of your choice.



2. Mark the spots of the following bars where the pattern breaks from going up or down in seconds and then play it on the piano or instrument of choice.



3. Highlight the notes in the following passages that are either followed or preceded by a rest, then play it on the piano or instrument of choice.



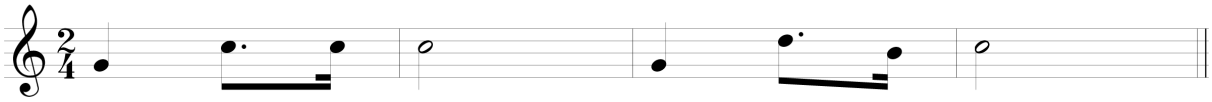
DOTTED NOTES

Adding a dot to the note means that half of the duration over the note to the left is added on. Therefore, a dotted quarter note = quarter note + (half of a quarter note)

So this:

Is the same as:

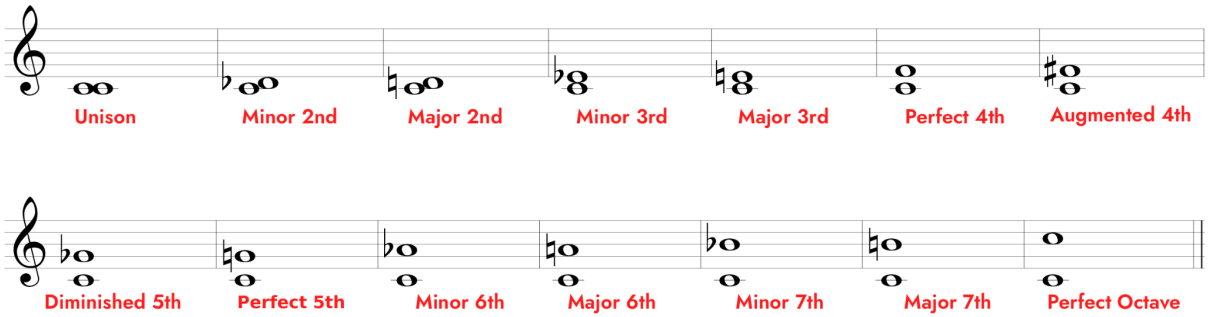
Here is an example of dotted notes in Wagner's *Bridal Chorus from Lohengrin*:



There can be more "dots" added to extend the duration by "half of a duration." For example, having two dots (a "double-dot") means that half + quarter duration of the note to the left is added on.

INTERVALS

There are names for the different distances between two notes - we call these "intervals."

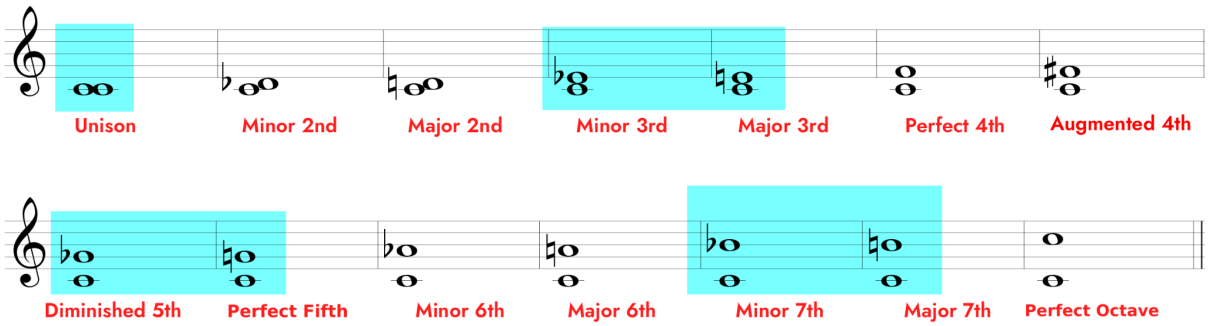


The names of these intervals will matter more when discussing harmony. For now, focus on the fact that these numbers indicate distances of 2nds, 3rds, 4ths, 5ths, 6ths, 7ths, and so on from a primary note. In the chart above, you are reading all of the intervals from the base note, C.

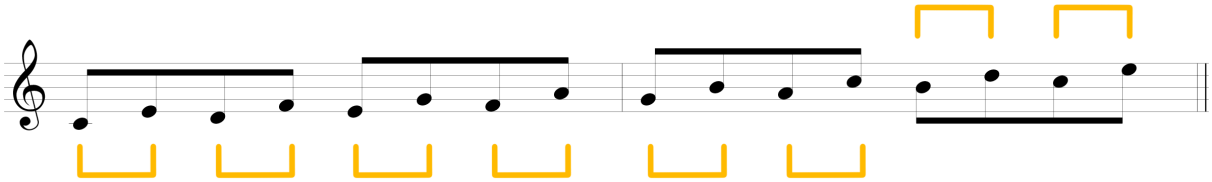
Getting better at recognizing these intervals will take time and it helps to rely on visual memory of certain details.

I find it useful to separate these into different "visual" categories. Because each note will either be on a line or a space, certain intervals are either alike in terms of whether they are both on lines or both on spaces.

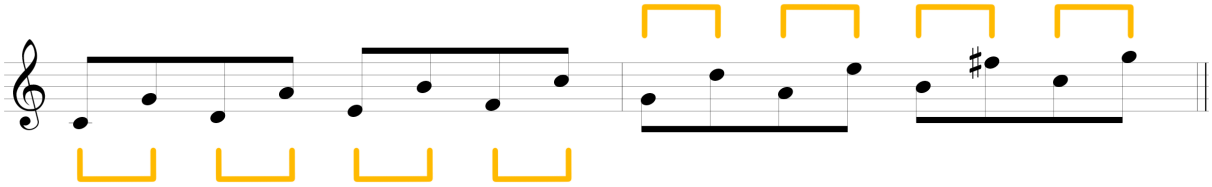
Observe how the highlighted notes (unisons, 3rds, 5ths, and 7ths) are either both on lines or both on spaces.



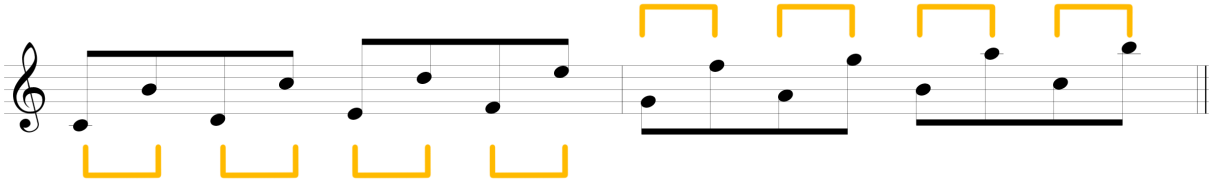
Intervals of a 3rd:



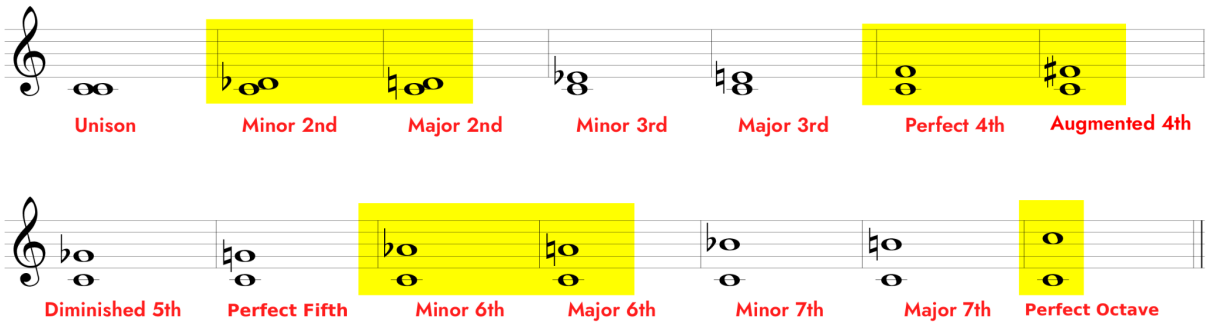
Intervals of a 5th:



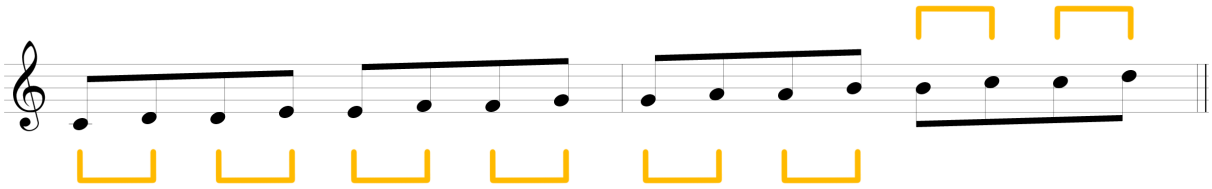
Intervals of a 7th:



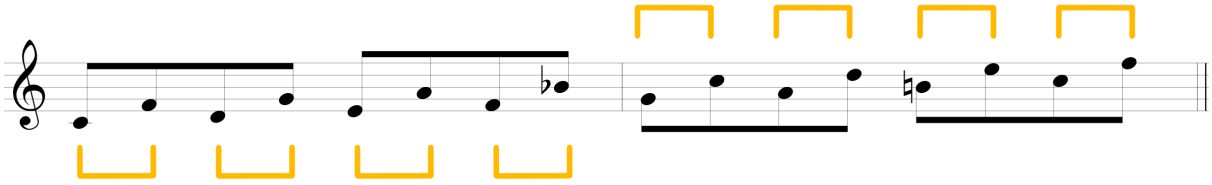
Now observe how the following intervals (2nds, 4ths, 6ths, octaves) have differences between lines and spaces.



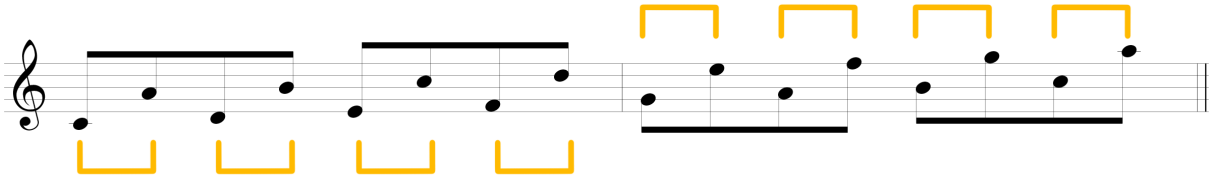
Intervals of a 2nd:



Intervals of a 4th:



Intervals of a 6th:



Being aware of intervals helps with sight-reading. Instead of reading the note values one by one, my eyes are focused on picking up on three pieces of information when reading from one note to the next:

1. The starting pitch (the main reference point)
2. The general (visual) distance between the two notes vertically (which will give me an idea of how wide the interval is)
3. The line-space combination (that helps me accelerate the process of identifying the interval)

The more you read, the less your eyes and brain will work to gather information in this manner. Instead, you will start to recognize how different intervals look from different starting points, how different chords look, scales, etc. This is how faster sight-reading is possible.

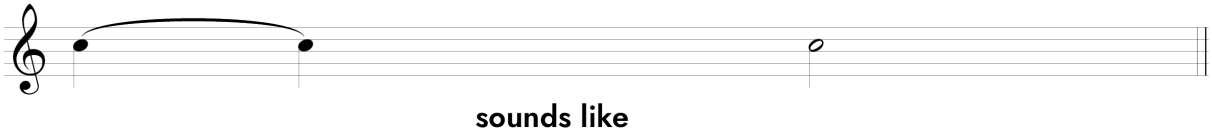
TIES AND SLURS

One area that many beginners get confused about is "ties" versus "slurs."

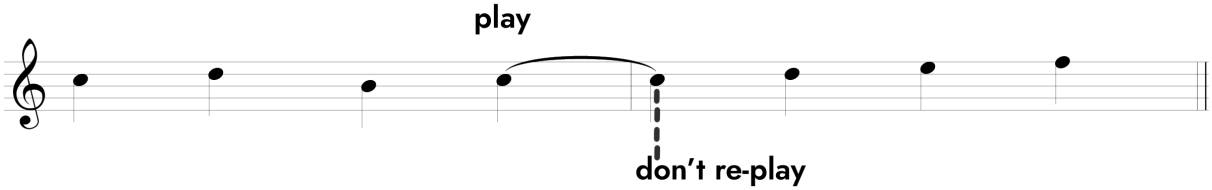
Ties = a curved line between **two identical adjacent notes** that means that the second note is not re-played, but **combined** with the first

Slurs = a curved line over **two or more notes** that combine them as a **musical phrase**.

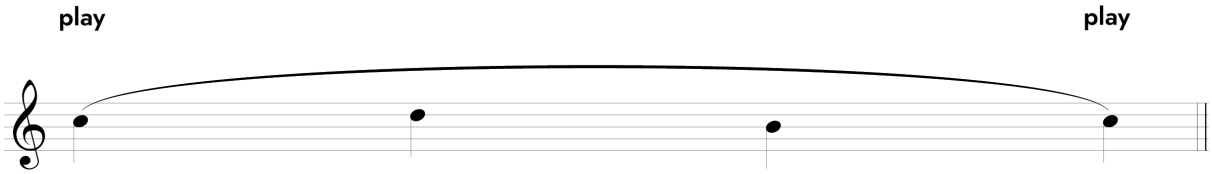
For example:



Ties are most commonly used between beats and measures, such as:

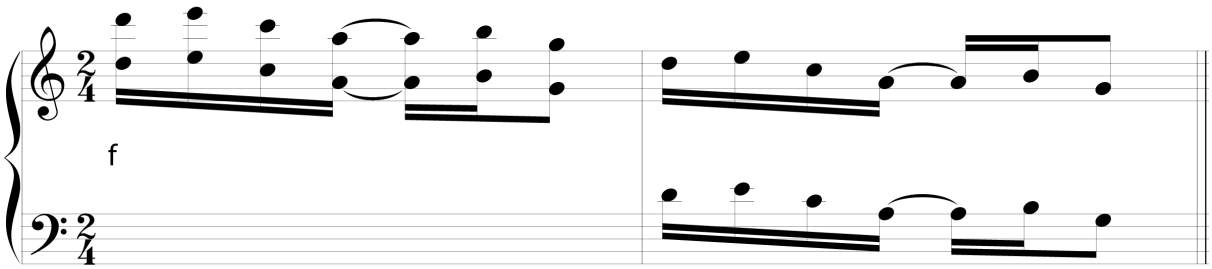


As stated above, they only apply to two identical notes that are adjacent to each other. Therefore, the following example contains a curved line that is a slur, not a tie:



The same applies to the following example (this is a slur, not a tie because the two notes are not identical):

Here is an example of **ties** in [Scott Joplin's *The Entertainer*]:

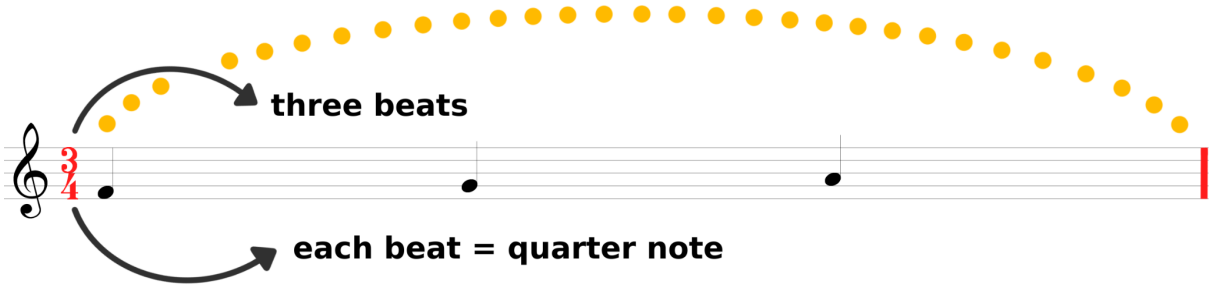


TIME SIGNATURE

When you see two numbers stacked on top of each other at the beginning of a measure, this is called a time signature.

Bottom note = the value of each beat
Top note = how many beats there are

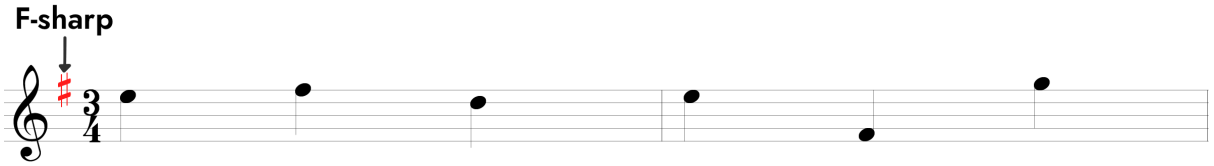
In the following example, there is a ¾ at the beginning of the measure. This means that:
Top note = 3 -> there are three beats to a measure
Bottom note = 4 -> how many divisions of a whole note (a whole note divided into 4 is a quarter note)



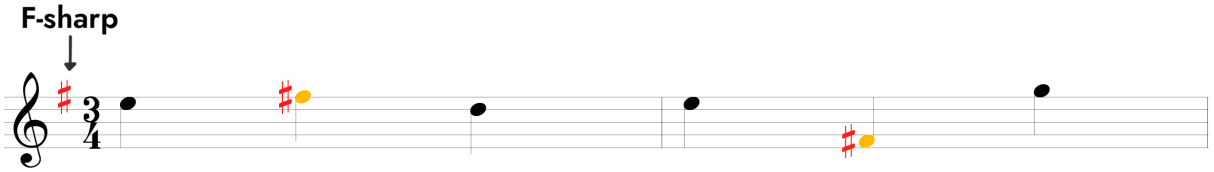
When you see accidentals at the beginning of the page, this means that the accidentals present will be applied to every note unless otherwise indicated. This is called a **key signature.**

In the following example, we see one sharp, which is on the line where an F sits. This means that **every F** (not just the one on that line) will have a sharp automatically applied to it.

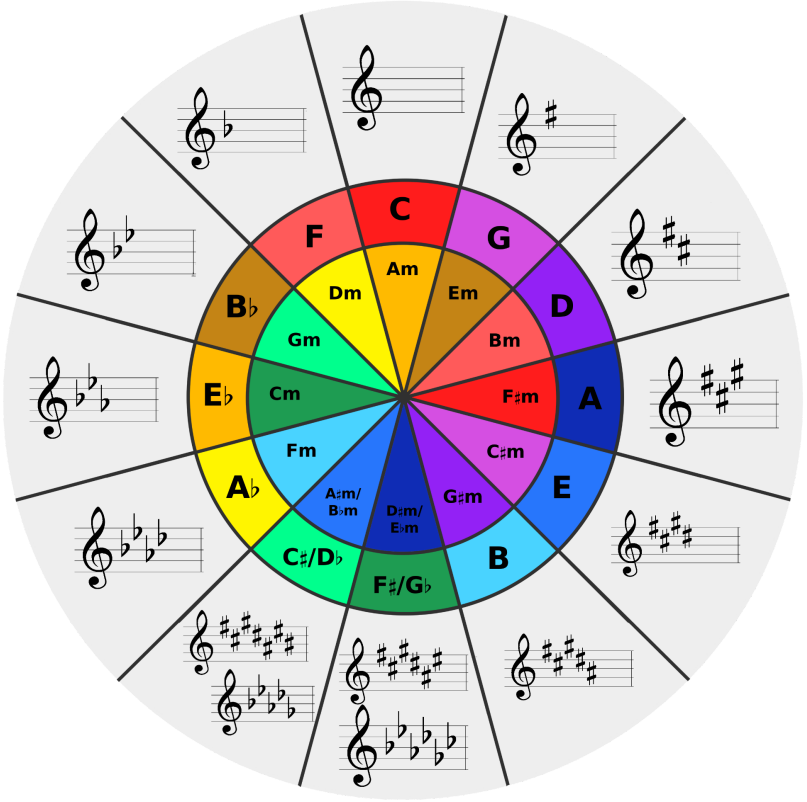
Written:



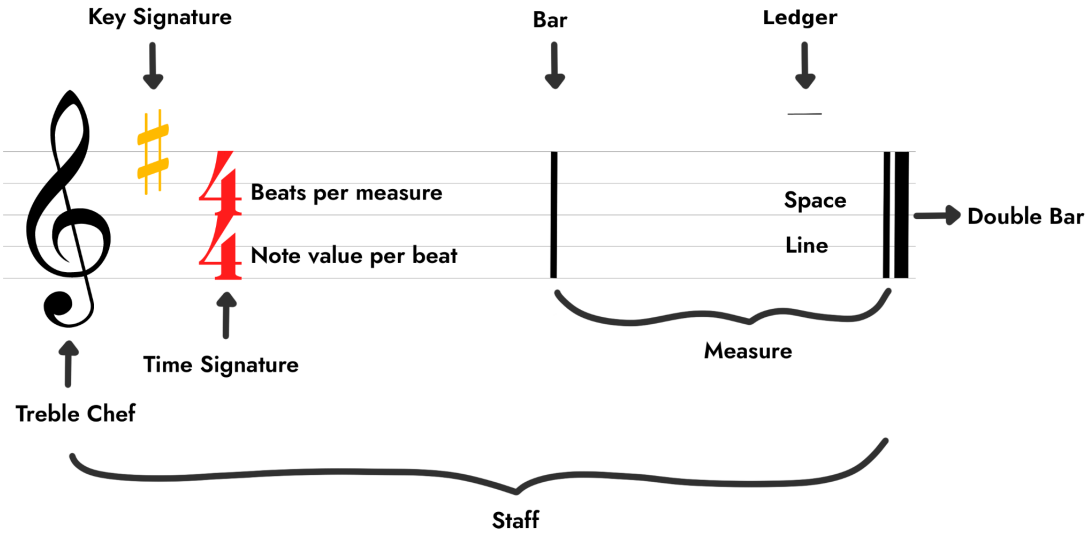
Played:



Observe the outer ring of the following graph, which is called **the circle of fifths.** These represent the different key signatures that you will come across when reading music. More details on the organization of this graph as well as the theory key centers can be found in chapter 5 "Scales and Modes."

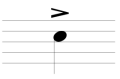
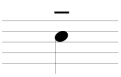
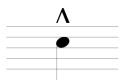
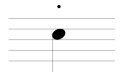


Let us review the basic symbols mentioned so far:



There are countless symbols that help composers indicate to performers how to add expression to the music.

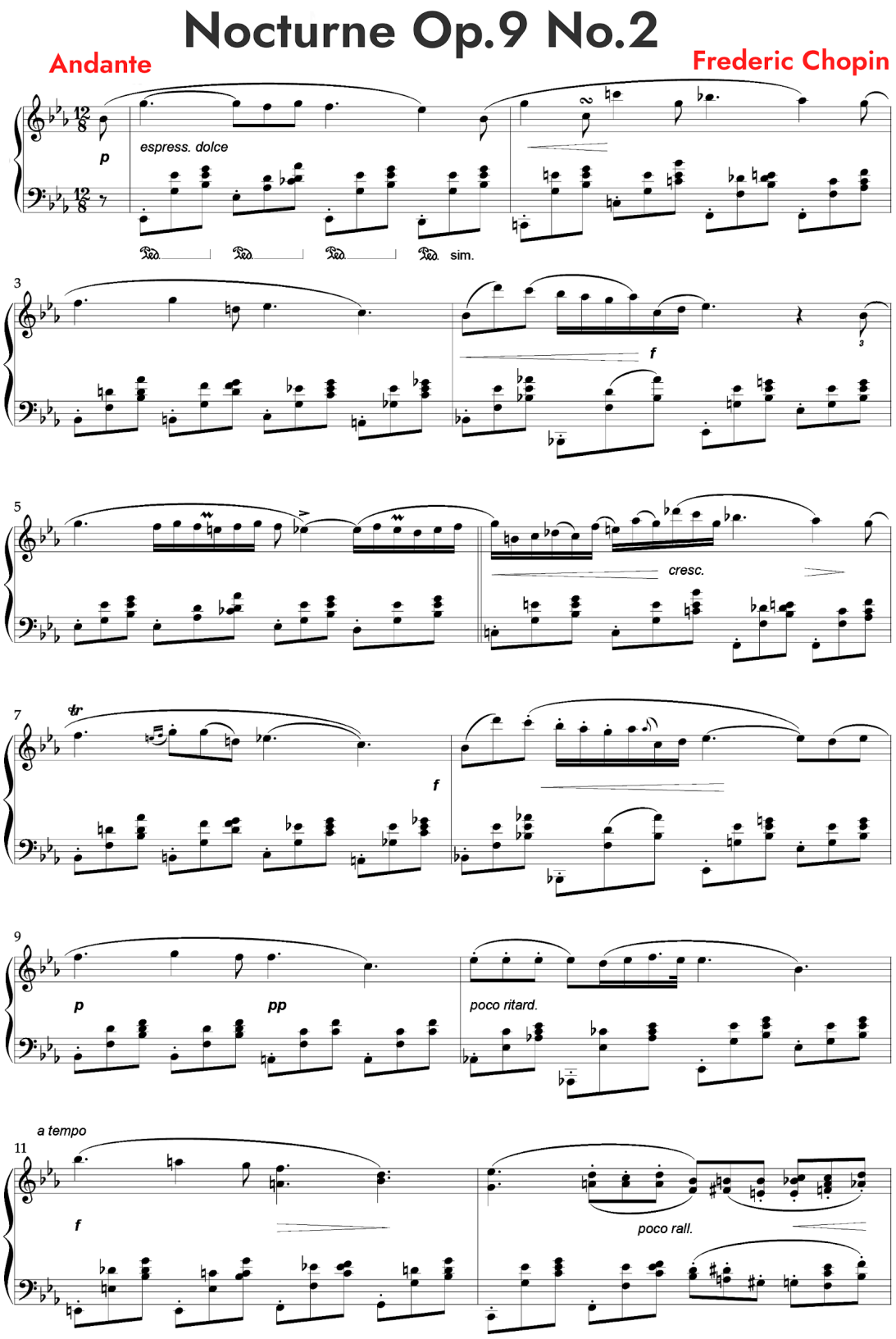
Articulation markings indicate the specifics of the attack and release of a note. Here are four examples:

Articulation	Length	Symbol
Accent	Long	
Tenuto	Long	
Marcato	Short	
Staccato	Short	

Dynamic markings indicate how loud or soft the notes are. These are derived from Italian words. The following list is by no means exhaustive but covers the terms that any musician should know to communicate more clearly:

Term	Sign	Meaning
pianissimo	*pp*	very quiet
piano	*p*	quiet
mezzo piano	*mp*	moderately quiet
forte	*f*	loud
mezzo forte	*mf*	moderately loud
fortissimo	*ff*	very loud
sforzando	*sf*	suddenly loud
sforzando piano	*sfp*	suddenly loud and soft
sforzando	*sfz*	suddenly loud

Now, an example as applied to how I would sight-read a piece.



Before placing my hands on the keys, I would gather the following information:

1. **REGISTER**: conventional format - right hand is in treble clef, left hand is in bass clef
2. **KEY SIGNATURE**: 3 flats, meaning E-flat Major (small detail, but I rule out that it is in C minor by multiple factors such as hearing the piece by ear and looking at the ending chords, which are in E-flat Major)
3. **TIME SIGNATURE**: 12/8, meaning 12 8th notes per measure
4. I also scan each of the parts (Right hand and left) to look for the general range of notes. What are some of the lowest and highest notes per hand? This helps narrow my focus of possibilities.
5. Starting first with the right hand, I would start a B-flat, go up 2 lines (B-flat to D, to F), then go up one more (to G). This process will be automatic the more you do this, and you would recognize this as a 6th. The next notes are whole steps down, up, and down.
6. When I see B-flat to G again, it is imperative to remember it as something I just played. The quicker you register recurring figures, the easier sight-reading will become.
7. I would do a similar process with the left hand, but I would separate the bass notes (bottom-most notes) from the pairs of chords following. This is so that I am not calculating the distance between the bass notes and chords but seeing them as two parts.

BEGINNER TO INTERMEDIATE PIANO PIECES TO LEARN READING MUSIC

Here I have compiled a list of pieces that will help you get more proficient at (sight) reading music. The first pieces I consider to be easier to read than the pieces cited further down the list, but you may find some pieces easier than others that I have thought of the other way around. Expand your comfort zone little by little, do not force yourself to read pieces that right from the get-go prove to be far too difficult for you.

