★ The Lessons on musictheory.net are free. You don't need to buy an app.

Music Theory is a description of common practice, not a set of rules.
Music notation is a visual representation of sound. We get to see how high or low a note is, how long it lasts, and what other notes can be heard at the same time.

The staff:
The framework that we use for mapping sound is called a staff. In modern notation, the staff has five lines. Between the lines are spaces. Each note (the ball of the note) has its own spot on the staff, either on a line or in a space.

Score: The score is a map of the entire piece. Elements of the score (like the different instruments) are usually separated into **parts** that are easier to read. A cello part will have only the notes that the cello plays.

Notes: every **note** (in modern notation) is a slightly-squashed ball-shape. The **ball** can be empty or filled in. It can have a **stem**. Stems can be plain, or have additional "**flag**s" or "**beam**s". Notes can have **dots** after them. All of these options determine the rhythm (and duration) of the note.

Leger lines. To expand the staff to accommodate notes that don't fit within the five lines, we use leger lines above or below the staff, only as many as are necessary, drawn for single notes, usually no more than four leger lines. To avoid drawing more than four leger lines, one might put the music in a different clef.

Clefs – Clefs make it easier for the musician to decipher what a note is, by minimizing the need for leger lines in a particular melody or passage. eg.: If most of your notes are below middle C (in the middle of the piano keyboard), you'll use bass clef. If they're mostly above middle C you'll use treble clef.
(clef page)
(example of cello clef-changes)

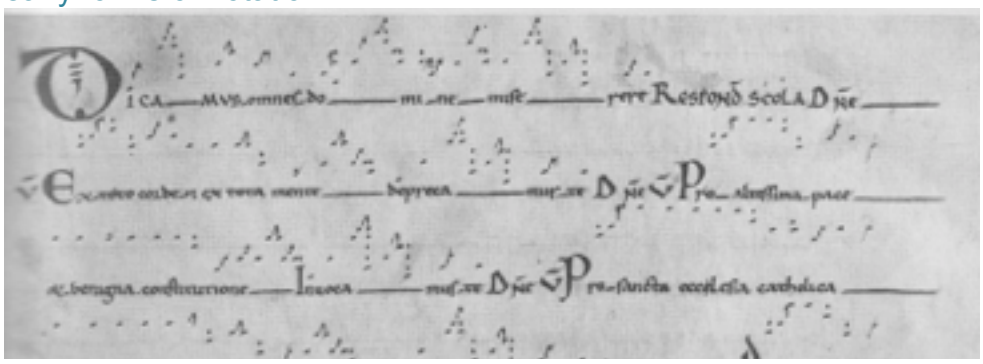
Melody - is horizontal. The notes of a tune are written one after the other.
Harmony - is vertical. Notes that sound together are stacked on top of each other, either within a single staff, (like chords in the left hand on a piano score) or in two or more staffs, all aligned so that it's easy to see how things line up. Each instrumental line will have its own staff. More than one staff in a score is called a system. Systems can have any number of components, depending on the size of the ensemble.

Bar lines are used to help musicians keep track of time passing, and also to clarify what happens with what. (When do the violins play at the same time as the oboe, for example.)
Double bar lines indicate the end of a section. Final bar lines denote the end of a movement or piece. Double bar lines with dots mark repeated sections.
evolved into a practical form that is easy to grasp

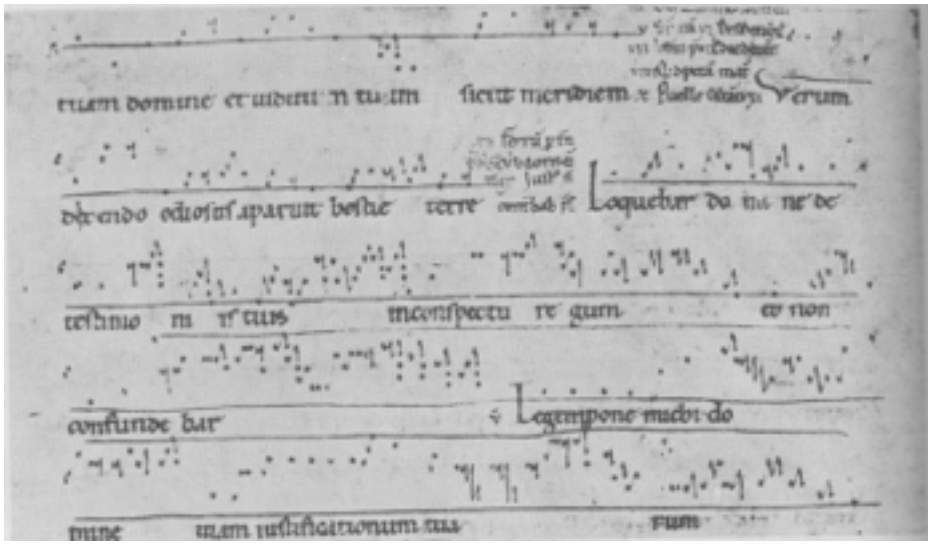
Lesson 1 The Staff, Clefs, and Ledger Lines
<u>The Staff</u>

The modern staff has five lines. That was not always true. It evolved as the most readable way to notate pitch.

