



What does that mean?

CRASH COURSE IN MUSIC
THEORY AND NOTATION

Contents

In this powerpoint we will look at a range of skills and notations that you really should know when learning instruments or writing music. we'll look at the things surrounding the staff , the more complex areas of the staff relation to time and durations , then we'll look at expression and metronome markings and finally more forms of music notations to finish off our journey of learning about what the staff means.

01

Rhythm and pitch in stave notation

Clefs, notes, rests, measures, accidentals, Intervals, dots, ties, time signatures, bar lines and leger lines

02

How tempo, dynamics and expression can be notated

Tempo, dynamics, expression, metronome markings, expression and articulation.

03

Rhythm and pitch in alternative forms of notation.

Tabs, Graphic score, drum notation, chord chart, lead sheet and tonic sol-fa

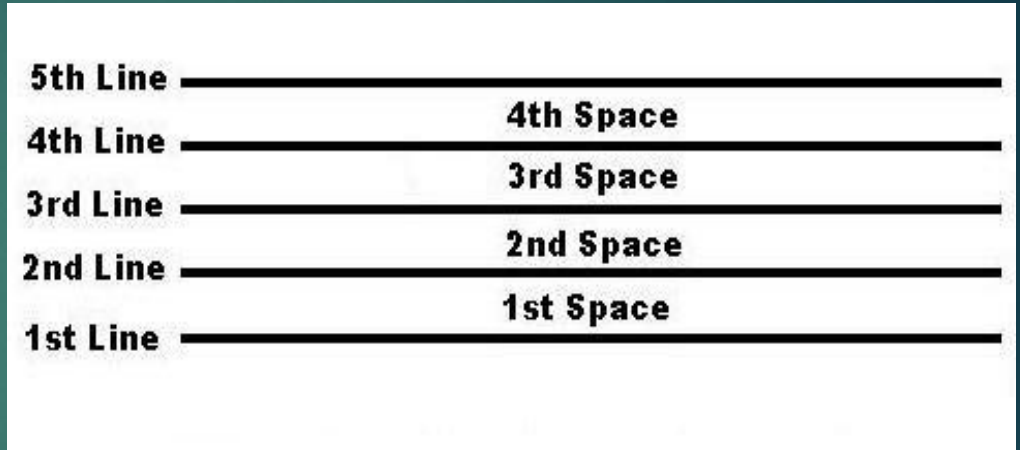


Rhythm and pitch in stave notation

Clefs, notes, rests, measures, accidentals,
Intervals, dots, ties, time signatures, bar lines
and leger lines

The staff

To start with the bare basics, it's important to mention first and foremost what the 'staff' is. the staff is a set of 5 lines with 4 spaces in which notes are placed upon (as shown on the right). There are many markings that can be placed on the staff including notes, rests, dots, ties and one of the first things you need to note, Clefs.



Clefs

Clefs are very important to stave notation. They tell you the pitch or key of the music you're playing. (key- “a group of notes based on a particular note and comprising a scale, regarded as forming the tonal basis of a piece of music”) there are many clefs, the main 2 used in piano by a long shot are the treble and bass clefs as shown.



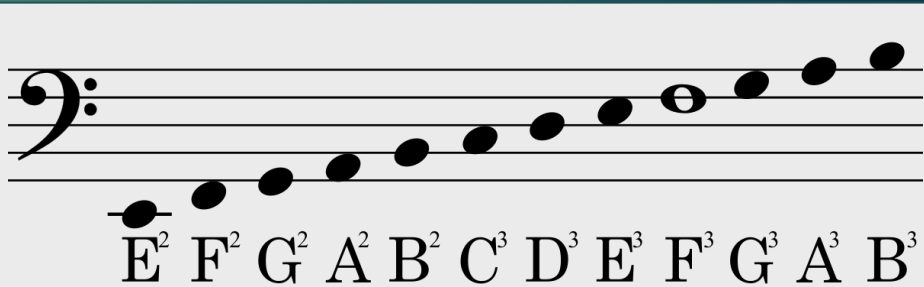
The Treble Clef

The Treble clef is called the G clef. This is because, as you can see, the lines used to draw it curl around the 2nd line which in the key determined by this clef becomes the G line. When the treble clef is on the staff the notes are set in this order