Bartok: Mikrokosmos

Arvo Pärt: Für Alina

Schumann: Album for the Young

Bach: Little Prelude BWV 939, Inventions and Sinfonia

Mozart: Piano Sonatas, Nannerl's Music Book, London Sketchbook

Haydn: Piano Sonatas

Scarlatti: Piano Sonatas

Beethoven: Sonatinas and Sonatas No. 9, 10, 20

Debussy: Suite Bergamasque

Tchaikovsky: Album for the Young, Op. 39

Kabalevsky: 30 Pieces for Children Op. 27, 24 Pieces for Children Op. 39, Sonatinas

Franck: Les plaintes d'une poupée, FWV 20

Shostakovich: Children's Notebook, Op. 69

Poulenc: Villageoises, FP 65

Chick Corea: Children's Songs

CPE Bach: Notebook for Anna Magdelena Bach

Couperin: Les Barricades Mystérieuses, from 3rd "Piéces de clavecin" - Les coucou bénévoles sous des dominos jaunes

Khachaturian: Children's Album, Books 1, 2

Stravinsky: Les cinq doigts "8 Mélodies très faciles"

Chapter 3

EVERYTHING STARTS WITH RHYTHM

How to make sense of music's backbone

In this chapter, we will cover the importance of rhythm and the components that make a rhythm. We will learn how time signatures, pitches, and accents influence how we feel rhythm and how to approach more complex rhythms.

All sounds are produced with duration, intensity, and frequency. What we call "rhythm" answers the questions: How long, how often, and *when* are we hearing these sounds?

Rhythm isn't an isolated aspect of music. It is most often tied to other components. For example, imagine hearing the footsteps of an elephant versus a puppy. The *timing and cadence* of the footsteps alone can indeed inform you about certain characteristics of each animal, such as size and weight. In this way, rhythm is tied to movement, space, and energy.

Rhythm also contains patterns. Natural patterns of sounds occur all around us, in nature and our lifestyles. Think of the sound of train tracks, bird calls, horse hooves, and our heartbeats. They all carry a distinct and recognizable rhythm.

Why is rhythm important?

Rhythm contributes to the overall character of the music we hear. Music is bound to time – the same progression of time that governs every other aspect of life. We cannot listen to music backward, upside down, etc. out of our own will, much like how we can view a sculpture at a museum from different angles. Based on the flow and intensity of the sound "events" we hear, our emotional experiences can be greatly influenced. That is why the pacing and timing of the music are so essential to the communication of music.

Think of the last time you heard someone tell a joke, and ask yourself how important the timing and pacing of the delivery was, in order to make the punchline funny and effective.

Also, think about a time when you needed to say "I am sorry." The timing and pacing used to say these words were probably very important. Saying the words in a rushed and quick manner has less weight and sincerity than saying them in a slow and composed way. The difference between the two shows how the rhythmic aspects of delivery will heavily influence the emotional content of how we communicate.

TEMPO: HOW FAST OR SLOW?

While rhythm is the arrangement of notes in time in a (more or less) regular pattern, *tempo* indicates how fast or slow music is played. It is one of the first things we perceive with a piece of music. Is it fast – or is it slow?

Examples of slow: Chopin E Minor Prelude, Barber Adagio for Strings, When the Party's Over by Billie Eilish, At Last by Etta James, Body and Soul by Stan Getz, Blue in Green by Miles Davis/Bills Evans, Misty by Errol Garner, Two Different Worlds by Sonny Rollins.

Examples of fast: Flight of the Bumblebee, Vivaldi The Four Seasons: Winter, Tchaikovsky 1812 Overture, Tea for Two sung by Anity O'Day, Giant Steps by John Coltrane, Rock with You by Michael Jackson, Oye Como Va by Santana, Blitzkrieg Bop by Ramones, Count the People by Jacob Collier.

The tempo is the backbone of the overall feel of the music. *The character of a piece can drastically change by changing the tempo.*

If a musician was asked to turn a downtempo jazz ballad like *Blue in Green* into a jubilant and ecstatic arrangement, the first thing they might do is to *increase* the tempo.

In reverse, if a musician was asked to turn Rimsky-Korsakov's *Flight of the Bumblebee* into a somber and introspective arrangement, the first thing they might do is to *decrease* the tempo.

Now, imagine Edward Elgar's *Pomp & Circumstance* (the piece that accompanies almost all graduation ceremonies) being performed *extremely slowly* - at about 3 seconds per beat. The piece would lose its noble quality and would instead feel like a meditation. This would no longer make it an appropriate piece for the graduating students to walk out to.

Now, imagine Beethoven's *Moonlight Sonata* being performed *extremely fast* - at about 160 BPM. The piece would lose its beautiful, brooding quality and would instead feel rushed and lighter.

These examples illustrate to me that tempo might be the most influential factor in controlling the emotional character of the piece. Things can immediately sound "off" if there is a disconnect between the intention of the music and its tempo.

FREQUENCY OF NOTES VERSUS TEMPO

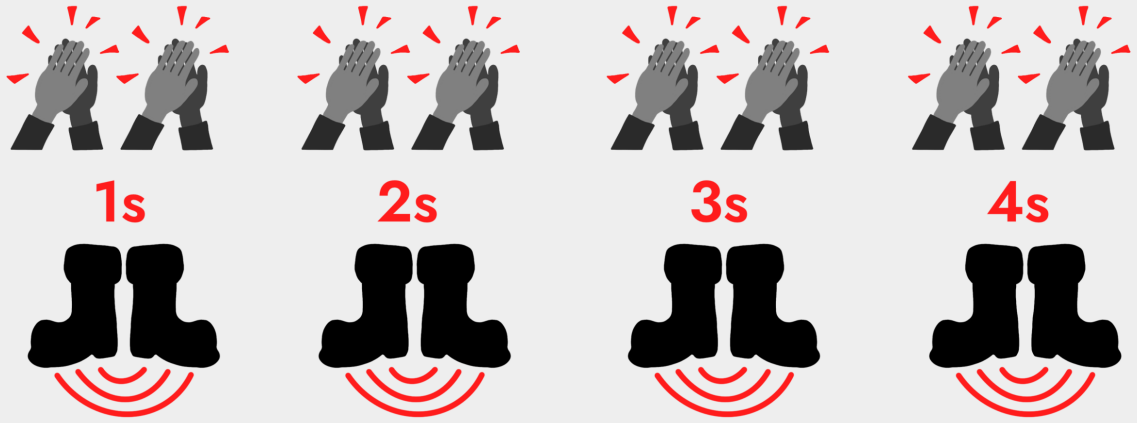
Tempo is not necessarily directly tied to the density and frequency of all of the notes. Hearing many notes in a short period of time does not always mean we are hearing a fast tempo. In reverse, hearing a few notes in a short period of time does not always indicate a slow tempo.

What determines the tempo is the **frequency of beats** and moreover, *certain and prominent* beats.

So what are beats? They are time-markers in the music that influence how you feel the music. Notes that are on the beats naturally carry more emphasis than other notes.

EXERCISE

To get a direct feel for this, try the following exercise:
Stomp your foot every second, and clap twice per foot stomp.



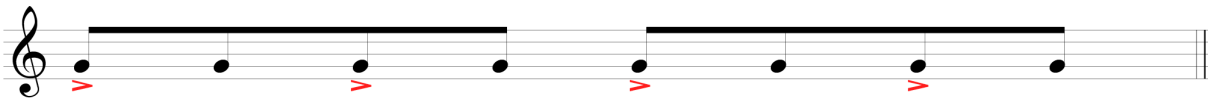
Maintain this pattern. You are now stomping on every beat while clapping notes at double the frequency.

Now, try doubling the number of claps to 4 per foot stomp. By doing this, your tempo did not change, despite the addition of claps.

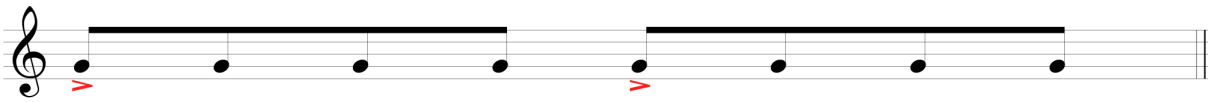
No matter how the music is written, the beats that carry more emphasis can make the tempo feel faster and slower.

ACCENTING

Accents in the music are another form of adding points of emphasis. Sometimes accents will align with the beats of the music, but sometimes not. In an isolated context, if both of the following examples were played at the same tempo, the first example:



would feel slightly faster than the second:



This is the case even if both examples share the same notes.

As these examples show, how we feel a rhythm is tied to additional nuances such as emphasis and accenting.

MUSIC vs MATH

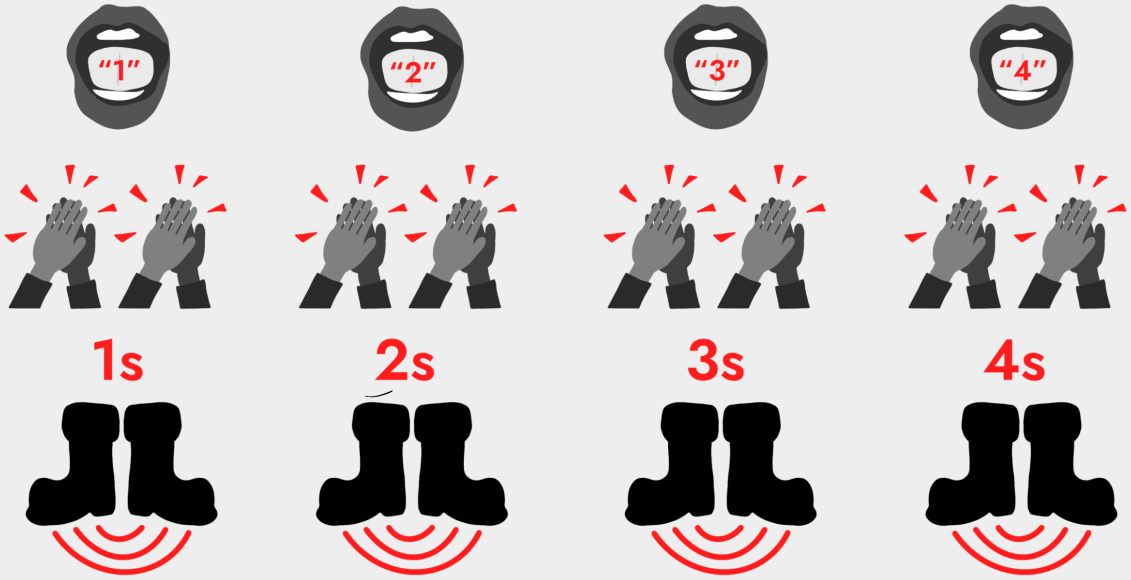
Music and mathematics have a strong correlation with one another. There is no need to be intimidated by this, nor does this mean that we should think about music in a mathematical way. It simply means that very basic arithmetics are involved in how notes and beats are structured. Being aware of these methods of organization will give you clarity and will help you build the intuition to feel and understand all kinds of **rhythms**.

TIME SIGNATURE

The first thing to know is the time signature. In Chapter 2, we explored how to read time signatures. They provide us with a framework to organize the notes into certain groupings. This also yields a certain hierarchy between the beats for most meters.

EXERCISE

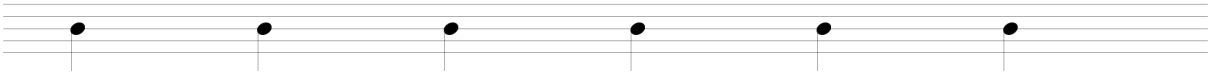
Repeat the previous instructions of stomping your foot 1x per second, and clapping 2x per second. Now, count to 4 with the foot stomps and keep repeating.



You have now added organization to your rhythm! Your time signature in this case is 4 beats per measure.

Having basic forms of organization for musical notes is similar to having a grammatical structure in language. When we speak, we do not just blurt out a series of vocabulary words. Certain words have more or less hierarchy over others, whether they are nouns, verbs, clauses, etc.

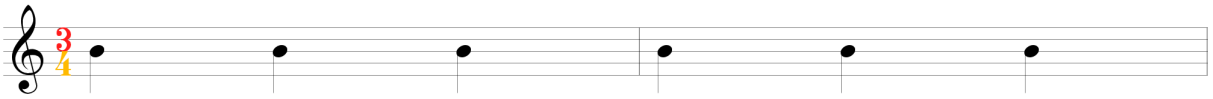
Have a look at this:



There are 6 quarter notes but without an indication of how to organize these 6 notes. Therefore, we do not know what the pulse of the music is, and what we can communicate with these notes alone is limited.

A **time signature** can help indicate the pulse by grouping notes in organized segments. This will also help us determine which beats are meant to be emphasized more or less than others.

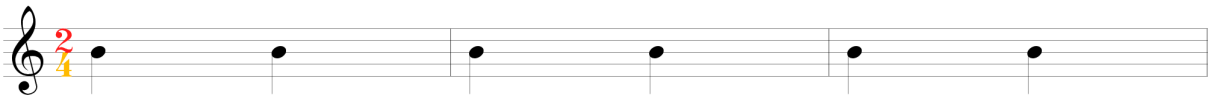
For example, adding a (¾) time signature immediately gives these notes more rhythmic structure. We can even start inferring that the music may be a waltz (dance music in groups of 3).



You might remember from Chapter 2 that the top number tells us the number of beats (3), and the bottom number tells us the length of each beat (4=quarter note).

How many beats there are is entirely up to the composer of the music, and is influenced by traditional formats.

Let's take a look at another example, where the top number tells us the number of beats (2), and the bottom number tells us the length of each beat (4=quarter note).



By changing the groupings of notes, the pace of the music is altered.

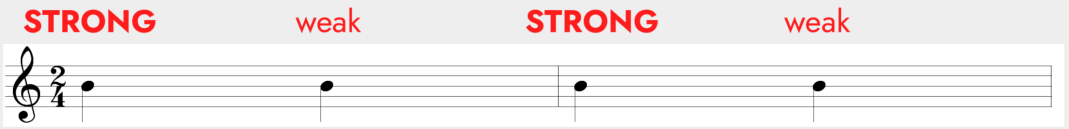
AGOGIC STRESS

All beats are not treated equally. Some beats are deemed as "stronger" than others and will carry additional "agogic stress."

EXERCISE

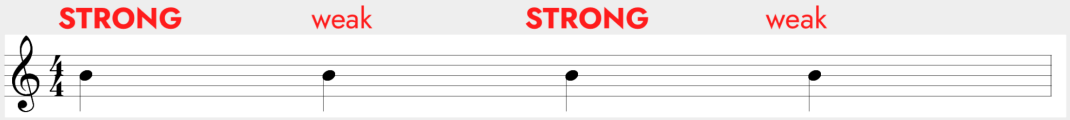
Here are common examples:

2/4 Time Signature:



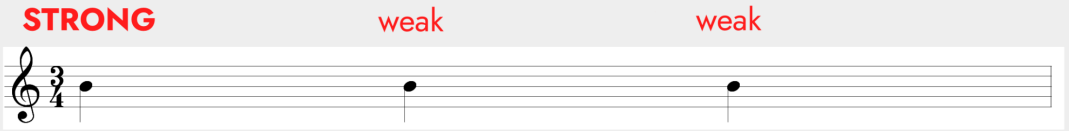
Stomp your foot while counting in 2, and make distinctions between STRONG and weak beats with your foot (ie. stomp with a bit more emphasis on strong beats).

4/4 Time Signature:



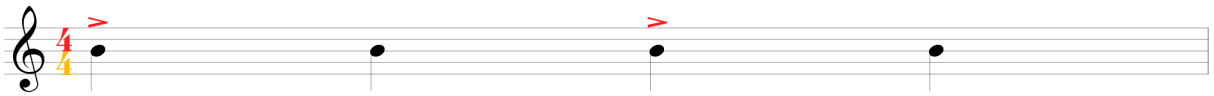
Stomp your foot while counting in 4, and make distinctions between STRONG and weak beats with your foot (ie. the first STRONG beats should have slightly more emphasis than the third beats).

3/4 Time Signature:



Stomp your foot while counting in 3, and make distinctions between STRONG and weak beats with your foot.

Note that time signature choices can also be a matter of style and preference, depending on the composer or transcriber's discrepancy. For example, one can argue that having one measure of 4/4 with accents written on every other beat,

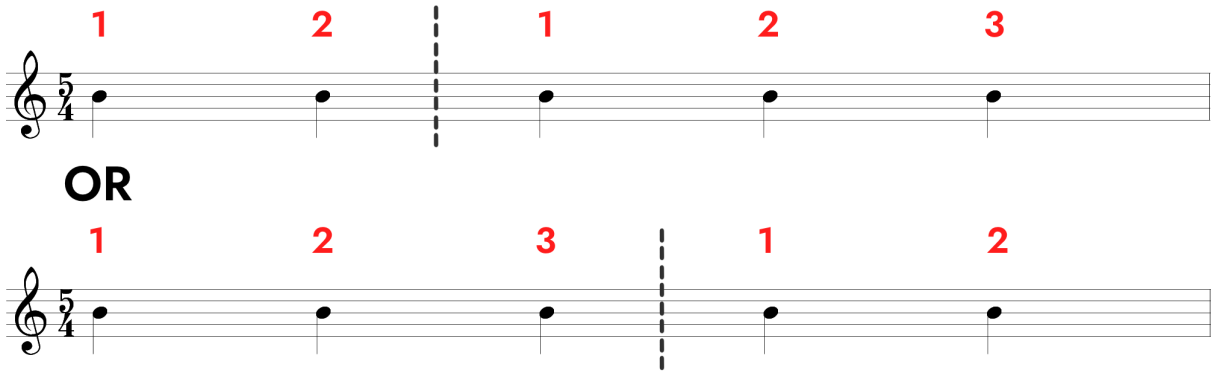


or two measures of 2/4

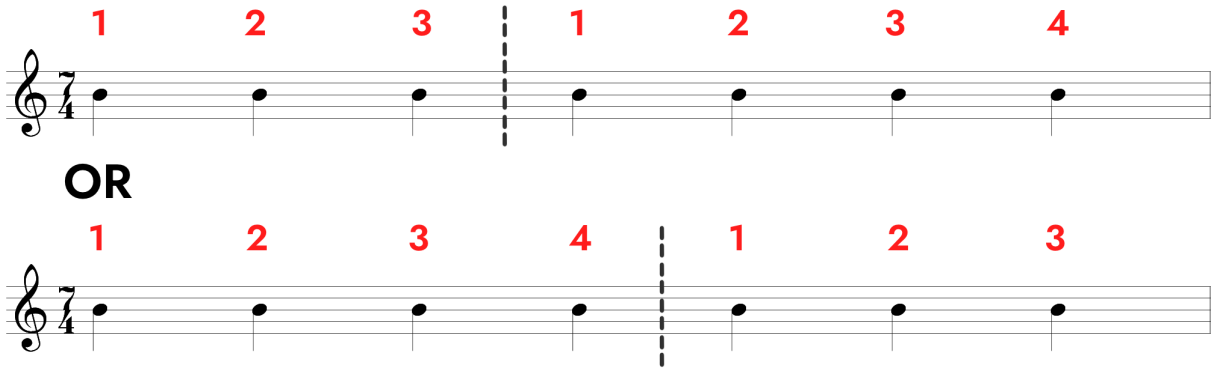
have marginal differences.

In general, you shouldn't have to worry too much about learning how to group and count notes beyond 4 notes at a time. The brain and ears struggle to comprehend more than groups of 2, 3, or 4. Therefore, more complex time signatures, such as those in 5 or 7, are usually counted in smaller groups.

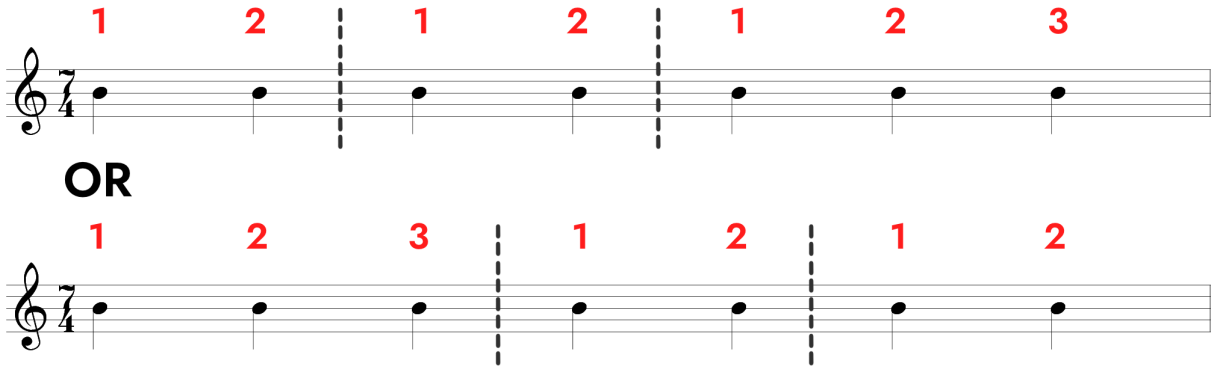
For example, 5/4 can be counted like so:



7/4 can be counted like so:

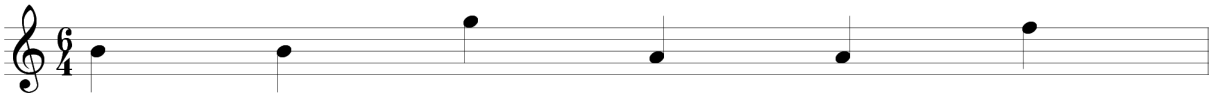


Or with smaller metrics:

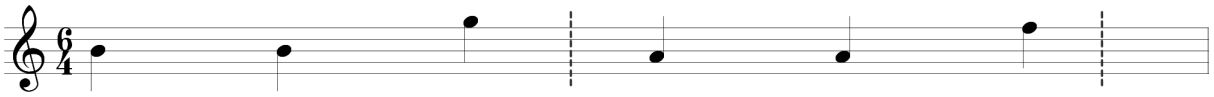


Note choice and pitch can also impact the rhythmic feel of a piece. This is because points of emphasis can be created with pitch.

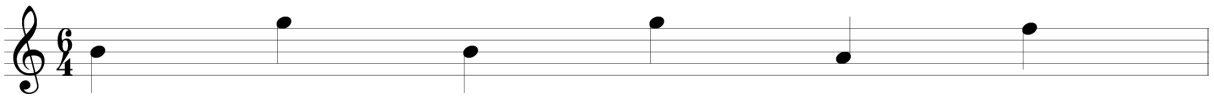
The following measures have naturally occurring **groupings** due to the pitches. Notice where the leaps occur and observe where the natural divisions occur.



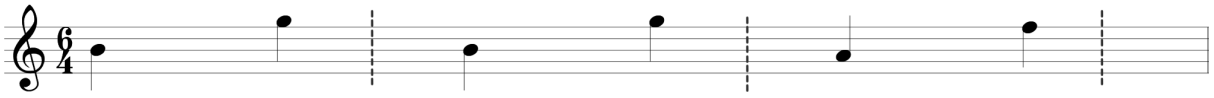
This measure is grouped naturally into two parts (3 quarter notes each) because of the distinct leap on each third beat:



The following measure:

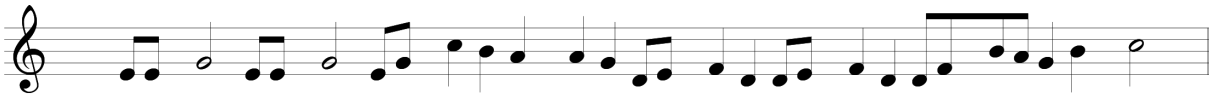


is grouped naturally into three parts (2 quarter notes each) because of the distinct leap on every other beat:

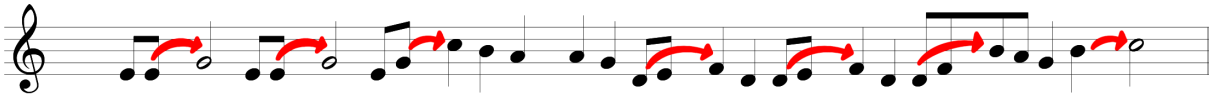


The shapes of phrases also create natural groupings.

Have a look at the following example. Can you tell what time signature this is in?

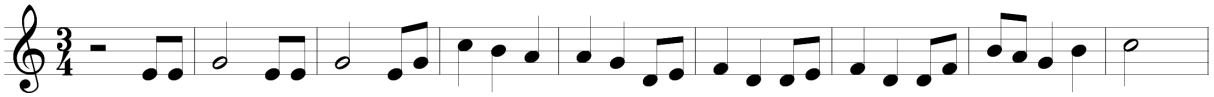


Look at each rise in pitches and observe how often they happen:



As you can see, a rise in pitches happens every 3 beats. Even without a time signature indicated, the pitches help determine a rhythmic flow of ¾ time.

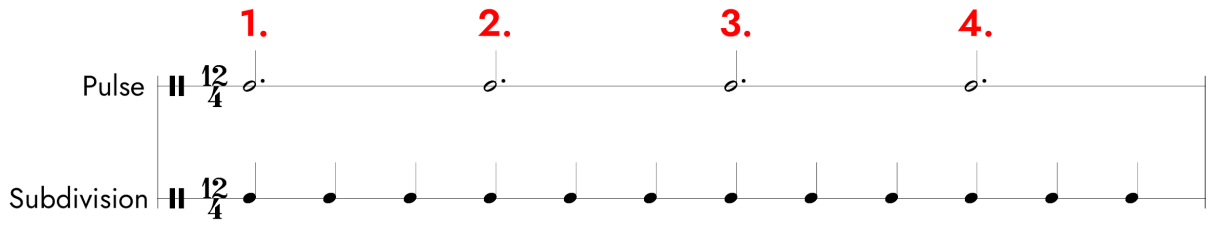
This example is Brahms's famous *Lullaby:*



As this music is being played, a constant pulse of 3 beats per measure in the background carries the rhythm forward.

Just like how a clock is always ticking, an internal rhythm is always running in the background, whether or not the audible music makes this obvious.

This means that even at the most static moments in music, there will always be **subdivisions** and an internal **pulse** running in the background. It is like a constant fabric beneath the music.

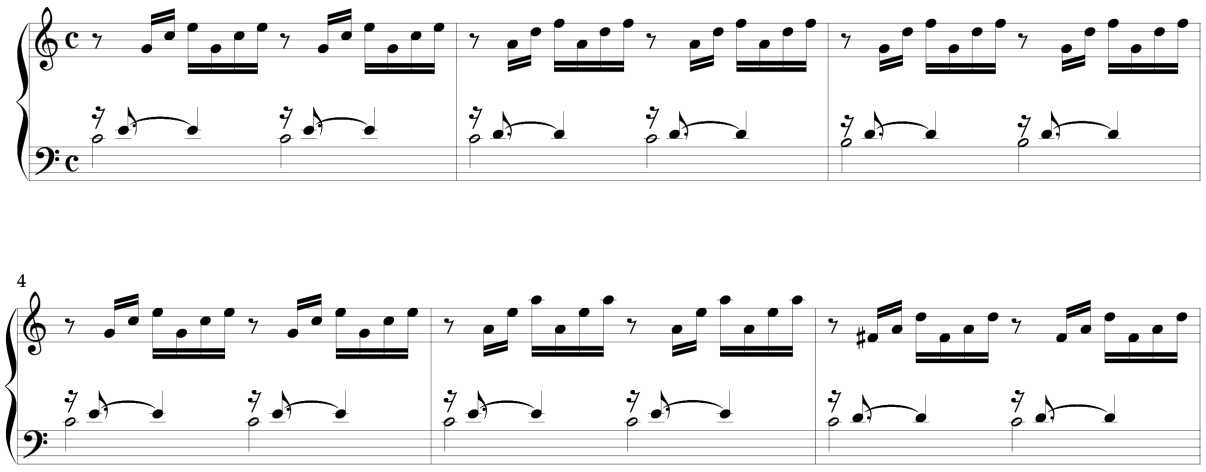


CONSISTENCY & VARIATION

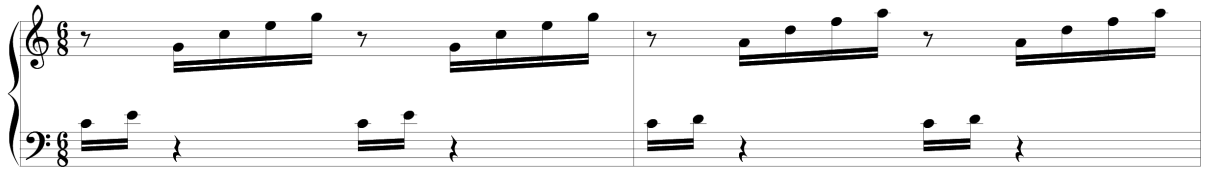
Different composers and arrangers will dial in differing amounts of consistency and variation into the rhythm.

Seemingly monotonous rhythmic patterns have details that promote repetition in a positive way.