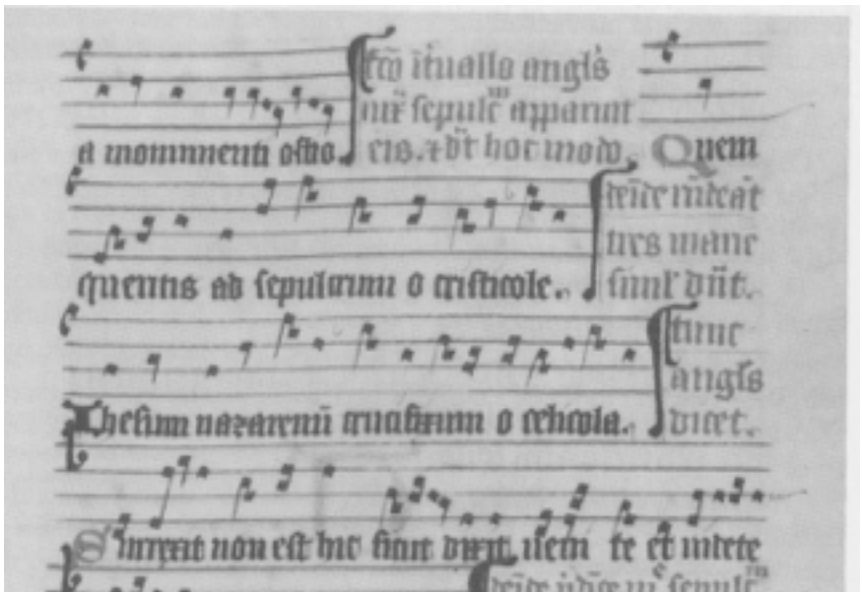
early forms of notation



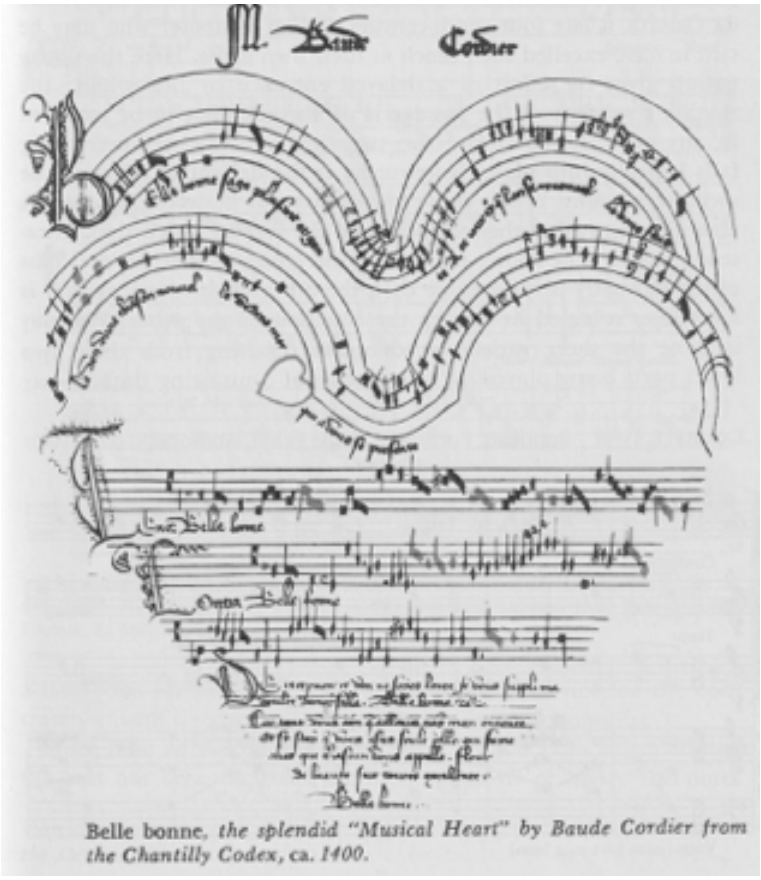
11th century Gallican Chant (no lines)



12th century Ambrosian Chant (one line or two?)



four lines – “Quem Queritis 14th century



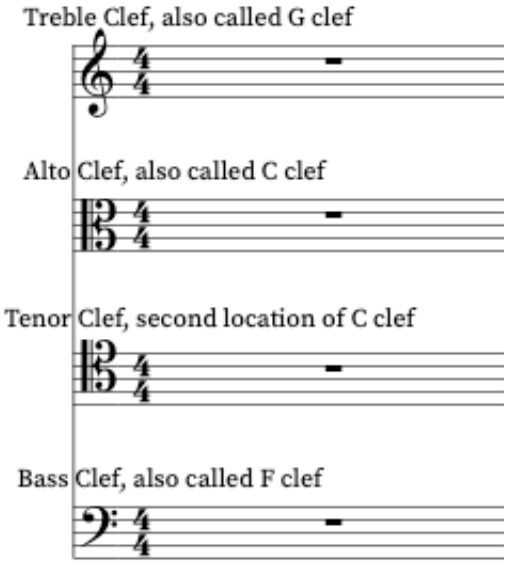
Belle bonne, *the splendid "Musical Heart" by Baude Cordier from the Chantilly Codex, ca. 1400.*

Five lines – ca. 1400

<u>Clefs</u>

Clefs tell us the location of middle C on the staff (refer to Theory.net for great info on middle C)

The clef used in chant was the movable C-clef, and was positioned higher or lower on the staff to accommodate the singer's range - lower on the staff for higher range, eg. - so that most of the notes of the singer's chant would fit on the staff without too many ledger lines. (see definition of ledger lines above) [the choral image in lesson 3 (below) shows the C-clef in 3 different positions.]

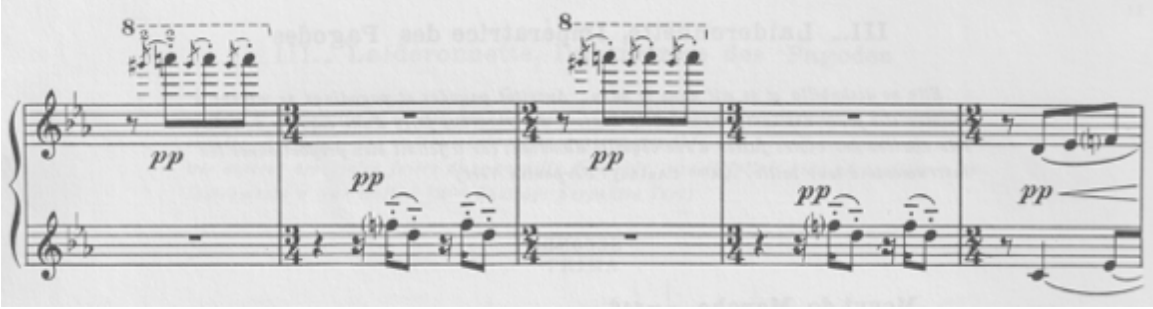


Treble clef is for higher notes, like violin or flute; Alto clef is for viola, alto trombone, and gamba; Tenor clef is used by cello, bassoon, tenor trombone, double bass; Bass clef for cello, bassoon, trombone, double bass, tuba, etc. Keyboard instruments and Harp use Treble and Bass clefs.