The Bass Clef

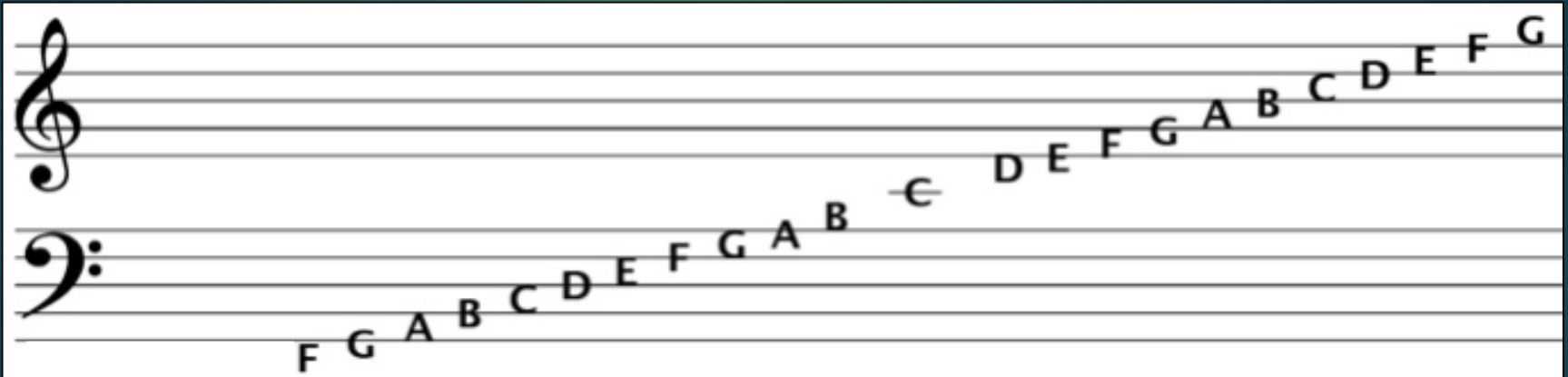
The Bass clef is called the F clef. This is because, as you can see, the lines used to draw it end at the 4th line which in the key determined by this clef becomes the F line. When the bass clef is on the staff the notes are set in this order



Activity: draw 5 lines to become your staff and practice drawing the clefs as well as labeling the notes on the lines. For the Treble clef you may find the common memory methods of 'Face' for the gaps and 'Every good boy deserves football' for the lines

The Grand Stave

The Grand staff is a theoretical version of the staff connecting the 2 clefs. There are 11 lines connecting the Treble and Bass clef when they are put together, joined in the centre by middle C in the centre, used most commonly in piano music.



Other Clefs

Alto Clef

C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5

Alongside the traditional Treble and Bass clef there is also the alto and tenor clefs. These clefs are lesser seen on piano notation and more commonly on viola and the cello. due to this they aren't as well known. Additionally when clefs change they simply put the new clef in at the bar it changes.

Alto

The Alto clef also known as the viola or C clef and has a centre of C where the centre of the clef lands on line 3 or the C line where any note placed on this line is a C and those become the notes adjacent on the keyboard.

Tenor

The tenor clef much like the Alto clef has a centre of C however, the C is moved up 1 line. Any note placed on the line becomes C and the notes around it become the notes adjacent to C and so on and so forth.

Treble Bass Alto Tenor

4

160 BPM
(from the Motion Picture *Angels & Demons*)

Composed by HANS ZIMMER

Moderately bright $\text{♩} = 160$

mf

sim.

KENDOR PRESENTS

Viola

Moonlight Nocturne by Joshua Reznicow
(the hunt begins)

Dolce $\text{♩} = 76$

pizz

p

The Swan
From the "Carnival of the Animals"

mf

leger lines

Sometimes when writing music you want to use higher notes and that means the notes go higher on the staff however, some notes won't fit on the staff's mere 5 lines. what do we do at this point? Utilise something called leger lines. Leger lines are small lines that are drawn for each individual note that goes above (or occasionally below the staff). These can also be seen in the grand staff for the middle C.

Ledger Lines

The diagram illustrates the use of ledger lines on two musical staves. The top staff is a Treble Staff, and the bottom staff is a Bass Staff. Both staves show a sequence of notes on the staff and notes extending beyond the staff boundaries, with small horizontal lines (leger lines) drawn for each note to indicate its pitch. The notes on the staff are labeled with letters A through F. The notes extending beyond the staff are labeled with letters D, C, B, A, G, F, E.

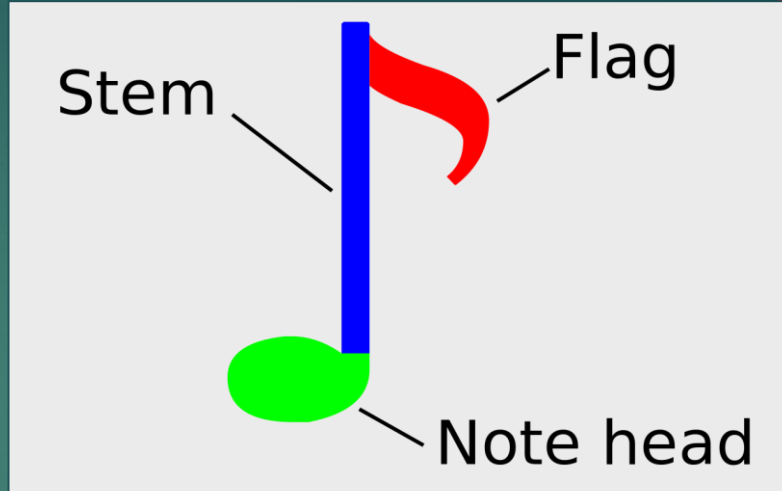
Treble Staff

Bass Staff

Notes

Notes can have 3 'parts' in their structure All notes have a head, all have a stem, aside from a semibreve and all quavers onwards have one or more flags.



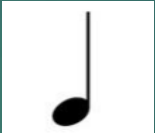

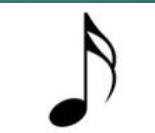
Additionally some note stems point up and others point down. from the third line up the stem goes down and from the second space down it goes up.