For example, upon first glance or listen, J.S. Bach's *Prelude in C Major, WTC Book I* maintains a consistent pattern throughout the *entire* piece:



However, there is variation built into the pattern. To demonstrate this, imagine this piece with a more basic pattern:

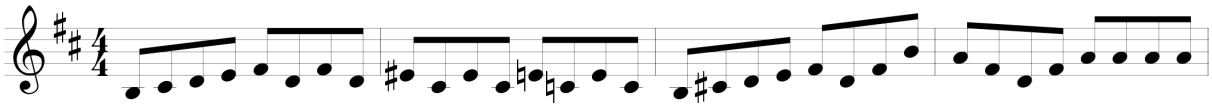


Just by simplifying the shape of the lines, the rhythm loses its distinction and becomes an ordinary set of repetitive notes that scale upwards. This type of pattern, though not dramatically different from Bach's, is more robotic.

What breaks monotony does not have to be something major. Subtle changes add a natural element to the music. Even the odd "rest" makes a huge difference.

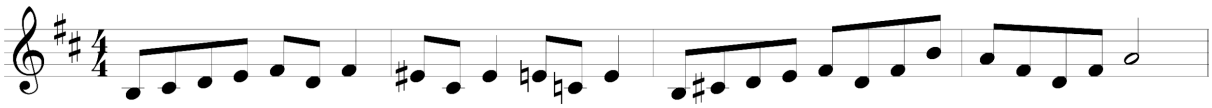
Music always needs to breathe. This is why *rests* and *silence* are very important.

Imagine Grieg's *In the Hall of the Great Mountain King* with no rests of prolonged notes:



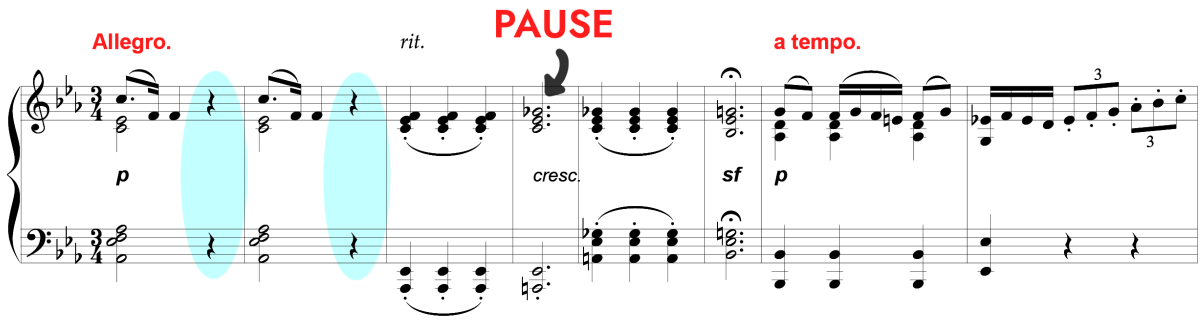
Even though the order of the pitches still makes for a great melody, there are no punctuations. It is like a run-on sentence that has no room for breath.

Now, here is the original version:

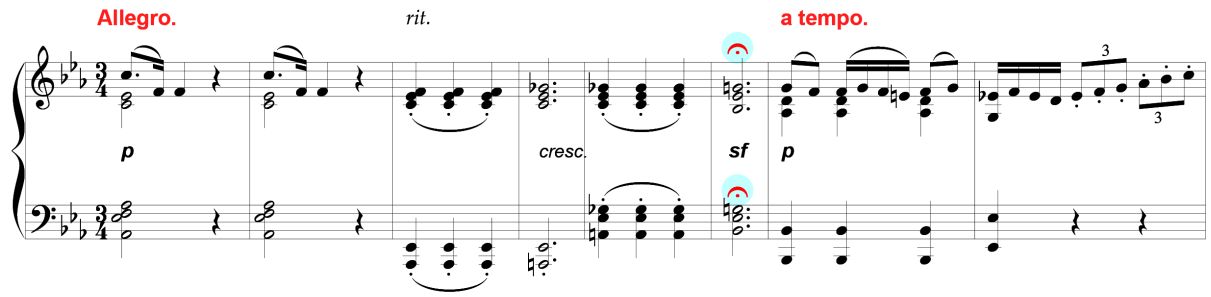


With just a few notes that are longer, there is enough rhythmic variety to add breathers between the sections and break the monotony. This shows how the rhythm of a piece does not need to be overly complex in order to be engaging. It only needs to have a reasonable dose of variety and space to breathe - **space and silence,** which are necessary contrasts to sound.

In Beethoven's *Sonata No. 18 in E-flat, Op. 31 No. 3*, the following rests and pauses create anticipation for what is to come next:



Furthermore, a **fermata** (which means to prolong the note further than the exact rhythmic value) is indicated in Measure 6 (highlighted in the following in blue) to extend the space before the next phrase:

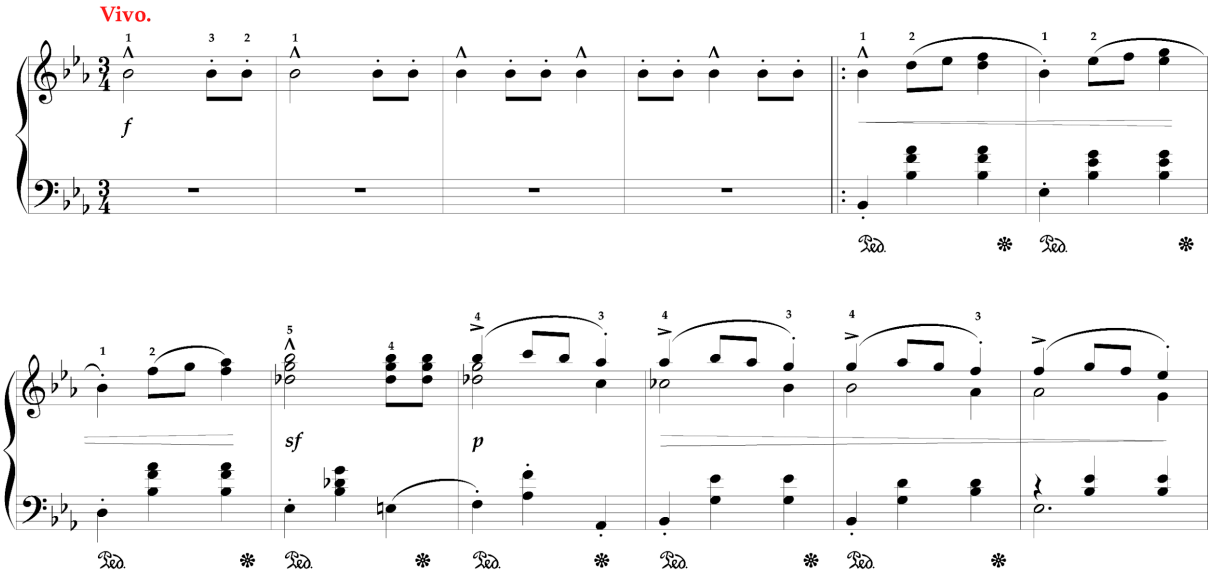


These are examples of **rhythmic suspension**, when there is a literal pause in the flow of the music. This gives music space to breathe and for the sound to resonate. The indication of the fermata means that it is up to the performer to decide exactly how long is needed before moving on to the next measure. This largely depends on the amount of "space" such a gesture requires. It is not too much different than a singer needing to take a breath before or after a significant phrase.

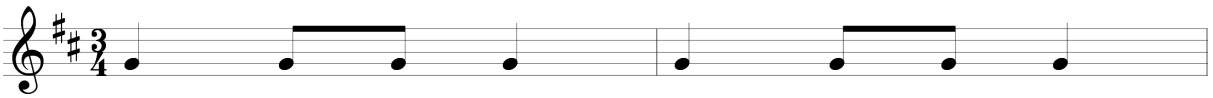
MOVEMENT

Many of the most common rhythmic patterns used in music are directly related to **physical movement** because they are derived from **dance patterns**.

For example, the rhythm in Chopin's *Grande Valse Brillante, Op. 18* (observe Measure 5 onwards),



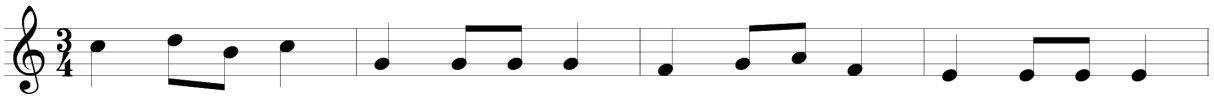
comes from the step patterns and movements in a waltz dance.



Note that there is a distinct pattern present: The middle two eighth notes make the rhythm feel natural to repeat over and over again because the middle beats now have a little skip forward. This

pattern becomes a rhythmic framework upon which an infinite variation of pitches can be applied to create musical phrases.

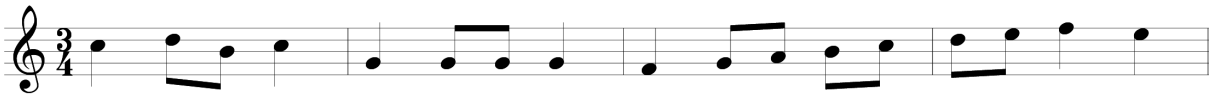
A composer may choose to apply a distinct set of pitches to the rhythmic pattern:



Further variations of pitch can be effective, but perhaps not enough to offset the routine predictability of this pattern.

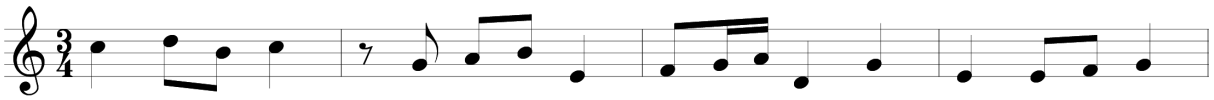
Simple changes in the rhythm in addition to pitch changes can create much more variation. This provides more direction as to where the music flows, especially in combination with pitches that support the rhythm.

This might be an example of adding simple rhythmic variation to the pattern:



Notice that in Measures 3-4, there is a string of eighth notes that break from the original pattern. This creates a bit of "rhythmic tension" that builds anticipation for the return of the familiar pattern.

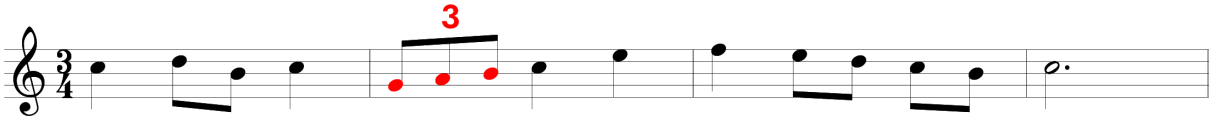
Further variations to the rhythm might sound like the following:



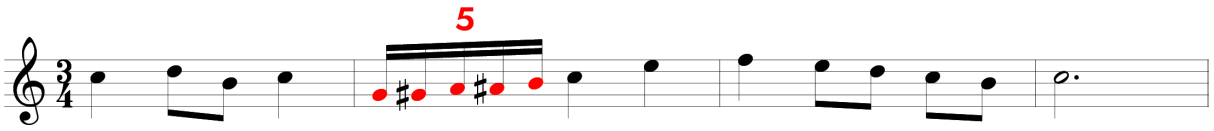
The rest at the beginning of Measure 2 creates a silent first beat, which disrupts the rhythmic pattern in a distinct way. The faster 16th notes add more energy, character, and contrast.

Rhythmic variations can go against "the grid" (meaning to choose between exact divisions of a whole note).

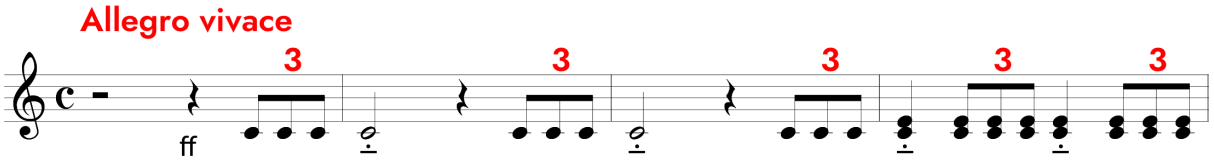
A natural pulse can be stretched or condensed with **odd groupings**. For example, a natural grouping of two eighth notes per beat can be stretched to include 3 notes in that exact time frame. This is a called a **triplet**, which is indicated as the following:



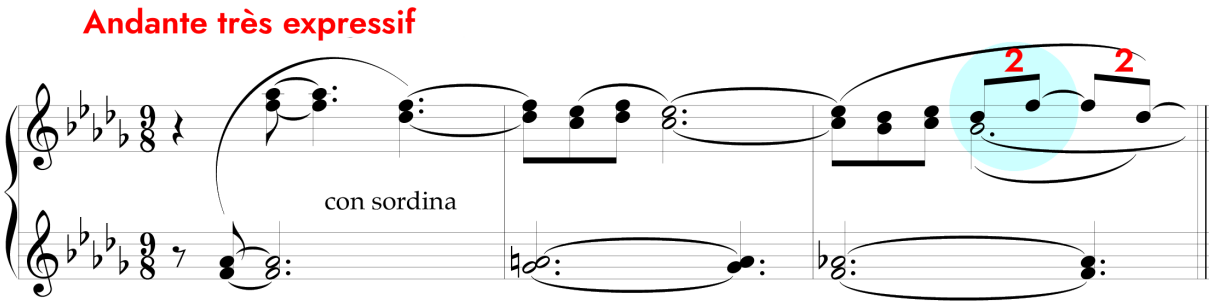
Any number that is not supported by a pre-existing value can be indicated as an odd grouping. Here is what a five-note odd grouping would look like in this context. (Note: It is indicated by 16th notes because they are the closest pre-existing rhythmic value to a group of five).



Here is an example of **triplets** in Mendelssohn's *Wedding March* from *Midsummer Night's Dream:*

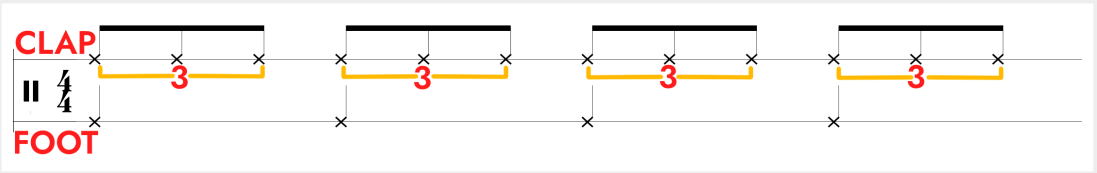


In reverse, in Debussy's *Clair de lune*, the amount of notes in a beat is condensed (and held back as a result). Instead of a normal grouping of three eighth notes, Debussy indicates a **duple** (two eighth notes in this context):

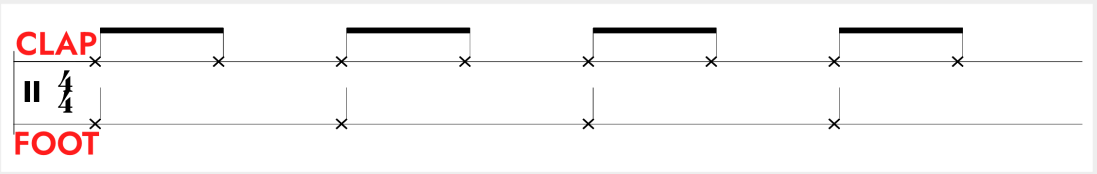


EXERCISE

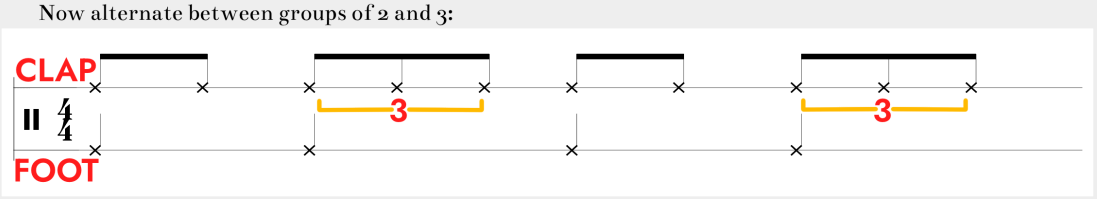
Stomp on each beat and clap the notes indicated.



Now switch to (keep the tempo the same)...



Now alternate between groups of 2 and 3:



So what makes certain rhythms effective? Well, that depends on many factors, including the purpose of the music, the genre and the traditions that come with it, and most importantly, *context.*

For example, in bebop (jazz), the music largely depends on rhythmic variations that weave around a swing. Predictability and monotony are not favored. In this context, a bebop solo can sound boring if all the notes are straight eighth notes, for example.

On the contrary, minimalist music embraces long stretches of repetitive and monotonous rhythm that is meant to create a continuous current of sound, almost like a running stream of water. In this context, a phrase that has straight eighth notes may work perfectly fine.

Even in the most minimalistic and meditative piece, music may lose momentum if there is not enough rhythmic variety. The only exception is music that relies heavily on sound design and texture, in which case an a-rhythmic (having no clear rhythm) can work.

If you show up to your gig at a flamenco performance and play music that changes time signatures every other bar, you will be fired, whereas you might be praised for this by a math rock band.

You get the point.

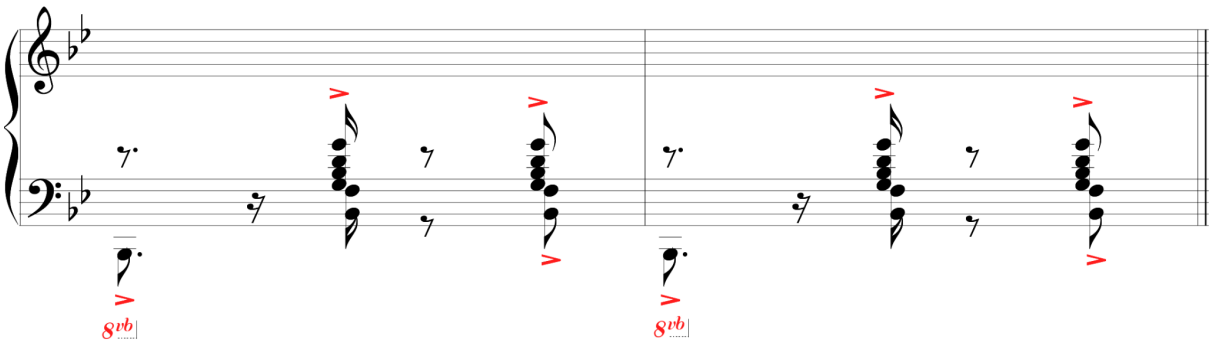
How to improve your timing

The best way to improve one's sense of timing is to consider the following:

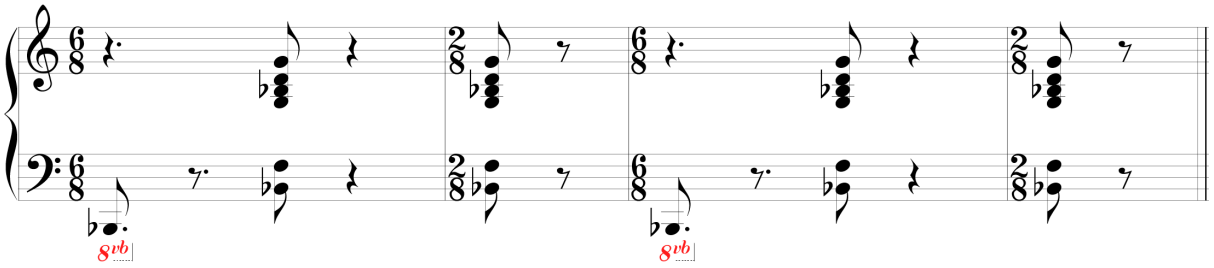
1. Refer to a metronome, which will give you the most exact and straightforward timing.
2. Sing lines (that are singable) to get a better sense of where the music needs a breath and the arc of the phrases.
3. Move your body to help you use physical space and momentum to distribute your beats. Do what feels natural, such as tapping your foot, nodding your head, conducting with one hand, etc.
4. Record yourself and listen back for feedback. This is particularly helpful because one tends to listen better (or at least differently) when not simultaneously playing the instrument. Listening back to yourself in recorded form will inform you of certain things you are doing rhythmically that you may not be intending.
5. Compare your timing to well-established musicians in the musical style that you are involved in. Take notes and be as specific about how they are playing the rhythm differently. There are so many valuable insights to be gathered through analytical comparison.

ON RHYTHMIC NOTATION

In Gershwin's *Piano Prelude No. 1*, the rhythm has an offbeat groove that goes against the natural points of emphasis of a 2/4 measure. The **accents** (see below in red) he writes reinforce the rhythm he wants, as well as encourage the performer to play this with more energy.

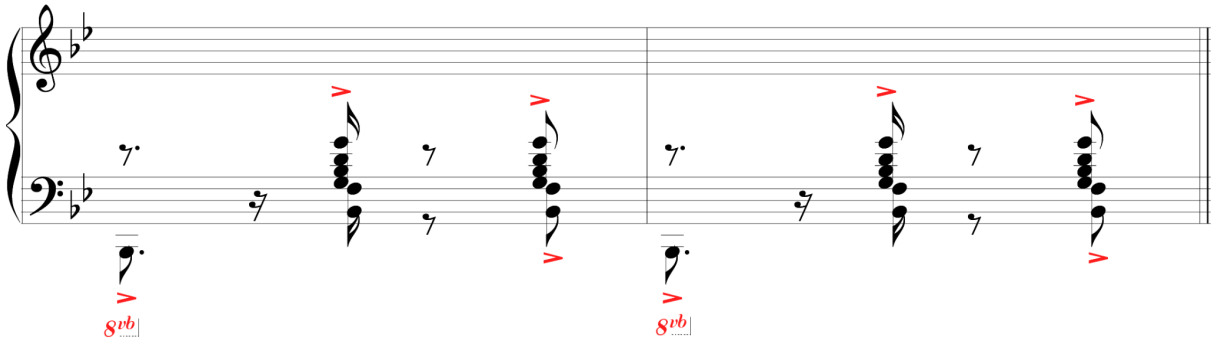


This excerpt can also be written as the following, where each second chord is now no longer an offbeat:



However, this notation is less practical because the alternating time signatures make it unnecessarily cumbersome to read. More importantly, this notation will encourage the performer to play the figure slightly differently - perhaps more stoutly than the original.

The original notation in 2/4 emphasizes the groove and quirkiness of the rhythm because we hear the notes *against* the larger 2/4 pulse in the background. Every third note is a playful upbeat as notated in 2/4, instead of a downbeat as a separate 2/8 measure (which would invite unnatural emphasis on that note). These nuances add character to the rhythm because there is a contrast between the underlying pulse and the rhythmic hitpoints.

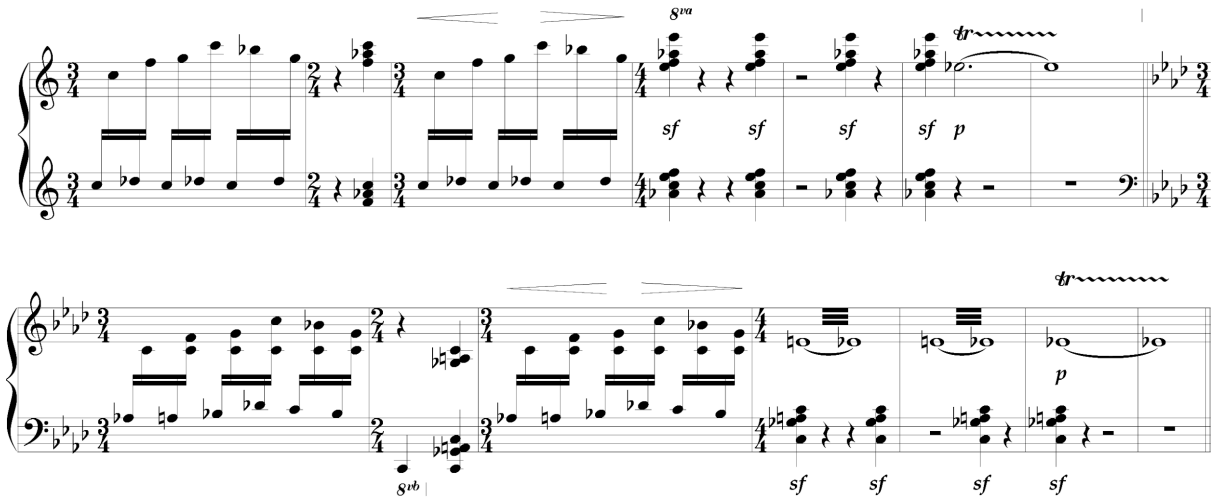


These discrepancies are what composers would keep in mind when notating their music.

Note: As a player, I would use subtle body movements, such as nodding my head for each quarter note beat, to help me feel how the accents occur against the natural pulse..

In the following section, I will briefly cover some common rhythmic devices used by many composers of different genres.

METER CHANGES

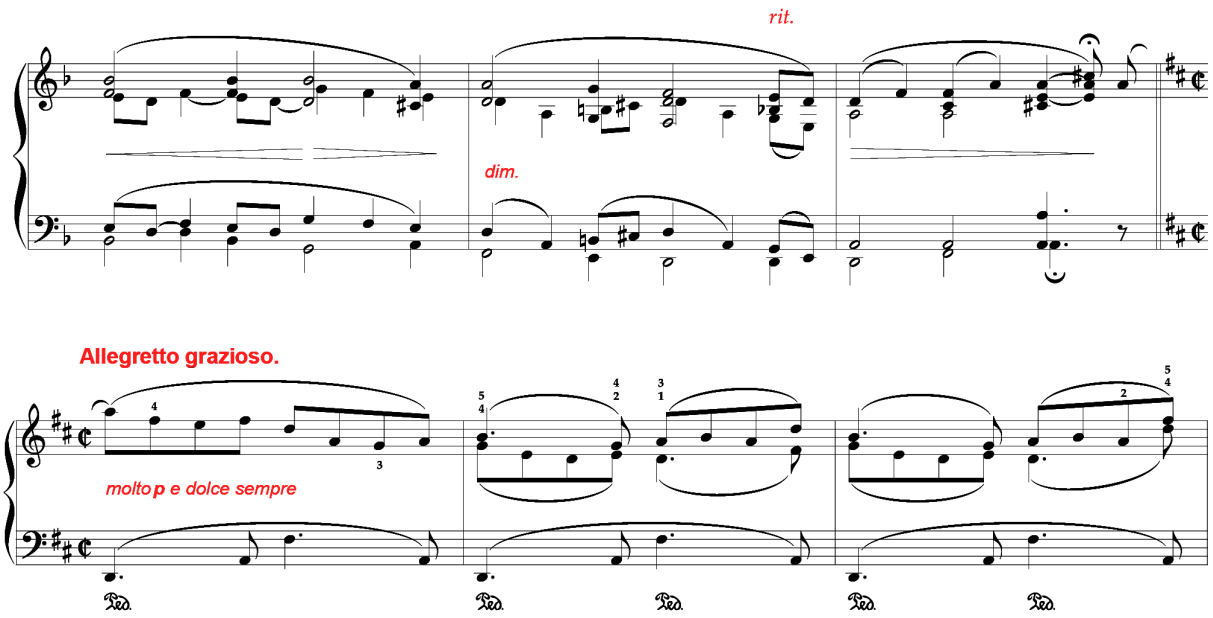


Stravinsky's *Rite of Spring* (end of *The Ritual of Abduction*)

Meter changes are when the time signature will change. This will oftentimes create disruption and a sense of unpredictability.

Sometimes, a meter change will occur in a piece to provide contrast in a new section.

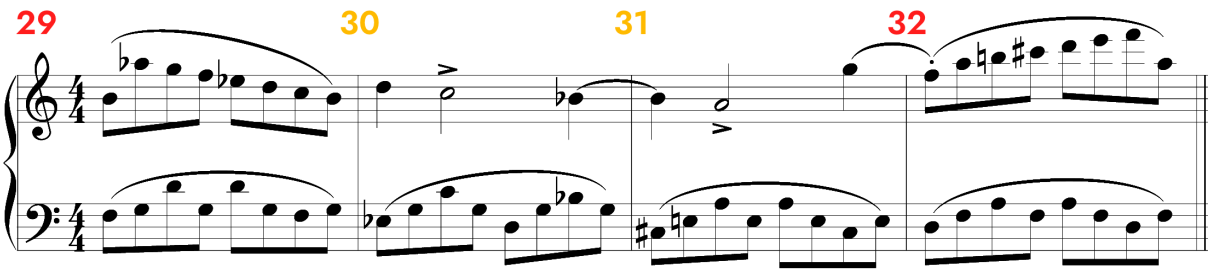
In this example from Brahms's *Romanze Op. 118 No. 5*, the meter changes from 3/2 to 2/4 when the music changes to the Allegretto grazioso section.



