Pitch Notation

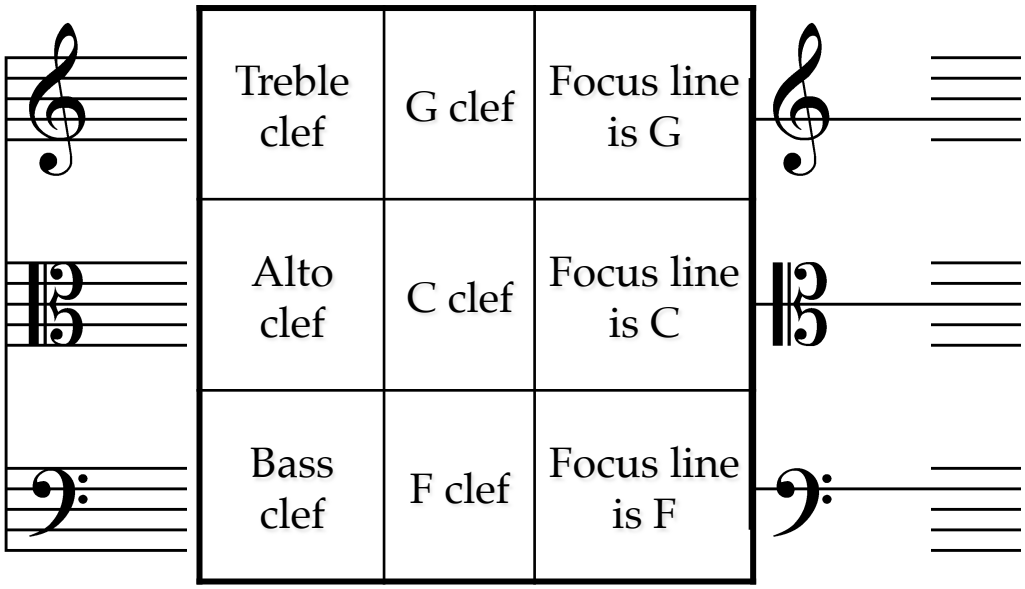
Scale steps

Pitch scale degrees with no reference to frequency or scale pattern.

1	2	3	4	5	6	7	8 (1)

The five horizontal lines together are called a *staff*. The plural for *staff* is *staves*.

Clefs



The lines of a staff are meaningless until they are provided a *clef* sign.

Clef signs establish a reference to specific pitches.

Treble clef (a.k.a. G-clef) is used for higher pitched instruments like violin, trumpet, and the higher notes of the piano.

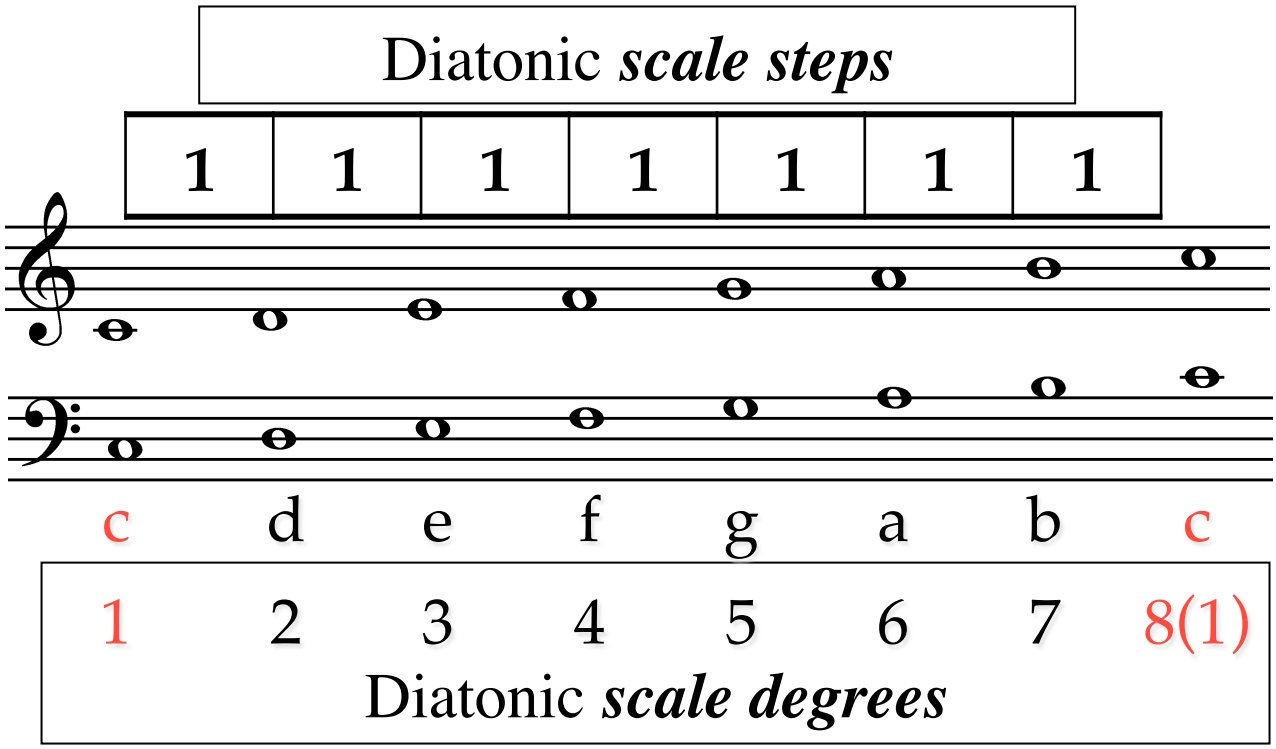
Alto clef (a.k.a. C-clef) is used for medium instruments like viola.