Notes and their durations

The Length of time a note is played is called its 'Duration'. There are 5 basic notes to be noted with their own durations.

the flag seen on the eighth and sixteenth note halves the notes duration and as such there are more notes that can be made. The next note after the semiquaver is a demisemiquaver, than a hemidemisemiquaver and so on. Of the same accord, for every note there is a rest.

| | | |
|---|--------------|------------|
|  | 4 beats | semi breve |
|  | 2 beats | minim |
|  | 1 beat | crotchet |
|  | half beat | quaver |
|  | quarter beat | semiquaver |



Note: This note is 2 quavers, the line between them is the tail. semiquavers have 2 lines.




This note is 2 semi quavers, the lines between them are the tails

Rests and their durations

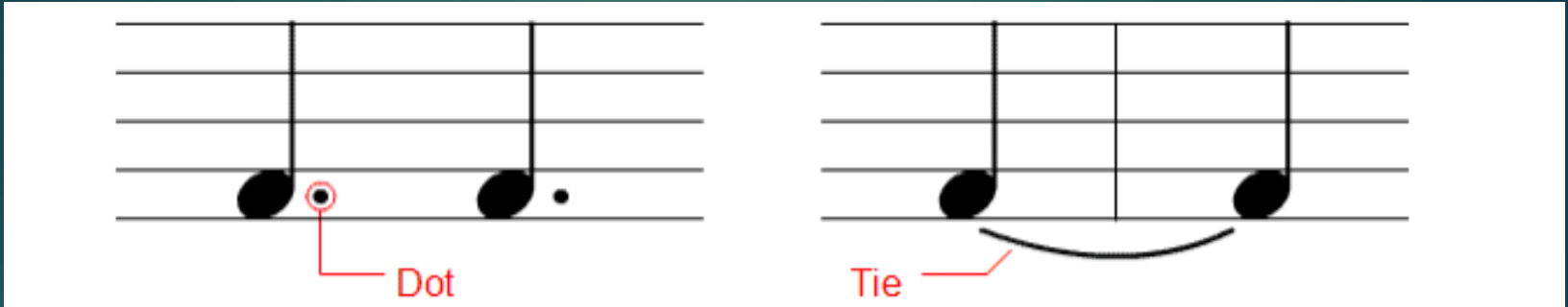
Now on our table we have the matching rests. A rest represents a period of silence in each measure (more on measures later). where a note would make a sound a rest is silent.

like notes rests as tails which half the length of the rest.

| | | |
|---|-----------------|---|
|  | semi breve rest |  |
|  | minim rest |  |
|  | crotchet rest |  |
|  | quaver rest |  |
|  | semiquaver rest |  |

dots and ties

Augmentation dots and tenuto ties are 2 types of marking used to alter a notes duration.



A dot increases the note duration by $\frac{1}{2}$ therefore the value of the note above (a crotchet) is now worth a crotchet and a quaver, making it worth $1+\frac{1}{2}$

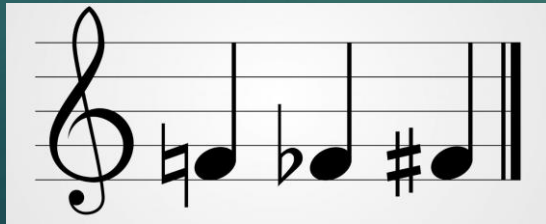
A tie merges notes of the same pitch. Therefore the merge of two crotchets becomes a equivalent of a semibreve

Accidentals

A Semitone is the smallest distance between 2 notes and a tone is equivalent to 2 semitones.

The distance between a C and a D is one tone or 2 semitones. Each semitone is each notes movement, meaning the difference between one note to the next such as C to C# or an E to F.

Sometimes when taking steps you come across sharps and flats. Sharps and flats are the black notes we see on the standard keyboard. these black notes are our accidentals and have a set of symbols for us to represent them on the staff. Additionally each black note (as well as E, F, B and C) have multiple names. For example G# is also Ab, E is Fb, F is E#, etc.



Accidentals

- ♮ Natural
- ♯ Sharp
- ♭ Flat
- ♭♭ Double Flat
- x Double Sharp

- a)F
- b)F flat
- c)F sharp

Each accidental effects the notes. Sharps make the note higher by 1 semitone, flats lower, double sharps and double flats do so by 2 semitones and a natural returns a note to its original pitch.

Bar lines

The music staff can be thought of as a timeline in a sense and as such it's easy to get lost. Bar lines divide the staff into measures that help to keep the staff organised and clear for the reader. There are 5 kinds of bar lines, the single, double, start repeat, end repeat and final bar line.