SYNCOPATION

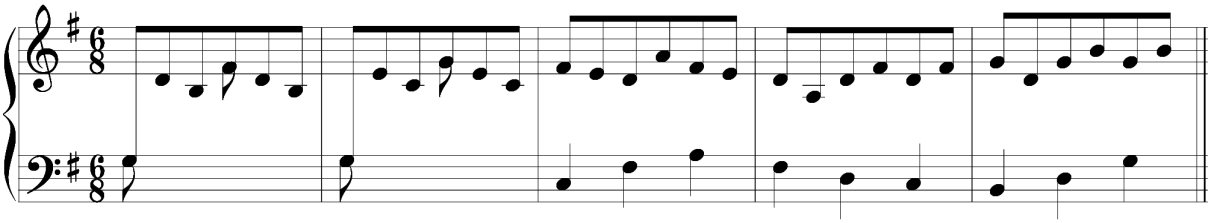
Syncopation is when a weak beat is emphasized, therefore displacing how you feel the beats temporarily.

Observe the accented 2 and 4 in bars 30 and 31 of Beethoven's *Sonata Opus 2 No. 3*:



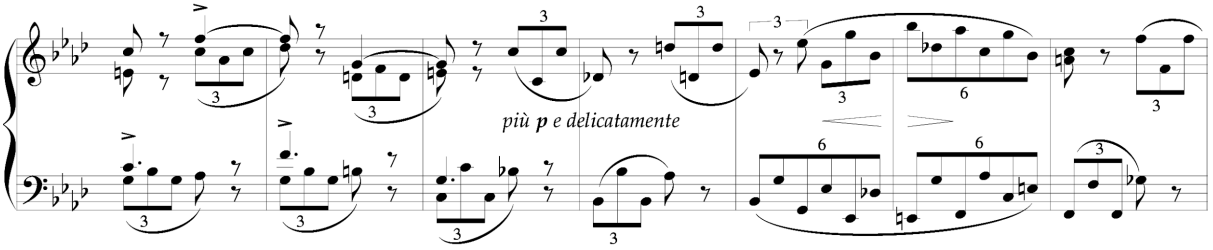
HEMIOLA

A good example of a hemiola is provided by Bach's *Partita No. 5 in G Major*:



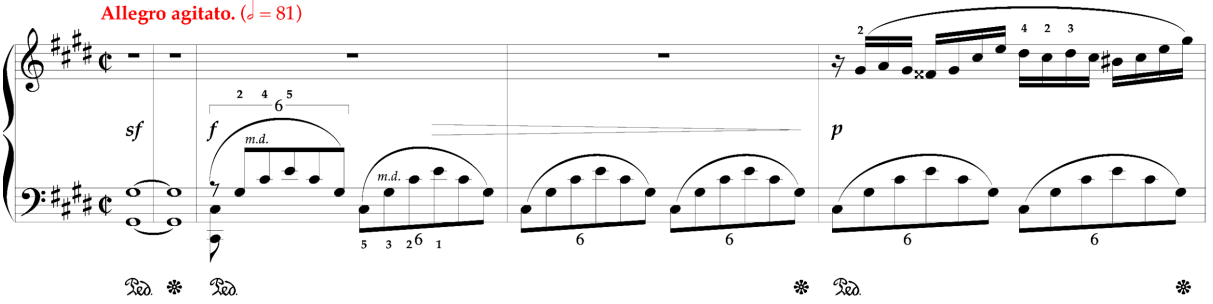
A **hemiola** is when there is an ambiguity of the pulse created by changing the way the measures are divided, often (and in this example as well) at the same time: The bass stays in a 3/4 feel, while the melody is in a 6/8 feel. This is an example of a "predictable" hemiola because the pattern repeats and the switch becomes normalized.

In contrast, the following example from Brahms's Intermezzo Op. 118 No. 4, contains a less predictable hemiola. Measures 14-17 (from the first visible measure) get your ears accustomed to groupings of 3 eighth notes at a time. Then, in Measure 18, the material clearly shifts over to groupings of 2 eighth notes at a time. This creates a very beautiful yet uneasy feeling.



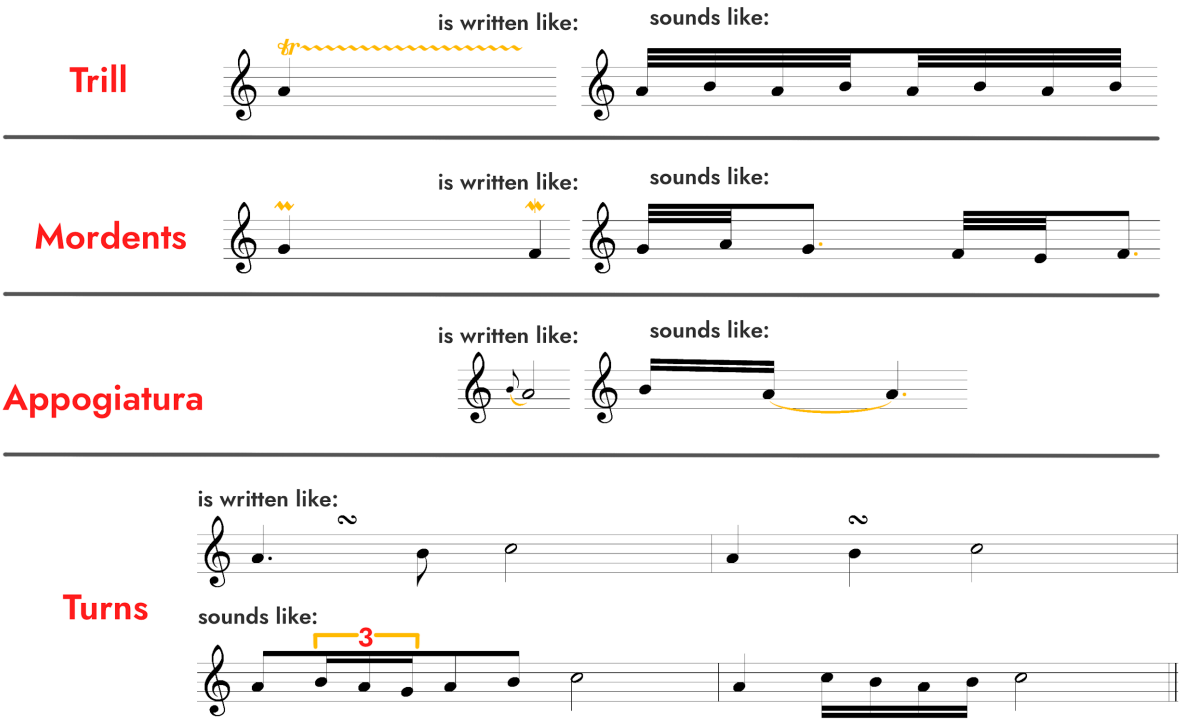
POLYRHYTHM

In the following example of Chopin's *Fantasie Impromptu Op. 66*, the two hands at the piano are playing different rhythmic groupings. The left hand is playing 6 notes per beat, and the right hand is playing 8 notes per beat. This prevents the notes from aligning and creates an intentionally disordered effect.



EMBELLISHMENTS

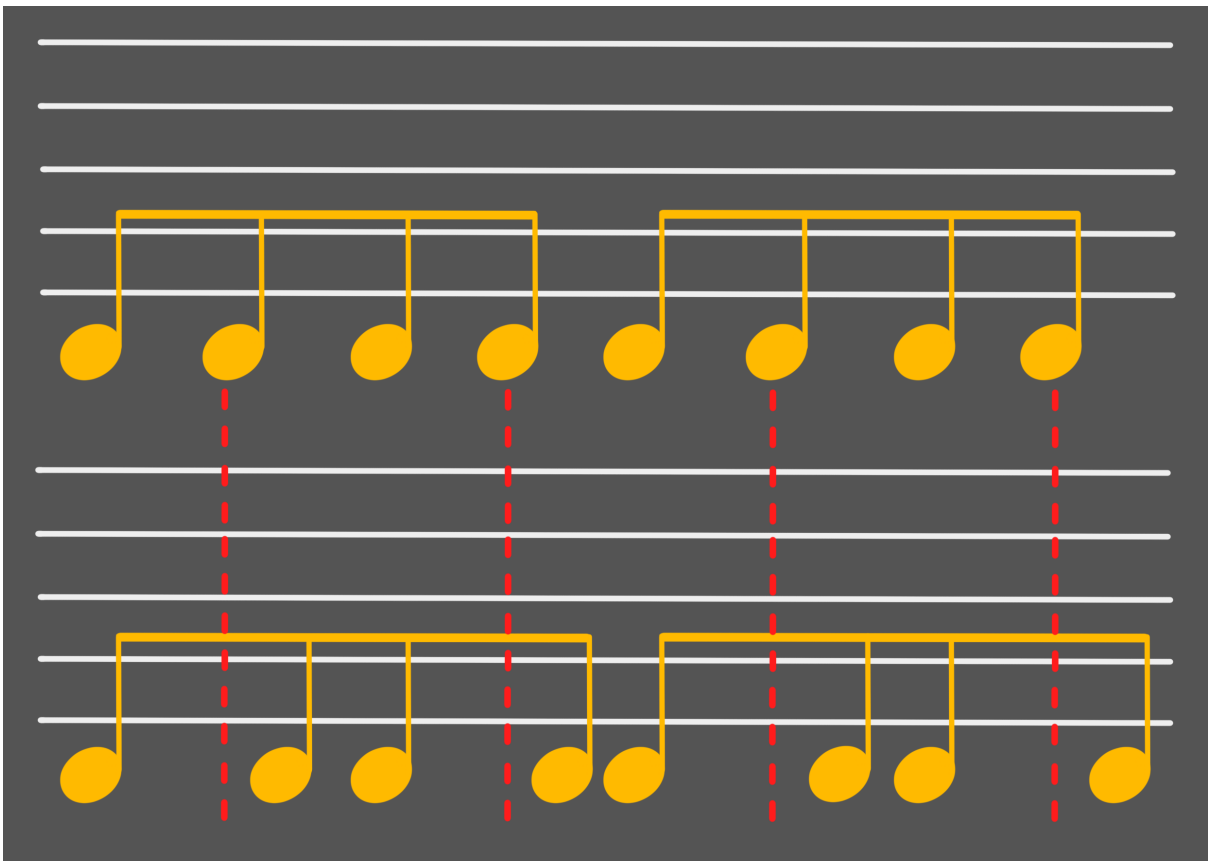
There are countless types of embellishments, which are decorative figures added before or around a stronger beat or note.



In flamenco, for example, embellishments are frequently added before the beats. They're kind of like micro-gestures that add extra flavor and energy to the beats.

SWING

When I first looked at lead sheets of jazz tunes, one of the things that surprised me was to not finding a bunch of dotted notes on the page. I did not understand why I heard this rhythm, which is referred to as "swing" in the music, yet nothing resembled it in the way that the rhythm was notated. The way I understand it now is to think of it as giving **elasticity** to the music. By **delaying the weaker subdivisions slightly**, music will start to swing.



How far you push the weaker subdivisions is up to taste and genre.

FEEL

The rhythm of certain genres are felt more palpably than others, especially through the body. I would include genres like Baroque/Period Music, Early-Mid Classical, Bebop, Swing, Hip-Hop, Tango, Salsa, Flamenco, Funk, etc. in this category because dance is heavily intertwined with each one.

Even if dance is not an underlying source for the music, all music carries rhythm. That rhythm carries the music through time as if a thread is being pulled through space. In this way, I think movement and gestures are a part of all rhythm.

Chapter 4

WHAT MAKES A MELODY?

And why some are better than others

In this chapter, we will learn about the two key elements that define a melody and how both can be more significant than the other depending on the context and elaborateness. We will learn about the general shape of melodies and what some of the most known melodies have in common. Later, we will gather how and which information can be subtracted by analyzing melodies in existing and acclaimed contexts.

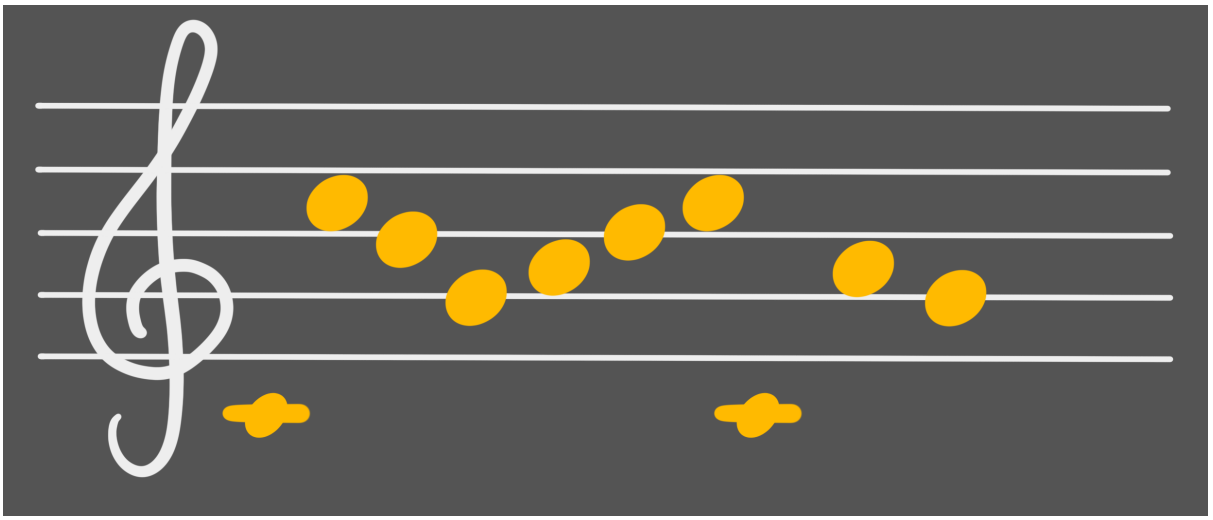
In this chapter, we will explore the roles of melodies in general and what the quintessential components of a melody are. Furthermore, we will look at what most recognizable melodies have in common and how to balance, both in direction as well as consonance and dissonance, to create a sense of tension and release.

A **melody** can be described as a memorable line of music from a piece or section. It is usually a more distinguishable phrase among others because of its lyricism and/or distinct shape. What a melody is and how it is incorporated into a piece of music has evolved over time. While some pieces of music do not have nor need a melody because other elements of the music are prioritized, many genres of music are composed of a string of melodies, especially music from the Classical and Romantic eras. Most popular music will contain a main melody in the chorus.

Let us explore how to define a melody, and the most important factors that go into creating a memorable melody.

Firstly, can we have a melody with only pitches?

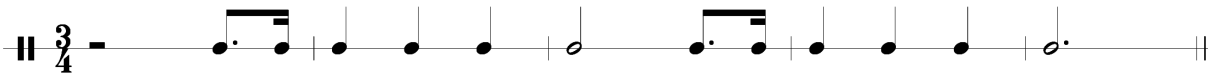
Try guessing what melody this is... (Hint: it is one of the most famous melodies and is often played on the ukulele):



You may or may not have gotten it, but chances are that it was quite difficult to guess.

Now, how about having a melody with only rhythm?

Try guessing what melody this is (hint: You hear this probably at least once a year and feel a bit awkward due to not knowing what to do while others "perform" it for you):



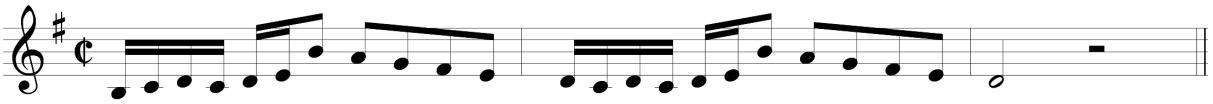
If you were to guess any of them, it shows how recognizable those melodies are, in order to be identifiable with only partial information. However, the melodies are only truly identifiable when both pitch and rhythm are combined.

Each melody is unique and will lean towards one aspect or the other to obtain its most essential, memorable characteristic. In other words, some melodies have a stronger rhythmic profile, while others will be more distinguishable by pitch order.

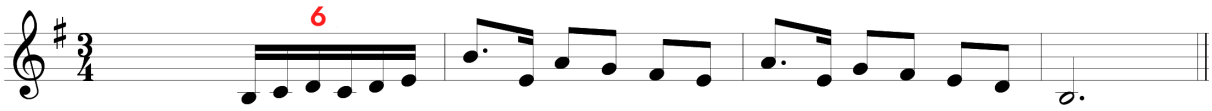
In order to fully grasp the nature of melodies, it will help to first learn about the following metrics of observations, as applied to any passage of music:

- Where are the peaks and valleys?
- At what points does the music want to lean in and out?
- How would you describe the overall shape - and, are you able to describe this in words?
- How do the notes align with the underlying harmony and time signature?
- With these observations in mind, certain phrases will stick out more as melodies over others.

Compare this phrase:



to this melody:



Both passages have more similarities than differences, but the melody has more distinction due to the following:

1. Its outline works with the time signature
2. The melody implies a simple yet strong harmonic progression (i – VII – V, more on that later, don't worry about it too much for now)
3. There is more rhythmic variety but at the same time more rhythmic coherence in its use of figures
4. If it was sung, the singer would have time to breathe

I would sum up the characteristics of a melody as the following:

A phrase is typically more "**melodic**" and easier to remember when it:

1. **Uses patterns or structural shape**s that are **distinguishable**, both in terms of pitch and/or rhythm (as opposed to a more random series of notes)
2. Promotes a **natural sense of harmony**
3. Contains a **balanced set of intervals**
4. Allows space to **breathe**

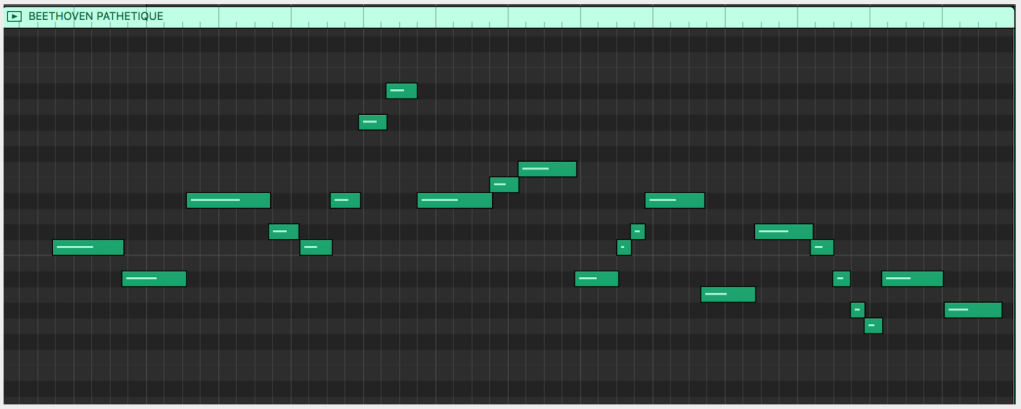
EXERCISE

Observe the shape of the following famous melodies without listening to them (at least when answering the following questions for the first time) and write down what you can observe:

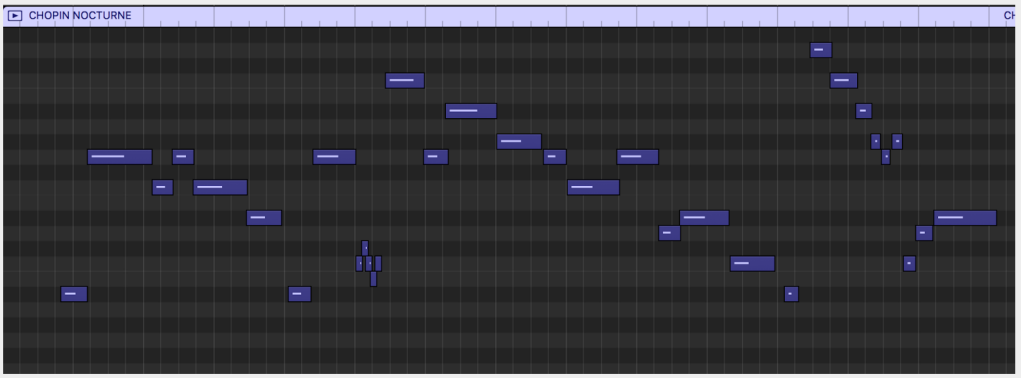
1. What do you observe in general?
2. What do they have in common?
3. What notable differences do you see?

Franz Schubert - Ave Maria

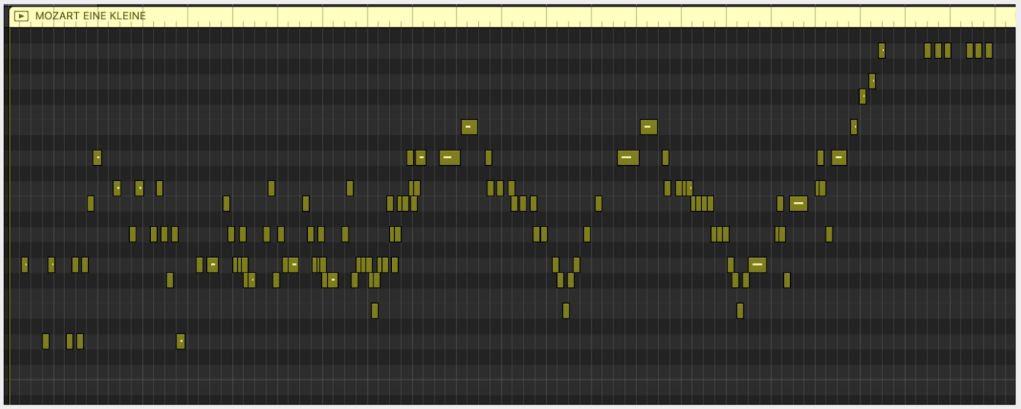
Ludwig van Beethoven - Pathetique, II. Adagio cantabile



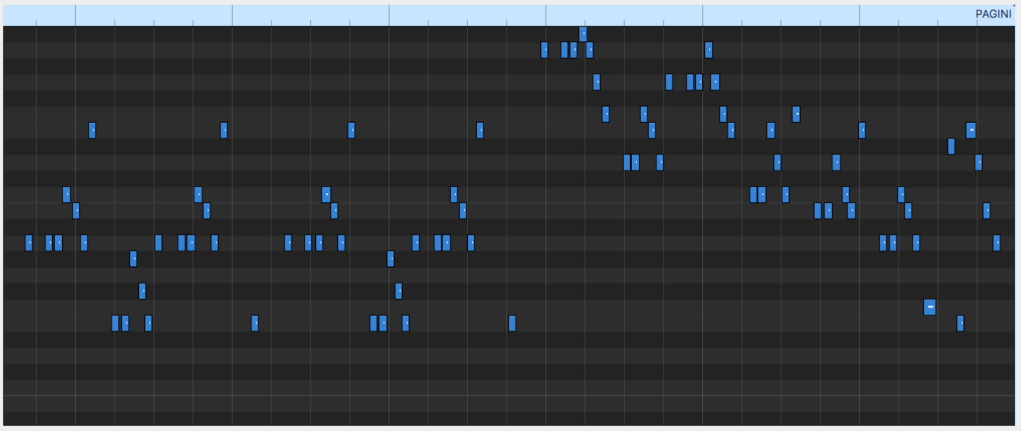
Frédéric Chopin - Nocturne Op. 9 No. 2



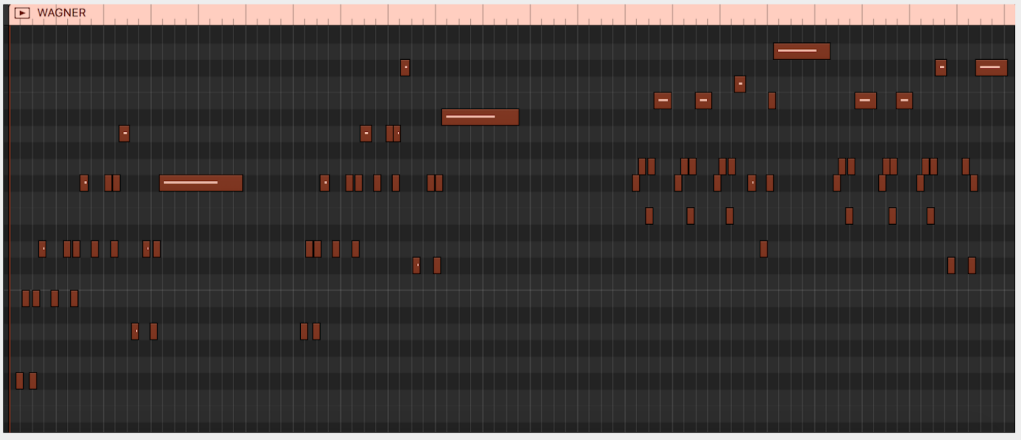
Wolfgang Amadeus Mozart - Eine kleine Nachtmusik



Niccolò Paganini - Caprice No. 24



Richard Wagner - Ride of the Valkyries



The pitch order combined with rhythm creates a shape - a rise and fall, creating a sense of progression and movement. There is no singular formula to establish a great melody. What is consistent among most melodies is that there are notable characteristics or a combination of characteristics that create distinction. These characteristics can also (and quite effectively) include

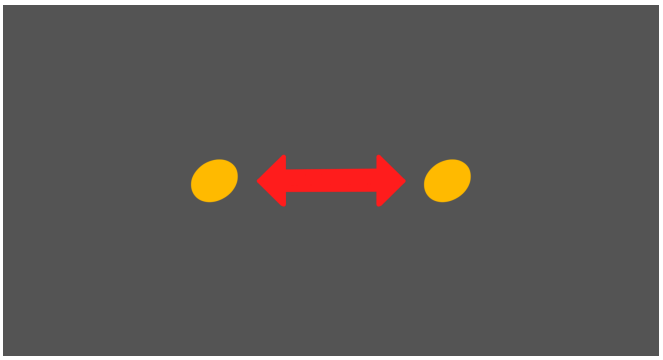
timbre and instrumentation, but in order to cover the basics, the chapter will focus on pitch and rhythm.

Let's say that we have one dot:

This is static - there is no movement.

The introduction of another dot, however, placed, brings this closer to being a melody because now we have a reference point between the two notes.

With two dots now, there is “distance” and “direction” to work with:



With the concept in mind, imagine 4 of these dots, and let us imagine these dots are notes:

Already, we have more "data" to work with.

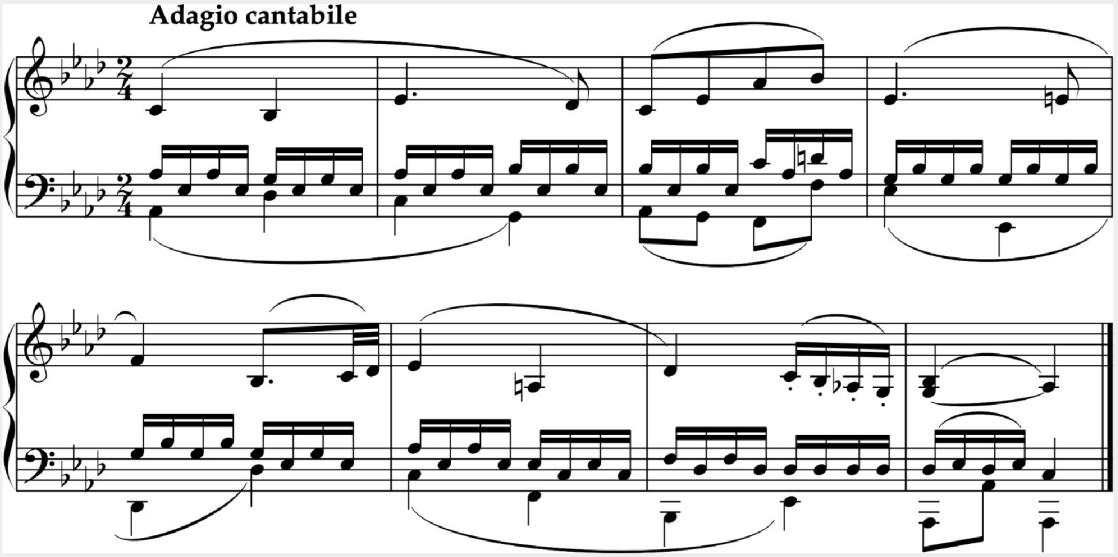
Now observe the following placement of the dots:

If we now introduce another dimension – by stretching out some dots and varying the space between and inside the elements, we have even more motion and direction.

This is essentially how composers shape notes to create distinctive melodies. When studying many great melodies, you will probably come to the conclusion that the majority has a sense of balance and variation.