Going up ↑ on the staff use the alphabet forwards → from A to G. Going down ↓ on the staff use the alphabet backwards ← from G to A.
The alphabet goes line, space, line, space, etc.

Lines of treble clef, starting on the lowest line: Every Good Boy Does Fine
Spaces of treble clef, starting in the lowest space: FACE
Lines of Bass clef: Great Big Dogs Fight Alligators
Space of Bass clef: All Cows Eat Grass

Ledger lines: we can easily read up to 4 ledger lines – then we need to change clefs or write 8va (for "Octava") which tells us play those notes an octave higher or lower than printed. The right hand for this player goes way up near the top of the piano keyboard and the 8va saves us from having to decipher 8 ledger lines.



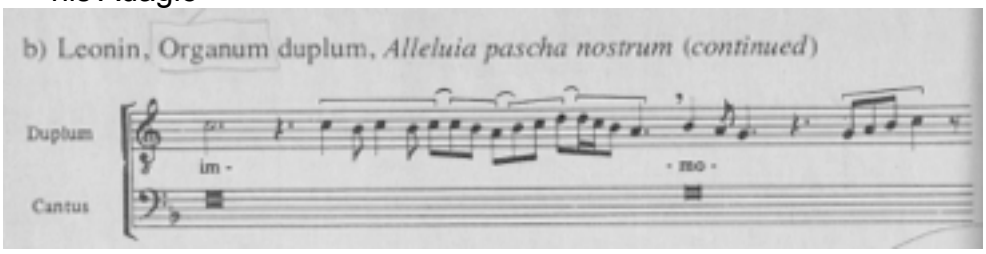
Ravel "Mother Goose" pieces for piano 4 hands (#2 Tom Thumb)

Lesson 2 Note Duration

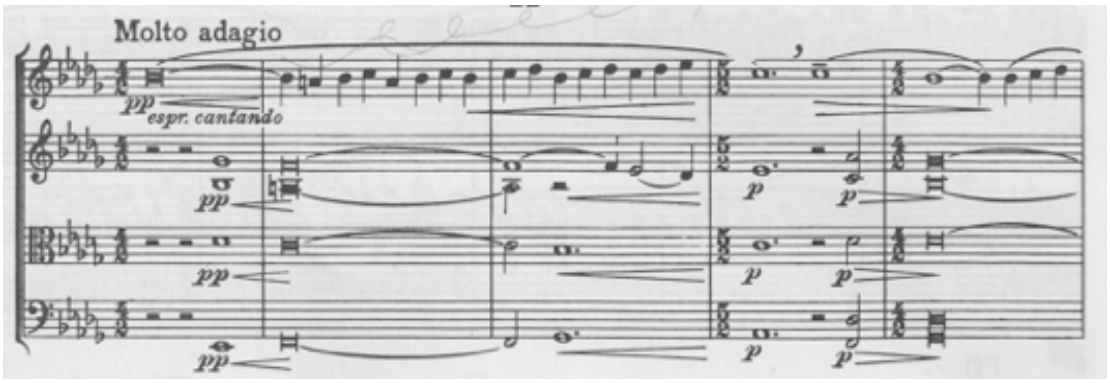
Commonly-used values: Lesson 2 on Theory.net has a very clear presentation of whole, half, quarter, eighth, and 16th-notes.

Additional values:

a. Double whole note used in chant and brought back by Samuel Barber in his Adagio

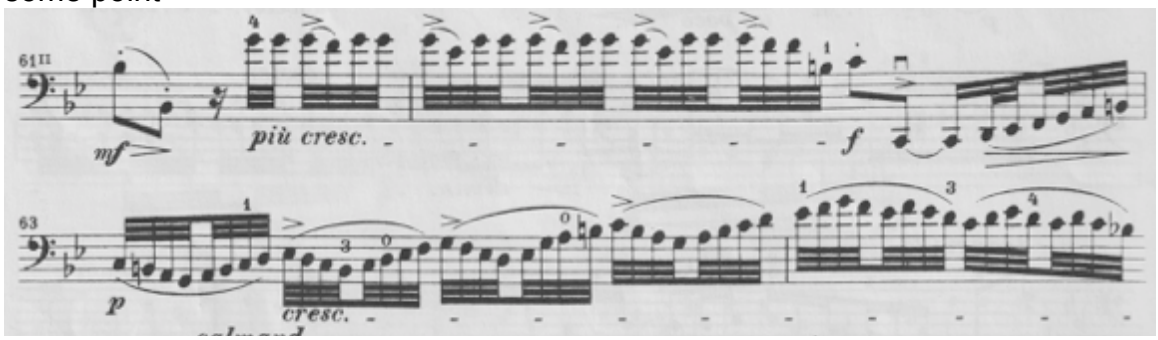


late 1100s Gregorian chant Notre Dame de Paris
Samuel Barber used this Gregorian-Chant-style notation to tell us to apply a spiritual, ethereal quality to our playing.