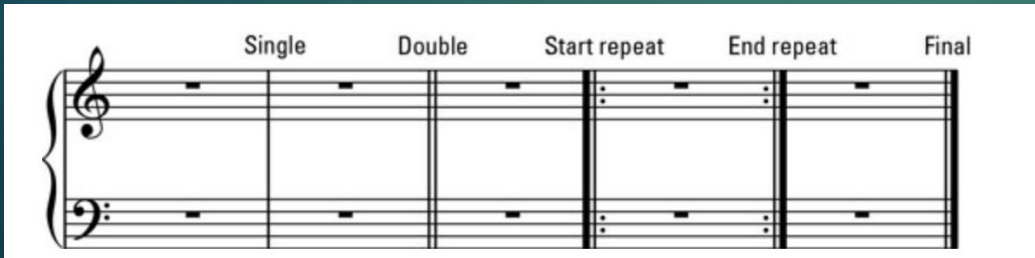
Single: Go on to the next bar.

Double: Move on to the next section.

Start repeat: Repeat this bar.

End repeat: Repeat the bars that begins with a start repeat.

Final: You've reached the end of the piece, stop playing.



Take a Break
Hamilton - An American Musical
Lin-Manuel Miranda
Transcribed by Louisa Tambunan

$\text{♩} = 84$

A musical score for the song 'Take a Break' from Hamilton. The score is in 4/4 time and features a treble and bass clef. The first system shows a single bar line circled in red, with a blue arrow pointing to it from the label 'Single'. The second system shows a double bar line. The third system shows a start repeat bar line circled in red, with a blue arrow pointing to it from the label 'Start repeat'. The fourth system shows an end repeat bar line. The fifth system shows a final bar line.

Single

Start repeat

Intervals

An interval is the distance between 2 notes. when counting intervals you count from the lowest note. A interval of 1 is a unison and is the same note, 2 is the next note up and it continues (ignoring black notes)
Intervals can be major, minor, perfect and augmented.

Augmented intervals:

Major and Perfect intervals can become augmented intervals by going up a semitone (remember, semitones include black notes)



Major intervals:

Major 2nd,
Major 3rd,
Major 6th.
Major 7th.

Perfect intervals:

Perfect 1st,
Perfect 4th,
Perfect 5th.
Perfect 8th (the octave)



Minor intervals:

Major intervals can become minor intervals by going down a semitone (remember semitones include black notes)

Intervals shown on the staff

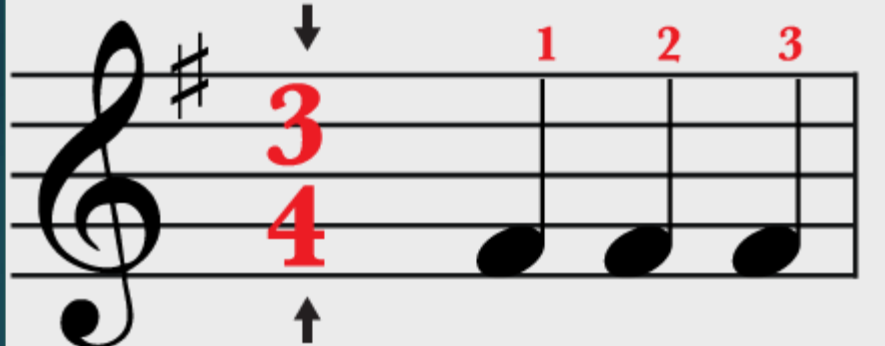
The image displays two musical staves in treble clef, illustrating various intervals. The first staff shows intervals from Unison to Augmented 4th, and the second staff shows intervals from Diminished 5th to Perfect Octave. Each interval is represented by two notes on the staff with a line connecting them, and a label below. Accidentals (sharps, flats, and naturals) are used to indicate the specific quality of the interval.

| Interval | Notes (C4 to D4) | Quality |
|----------------|------------------|----------------|
| Unison | C4, C4 | Unison |
| Minor 2nd | C4, B3 | Minor 2nd |
| Major 2nd | C4, D4 | Major 2nd |
| Minor 3rd | C4, B3 | Minor 3rd |
| Major 3rd | C4, E4 | Major 3rd |
| Diminished 4th | C4, F4 | Diminished 4th |
| Perfect 4th | C4, F4 | Perfect 4th |
| Augmented 4th | C4, F#4 | Augmented 4th |
| Diminished 5th | C4, G#3 | Diminished 5th |
| Perfect 5th | C4, G4 | Perfect 5th |
| Augmented 5th | C4, G#4 | Augmented 5th |
| Minor 6th | C4, A3 | Minor 6th |
| Major 6th | C4, A4 | Major 6th |
| Minor 7th | C4, B3 | Minor 7th |
| Major 7th | C4, B4 | Major 7th |
| Perfect Octave | C4, C5 | Perfect Octave |

<https://www.musical-u.com/learn/interval-reference-songs-that-youve-actually-heard-of/>

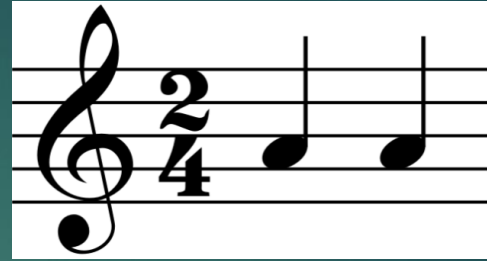
Time signatures

Three notes in the bar

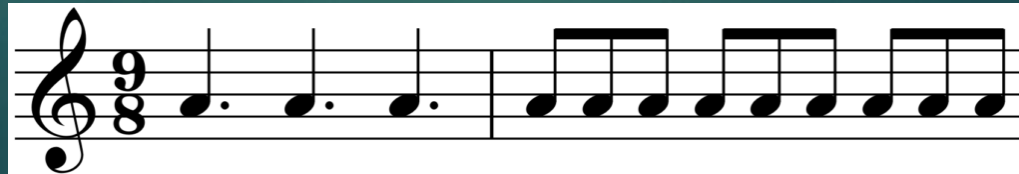


Quarter note gets one beat

<http://piano-music-theory.com/>



Time signatures are important when playing or sight reading as it helps the player understand the rough speed they should be working at. The top number is how many beats are in the bar and the bottom tells you the type of beat. 4 in this case represents a crotchet, hence 3 crotchets in the bar.