EXERCISE

Let's take a look at the first part of the melody from Beethoven's Pathetique Sonata (second movement):

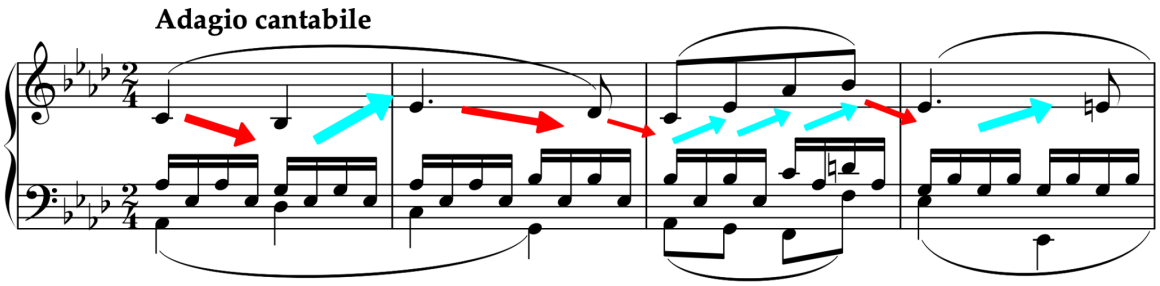


1. Observe the change of direction between the first three beats by creating arrows of the determining direction between the notes (either copy the bars on paper and insert arrows with a pen or add it in in the pdf).

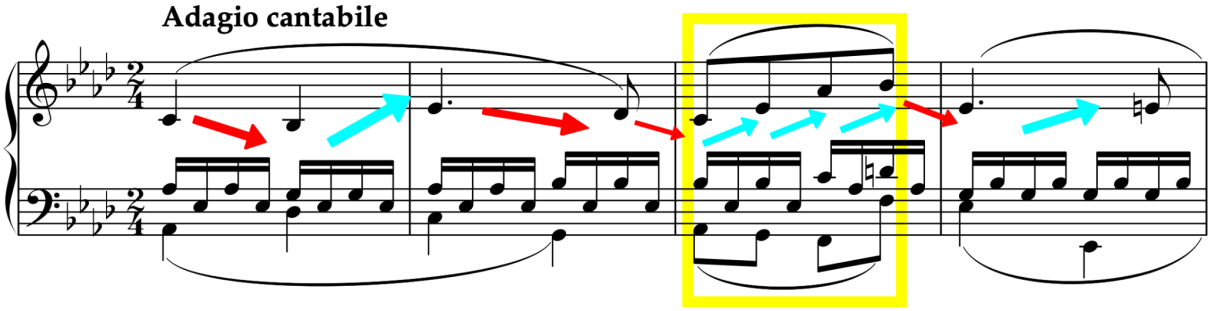
2. Write down whether and how you can see differences between the change of direction related to the length of the notes.

3. Now look at bars 5 to 8 - mark where the phrase begins and where - in your perception - it ends. Can you see anchor points that guide the direction of that phrase?

Here are some significant details I notice in the structure of this melody. Observe the change of directions:

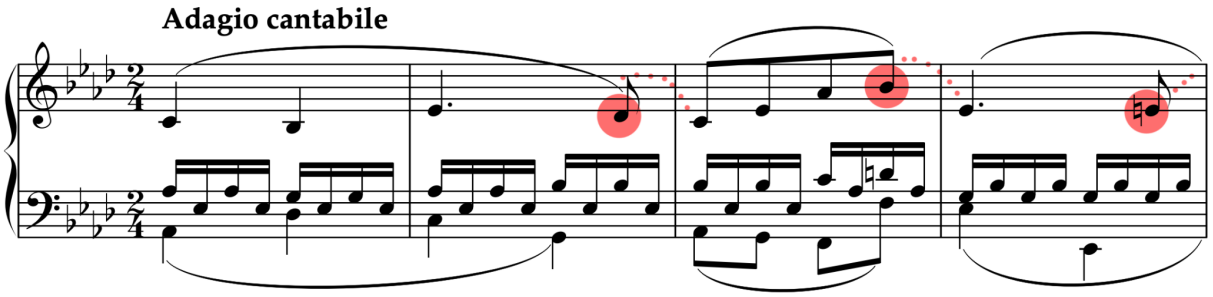


Observe that there are fewer direction changes for the busier measure (with 8th notes) in contrast to the first two measures:



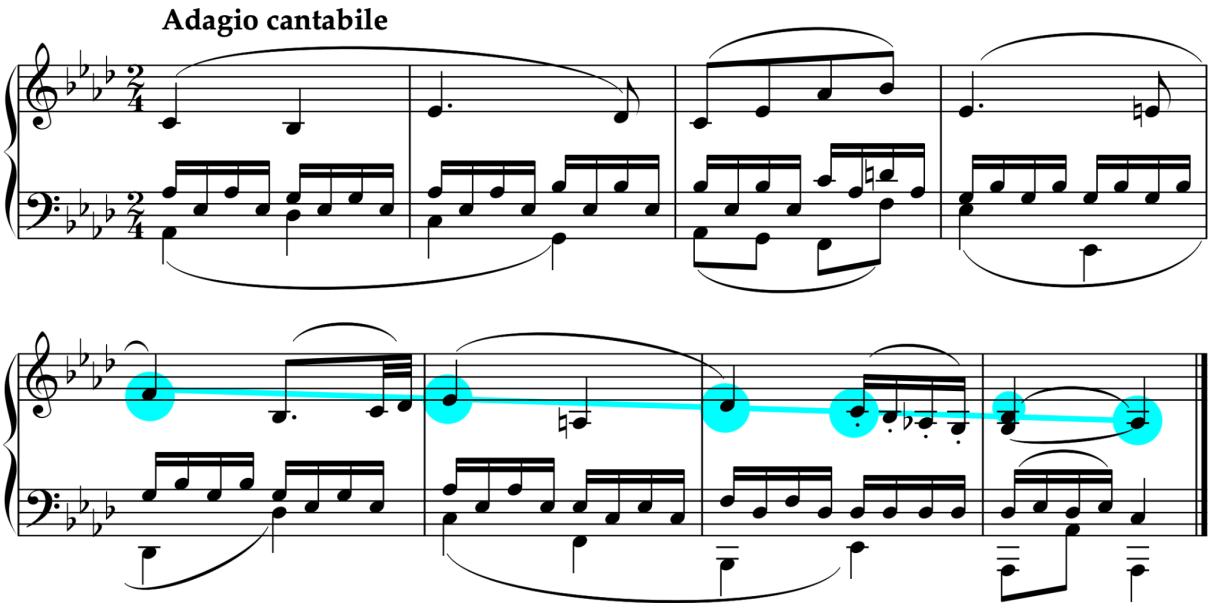
This consistent flow of direction balances out the quicker movement of harmony and rhythm in that measure.

Also, observe the eighth notes at the ends of shorter phrases. These serve as a transition to the next section and creates a natural momentum that keeps the melody flowing:



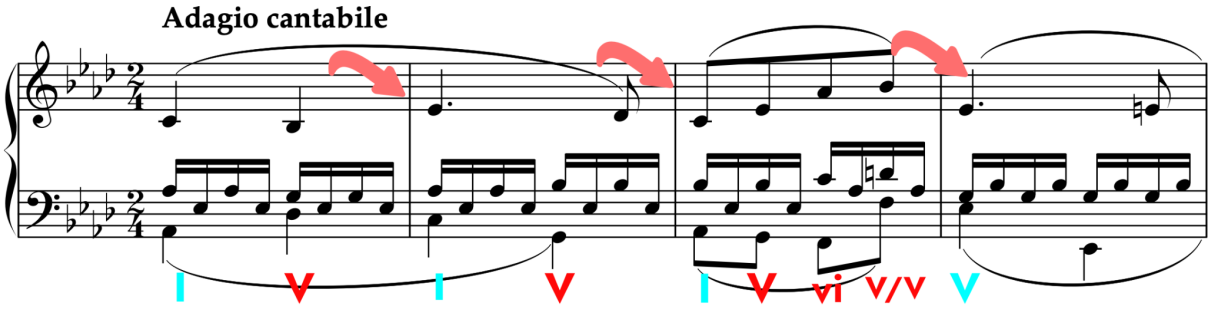
Melodies often contain elements of a natural progression of "events." This can be embedded into the larger structure, as Beethoven does so in the second half of this melody.

Observe the path of the highlighted notes:



These notes are descending down a simple scale (A-flat Major). This provides an internal structure that guides our ears as the phrase progresses.

Also, observe the points of tension vs release, indicated by the red arrows:



A knowledge of harmony (more on this will be covered in the following chapters) helps, but one can already observe these points of tension and release simply by listening.

Being mindful of the structure of the notes in this manner helps us form ideas on how to use dynamics, timing, and articulation in order to highlight the shapes of melodies.

Chapter 5

WHAT ARE SCALES AND MODES

The basic pitch ingredients

In this chapter, we will learn about how certain types of recurring sound colorings are called modes and what their building blocks - scales - are. We try to find an approach on how to grasp the difference between the two and how to successfully use either of them. We will learn the most common scales and modes and how centers of gravity, tension, and release as well as push and pull principles determine new rule sets within music.

I am sure you have heard of the saying "practice your scales."

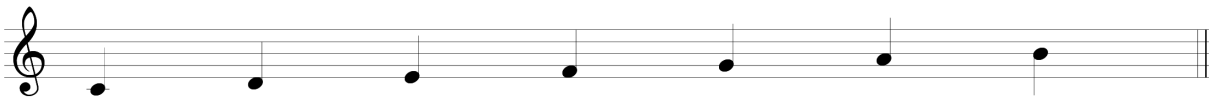
By learning about scales and modes, you are learning about one of the most elaborate and ingenious systems created in music history. Once you learn them, many songs and pieces of music will make greater sense to you.

All musical cultures go through a gradual evolution of choosing which pitches have greater emphasis when making music - essentially, the creation of musical palettes.

These are what "scales" are - a specific order of pitches that have a specific order or different spacing.

There are many of them, with many different labels and "functions." Different parts of the world at different points in history used these pitches in different ways; however, there are many overlaps and cross-influence. Just as different cultures used similar natural materials to form different cuisine, architecture, and art over time, the use of pitches to create music evolved in this manner as well.

Let us start with the seven notes we are able to notate without the use of any sharps, flats, or key signatures.



What are the different variations possible?
I will include the scales and modes that will cover most bases when it comes to studying, playing, and writing music.

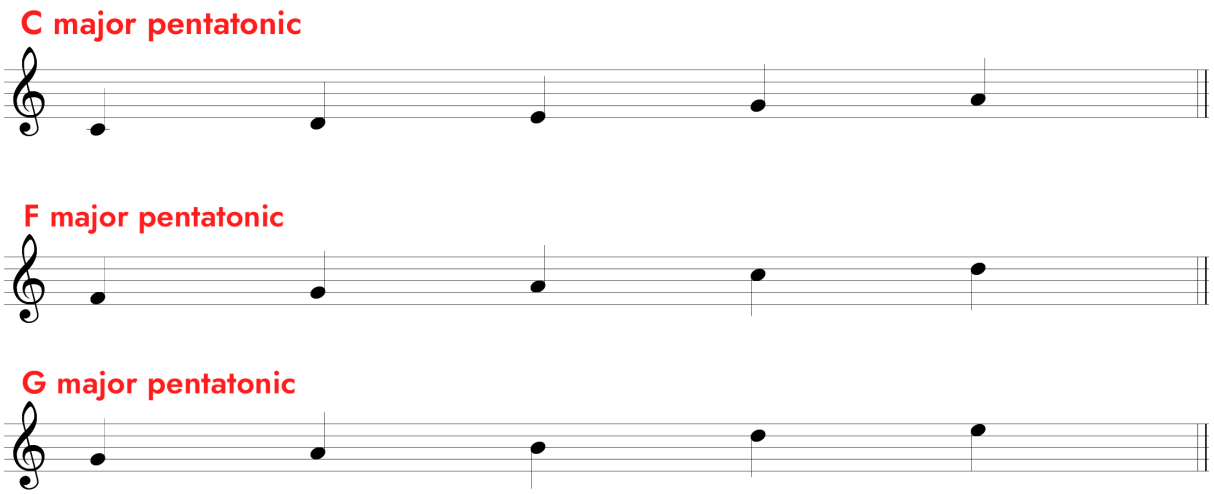
They will be grouped into two categories: the Major (brighter) and the minor (darker).

Major vs minor is determined by the third pitch in combination with the first one because this is the smallest unit to form default "chords" that are derived from the pitches (more will be covered in the next chapter). The categories of bright vs dark are used for the purposes of simplification.

The 7-note scales you see above will have combinations of whole-tones and semi-tones (aka half steps and whole steps, as you remember from before). The 5-note scales (called "pentatonic scales" - "penta" derives from Ancient Greek for "five") also include thirds.

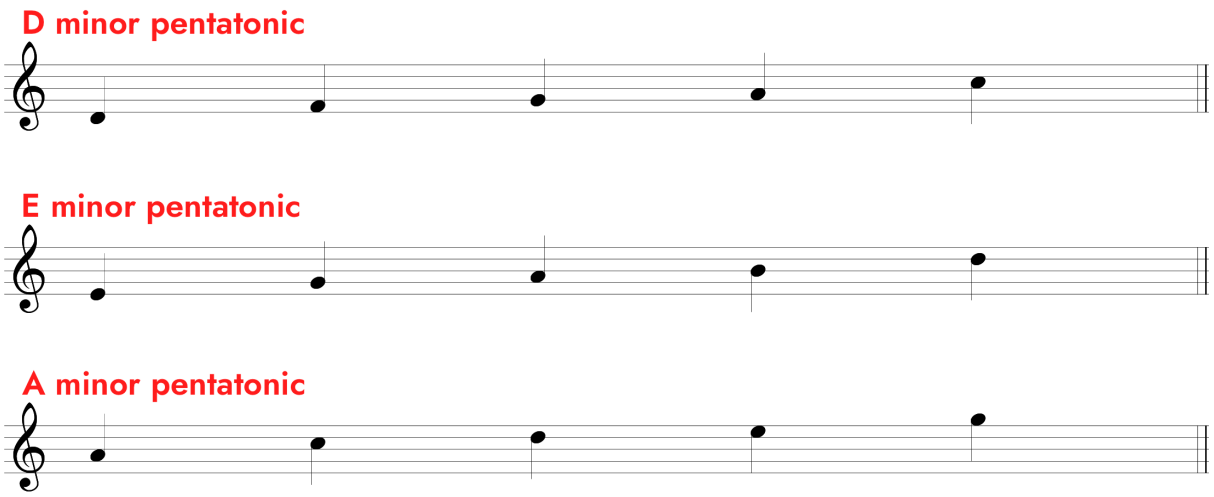
Major 5 note scales:

Starting from C, F, G



Minor 5 note scales:

Starting from D, E, A

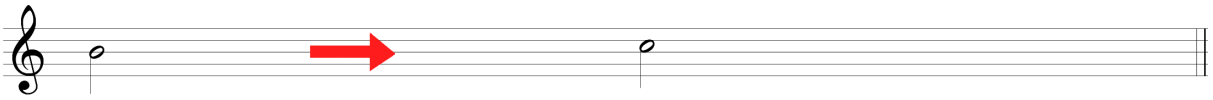


You might notice that we have not mentioned a pentatonic scale that starts from B. That's because starting from B with just white notes would leave us with neither a Major nor a minor pentatonic scale - it would leave us with a "diminished scale". More on diminished scales you'll learn about below).

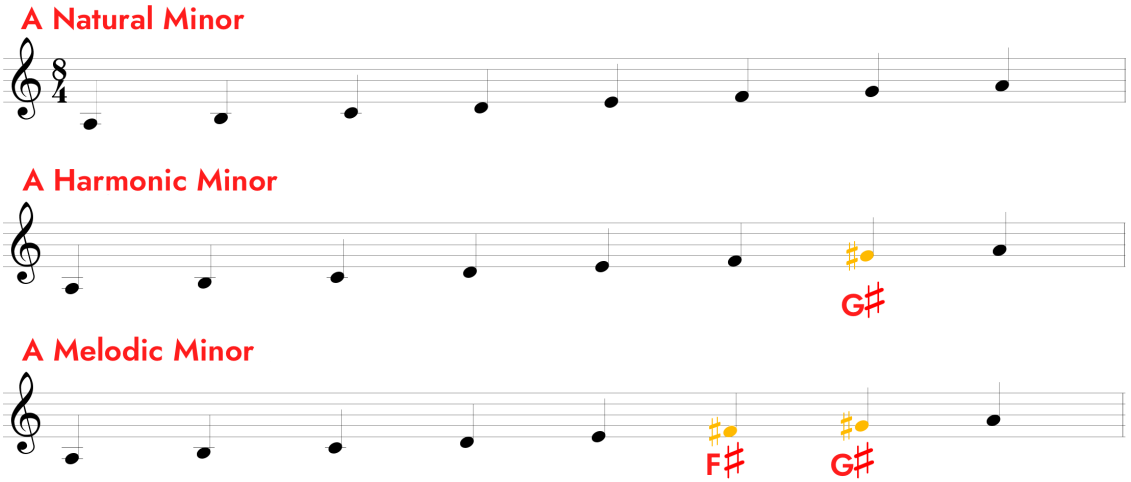
Because all of these sets use the same 7 pitches, they are related. Of the ones noted, **Western music favors the Major scale starting from C (WWHWWH)*** and the **minor scale starting from A (WHWWHW).**

*note: *W* stands for *whole step* (the distance of two semitones, e.g. C to D) while *H* stands for *half step* (the distance of one semitone, e.g. B to C).

In the tonal system, the push and pull between the I (meaning a chord based on the first pitch of a scale) and the V (meaning a chord based on the pitch that is a perfect fifth apart from the first pitch of the scale - more on that in the next chapter) is what creates movement and harmony. The half tones between 7th and 1st notes of the Major scale maximize this tension.



Therefore, in the minor version, the 7th note is commonly altered to be closer to the 1st note. In A minor, the G will be raised to the G♯. In earlier tonal music, this raised note is sometimes only altered when a melodic figure is rising.
This is why there are [different sets of minor scales]:



*In traditional contexts, the melodic minor scale is only observed in ascending notes (a melodic minor scale often switches to the natural minor scale when descending).

So now, **what are modes?**

The difference between scales and modes lies in how these pitches are then used in context.

When we talk about scales, the labeling typically occurs in the context of tonal harmony. Therefore, there will be characteristics in the music that lead us to this form of labeling.

In Western music, a "mode" is a term used to describe different permutations of a home scale or set of pitches. This is where the terminology becomes fuzzy, however. **Modes are not simply permutations of home scales** in certain cultures. For example, the Arabic maqam system uses 72 modes, several of which Western musicians would refer to as "scales" on their face value. Many scholars and theorists will disagree about the labeling of such systems, but I like to refer to scales and modes quite synonymously.

The point is not to get the labeling correct, nor be bound by hard rules, but to expand one's awareness of the many possibilities of pitch mixture and how they translate into expression and color.

That being said, let me introduce you to the common "modes" referred to by many modern-day musicians.

THE 7 MAJOR MODES

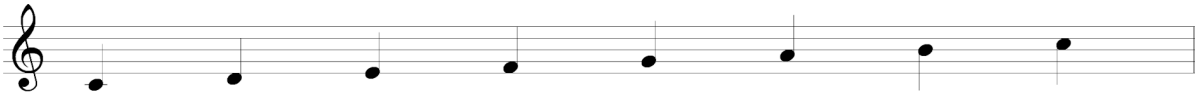
I will outline three ways of thinking about them, which all come in handy in my opinion.

1. **Permutation/reordering:** Start the scale from a specific note, and readjust to make this note the new "home" note
2. **Alterations/referencing:** Think of how the Major or (natural) minor scale is altered to form the pattern of the particular mode you are looking use.
3. **Key signatures:** Apply key signatures to the sets of pitches that will form the mode, accordingly

1) [Permutation/reordering]

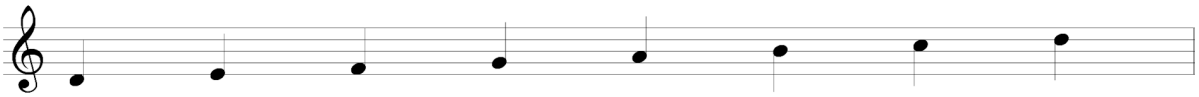
When only using white notes, with reference to C Major:

C Ionian



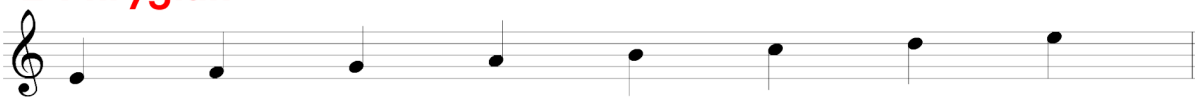
Ionian starts on C, the primary note

D Dorian



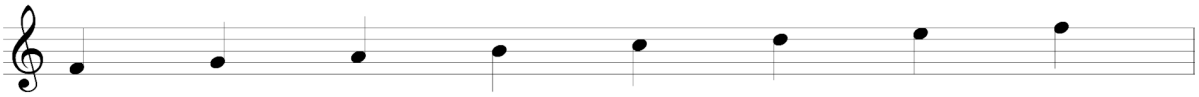
Dorian starts on D, the 2nd note

E Phrygian



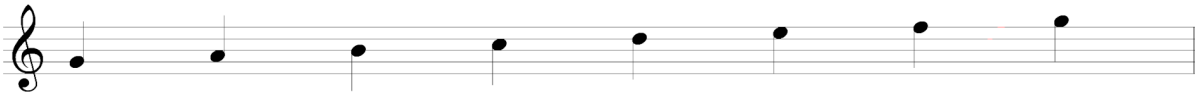
Phrygian starts on E, the 3rd note

F Lydian



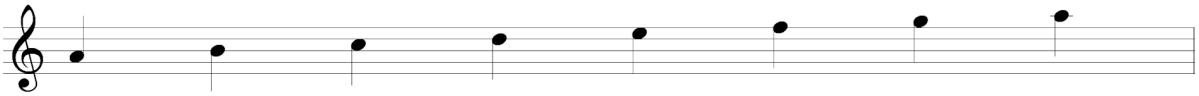
Lydian starts on F, the 4th note

G Mixolydian



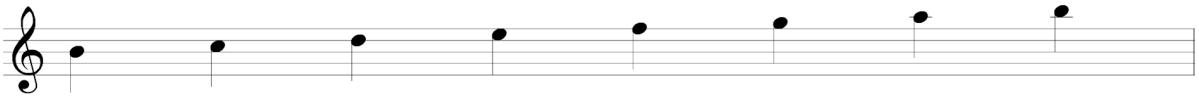
Mixolydian starts on G, the 5th note

A Aeolian



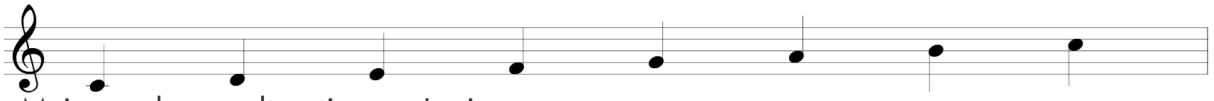
Aeolian starts on A, the 6th note

B Locrian

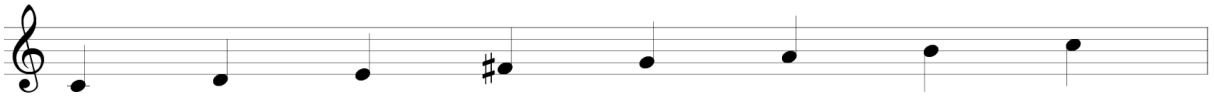


Locrian starts on B, the 7th note

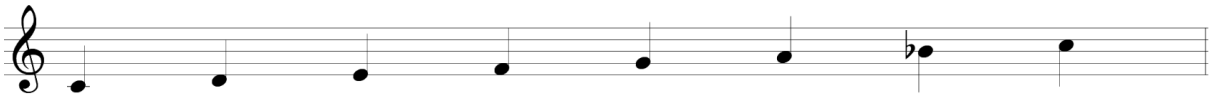
2) Alterations/referencing



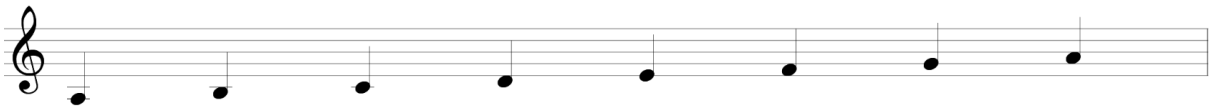
Major scale, no alterations = Ionian



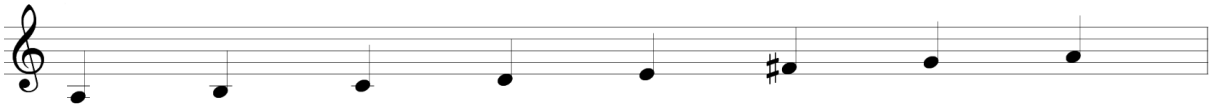
Major scale, with raised 4th = Lydian



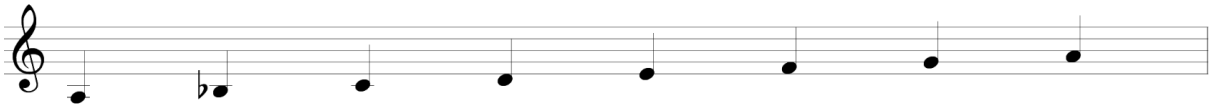
Major scale, with lowered 7th = Mixolydian



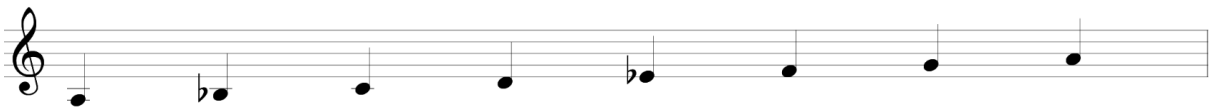
Natural Minor scale = Aelion



Natural Minor scale, with raised 6th = Dorian



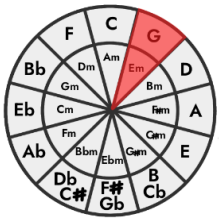
Natural Minor scale, with lowered 2th = Phrygian



Natural Minor scale, with lowered 2th and lowered 5th = Locrian

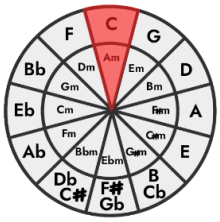
3) Key signatures

From the primary note, C, apply the Major key signature of the note:



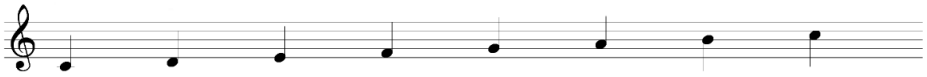
LYDIAN

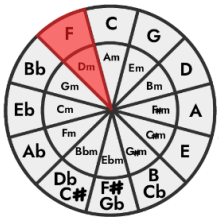
Apply key signature that is a Perfect 5th above 'C' = G Major key signature



IONIAN

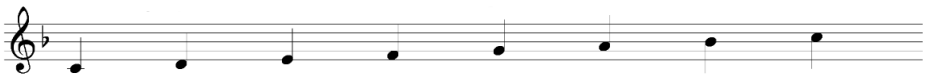
Apply key signature that is a unison to 'C' = C Major key signature

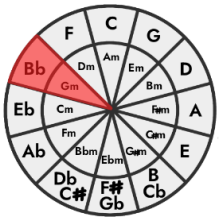




MIXOLYDIAN

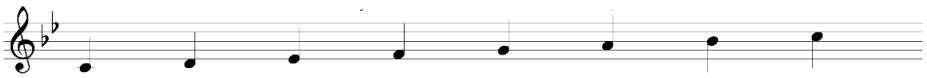
Apply key signature that is a Perfect 4th above 'C' = F Major key signature

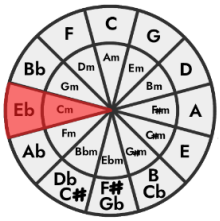




DORIAN

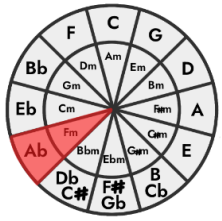
Apply key signature that is a Major 2nd below 'C' = B-flat Major key signature





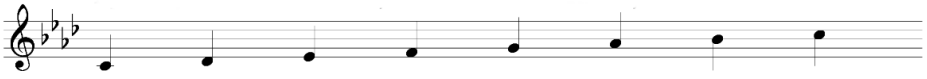
AEOLIAN

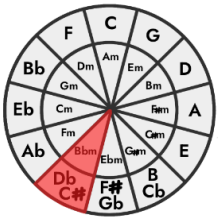
Apply key signature that is a a minor 3rd above 'C' = E-flat Major key signature



PHRYGIAN

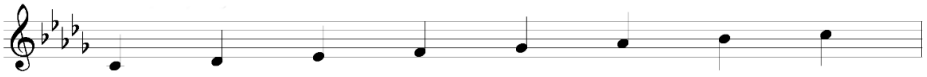
Apply key signature that is a Major 3rd below 'C' = A-Flat Major key signature



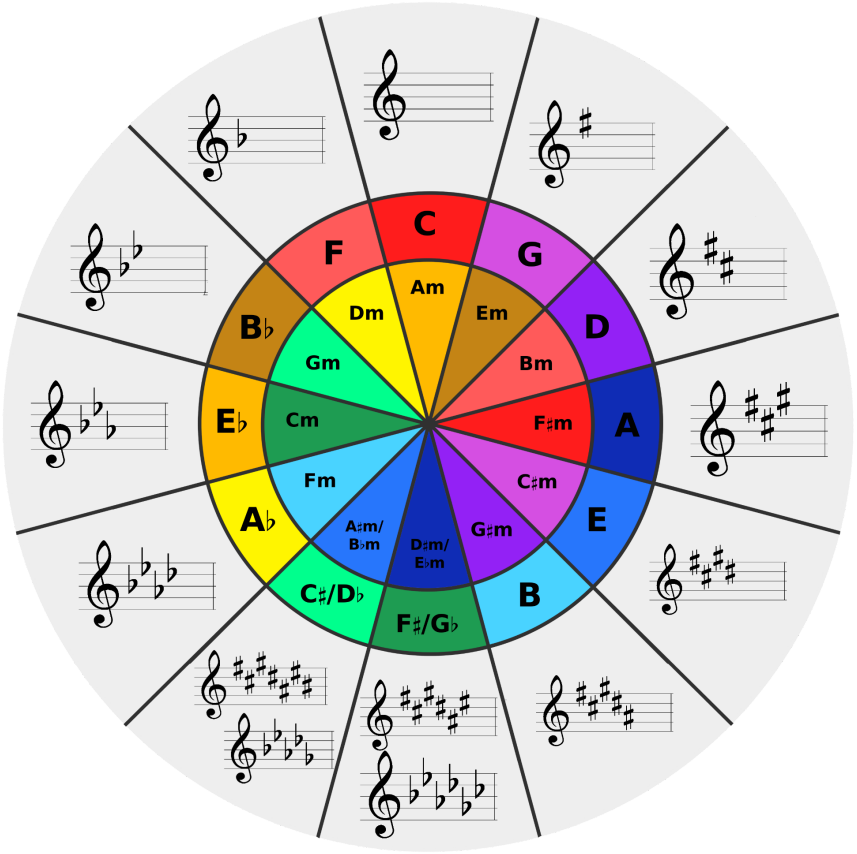


LOCRIAN

Apply key signature that is a minor 2nd above 'C' = D-Flat Major key signature



The reason I ordered the modes in this particular way above is it represents the order of brightness to darkness that each mode carries. Also, notice that the key signatures applied to follow the circle of fifths:

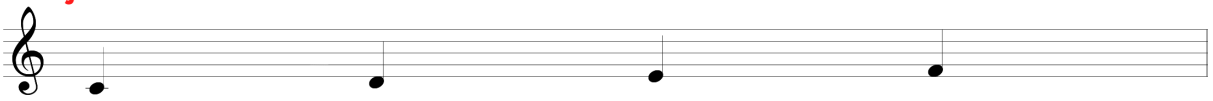


Even though the method looks complicated on paper, it can be a quick way to find the mode starting from a particular note.