Barber Adagio from SQ Op. 11 You can find several versions on You Tube – notice how sing-able the violin melody is.

b. 32nd notes are quite common - practically every concerto uses them at some point



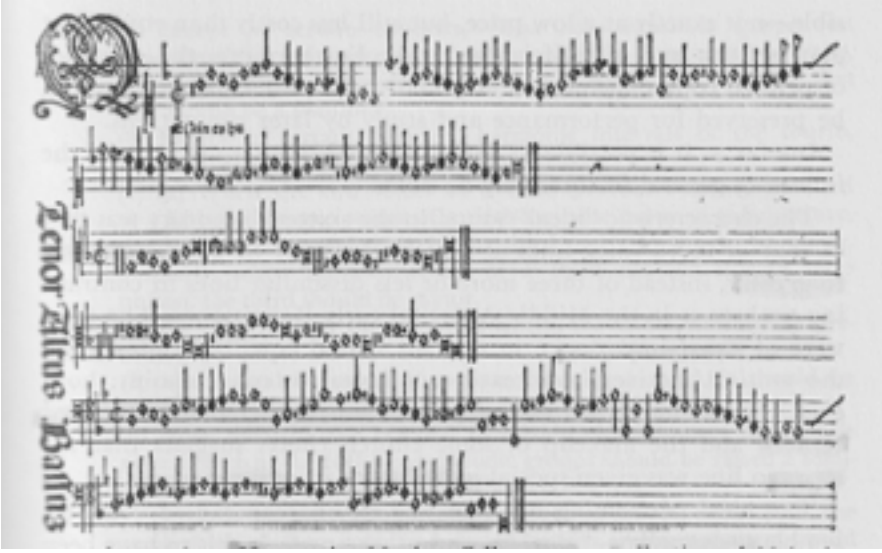
Boccherini Cello Concerto

Skipping to
Lesson 4 Rest Duration
Clear and Simple description on MusicTheory.net
Comments:

a. Half rest contains two quarters, (less heavy) so it floats on top of the middle line – the whole rest contains four quarters (heavier) so it hangs down from the line above
b. Rests are as "heavy" as notes (they last as long as their equivalent notes)

Lesson 5 Dots and Ties
Clear and Simple description on musictheory.net

Skipping back to
Lesson 3 Measures and Time Signatures (Measures are also called "bars") musictheory.net has a clear and simple description of measures and Time Signatures.



Harmonice Musices Odhecaton, Venice, pub. 1501

This piece has no bar lines, making it really hard to tell what's supposed to go with what. Also notice that the C clef is on different spots for each singer depending on their range.

Time signatures tell us the basic rhythmic structure of each measure
In early notation, which was devised by monks, a perfect circle, or "perfection" represented 3 basic units in a measure – the Trinity.
A dot represented a three-part division of each unit.
A C represents an *imperfect* number of basic units in a measure – 2.
No dot means a two-part division of each unit .

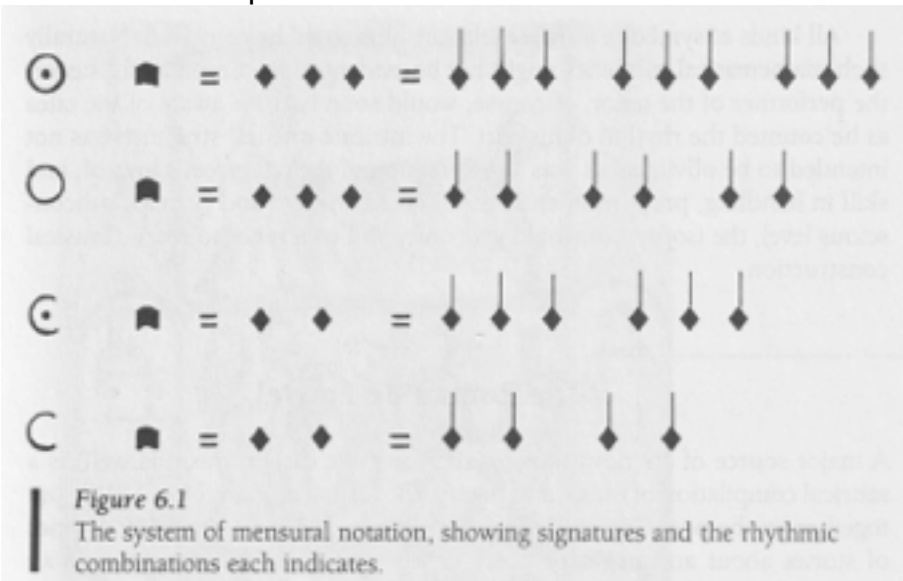
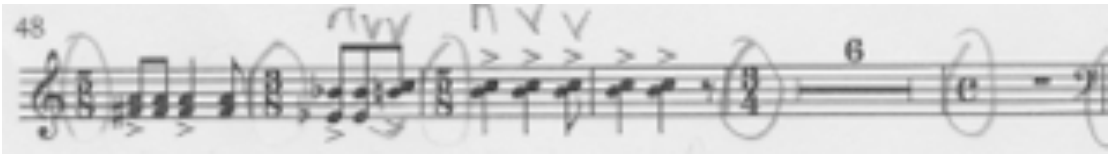


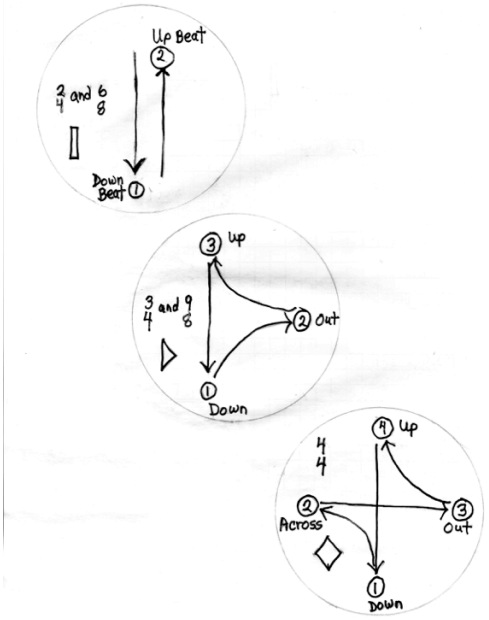
Figure 6.1
The system of mensural notation, showing signatures and the rhythmic combinations each indicates.