Bass clef (a.k.a. F-clef) is used for low pitched instruments like cello, trombone, and the lower notes of the piano.

(a.k.a. means *also known as*)

C Major Scale

Each change of level from line to space to line etc.,
is one scale step.

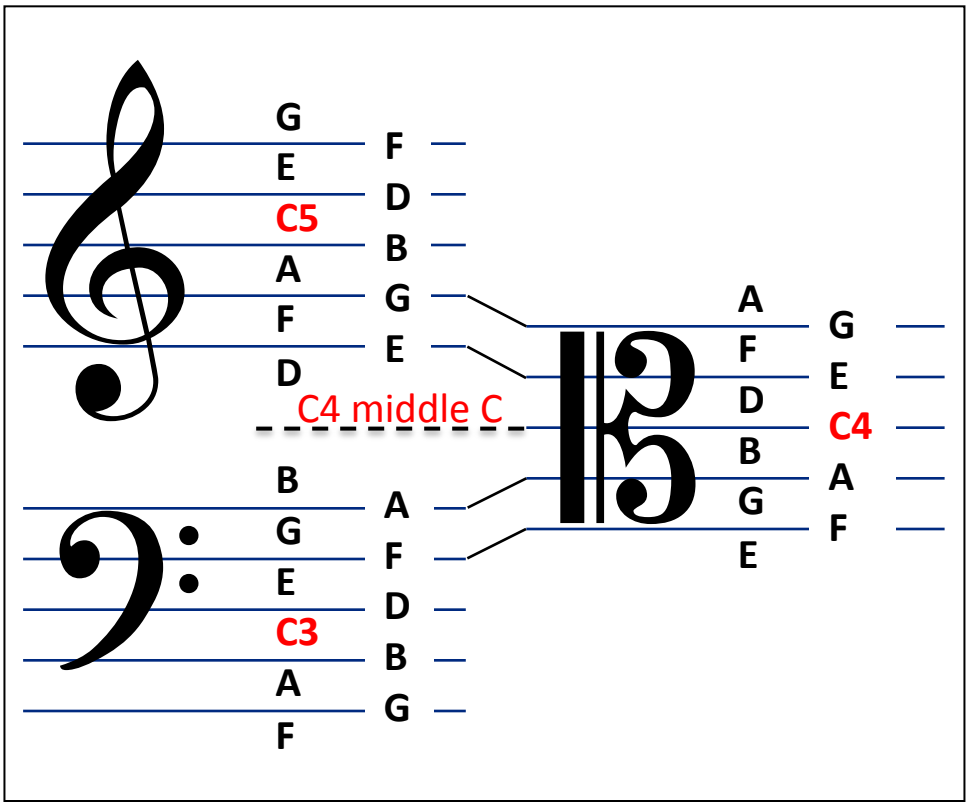


Note names (‘c’, ‘d’, ‘e’, etc.) and
scale degrees (1, 2, 3, etc.)
help us to identify particular notes of a scale.

Notice that the names of the lines and spaces for the two staves
with different clef signs are different from each other.