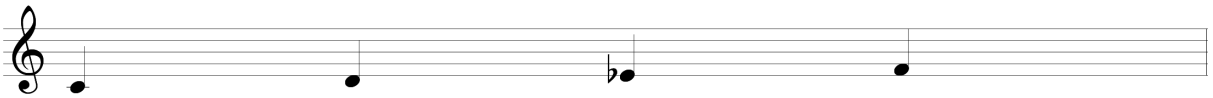
TETRACHORDS

Tetrachords are groups of 4 notes in linear fashion.
Instead of thinking of each interval and spacing, you can think in terms of groups of 4 notes at a time. Here are 4 examples:

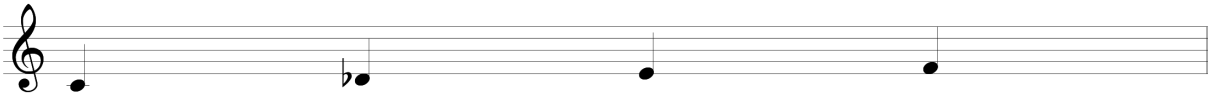
Major Tetrachord



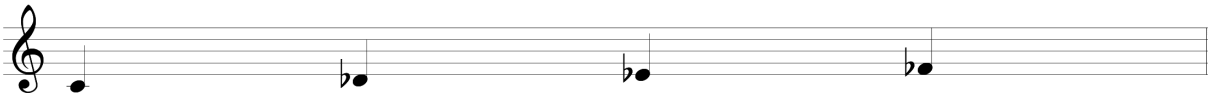
Minor Tetrachord



Harmonic Tetrachord



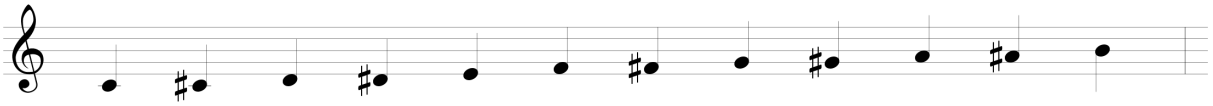
Diminished Tetrachord



As you can see, different types of building blocks, combinations, and permutations can create a massive variety of scales and modes.

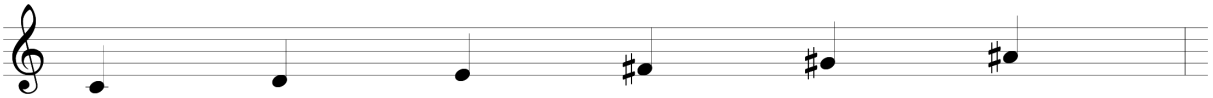
Let us move on to some other commonly used scales. Observe them from a variety of angles, as mentioned previously (spacing, alteration of common scales/modes, tetrachords).

Chromatic scale



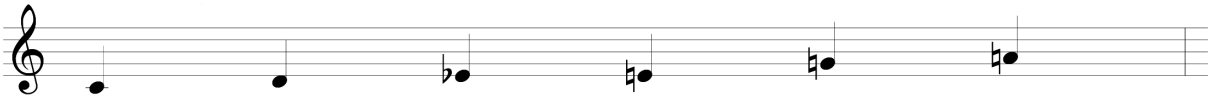
Giving full democracy to all of the pitches commonly used, this scale uses 12 pitches that are all a semi-tone apart.

Whole-tone scale

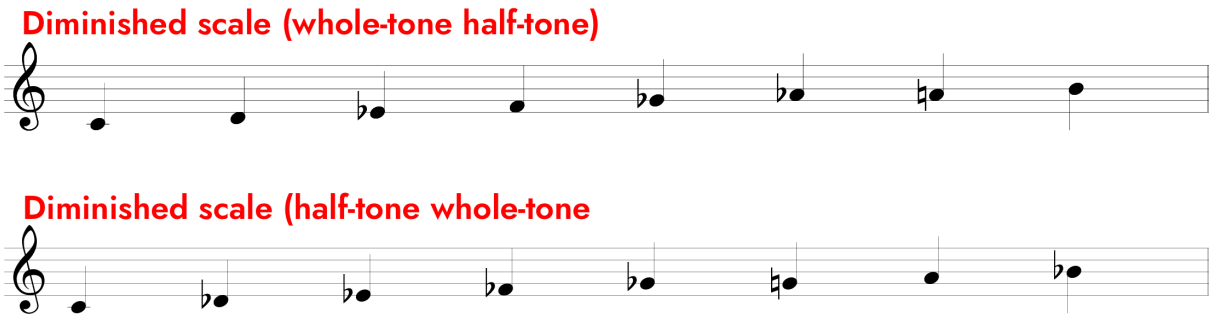


This scale uses 5 pitches that are all a whole-tone apart. Like the chromatic scale, all of the notes are equidistant apart from each other.

Blues scale



The blues scale is a Major pentatonic scale with a flat 3rd added in, or – when looking at it from a minor perspective – a sharp 4th added in



The diminished scale, also octatonic scale ("octa" derives from the Ancient Greek word for "eight" – the scale has eight different pitches), actually has two variants. It alternates between whole-tone and half-tone steps. Thus there is the diminished scale that starts with a whole-tone step, and one that starts with a half-tone step.

And – believe me – many, *many* more.

Do not let the "study" of scales be fixed in memorization. Build sound associations to each scale/mode, which first starts with the close observation of the spacings between the notes and how the notes in each grouping "mix" with each other.

Composers use these scales as larger units of notes to use at a time, almost like larger brushstrokes, as opposed to always thinking note to note. Once you become more familiar with these, you will be able to gain new insights into many musical passages, especially melodies.

Chapter 6

HOW TO MAKE SENSE OF HARMONY

Understanding the art of blending notes together

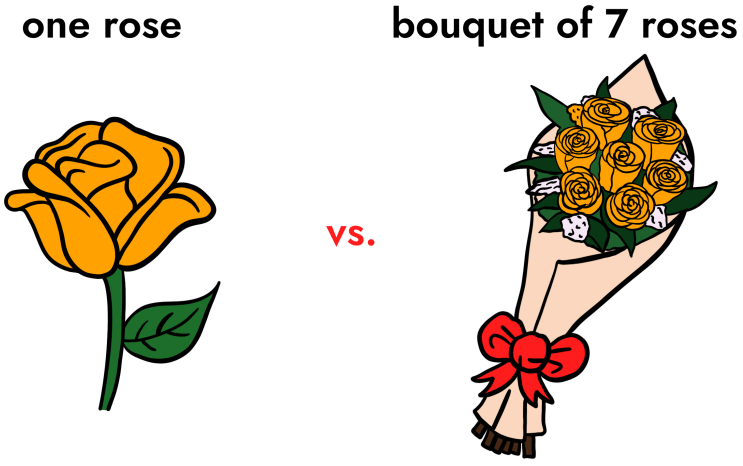
In this chapter, we will learn how notes function together and why some mixtures work better than others. We will learn about intervals, chords, chord progressions, voice-leading, and more importantly, why they are an essential part of musical structure and color. Mastering this topic alone will enable you to understand why different kinds of harmony evoke different colors and emotions.

In music, harmony refers to how different pitches *exist together*. This is significant because when certain pitches are combined simultaneously, they can start to evoke emotions and feelings, such as joy, stability, discomfort, and anxiety, for example. Points of tension, resolution, and color can be formed with the strategic use of how these groups are presented.

Different systems of utilizing harmony developed over centuries, similar to how grammar systems have evolved for languages. We will focus on the type of harmony that aligns most with Western music musical culture in the broadest sense. Please note that these concepts are actually **fluid in practice and not as definite as textbooks may often make them seem**. In other words, do not think of them as rigid rules but rather malleable guidelines.

In order to understand how harmony has developed, it helps to remember that the roots of Western music come from the Middle Ages. Gregorian Chants from the Roman Catholic Church of this time were **sung in unison**, in what we call a "**monophonic**" manner, where all singers shared the same line. Gradually, this became limiting, and musicians started to expand on it.

By the 10th century, it became a practice to also sing *different lines* simultaneously. This gave birth to what we refer to as "harmony," where we start to listen to multiple notes that are played simultaneously.

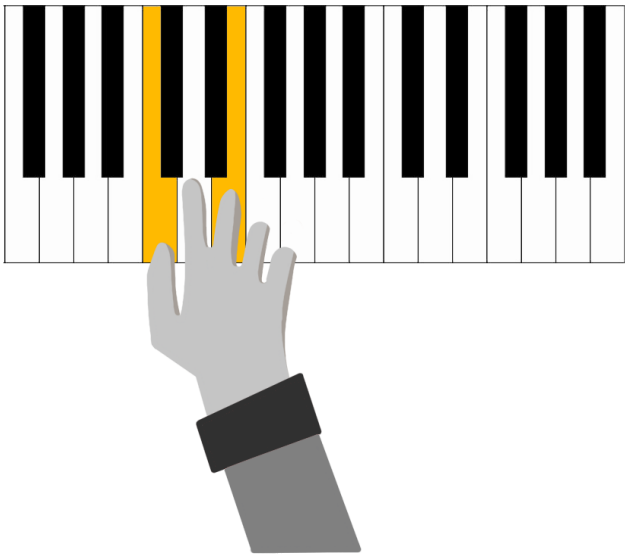


Think of how a bunch of single roses forms a bouquet of roses. A rose or two may stand out over the others, but the bouquet of flowers functions as a *whole set* rather than as single roses. With more

roses added, more combinations of what is now visually and creatively possible. Similarly, we can bunch different pitches together to create different sound combinations.

When we combine **two** different notes we call that an **"interval."** We label intervals based on the distance between the two notes.

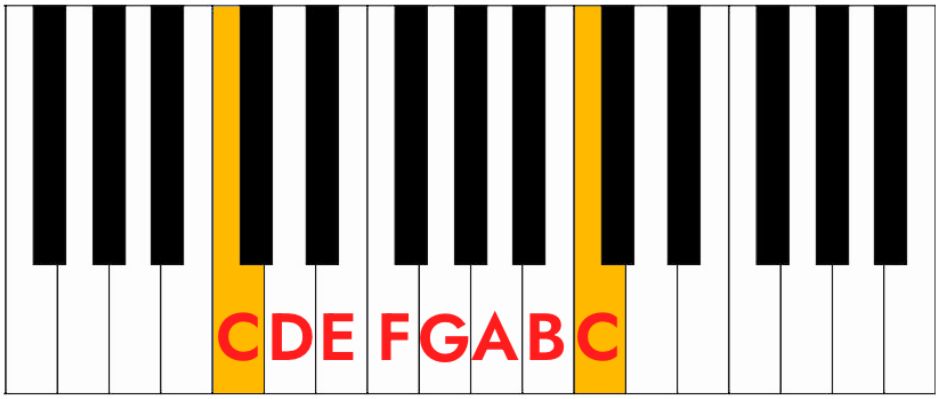
In this example, there are two notes played:



They are C and E.

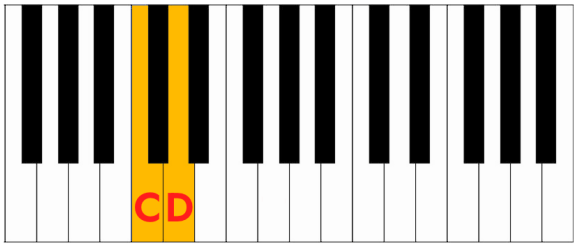
Starting first from C, it takes 2 whole steps to get to the E. This tells us that the **interval is a Major Third**. Different distances between two notes will have different names.

I think the most efficient way to think about and remember intervals is to first **reference the Major scale**.

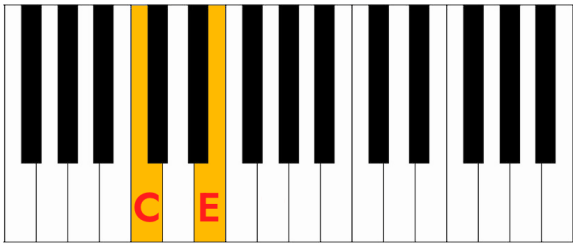


The intervals formed using the notes of the Major scale are all Major intervals.

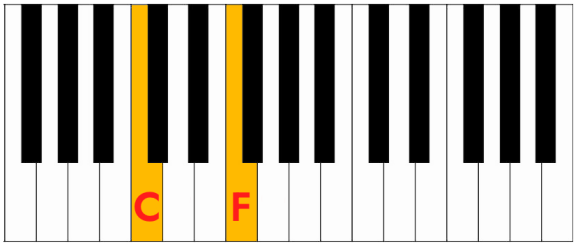
Major 2nd



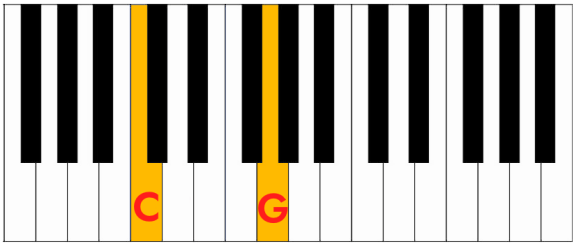
Major 3rd



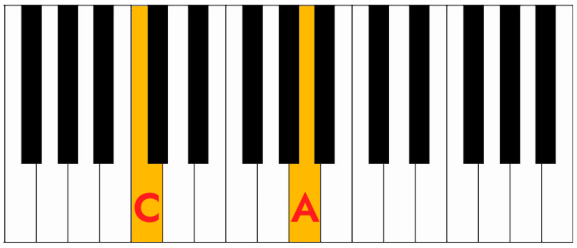
Perfect 4th (called "perfect" because there are no minor 4ths)



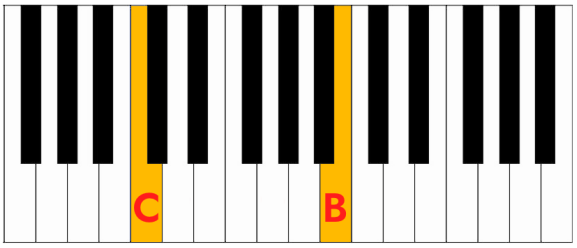
Perfect 5th (called "perfect" because there are no minor 5ths)



Major 6th



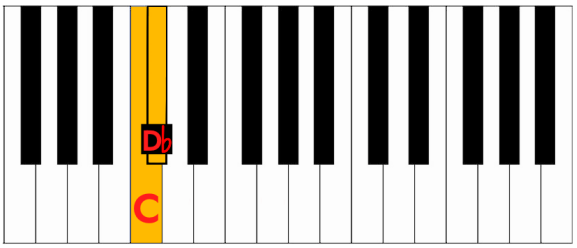
Major 7th



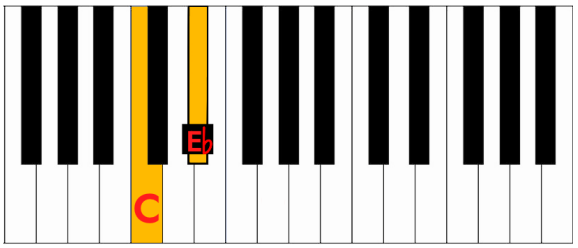
Note: "Perfect" is sometimes abbreviated as "P" (a perfect 5th might be abbreviated as "P5")

The remaining types of intervals (minor and tritone) can be easily identified as lowered major intervals.

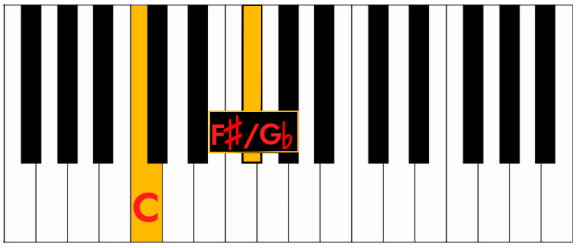
Minor 2nd (one half step below Major 2nd)



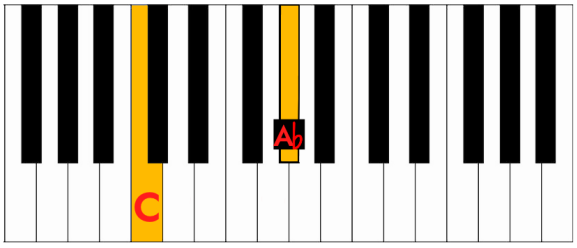
Minor 3rd (one half step below Major 3rd)



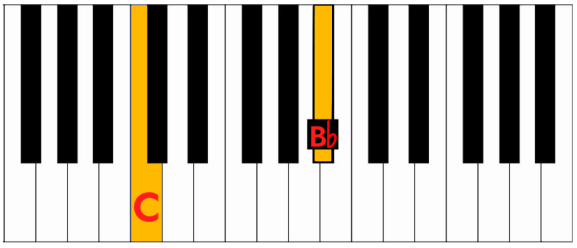
Tritone (one half step below Perfect 5th)



Minor 6th (one half step below Major 6th)



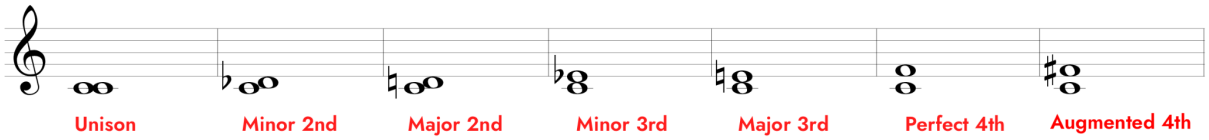
Minor 7th (one half step below Major 7th)

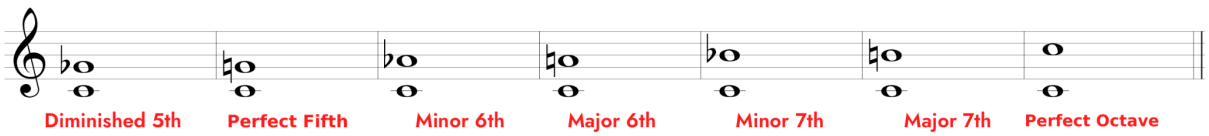


*Advanced note: If considering the specifics of spelling, there *are* differences between C+C♯ and C+Db, for example. However, the identification of intervals in many contexts is quite irrelevant.

When raising a Major or perfect interval further we call those intervals **augmented.**
When lowering a minor or perfect interval further we call those intervals **diminished.**

Note: The tritone can both be spelled as augmented 4th or diminished 5th – it's the same pitch.





I find that thinking of intervals in this manner is more efficient than counting half steps.

While memorizing these intervals, it is important to identify each interval by how they **sound** as well.

EXERCISE

1. Listen to each interval and ask yourself if it sounds...

- Stable or unstable?
- Consonant or dissonant?
- Narrow or wide?

Also, choose two intervals and compare the two. This will train your ears to notice subtle differences.

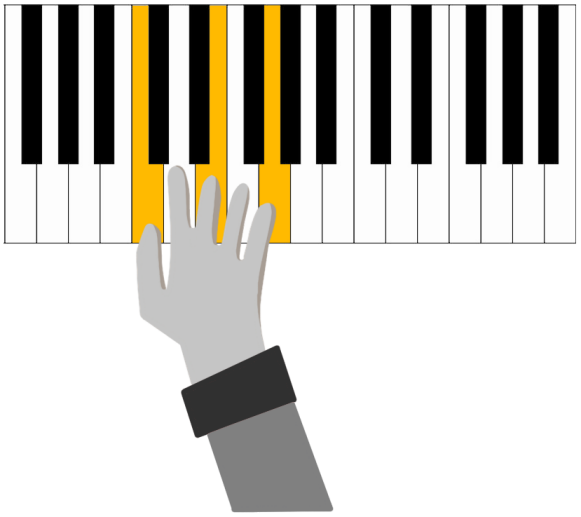
Major 3rd sounds stable, consonant, and narrow. To me, it also sounds round and a bit friendly.

Minor 3rd sounds stable but not grounded, consonant, or narrow. To me, it also sounds a bit cloudy and serious.

2. Find the following intervals in every key –

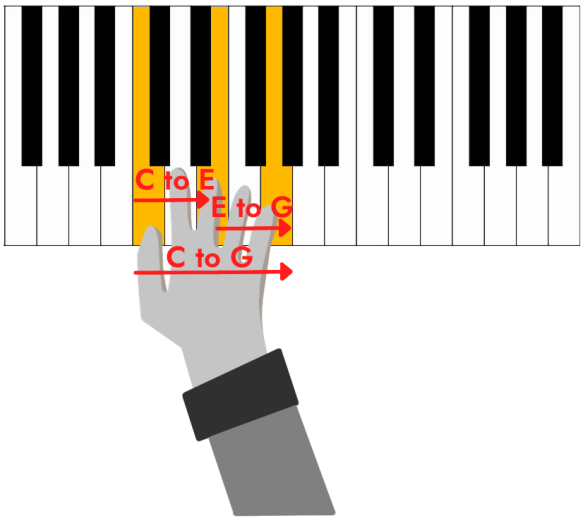
1. Major and minor 2nds
2. Major and minor 3rds
3. P4, P5
4. Tritones
5. Major and minor 6ths
6. Major and minor 7ths

Moving on, a **"chord"** contains **three or more** notes.



Here is an example with notes C-E-G.

Since we have three notes, we have 3 different intervals present within this chord.



C to E = Major third

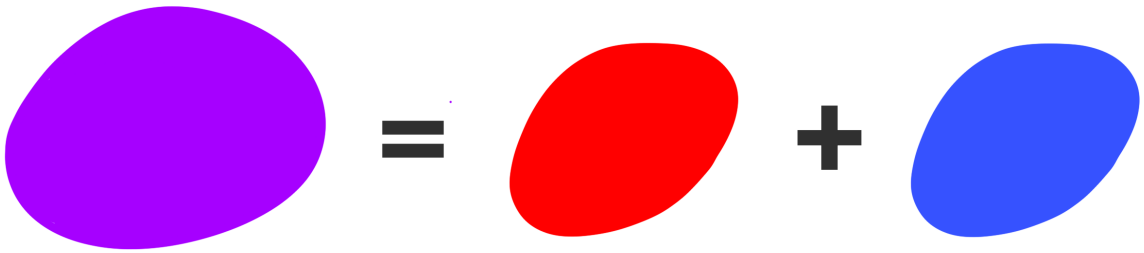
E to G = minor third

C to G = Perfect fifth

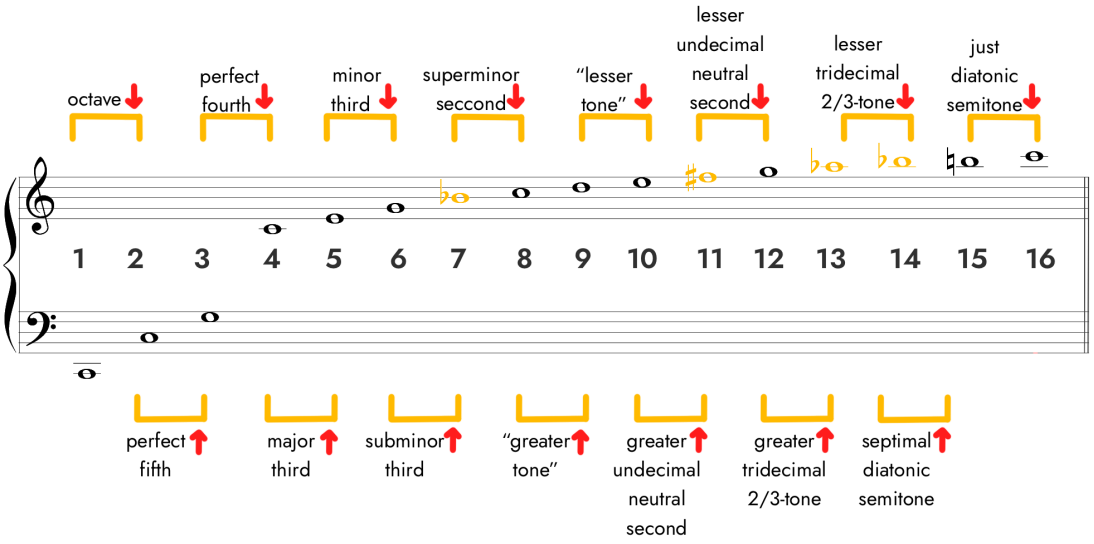
This chord (called a "Major chord") is fundamental to Western harmony - **but why?**

These notes actually *already exist* in the "**root**" note of the chord, the C (the root is the note upon which the other notes of a chord are built upon).

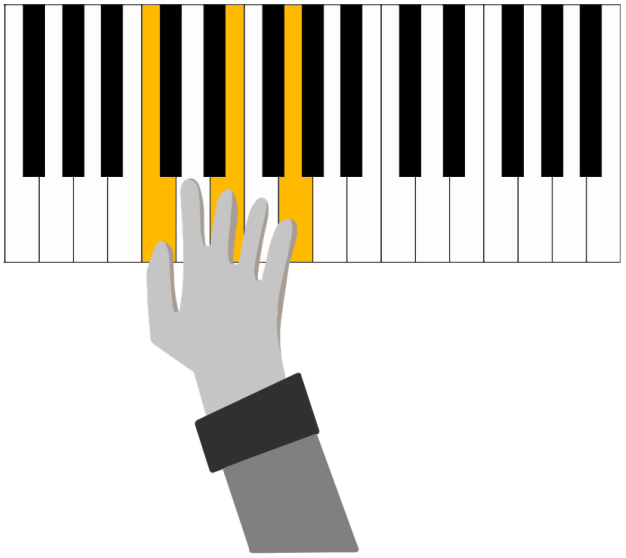
Sounds are made of vibrations and when a single note is played on an instrument, it is vibrating frequencies that produce multiple pitches (though most of them are barely audible). This is similar to how a certain shade of color actually contains many different hues within it that may not be apparent to the untrained eye.