Today a C (Common Time) still represents 4/4, a ¢ (Cut Time) represents 2/2, and a dot still represents 1.5 units of a value. We've given up the perfect circle, and we have many more options.
The top number in a time signature tells us how many counts per measure. It can be any number (not usually more than 13 – too clumsy to count). The bottom number tells us what kind of note we're counting, and can only be an exponential multiple of two (2, 4, 8, 16, 32, 64 – the same as our note values)



Rogerson “Luminosity”

Counts vs. beats



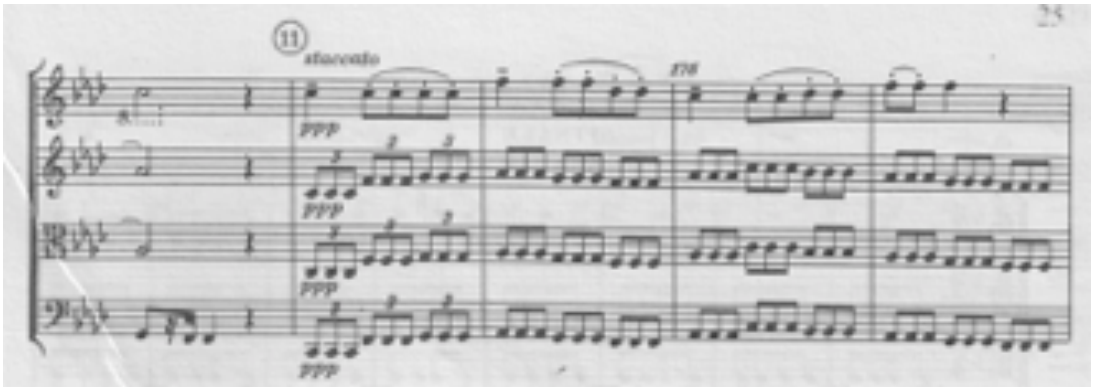
If you change the number of counts or beats in a measure, you have to write in a new time signature

Skipping to

Lessons 7 and 8 Simple, Compound, and Odd Meter

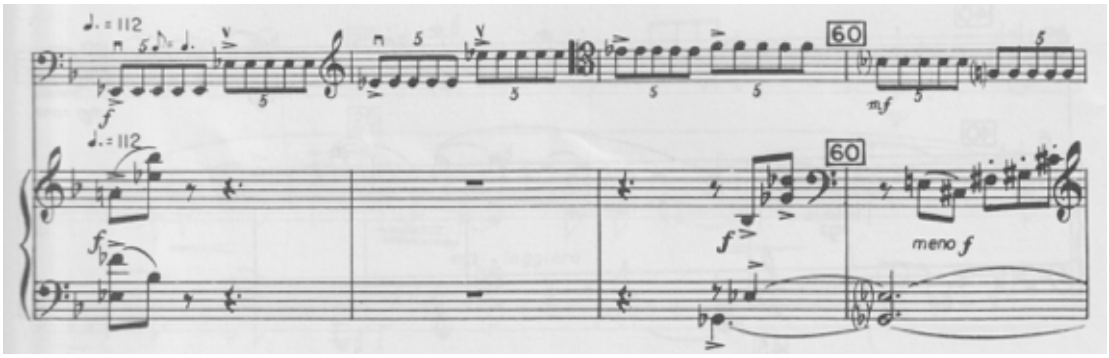
This is somewhat complicated, but worth looking at once for the basic concepts.

a. If you need to divide a <u>simple-meter beat</u> into an odd number (three or five) you write braces for the beat, with the number of the divisor in the middle
b. <u>Compound meter</u> is a triple division of the beat (see early time signatures, above)
c. <u>Triplets and other uneven divisions of the beat</u>



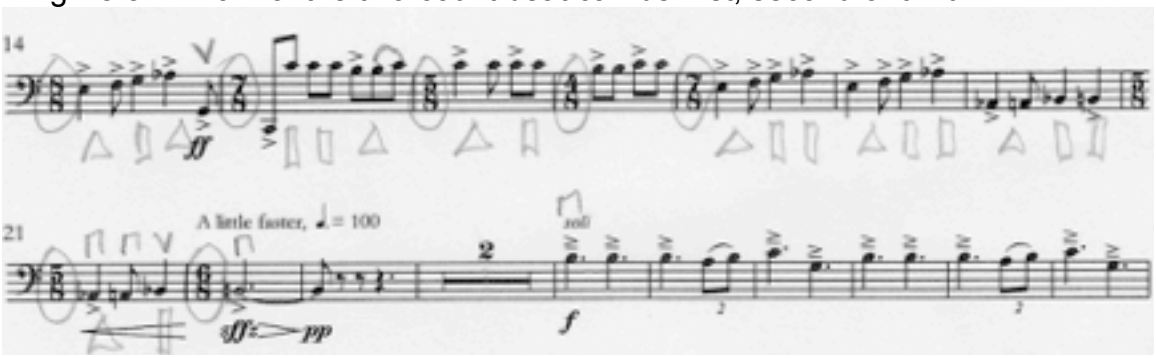
Dvorak “American” Quartet, third movement, “molto vivace”; triplets are notated with tiny 3s. Violin 1 is still in a duple division of the beat, the others in

triplets - a slightly turbulent combination of 3 against 2, which can be felt throughout. Many versions on YouTube.