4/4 can also be written as just C

Types of Time signature

4/4 is the most well known time signature and is good for modern dance music, rock, jazz, country and most modern pop and as such in can be seen in many popular songs however they are only one of the simple time signatures, there are also compound and complex.

| name | 1 | 2 | 3 | definition |
|----------|-----|-----|------|---|
| simple | 2/4 | 3/4 | 4/4 | divides the beat into groups of 2 subdivisions |
| compound | 6/8 | 9/8 | 12/8 | divides the beat into groups of 3 subdivisions |
| complex | 5/8 | 7/8 | NA | notes cannot be broken down into smaller groups |

Washington By Your Side



Satisfied

Hamilton - An American Musical
Lin-Manuel Miranda
Transcribed by Louisa Tambunan



Reiach Tapuach

Music by Nachum Heiman
Words by Yoram Tcharlev
Arr. Mauro Cutz Braunstein 2017



Washington on your side

<https://www.youtube.com/watch?v=LDVR7LRXo5k>

Satisfied

<https://www.youtube.com/watch?v=Y1130a6NPjw>

Reiach tapuach

<https://www.youtube.com/watch?v=5tVkqRPbJjk>

Here are some examples from each category.



How tempo, dynamics and expression can be notated

Tempo, dynamics, expression, metronome markings, expression and articulation.

Tempo markings

The tempo of a piece is considered to be the 'speed' or 'pace' of the work and how quickly the notes are played. This can be shown via metronome +/- tempo markings at the top of and throughout the piece, However, with popular music these notes are becoming more vague and less specific, for example 'lightly'

Most markings are in italian.

Farmer Refuted
Hamilton - An American Musical
Lin-Manuel Miranda
Trascribed by Alexandra (Ali) Taylor

$\text{♩} = 80$

YOU'LL BE BACK
from HAMILTON

Words and Music by
LIN-MANUEL MIRANDA

Moderato (♩ = ♪♪)

G G/F C/E Am7 D

BURN
from HAMILTON

Words and Music by
LIN-MANUEL MIRANDA

Moderately, in 2

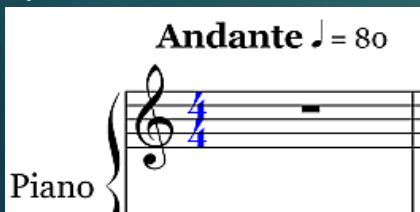
1.

| Word | Bpm range | Meaning |
|----------|-----------|----------------|
| Largo | 40-60 | very slow |
| Adagio | 60-70 | slow |
| Andante | 70-90 | walking pace |
| Moderato | 90-110 | medium |
| Allegro | 110-140 | fast |
| Vivace | 140-160 | very fast |
| Presto | 160+ | very very fast |

(The crotchet with the =80 signifies 80 crotchets a minute. similar to a bpm (beats per minute))

Tempo change markings

There are also words to describe a change in tempo. It surrounds and explains the movement in different ways including speeding up, slowing down or more movement within the piece.



The image shows a musical staff with a treble clef and a 4/4 time signature. Above the staff, the word "Andante" is written in a bold, serif font, followed by a quarter note symbol and "= 80". Below the staff, the word "Piano" is written in a smaller font. The staff contains a single measure with a whole rest.

| Marking | Abbreviation | Meaning |
|--------------|---------------|--|
| Accelerando | accel. | Gradually speed up |
| Ritardando | rit. | Gradually slow down (deliberate) |
| Rallentando | rall. | Gradually slow down (die away) |
| Ritenuto | riten. | Suddenly slow down |
| Rubato | rub. / rubato | Expressive speeding up or slowing down/ sense of improv. |
| Tempo Giusto | | Strict tempo |
| Più mosso | più mosso | More motion or movement; faster |
| Meno mosso | meno mosso | Less motion or movement; slower |

Dynamics and their markings

In music, dynamic is used to express volume and strength of the piece and notes as they are played. This often means an increase or decrease in volume. As such there are more names and symbols used on the staff to represent the dynamics of the piece.



| Marking | Symbol | Meaning |
|-------------|------------|------------------|
| Pianissimo | <i>pp</i> | Very soft |
| Piano | <i>p</i> | Soft |
| Mezzo piano | <i>mp</i> | Moderately soft |
| Mezzo forte | <i>mf</i> | Slightly loud |
| Forte | <i>f</i> | Loud |
| Fortissimo | <i>ff</i> | Very loud |
| Forte piano | <i>fp</i> | Loud then soft |
| Sforzando | <i>sfz</i> | Sudden accent |
| Crescendo | < | Gradually louder |
| Diminuendo | > | Gradually softer |