Therefore, when the note "C" is played, these other overtones exist in the background even though our ears primarily hear only the "C":

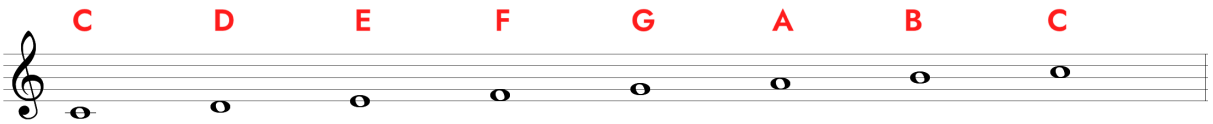


This series of tones is called the **overtone series.** Notice that the first *three different* pitches present in this overtone series, are the notes of the most basic chord mentioned previously: **C - E - G**

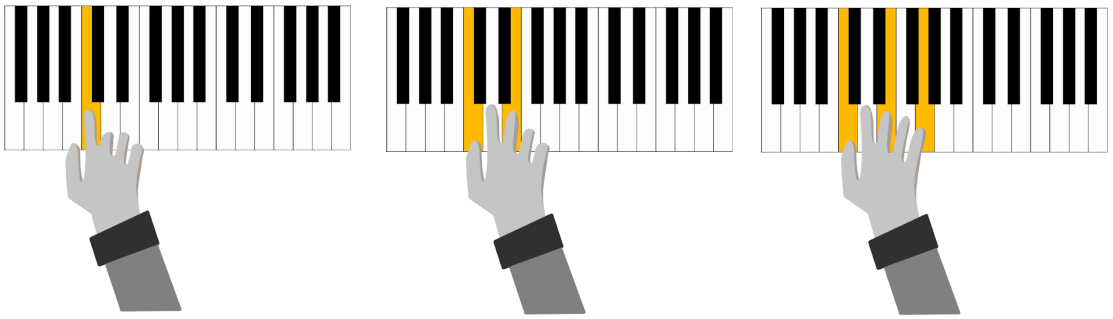


These notes are also non-adjacent notes of a Major scale (as in that are spaced **every other note apart**). This relates to how chords are formed by combining notes that are *spaced thirds* apart.

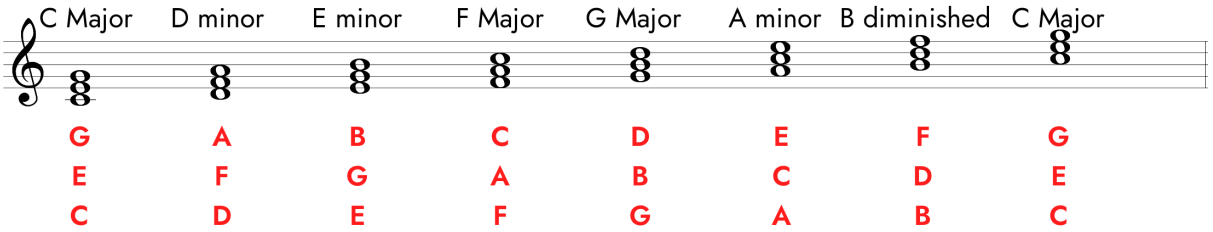
Using this concept, let's create chords using the notes of the scale (C Major).



Following these steps:



Once formed, the chords should look like the [following]:



*The exercise from chapter 1 will be useful in the formation of chords because it involves counting every other note.

Observe that the chords are spaced differently from one to the other. There are 3 different kinds of triads in this set: Major, minor, and diminished.

Here is a list of different types of triads. The interval distances are all anchored off of the root note.

Major: Major 3rd + Perfect 5th
Minor: Minor 3rd + Perfect 5th
Diminished: Minor 3rd + tritone
Augmented: Major 3rd to Augmented 5th
Sus2: Major 2nd + Perfect 5th
Sus4: Perfect 4th + Perfect 5th

EXERCISE

1. Listen to each type of chord built onto a C, and ask yourself if it sounds...

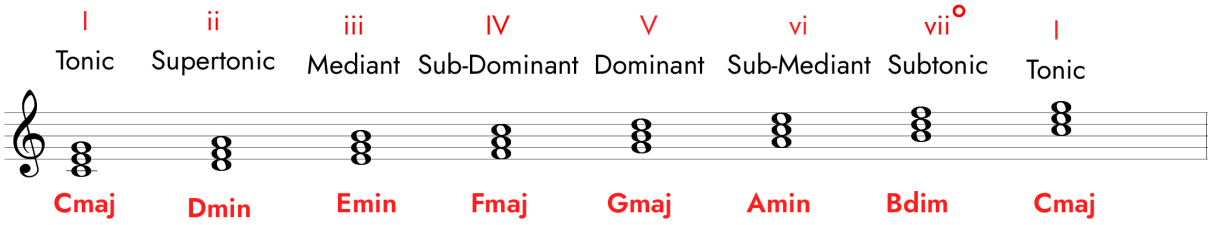
- Dark or bright?
- Stable or unstable?

These chords can be labeled and described in multiple ways. First, notice that each scale degree is numbered. Secondly, notice each scale degree in relation to the quality of the chord (Major, minor, etc). This particular order of chords is consistent with different types of scales.

For example, all Major scales will have the same order of chords in relation to their scale degrees.

I (Maj)
ii (min)
iii (min)
IV (Maj)
V (Maj)
vi (min)
vii (dim)

C Major:



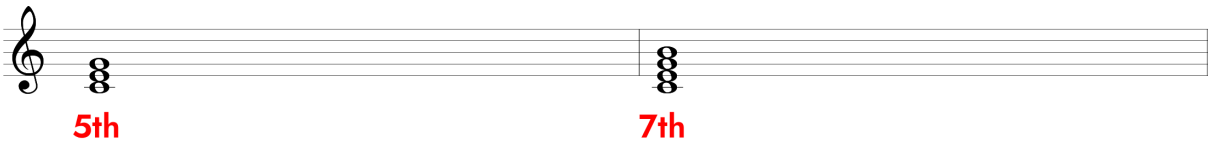
It is customary to use **Roman Numerals** to describe the *function* of these chords, or in other words, refer to a certain order of the chords. For example, I-IV-V-I is a common order of chords and Roman Numerals will be used instead of writing 1-4-5-1.

Within this system, each chord position also has a descriptive word, such as Tonic, Supertonic, Mediant, etc. These refer to the hierarchy and organization of the different chords. I would honestly not worry too much about remembering them besides the "Tonic (I)" and the "Dominant (V)."

Letter names such as CMaj, Dmin, etc. specify the root note and quality of the chords. These are most commonly used in lead sheets, chord charts, etc.

Always remember that chords are built as a **stack of notes**, so read each chord **from the root note**, which in the chord's root position, is the lowest note.

Chords don't just stop at three-note triads. We can continue to add non-adjacent notes to build larger chords. **Four-note chords** are called "**seventh chords**" because the largest interval is now a 7th instead of a fifth.



When identifying a chord, follow these steps:

1. **Find the home position** of the chord. For now, we will deal only with chords already in their root positions. Later on, this step will require a few extra things to do (see *Chord Inversions*)

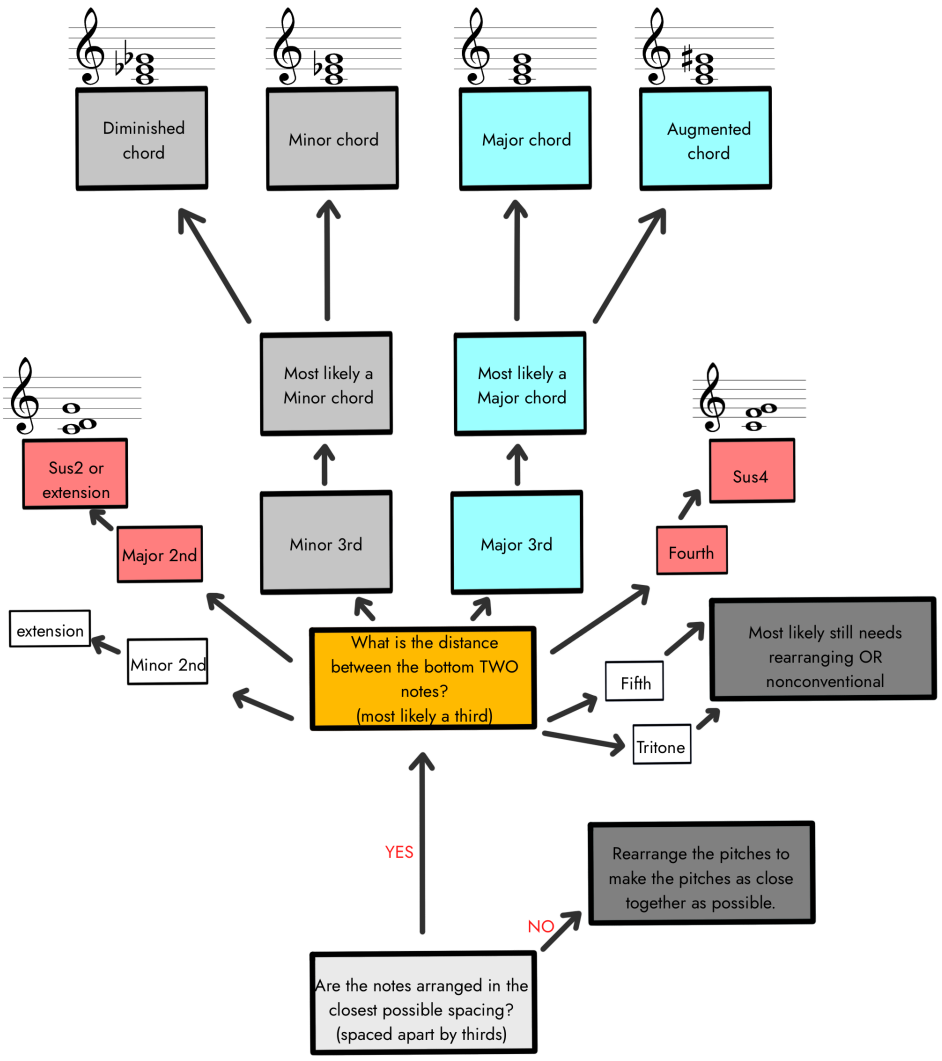
2. Observe the **bottommost note**, the root.

3. Observe the distance between the **root and the first note above.**

4. Observe the distance between the **root and the second note above.**

The information from the observations above will help you find the quality of the chord.

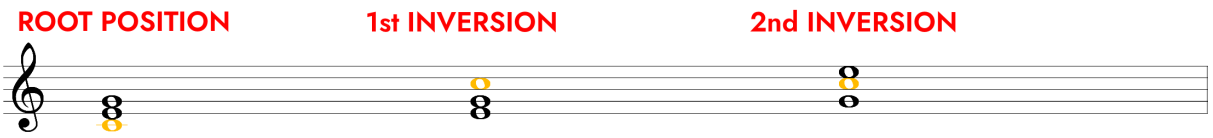
Read the chart from the bottom up, just as you would read a chord in its root position:



CHORD INVERSIONS

The order of the notes in a chord can be "inverted," or simply **reordered**. This does not change the quality of the chord, but only its spacing.

The following chords are all equally "C Major," but with additional labels that define their inversions:



Root position = Root note on the bottom
1st inversion = 2nd note of the chord on the bottom (in this case, the 3rd)
2nd inversion = 3rd note of the chord on the bottom (in this case, the 5th)
3rd inversion = 4th note of the chord is on the bottom (applies to 7th chords)

There are endless possibilities on how to space the notes of the chord. Some notes may be repeated as well.

When trying to identify a chord, follow these steps:

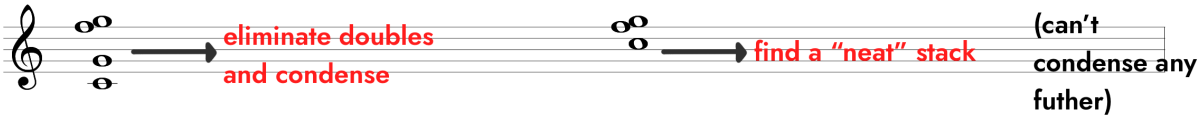
1. **Condense** the notes and **eliminate double pitches**
2. Find a "**neat stack**" and **make sure the root note is on the bottom.**

The most condensed spacing involves a stack of thirds (unless a Sus chord).

Example 1:

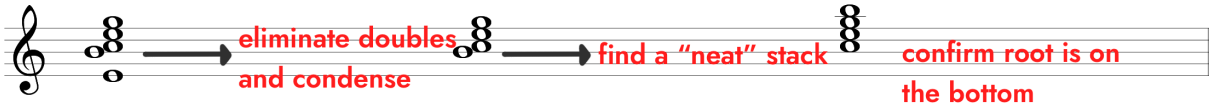
Therefore, we know that this is a C Major chord. In its original form, the E is the lowest bass note, therefore we know that this is a first inversion chord.

Example 2:



Therefore, we know that this is a C Sus4 chord.

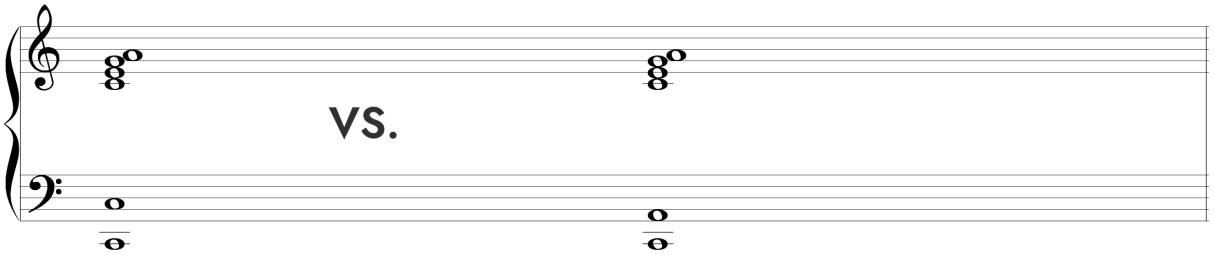
Example 3:



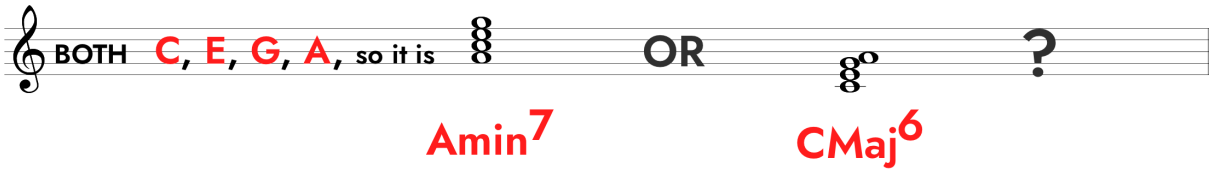
Therefore, we know that this is a CMaj7 chord. In its original form, the E is the lowest bass note, therefore we know that this is a first inversion chord. We can either **label** this by **Roman Numeral analysis (6-5)** or as a **slash chord (CMaj7/E)**.

Sometimes, this process will not be as straightforward. Learn how to use your ears to accelerate the process of finding out what chord you are dealing with.

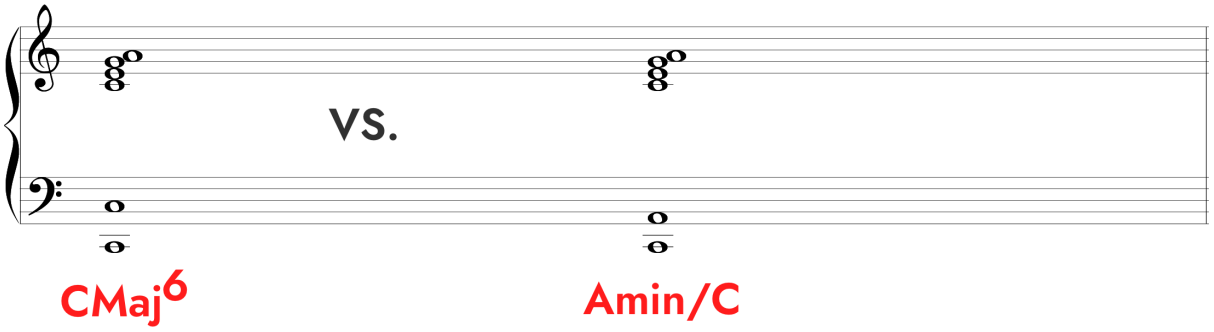
For example, observe the following chords:



They both have the same raw ingredients and both contain C, E, G, A. So is it Amin7 or CMaj6 (Note: A "Maj6" chord is a Major chord with a Major 6th added)?

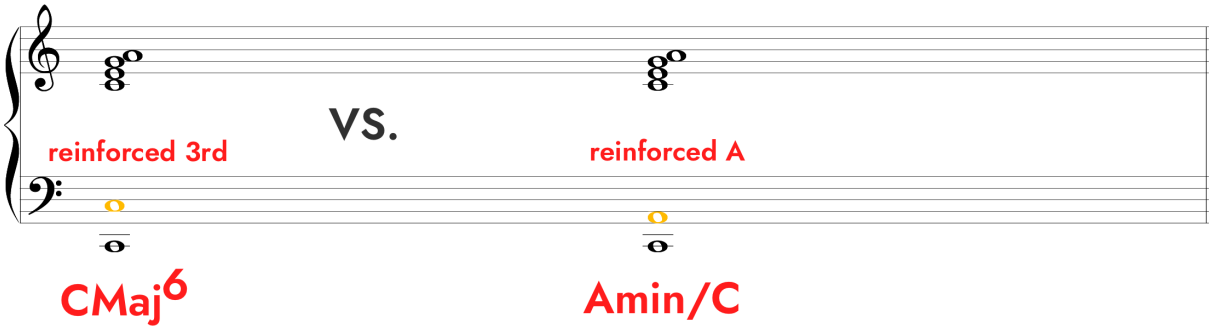


....



Listening to the two chords will help you identify that one sounds more Major, and the other sounds more minor.

Additionally, pay attention to which notes are doubled, or reinforced. This will give you clues as to how to interpret a chord.



Typically, slash chords such as "C/E" are used in lead sheets. Traditional forms of analysis will identify a C/E as a C Major chord in its 1st inversion position. In other cases, slash chords can be used to describe polytonality (when two key centers are present).

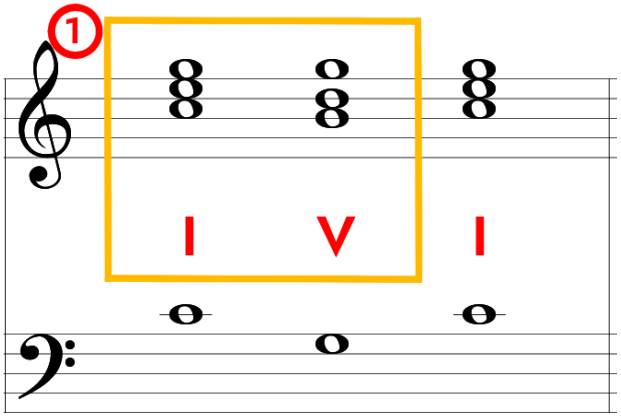
Sometimes, the 5th note of a chord will be omitted. The first interval or the first 2 notes of a chord are the most important in determining the quality of a chord.

TONIC AND DOMINANT

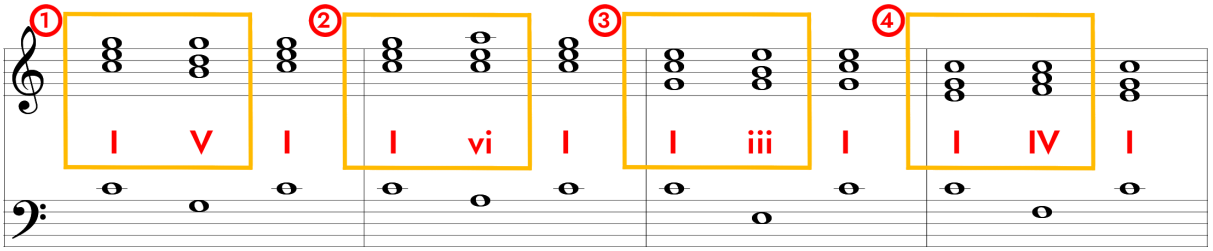
The order of chords presented in a piece of music contributes to its "harmonic flow." This involves the push and pull between stable chords and unstable chords. Unstable chords want to return to a point of stability, or in musical terms, they want to "resolve."

The **Tonic (I)** is considered "home base" because it sounds the most *settled*.

The **Dominant (V)** chord (the V) is considered the tension chord that has the most pull towards *returning* back to the Tonic.

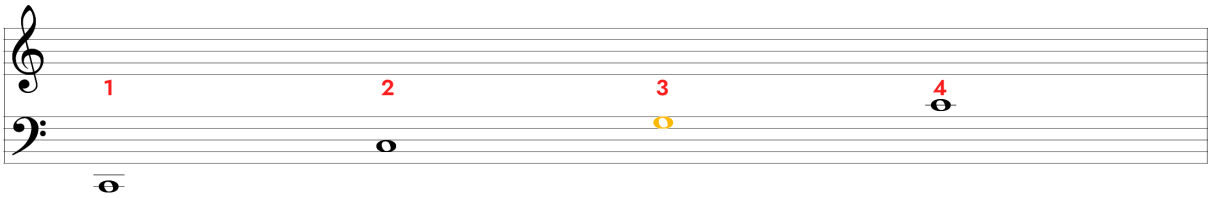


This tension is audible. Compare the following chord relationships and listen to which one has the most tension between the two chords:

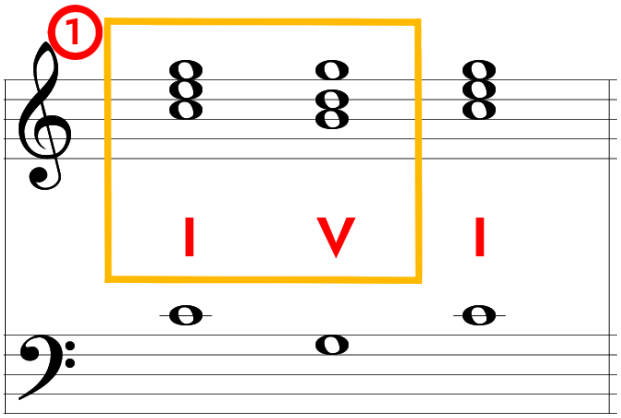


Beyond that, there are a lot of reasons why the I and V are dedicated "poles."

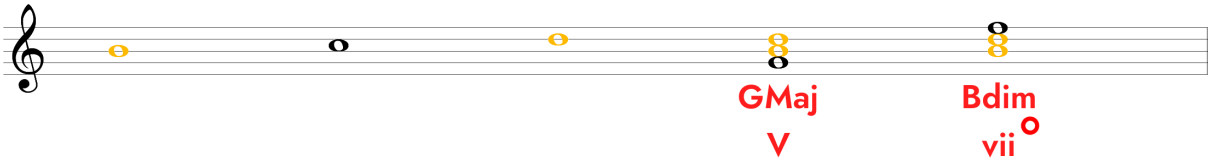
Notice that the first *different pitch* that resonates in the overtone series is the 5th:



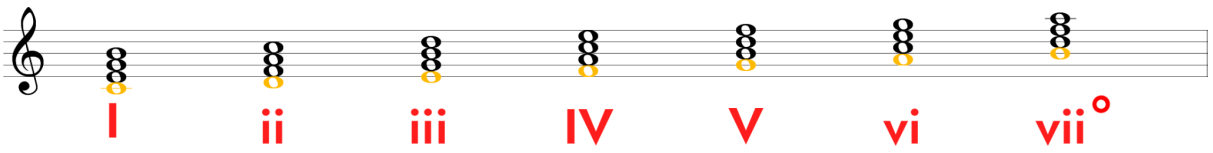
Also, note the significance of the B - C movement in a V-I movement:



Additionally, observe that the surrounding pitches of the C make up the pitches of a V chord (and also vii° chord, [which is often interchangeable as a dominant chord]):



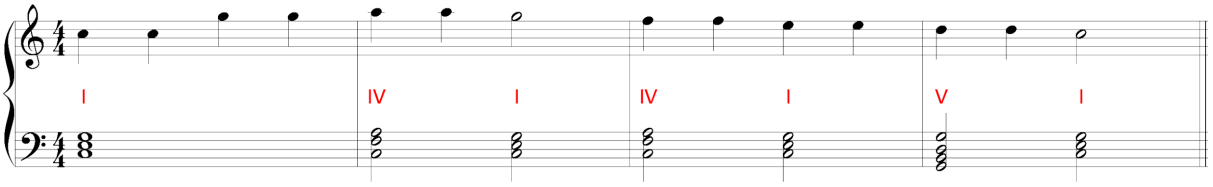
The V and vii° (the "°" means a chord is diminished) chords both have dominant functions because they contain similar pitches. When considering 4-note chords, [the V chord contains a diminished vii° chord within it]



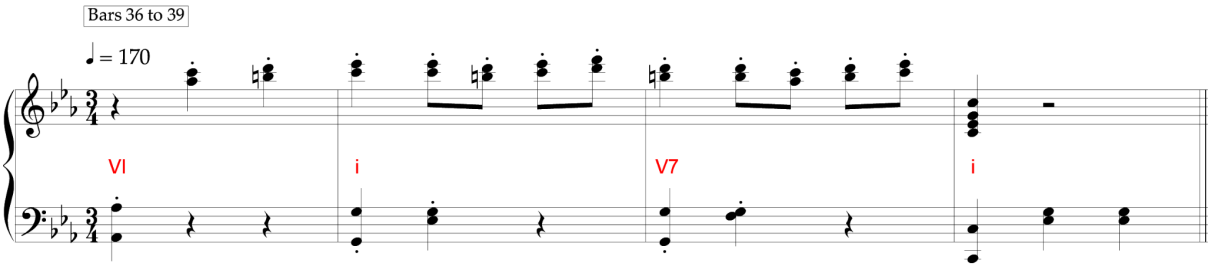
The harmonic flow of a piece of music is almost like a sculpture upon which you would drape a beautiful piece of cloth over. A strong underlying current of tension and resolution is essential for melody to thrive.

Let's observe the tension point(s) of the Dominant chord in the following examples:

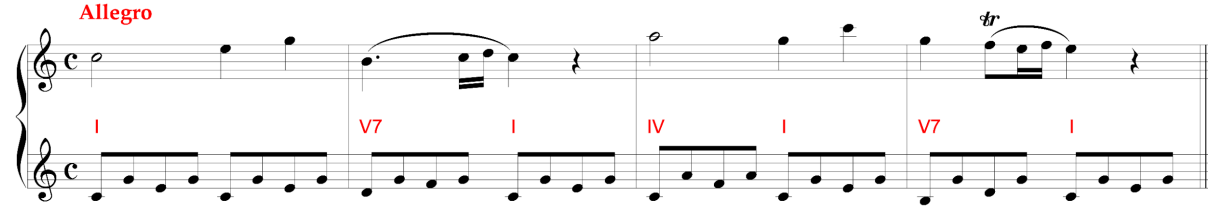
Twinkle Twinkle Little Star



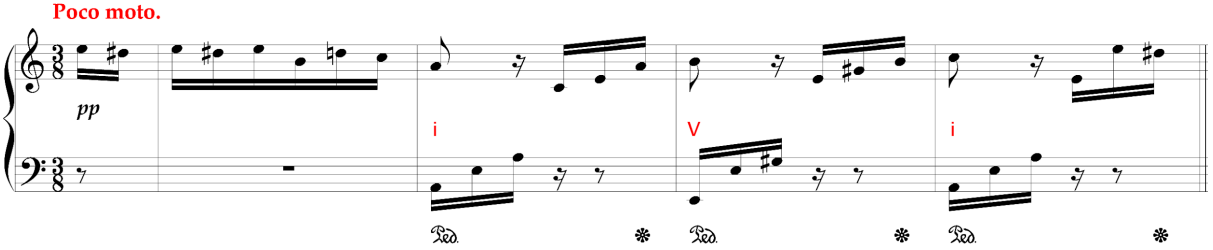
Shostakovich waltz 2



Mozart Piano Sonata in C Major



Beethoven "Für Elise"



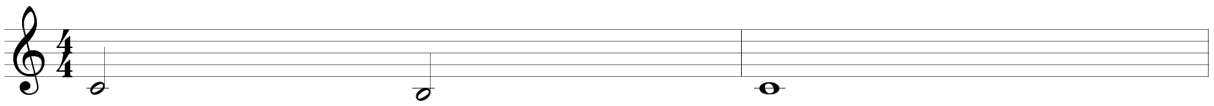
Beyond the traditional push and pull of I and V chords, there are endless varieties to create harmonic movement in music.