Elliott Carter Cello Sonata, “vivace, molto leggiero” bar 60 has 5 notes in the cello against 3 notes in the piano right hand.

d. Odd meter means that there are unequal beats within a measure. The counts remain steady throughout. What’s important here is that the compound beat takes more time than the simple beat.(5/8, 7/4, 8/8)
e. 5/8 can be 3 counts plus 2 counts, or 2 counts plus 3 counts
f. 7/4: 2 + 2 + 3: the three-count beat can be first, second, or third
g. 8/8: 2 + 3 + 3: the two-count beat can be first, second or third



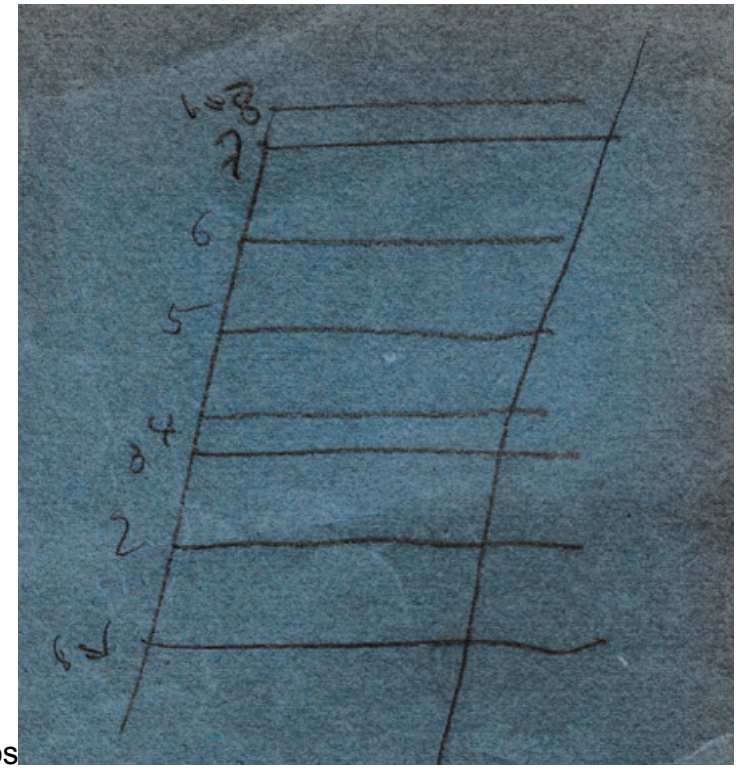
This is also from Rogerson “Luminosity”

Skipping back to
Lesson 6 Steps and Accidentals
Clear and Simple description on MusicTheory.net.

Accidentals written into a measure tell us something is up – it could indicate a mode change (see chart of modes below), a harmonic modulation, a decoration, a passing tone, or a “grit note”.

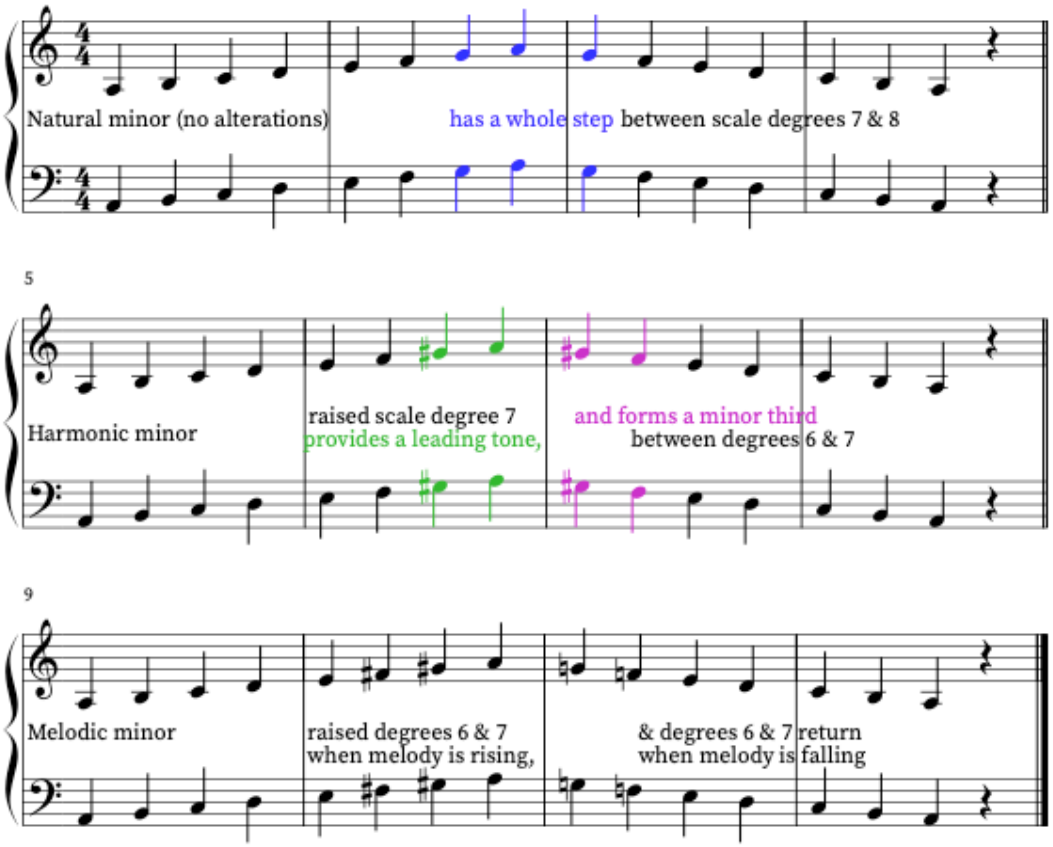
Skip forward to
Lessons 9 and 10 The Major Scale and Minor Scales
The old Aeolian Mode is our Minor Scale
The old Ionian Mode is our Major Scale.