Articulation

Articulation markings give music more style and character. It describes how a performer should perform/play the notes to create a desired effect.

| | | | | |
|-----------------|----------------------|-----------------------------------|---------------------------------|---|
| | | | | |
| <i>staccato</i> | <i>staccatissimo</i> | strong accent <i>martelato</i> | normal accent <i>marcato</i> | legato accent <i>tenuto</i> <i>portamento</i> |
| light accents | | strong accent | medium accents | |

Different instruments (including vocals) will have different techniques specific to the instrument such as breath marks for singers and bow marks for violinists.

An accent means to put emphasis on a note/word in the song. it's quite useful for singers especially when considering pronunciation.

Effect Articulations

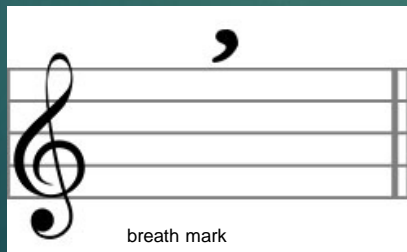
Fall **Quick fall** **Shake** **Gliss** **Rip** **Doit** **Scoop** **Bend**

N.B. the text is for academic purposes, these are all obvious, do not label in real world!

Articulation

Alongside Piano there are tons of instruments with their own unique articulation markings such as Drums, Cymbals, Guitar, Bass and Orchestral string instruments. There is crossover at times with the staff but most of the techniques are unique to their own forms of notation.

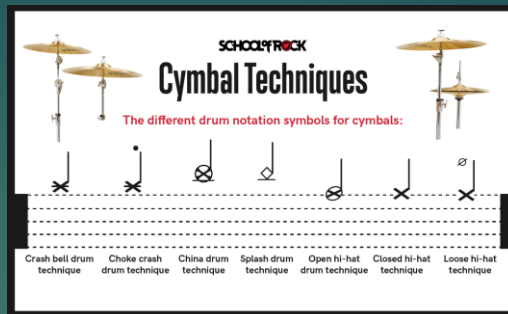
| | |
|--|---------------------------|
| | <i>Down-bow.</i> |
| | <i>Up-bow.</i> |
| | <i>Whole bow.</i> |
| | <i>Upper half bow.</i> |
| | <i>Lower half bow.</i> |
| | <i>Tip of the bow.</i> |
| | <i>Middle of the bow.</i> |
| | <i>Heel of the bow.</i> |



breath mark

SCHOOLROCK Cymbal Techniques

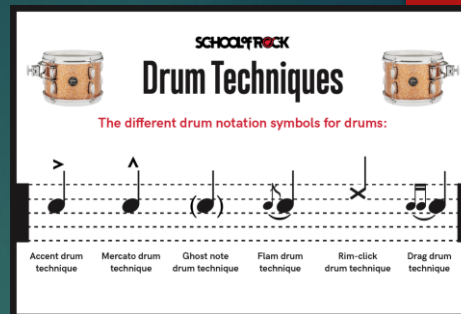
The different drum notation symbols for cymbals:



Crash bell drum technique Choke crash drum technique China drum technique Splash drum technique Open hi-hat drum technique Closed hi-hat drum technique Loose hi-hat drum technique

SCHOOLROCK Drum Techniques

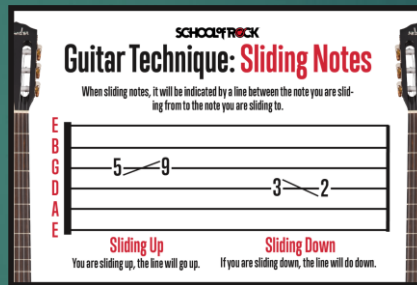
The different drum notation symbols for drums:



Accent drum technique Mercato drum technique Ghost note drum technique Flam drum technique Rim-click drum technique Drag drum technique

SCHOOLROCK Guitar Technique: Sliding Notes

When sliding notes, it will be indicated by a line between the note you are sliding from to the note you are sliding to.

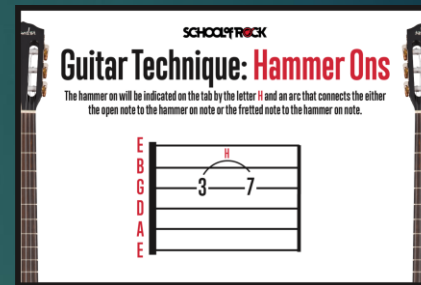


Sliding Up
You are sliding up, the line will go up.

Sliding Down
If you are sliding down, the line will do down.

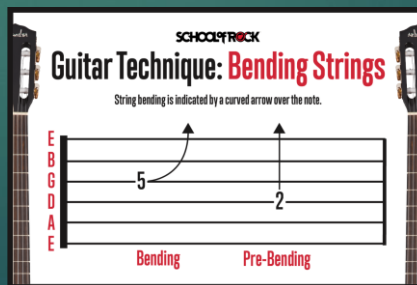
SCHOOLROCK Guitar Technique: Hammer Ons

The hammer on will be indicated on the tab by the letter **H** and an arc that connects the either the open note to the hammer on note or the fretted note to the hammer on note.