VOICE-LEADING

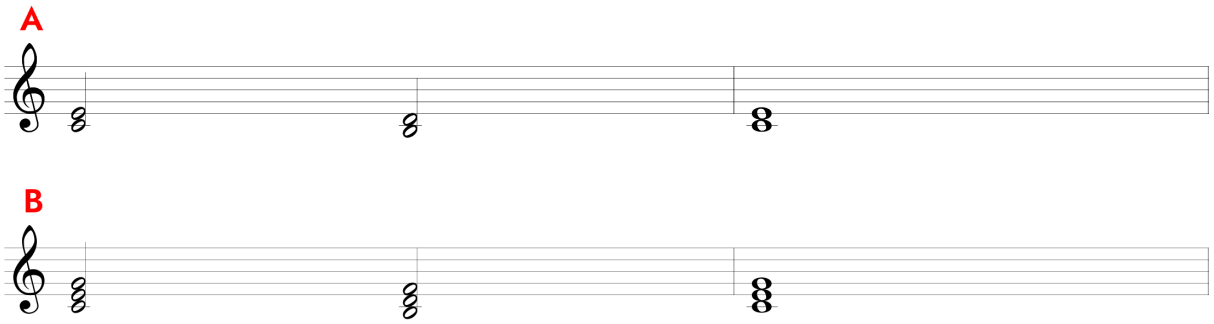
Behind every elegant chord progression is **smooth voice-leading**. This is, in my opinion, far more important than the order of chords you choose for a chord progression.

We can understand more about voice-leading by paying attention to how the single voices *within* chords move.

Imagine a singer singing the following:



When another line joins, the two lines start to depend on each other. Compare the two options:



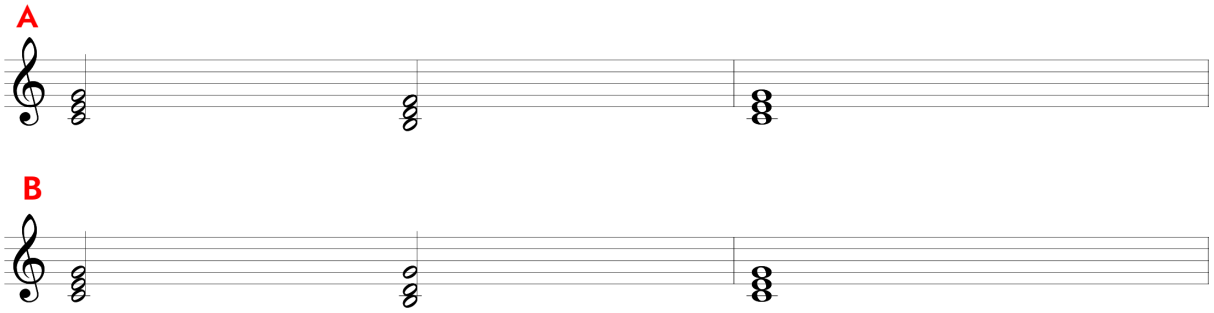
Both options have smooth "voice-leading" because in both cases, the lines are only moving by half step. There is only one note of difference between the two examples.

In an isolated context, Option B has more tension and lyricism due to the **direction of the lines** (they expand onto a tritone and collapse to return to their original position). In Option B, the voices are moving in opposite directions in what we call "contrary motion." In Option A, the voices are moving in the same fixed direction in what we call "parallel motion."

Small details make a big difference.

Without overcomplicating the rules of voice-leading, this is a prime example of how some movements are more preferred than others in order to smoothly transition from one chord to the next.

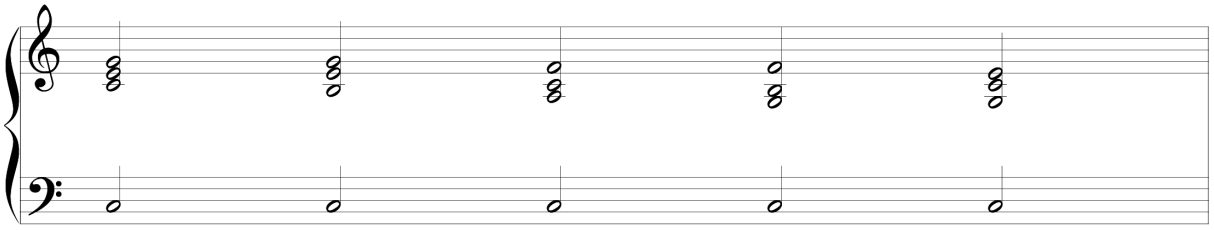
Another aspect to consider is cohesion. Now observe the following examples with three voices:



Again, there is only one note that is different between the two examples. Option B has more cohesion when going to the second chord due to the top note (G) that remains in place. This acts like glue.

Having notes that are in common from one chord to the next, as well as having very **subtle movements** (small interval movements) **instead of large leaps, creates bridges for the ears to make sense of the transition**s.

A common technique for "gluing" chords together with the bass note is to provide what is called a **"pedal point."** A pedal point is when a bass note is held down while having a regular chord progression above.

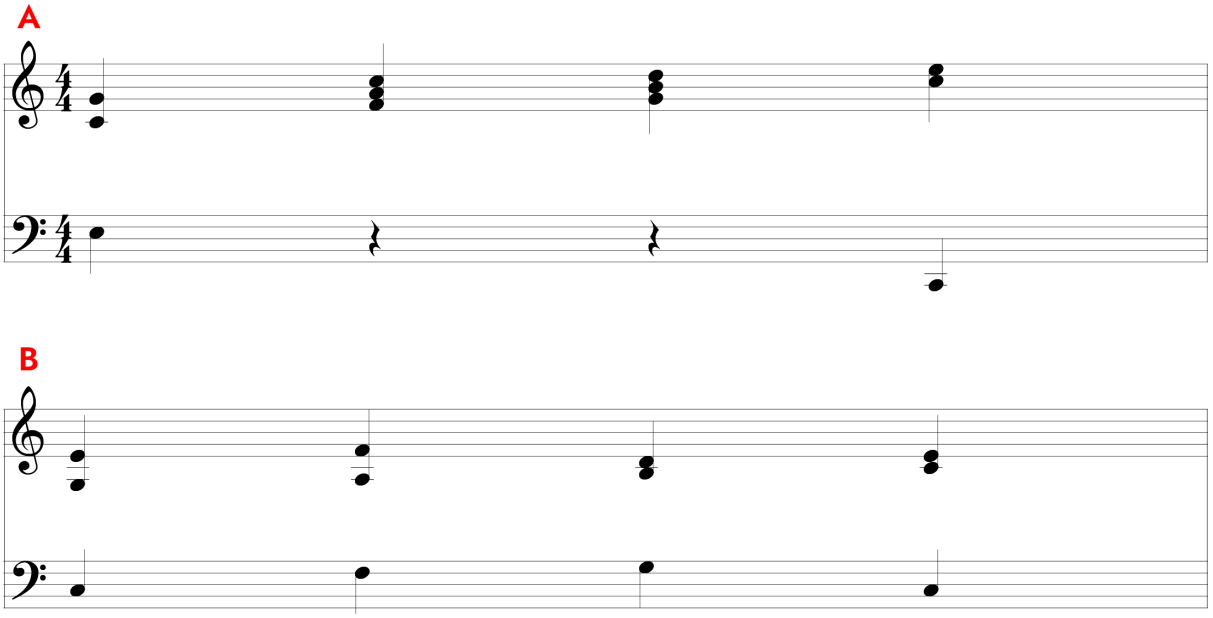


In general, it is more effective to have a smooth voice-leading and efficiency in the inner and upper notes. This is because these voices are more prominent in relation to the melody, and are in closer proximity to each other. Having less movement will help the ears follow the music. At the same time, the goal is not for all voices to be close to each other. Having a singable line often includes the addition of enough leaps at key moments to emphasize the tension between point A to B. The key is to have a balance of different types of movements.

Bass lines can be more independent in comparison to the other notes because they are generally a lot lower than the rest of the notes. This gives bass lines room to contain more leaps without sounding fragmented.

Having more singable, melodic lines embedded within the inner lines is considered "beautiful voice-leading." Composers such as J.S. Bach, Mozart, Beethoven, and Chopin tend to follow these guidelines more strictly than others. Composers such as Debussy, Stravinsky, and Bartok will deliberately choose to shy away from this type of smooth voice-leading and choose bolder movements of lines in many cases in order to achieve the emotions and colors they are going for.

Compare the following examples:



Example A may sound less pleasant due to the following:

1. The spacing is inconsistent and jerky, moving from narrow to wide too suddenly
2. It does not highlight the tension and release of the chord progression
3. All of the upper voices are moving in the same direction. This makes them difficult to appreciate and hear on their own
4. The bass line also moves into awkwardly high territory for the middle beats (jumping more than an octave)

Whereas example B may sound more pleasant due to the following:

1. There is a balanced mixture of wider and closer spacing
2. Inner lines lead the ears to want to have the chords resolve back to I. The tension and release is well established
3. There is variety in the direction of the lines
4. The bass line has a reasonable amount of movement (not more than an octave)

It must be said at this point, however, that there is no objective right or wrong voice leading and/or form of chord progression, even though the grading on your music theory exam sheet might make you believe otherwise. Close and efficient voice-leading is the basis of traditional western music theory and will, in general, produce a more pleasant, less "jerky" sound in one's music. If you look e.g. at the music of french impressionists or 20th-century minimalist composers, you will see that their music breaks with the above-mentioned rules of voice-leading. That is because they have deliberately chosen to break away from those rules and meticulously follow their own. Even if one does not want to apply the traditional rules of voice-leading and chord progressions to their own music, it is without a doubt immensely helpful to know the rules that have established the foundation of western music. As cliché as it is, Picasso's proverb holds true: "Learn the rules like a pro, so you can break them like an artist."

CHORD CHOICES

The concepts behind smooth voice-leading are baked into common chord progression formulas. These have been tried and trusted over many generations and many different genres because they allow for the harmony to move through different parts of the key while having enough variety of tension and release while avoiding jarring and jerky chord transitions.

Is there a formula for chord progressions?

Many common chord progressions will share similar patterns of movement that can contain the following:

There are a bunch of formulas, such as confusing graphs that apply to "diatonic" chords (chords that stick to the notes of the key/scale). However, most of the common "diatonic" chord progressions can be recreated with the following set of guidelines:

1. Have any combination of I, IV, V (i, iv, V for minor)
2. Insert ii, iii, vi to taste (ii°, iii, VI for minor)
3. End with a IV-I or V-I

Certain chord progressions have become common because the movement of the notes from chord to chord contains logic and efficiency. The ordering of the chords also provides enough tension and release in order to create a feeling of movement.

LOGICAL AND "TYPICAL" CHORD PROGRESSIONS

Examples in minor (using the example of A minor)

i	**VII**	**VI**	**VII**	**i**	**VI**	**VII**		**i**	**iv**	**v**	**i**
Am	**G**	**F**	**G**	**Am**	**F**	**G**		**Am**	**Dm**	**Em**	**Am**
VI	**VII**	**i**		**i**	**VI**	**III**	**VII**	**ii°**	**v**	**i**	
F	**G**	**Am**		**Am**	**F**	**C**	**G**	**B°**	**Em**	**Am**	

Examples in Major (using the example of C Major)

I	**IV**	**V**		**ii**	**V**	**I**		**vi**	**ii**	**V**	**I**
C	**F**	**G**		**Dm**	**G**	**C**		**Am**	**Dm**	**G**	**C**
I	**iii**	**IV**	**V**	**iii**	**vi**	**ii**	**V**	**V**	**IV**	**I**	
C	**Em**	**F**	**G**	**Em**	**Am**	**Dm**	**G**	**G**	**F**	**C**	

Understanding some of the concepts behind what makes certain chord progressions sound more natural than others, both in terms of chord choices and voice-leading, serves as a reference point. Different people and cultures will hear the same chord progression differently.

How we break from these traditional molds is where a lot of harmony gets more distinct and interesting.

The most important aspect of an effective chord progression is the dance between points of tension and resolution, whether or not this involves the Tonic and the Dominant. If there exists some form of push and pull from chord to chord, any chord progression can work.

If you turn on listening to the radio, a playlist, or your favorite handful of albums, chances are, you will hear many similar chord progressions. The differences between the chord progressions used from artist to artist are usually quite subtle.

The topic of finding alternative chord progressions, chord substitutions, and the like can become an endless topic, and in my opinion, cluttered with information.

One of my mentors once told me a beautifully simple metaphor that helped me understand chord functionality with more clarity. He told me to think of chord progressions as an outfit.

You have different components that go into creating an outfit - a top, bottoms, and shoes. Now, there are endless combinations of what you choose to wear for each part.

Top - a button down, a t-shirt, a sweater...?

Bottoms - jeans, slacks, a skirt, shorts...?

Shoes - boots, sneakers, sandals, loafers...?

Those are primary concerns, but also your decisions do not end there.

What color is each piece? What fabric/material?

Additionally, there are a ton of accessories to also complement your outfits, such as hats, scarves, and jewelry.

So tying it back to music, the way chord progressions are formed deals with a similar thought process as putting together an outfit.

There seem to be so many "rules" that make certain chord progressions "right or wrong," but this type of mindset is unnecessary. Just like with fashion, certain basics prevail, but at the end of the day, there isn't really a right or wrong. Who's to say that you cannot wear a shirt as your bottom piece and a pair of shorts as a hat? Similarly, who's to say you cannot have a piece of music with only diminished chords and no tonal center?

Why is this important to know?

When performing, it gives you clues as to how and where to emphasize the points of tension and release in the music, if at all present. When composing, it gives you tools to help direct the points of tension in the music to create your unique sense of flow.

AFTERWORD

My sincerest gratitude to Julius Meltzer, my close friend and editor, who worked tirelessly with me in putting together this book. I would also like to thank Lisa Tsakiris for helping with graphics. One of the greatest challenges we faced while working on this project was to discern which topics and details to focus on over others. We hope that this book helps fill in any gaps of your musical knowledge and encourages you to investigate further in areas where this book leaves off.

Music theory and comprehension involve constant evolution. The material contained in this book just scrapes the surface. With that in mind, I hope to continue this discussion across different platforms and future installments.

GLOSSARY

DISCLAIMER: The following list is neither exhaustive nor necessarily compliant with academic standards. The definitions of terms are based on my own understanding and **how I observe** them being used by other musicians. If you do not know some of the terms in the chapters, you hopefully find them here. There is no point in studying the glossary itself. Use it as a reference section.

a capella
without the use of instruments, vocals only

a tempo
return to original tempo (oftentimes present *after* a tempo change indication). Literally means "in time", meaning that the music is to be played (or sung) in the indicated tempo

accelerando (abbreviated: accel.)
Italian for "accelerating," meaning a gradual increase in tempo. The opposite effect is called a *ritardando* or *decelerando*

accent
an indication to play (or sing) a note with extra emphasis (indicated with ">" above a note)

acciaccatura
a very fast grace note that is almost "crushed" against the note that follows (derives from the Italian verb "acciaccare" which means "to crush")

ad libitum (abbreviated: ad lib.)
literally means "at liberty". Can either mean that the execution of the music is up to the former in terms of tempo and dynamics. It can also mean that there is room for improvisation

adagio
tempo indication to play (or sing) slowly

agitato
Italian for "agitated," a tempo and expression indication to play in an agitated manner, with some quickness

alla breve
Italian for "on the breve," originally meant to utilize the meter of 2/2 instead of 4/4. Nowadays the term indicates a rather quick tempo

allegretto
tempo indication to play somewhat fast, but not as fast as "allegro"

allegro
Italian for "cheerful,"tempo indication to play fast

andante
Italian for "going/walking," tempo indication to play at a relaxed pace, similar to a walking pace

appoggiatura
grace note(s), not as quickly played (or sung) as an acciaccatura. Also, see chapter 3 *embellishments*

arco
Italian for "bow," means that the bow (of a string instrument) is to be used to play the notated music

arpeggio
a succession of notes that derive from a chord (playing the notes of a chord separately), or playing every other note of a scale

basso continuo
means "continuous bass," indicates that an accompanying bass is to be played (or sung) throughout the piece by an instrument that can play chords (and not only via an arpeggio)

beats
time-markers in the music that influence how one feels the music. Beats carry more emphasis than other notes.

cadence
a harmonic succession that ends with a resolution

cadenza
the Italian word for "cadence", however, a cadenza is a solo section, usually in a concerto, in which a soloist can display their virtuosity. Cadenzas can be written out, but do not have to be notated and thus left to the player to improvise

canon
a musical form where a phrase is repeated and played simultaneously (from different entrance points and with variations) by multiple different players (or voices)

cantabile
indicates that the music is to be played (or sung) (by an instrumentalist) as if it was sung. That usually takes into account a virtual breath and the natural leaning towards legato (see below)

capo
Italian for "head." Indicates towards the beginning of the piece, thus "da capo" (abbreviated "d.c.") means that the music is to be played (or sung) (again) from the beginning if a certain point in the piece is reached

capriccio
a composition that is not displaying aspects of other typical compositional forms (e.g. a sonata). Capriccios usually display a quick tempo and a happy character

chant
music that is sung in unison, oftentimes referring to pre-Baroque era vocal music

chord
a group of pitches that are played (or sung) together. Triads are the most common type of chords and are made up of three notes: the root note, a third, and a fifth above it

chromatic
including the notes of the chromatic scale with all twelve notes present, including notes that are outside of a scale

clef
a symbol in sheet music that determines how to interpret the pitch indications (ie. "treble clef")

coda
Italian for "tail," means the ending passage of a piece. "Da capo al coda" (see above for "capo") would mean jumping back to the beginning of a piece and then playing it through to the end

col legno
technique for (bowed) string instruments. Indicates that the notes shall be performed by striking the strings with the wooden part of the bow

comping
jazz terminology for accompanying the music, mostly via the rhythm section

concerto
a piece of music that involves at least one soloist and an orchestra

con sordino
means that the music is to be played (or sung) with the instrumentalists applying mutes to their instruments

counterpoint
describes the relationship of two or more voices (note: the term "voice" in music does not solely indicate singing, an instrument also counts as a "voice" in an orchestra) that together form a harmony. What separates counterpoint from "just" two or more notes forming a chord is the fact that the voices move independently in melodic ways

crescendo (abbreviated: cresc.)
gradually increasing the loudness. The opposite effect is called a *diminuendo* or *descrescendo*

da capo
see *capo*

decelarando
also called *ritardando*, meaning a gradual decrease in tempo. The opposite effect is called an *accelerando*

decrescendo (abbreviated: decresc.)
gradually decreasing the loudness. The opposite effect is called a *crescendo*

détaché
(usually) a technique for playing string instruments with a bow: short, strong, set off between upstroke and downstroke

diatonic
containing (and remaining within) the notes of a particular scale and/or key center

diminuendo (abbreviated: dim.)
same as a *decrescendo*. Decreasing the loudness, thus the opposite effect of a *crescendo*

divisi (abbreviated: div.)
term used to instruct musicians who normally play in unison to instead play differing parts. Most commonly seen in string instrument writing. The opposite is called *unisono*

dolce
Italian for "sweet", meaning that the music is to be played (or sung) with sweetness

dolore
Italian for "pain," meaning that the music is to be played (or sung) with sorrow/distress

double dot
to extend a note by three-quarters of its value (indicated by two dots besides the note)

double stop
technique of playing two notes at the same time, usually on a string instrument played with a bow

drone
(usually) a bass note or chord that is played (or sung) continuously throughout a piece of music or certain passage within the music

dynamics
language to describe the volume and expression levels of a music

choir
a group consisting of multiple singers singing together

étude
French for "study," meaning a piece of music that is written for the purpose of improving a musician's technical skills

enharmonic
two notes that sound the same, but are "spelled" differently (ie. B-natural and C-flat)

exposition
a section of a piece of music that introduces prominent themes and melodies, usually at the beginning of a piece (that is, for example, written in "Sonata-Allegro" form)

fermata
an indication to pause or stop the music longer than the rhythmic value indicates, within reasonable judgment that considers the context of where it is placed (a fermata at the end of a movement or section is usually held for a longer duration, but the final fermata of a symphony may be held for an even longer period of time)

flat
A symbol (♭) that indicates that a note should be played (or sung) a semitone lower. The term can also describe a note being performed slightly lower than it should be without being so low it is at least a semitone lower. Also, see chapter 2 *Making sense of Accidentals*

forte (abbreviated: f)
means to play loudly. Also, see chapter 2

forte-piano (abbreviated: fp)
means to play loudly at first, then immediately softly. This is called a dynamic contrast. Also, see chapter 2

fortissimo (abbreviated: ff)
means to play very loudly. Also, see chapter 2

fortississimo (abbreviated: fff)
means to play as loudly as possible

forza
means musical force or emphasis. *Con forza* means with force or emphasis

forzando (abbreviated: fz)
means to play (or sing) with emphasis, similar to *sforzando*

form
the structure of a piece of music (ie. “Rondo” or “Sonata-Allegro”)

fugue
a musical form that is written with polyphonic musical texture, with multiple independent voices. It usually begins with the introduction of a short theme (the subject) in one voice, followed by its imitation in other voices. As the piece progresses, the theme undergoes characteristic development through imitation and variation

glissando
continuous sliding from one pitch to another, or an incidental scale played (or sung) while moving from one melodic note to another

grace note
is an extra note added as an ornament and not essential to the harmony or melody

Hemiola
refers to the use of a different rhythmic or articulatory pattern than the one indicated by the time signature. E.g., in triple time (such as 3/4), a duple pattern (as if the time signature were 2/4) may be imposed. Also, see chapter 3 *Hemiola*

hook
a catchy musical idea, often a short riff, passage, or phrase, that is used in popular music to make a song appealing and memorable

harmony
pertaining to the synthesis of multiple notes in music (ie. how notes form chords, and how chords form progressions)

homophony
music that has a clear hierarchy of importance, such as having a main melody and accompaniment

improvise
means to create music spontaneously and not necessarily with preparation

interlude
a piece of music that serves as a transition in between other (often larger) bodies of works

interpretation
how a performer chooses to play a certain musical phrase or piece

interval
the difference between two notes. If the two notes of an interval are played (or sung) together, it is called a *vertical* interval. If the notes of an interval are played (or sung) after one another, it is called a *horizontal* interval

jazz standard
a well-known piece of jazz music that is rather expected to be known and able to be played (or sung) amongst jazz musicians

largo
Italian for "wide," tempo indication to play slowly and broadly

legato
Italian for "tied up," means connect the notes of a phrase together in a smooth manner, often indicated by a slur above the notes that are to be played (or sung) legato

lento
Italian for "slow," tempo indication to play slowly

libretto
the text/storyline of an opera

key
an arrangement of pitches that determines the tonal organization of a section or piece of music; can also refer to a note on a keyboard or piano

major
referring to the tonal system in music that has association to the Major scale and its intervals

minor
referring to the tonal system in music that has association to the minor scale and its intervals

measure
a unit of musical time that encompasses a complete cycle of the time signature. For example, in 4/4 time, a measure has four quarter note beats. Also known as "bar"

mode
a series of notes that is derived from and/or a form of a scale

modulation
means a key change and thus a change of the tonic. Can also be applied to rhythm (when a time signature or rhythmic pattern shifts to something else)

movement
a part of a composition that has a clear break-off point (entails several parts "movements" of a composition)

nocturne
French for "of the night." Composition that is inspired by the (concept of) night, often a single-movement piece

octave
two notes that are identical in pitch name but are eight full tones apart

ostinato
a musical pattern that is repeated throughout a piece (or a particular section of a piece). In contrast to a *drone* (see above), an ostinato does not need to be a bass or chord pattern

overture
intro piece of a composition that consists of several movements (see above)

orchestra
a large combination of musical instruments that play together, traditionally including strings, woodwinds, brass, and percussion instruments

orchestration
how the separate parts of a piece of music are arranged for different instruments and/or sounds

pastorale
refers to a style of music that is to be played (or sung) peacefully

pedale (abbreviated: ped)
indicates that the damper pedal of a piano (or key instrument) should be pressed to sustain the notes being played (or sung)

pentatonic
a form of a scale consisting of five pitches

phrase
a musical idea that is played or sung, similar to a "sentence" in traditional language

pianissimo (abbreviated: pp)
dynamic indication, means to perform the music very softly, softer than *piano* (see below). Also, see chapter 2

piano (abbreviated: p)
dynamic indication, means to perform notes softly. Also, see chapter 2

pitch
the frequency of a note, pertaining to how high or low it sounds

pizzicato
refers to playing a string instrument by plucking the strings with the fingers rather than playing it with the bow

polyphony
music that includes multiple layers of independent voices, such as having more than one prominent melodic line (ie. a fugue)

ponticello (abbreviated: pont.)
technique for playing string instruments, refers to playing or plucking very close to the bridge on a string instrument, producing a sound that emits higher harmonics

portamento
describes the technique to perform a note slide from one note to another. In piano music, portamento is an articulation between legato and staccato. Also, see *portato*

portato
technique to play not in a legato style (see above), but not as detached / non-legato as staccato (see below)

prelude
a short piece that usually precedes a (larger) work

presto
tempo indication to play very fast

recapitulation
a reprise, that is usually present towards the end of a piece written in "Sonata-Allegro" form

reprise
repetition of a musical phrase, usually coming back to a section/part of the music that was introduced early in the composition

riff
a memorable musical figure, often used in context of popular music. Often used as repetitive figure that serves as an ongoing (background) theme

ritardando (abbreviated: ritard. or rit.)
same as *decelerando* (see above), slowing down the tempo of the music

ritenuto (abbreviated: riten. or rit.)
mean to suddenly play slower, usually more drastically than *ritardando* (see above)

rondo
a musical form that has a distinct section that periodically returns

rubato
Italian for "stolen," meaning to play with flexible timing to support the expression of the music

run
a succession of closely spaced notes played (or sung) together, often in a quick manner, usually from the same scale (see chapter 5) and/or as part of an arpeggio

scherzando
meaning that the music is to be played (or sung) playfully

scherzo
a brief musical piece that may be part of a larger work, like a symphony or sonata. It can also refer to a humorous, fast-paced composition that may stand alone or be part of a larger work

semitone
the smallest interval (see above) used in traditional western and most western pop music. It is the interval between two adjacent notes on a piano keyboard

sequence
a musical phrase that is repeated in succession with a systematic method of transposition or variation

sforzando (abbreviated: sf or sfz)
a dynamic indication to play louder, almost like a more emphatic "accent" (see above)

sharp
a symbol (♯) that alters the pitch of a note by a semitone. It can also be used as an adjective to describe a note that is performed higher than it is supposed to be, without being up to a semitone higher (and thus a would-be wrong note). Also, see chapter 2 *Making Sense of Accidentals*

slur
a slurred line over notes that are supposed to be played (or sung) without separation, often in a legato (see above) manner. Also, see chapter 2 *Ties and Slurs*

sonata
a traditional musical form that usually refers to the "Sonata-Allegro form," which consists of multiple sections that contain a structural and developmental arc. Can also mean (in the broadest sense) a musical composition that mostly is written for a solo instrument (but can also entail other settings). It usually consists of three or four movements

sordino/sordina
see *con sordino* above

spiccato
technique to play bowed string instruments, where the player lets the bow bounce very lightly on the strings. It has a *staccato* (see below) quality due to its short duration

staccato
articulation that is indicated by a small dot placed above or below a note, meaning that the *staccato* notes should be played (or sung) in a detached manner. The opposite of *legato* (see above)

staff
a portion of sheet music that contains a set of 5 lines, where notes and markings are written over

syncopation
emphasizing a weak beat, often shifting the felt emphasis of the beat structure.
Also, see chapter 3 *Syncopation*

tempo
means the speed that shall be applied when a certain piece of music is played (or sung)

theme
a musical idea that is short and distinct, can be similar to a melody but usually more abbreviated, and usually expanded upon

tenuto
means that a note is to be held. Indicated by a "-" above a note. See also chapter 2

tonal
music that is in reference or alignment to traditional harmonic systems

tonic
the first note of a scale

tremolo
the effect of rapidly repeating a note or chord (usually in the context of classical music). It is notated by putting a or several horizontal lines on the note stem

trill (abbreviation: tr)
like a *tremolo* (see above), but the notes that are to be played (or sung) in a trill are alternating between two adjacent notes

tritone
an interval that is three whole tones apart, it is known as a notably dissonant interval

tutti
Italian for "everyone," describes a passage of music in which all players of an ensemble have a part that is to be played (or sung) at the same time

unisono (abbreviation: unis.)
means that players of an instrument group (e.g. trumpets) shall all be playing the same notes as it is written. *Unisono* is usually applied in a score to indicate that *divisi* (see above) is not to be applied anymore

vibrato
playing a note and slightly varying the pitch up and down to a very small extent while holding it. Instruments that do not let the player alter the resonating body of the instrument can not produce vibrato effects (e.g. a piano)

vivace
Italian for "lively," a tempo indication to play in a lively, upbeat manner

virtuosic
music that is elevated in difficulty level