Numbers.	*Names of the Modes.*	*Range.*	*Fin.*	*Dom.*	*Med.*	*Part.*	*Mod. Con.*	*Absolute Initials.*
I.	Dorian.	D—D	D	A	F	G	C^1, E	C^1, D, F, G, A.
II.[3]	Hypodorian.	A—A	D	F	E	A, A^3	C, G	A, C, D, E^4, F
III.	Phrygian	E—E	E	C	G	A, B	D^4, F	E, F, G^4, C
IV.[3]	Hypophrygian.	B—B	E	A	G	C, F	D, B^3	C, D, E, F, G^4, A^4
V.	Lydian.	F—F	F	C	A	G	B, D, E	F, A, C
VI.[3]	Hypolydian.	C—C	F	A	D	C^3	B^1, G, B ($\flat$)	C, D^4, F
VII.	Mixolydian.	G—G	G	D	C	A	B, E	G, A^4 B, C, D
VIII.[3]	Hypomixolydian.	D—D	G	C	F, A	D	B, D^3	C^1, D, F, G, A, C
IX.	Æolian. MINOR	A—A	A	E	C	D^3	G^1, B	G^1, A, C, D, E
X.[3]	Hypoæolian.	E—E	A	C	B	E, E^3	G, D	E, G, A, B^4, C
{ *XI.*	*Locrian.*	*B—B*	*B*	*G*	*D*	*F*	A^1, *C*	*B*, C^4, *D*, *G* }
{ *XII.*[3]	*Hypolocrian.*	*F—F*	*B*	*E*	*D*	*C*	*A*, F^3	*G*, *A*, *B*, *C*, D^4, E^4 }
XIII. (*or* XI.)	Ionian. MAJOR	C—C	C	G	E	D	F, A, B	C, D^5, E, G
XIV. (or XII.)[3]	Hypoionian.	G—G	C	E	A	G^3	F, D, F	C, D^5, G, A

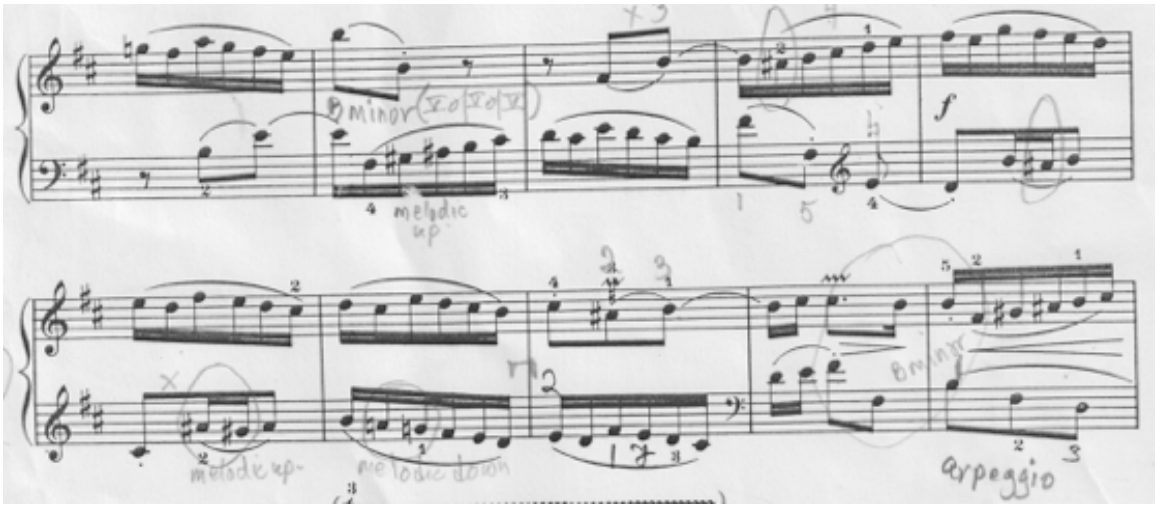


major scale steps

Comments on minors



a. Natural minor is unaltered
b. Harmonic minor has a raised 7th note – in practice this alteration was made so often that it was given the name “Harmonic”
c. Melodic minor 6th and 7th notes are raised when the melody is going up, and revert when the melody is going down. If you raise G and A to G# and A# going up and take those alterations away going down (A♮ and G♮) you’re in B melodic minor like this example from Bach Invention #3