SCHOOLROCK Guitar Technique: Bending Strings

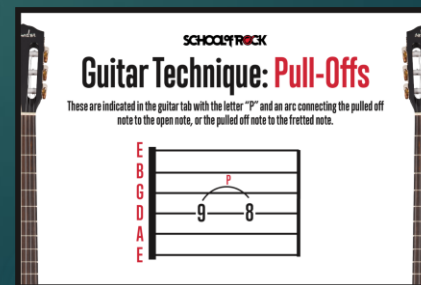
String bending is indicated by a curved arrow over the note.



Bending **Pre-Bending**

SCHOOLROCK Guitar Technique: Pull-Offs

These are indicated in the guitar tab with the letter **P** and an arc connecting the pulled off note to the open note, or the pulled off note to the fretted note.





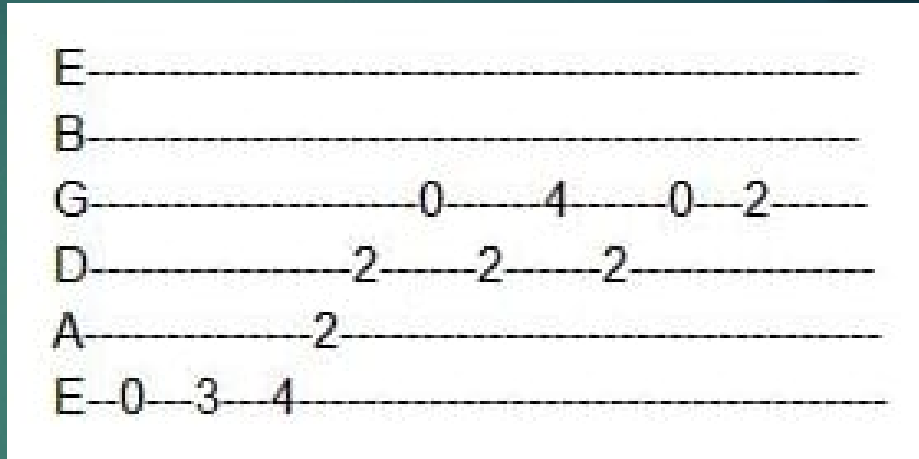
Rhythm and pitch in alternative forms of notation.

Tabs, Graphic score, drum notation, chord
chart, lead sheet and tonic sol-fa

Guitar (and ukulele) Tabs

in guitar tabs, each line represents a string on the guitar, the top line is the high E string which is the furthest away from the player and the bottom is the low E, the closest. The numbers represent which fret to play.

Tabs is also able to be used for ukulele and bass guitars but with 4 lines to represent their 4 strings.

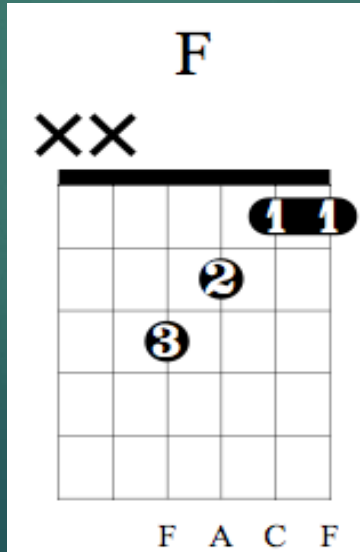


Note: For those who don't know, the frets are the gaps between the lines. Each fret is separated by 1 semitone.

Chord charts

Chord charts are another useful form of notation that are great for guitarists using chords. While chords can and aren'tatedcd in tab, chord charts make it simpler and shows a more visual representation of the chord.

The dots represent which place you hold on the strings. Most also have numbers to represent which fingers you use, 1 being the pointer, 2 the middle, 3 the ring and 4 the pinkie however this rarely accounts for the thumb as some chords allow the thumb to wrap around the guitar neck to hold down the low E string to complete the chord.



Symphony

Tim Hughes

Key: G · Tempo: 105

Intro (4x)
Em / C / | G / / /

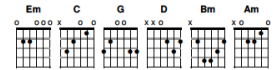
Verse 1
Em C G
Kindness will lead us to freedom
Em C G
Safe from the weight of the world
Em C G
If glory is grace You've per - fected
Em C G
Then grace have Your way in me

Pre-Chorus
D Bm C
You re - store my soul
Am D
You're breathing Your life into me
(D) Bm C
You re - store my soul

Pre-Chorus > Chorus (2x)

Bridge
Am Em
Songs of freedom songs of healing
G D
You're for me You are for me
Am Em
Every promise never failing
G D C
You're for me You are for me

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Here on the F you can see that the '1' is stretched for a bar chord where the finger is flattened to cover multiple strings. This is represented with elongated circles that stretch over multiple strings. This represents flattening your fingers, one of the techniques exclusively used with string instruments.

Tonic sol fa

If you've ever watched the sound of music you may be familiar with tonic sol fa's basics.

For those who haven't the link is on the right.

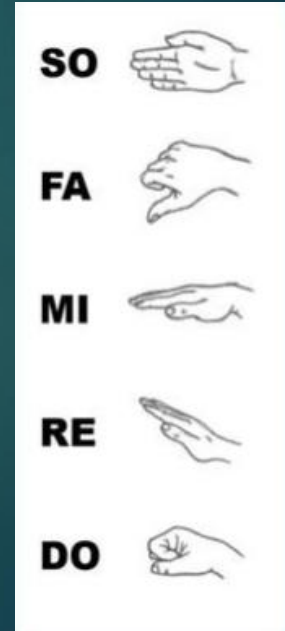
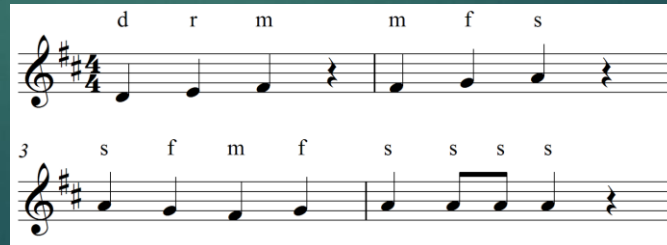
Tonic sol fa is built up from scales using Do Re Mi onwards to represent the notes. It's a great resource to learn sight reading however it's not always easy to learn for the first time and its rarely used due to its old fashioned nature but for a singer it can still be a great warm up exercise.

Additionally there are hand signals that can be used to represent the words and notes that make it good for groups.



<https://www.youtube.com/watch?v=drnBMAEA3AM>

| Flat | Natural | Sharp |
|------|---------|-------|
| (De) | Do | Di |
| Ra | Re | Ri |
| Me | Mi | (My) |
| (Fe) | Fa | Fi |
| Se | So | Si |
| Le | La | Li |
| Te | Ti | (Di) |



lead sheet

A lead sheet is the final notation I intend to cover and it's the closest to the natural staff. A lead sheet is specifically for singers and contains only the vocal melody, lyrics and any harmonies. For example on the one on the right, Blackbird by the Beatles, we can see the basic chords as well as the vocal melody on the staff and the lyrics under it, words even have lines to indicate either a held note or a pause in the words spoken.

38

(SLOW)

BLACKBIRD

- JOHN LENNON/
PAUL McCARTNEY



(1., 3.) Black - bird sing - ing in the dead of night,
(2.) Black - bird sing - ing in the dead of night,
take these bro - ken wings_ and learn to fly; all your life_
take these sunk - en eyes_ and learn to see; all your life_
you were on - ly wait - ing for this mo - ment to a - rise.
you were on - ly wait - ing for this mo - ment to be
free. Black - bird, fly,
Black - bird, fly, in - to the light of a dark, black night..

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<https://www.youtube.com/watch?v=Mn4Xw8Xypo>

| Notation | Pro's | Con's |
|--------------------------|--|--|
| Tab (guitar and ukulele) | Literal, clear, standard for guitarists and is relatively easy to learn and because it is so well used, there are many books and sources written in it making it universal and easier to find music in this notation. | Difficult to sight read due to the small numbers and lacks time which means that the musician often has to play to those around them or rely on a metronome more so as not only is timing often neglected but there are no bar lines more often than not, making phrasing difficult. |
| Graphic score | Open to interpretation, descriptive, allows for unique interpretation and often used in jazz due to its nature of freestyle interpretation allowing for the artist to be more creative than with other notations. | Unusable in band settings because there's not really set notes, no standardisation, can't be recreated from score alone, this is due to the strange shapes and vague drawings that transpose into notes but every individual would do so individually making standardisation impossible. |
| Drum notation | Unique for the kit, designed with drums in mind and is informative in a way that no other notation could for a drum kit, allowing for drummers to write down their notation the same way other instruments do. | Hard to sight read because drums are played quite fast, no time signature hard, not all that different from classic piano stave, drummers often roughly memorise their music and add inflection where possible, drums unlike melody are overlooked and as such specifics and changes are less significant and therefore learning the notation can feel redundant when it is rarely followed. |
| Chord chart | Simple, great for beginners, accurate, easy to recreate and shows clearly how to play each chord which allows for people of various skill sets to utilise them to get used to the chords. | Doesn't always include strumming patterns, hard to sight read, only useful for a few instruments and as a whole isn't as necessary thanks to tabs which does the same thing in essence but with picking and other patterns.. |
| Tonic sol fa | Good for singers, easy to learn, useful in choirs and can have hand signals which are great for choirs where the sound of other people can drown out what the conductor is trying to convey. | outdated, is no longer used as commonly and as such less people are likely to use it making it less useful when it's a rare notation to use and as such learning the notation for it to be used so little is poor and many people use aspects of it but rarely the whole notation for warm ups and nothing more. |
| Lead sheet | Great for singers, states with clarity, does its job, great for sight reading and helps lead the singer to where they need to be to ensure that they perform well and they allow for the singer to write down specifics of the vocal melody. | only for singers and as such is only useful in that setting, making it more effort that worth potentially if you're learning a whole new notation for 1 instrument whereas standard stave is utilized for most instruments with pitch. |