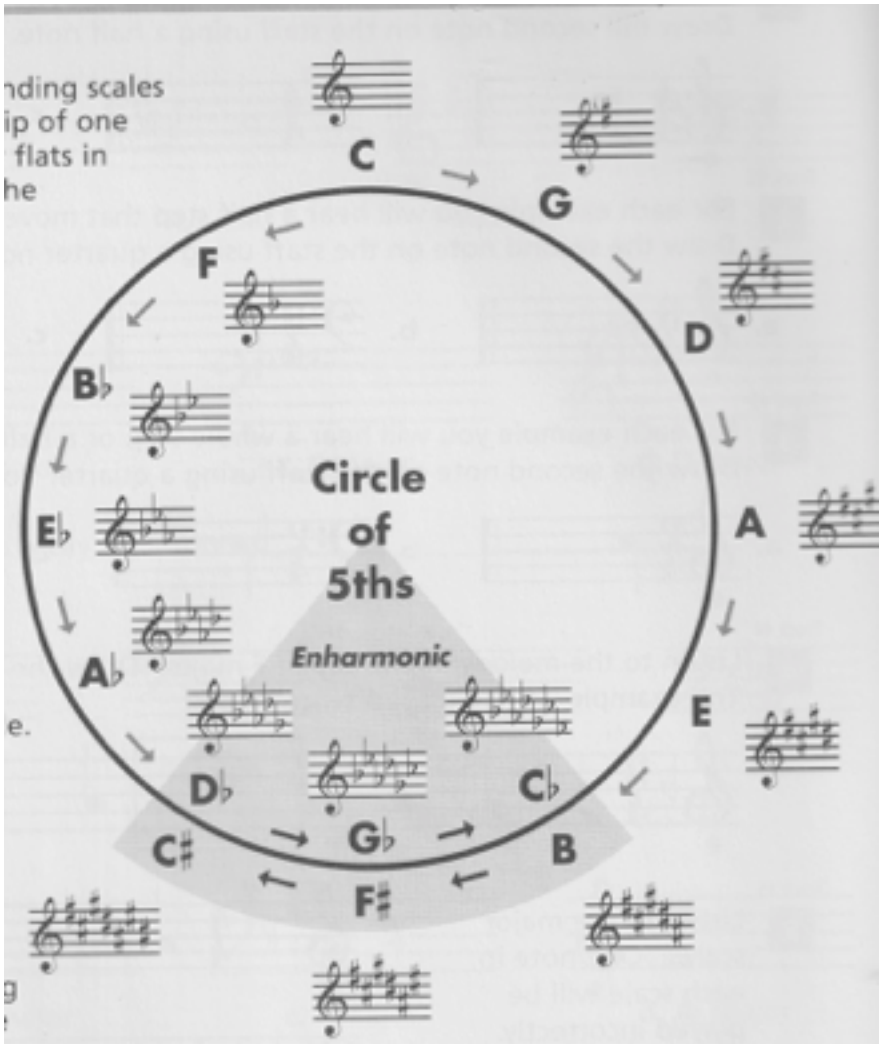
Skip forward to

Lesson 12 Key Signatures

a. Order of accidentals on the staff:
   Flats: Battle Ends And Down Goes Charles’ Father

Sharps: Father Charles Goes Down and Ends Battle

b. The goal is to keep most of them INSIDE the staff: flats go up a fourth and then down a fifth. Sharps go down a fourth and up a fifth, while staying close to the staff.
c. Circle of fifths



Why we have key signatures – it's efficient.

If you're writing a piece, especially a longer one, you might want to use a key that's not C major. If everything were written in C major, it would be boring. That means you'll be writing some music in a different key.

Suppose you are living in the time before printing was easily available, and you are composing a large piece for orchestra. Ink and paper are expensive. Accidentals (sharps and flats) take up space on the page, and you may have noticed that it takes *time* to write them all in. A key signature lasts for a whole line of music, so by using a key signature you're saving yourself time and money in writing out your score. And your copyist, who makes copies of the individual parts of your magnum opus for each player, is grateful too, and is making fewer mistakes. And then your musicians don't have to parse all the accidentals and everything goes more smoothly.

Lesson 13 Key Signature Calculation

I find this method confusing – If you're composing, use the scale tool or a keyboard.

If you're reading, use the old method: Flat keys go to the next-to-last flat
Sharp keys go up a half-step from the last sharp

Building scales with the SCALE TOOL

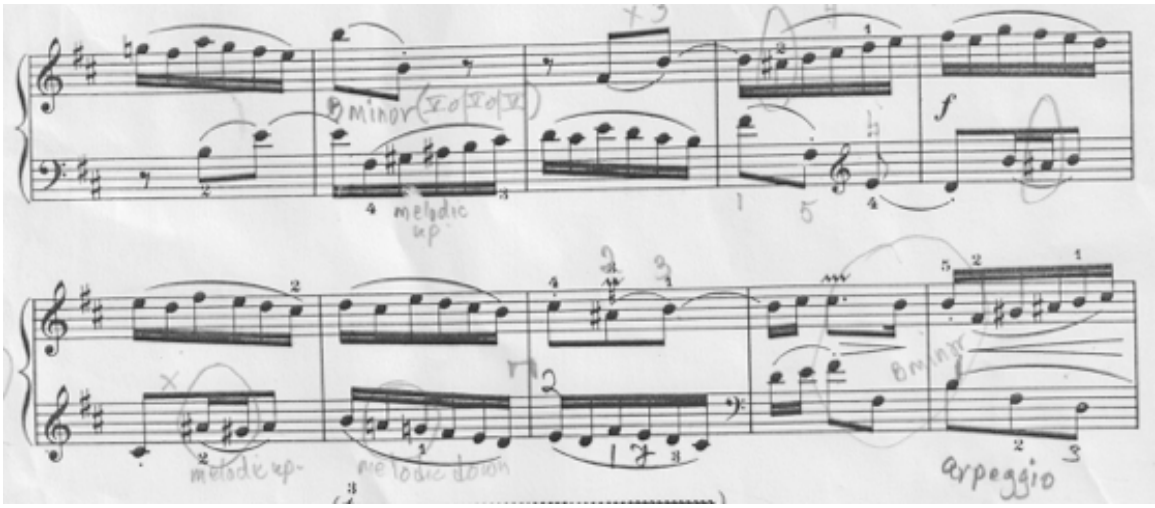
Use the major template for major scales, the minor template for minor scales

Scale tool rules:

a. Use every letter of the alphabet in your scale, each letter only once except first and last will be the same. (We can't have B and Bb in the same scale.)
b. Use either sharps or flats but not both in your scale.
c. Some notes have two names (spellings). If you can't finish a scale correctly, choose the other option in a window. You might have to change the spelling of the starting note.
d. Three scales have two different names, both of which work. Enter them all.

Comments on minors

d. Natural minor is unaltered
e. Harmonic minor has a raised 7th note – in practice this alteration was made so often that it was given the name "Harmonic"
f. Melodic minor 6th and 7th notes are raised when the melody is going up, and revert when the melody is going down. If you raise G and A to G# and A# going up and take those alterations away going down (A♮ and G♮) you're in B melodic minor like this example from Bach Invention #3



<u>Relatives and Parallels</u>

Every major scale has a relative minor. They are relatives because they share a key signature (like a last name). The starting note is different – (like a first name). A minor (no sharps no flats) and C major (no sharps no flats) are relatives.
Every major scale has a parallel minor. Parallels have the same first name, but different last names. D major (two sharps) and D minor (one flat) are parallel.

Lesson 11 Scale Degrees

a. Leading tone alterations in minor

b. Dominant and Gregorian chant
c. Mirroring – mediant submediant dominant subdominant supertonic, subtonic
d. Tritone
e. Bartok and the others getting away from tonality
f. 12-tone