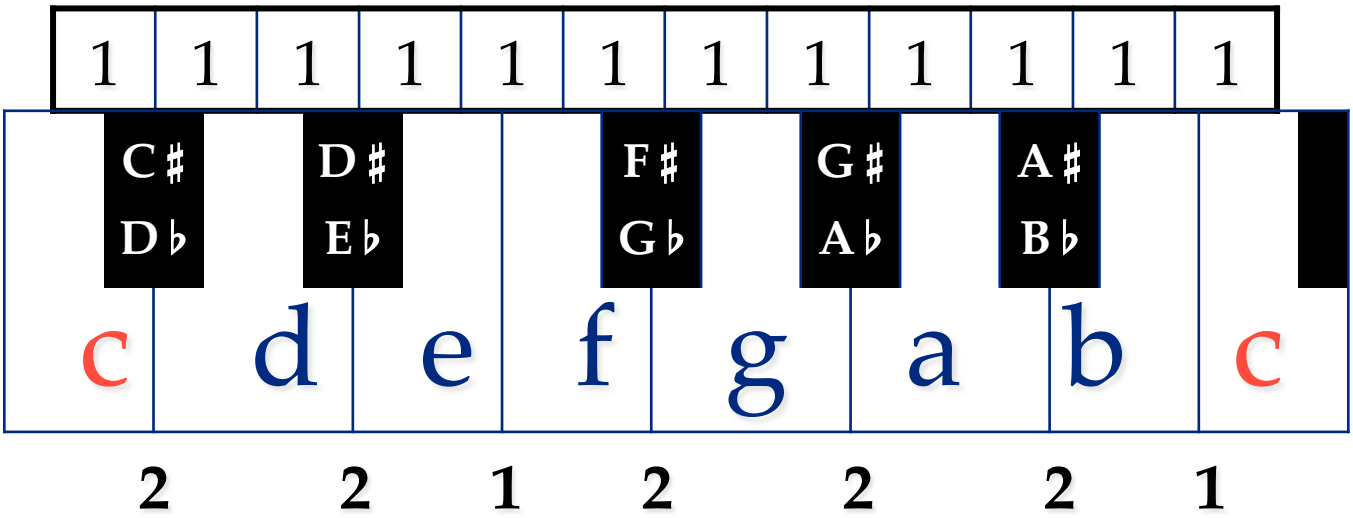
Grand Staff

Here we see the relationship between the three common clef signs.



Middle C (also known as C4) is a central reference pitch in Western music, even though it is not the pitch used to establish the tuning.

Diatonic Scale



Diatonic scale steps with chromatic distance

The numbers represent the distance (pitch interval) between notes.

Not all ***scale*** steps are created equal.

All keys, black and white, represent a pitch in the *chromatic* scale.

The white keys taken alone represent a melodic (or *diatonic*) scale.

Most white keys are separated by a black key, indicating that the pitch interval between the white key and the adjacent white key is two chromatic steps instead of one.

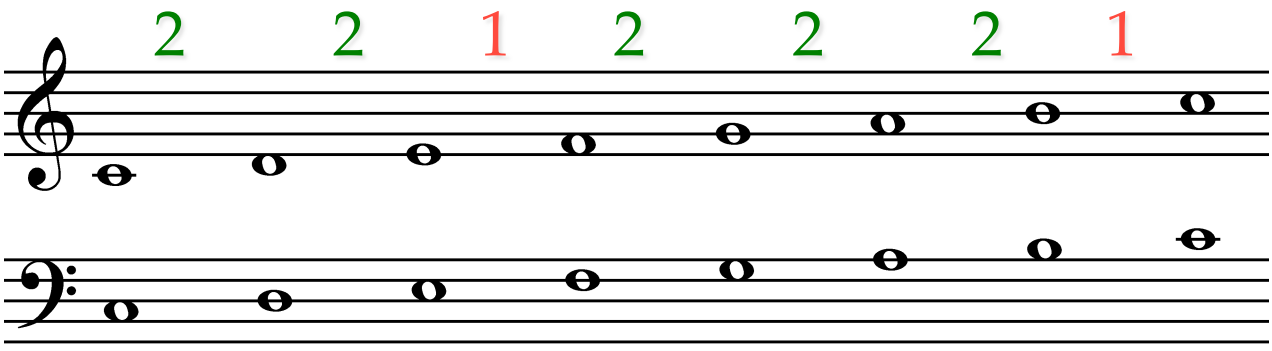
Whole Step & Half Step

Western music is based on the diatonic scale.

The numbers below indicate how many actual pitches (chromatic steps) there are between the white notes.

Notice there are more 2's than 1's. Because of this, two chromatic steps is considered to be the norm and are called whole steps. Therefore, one chromatic step is only a half step (also called a semitone). In either case, the *diatonic* step, either whole or half, is one *scale* step.

C Major scale: one octave



Chromatic step = one ½ step
Whole step = two ½ steps
Scale step = one or two ½ steps

A Chromatic step has several names:

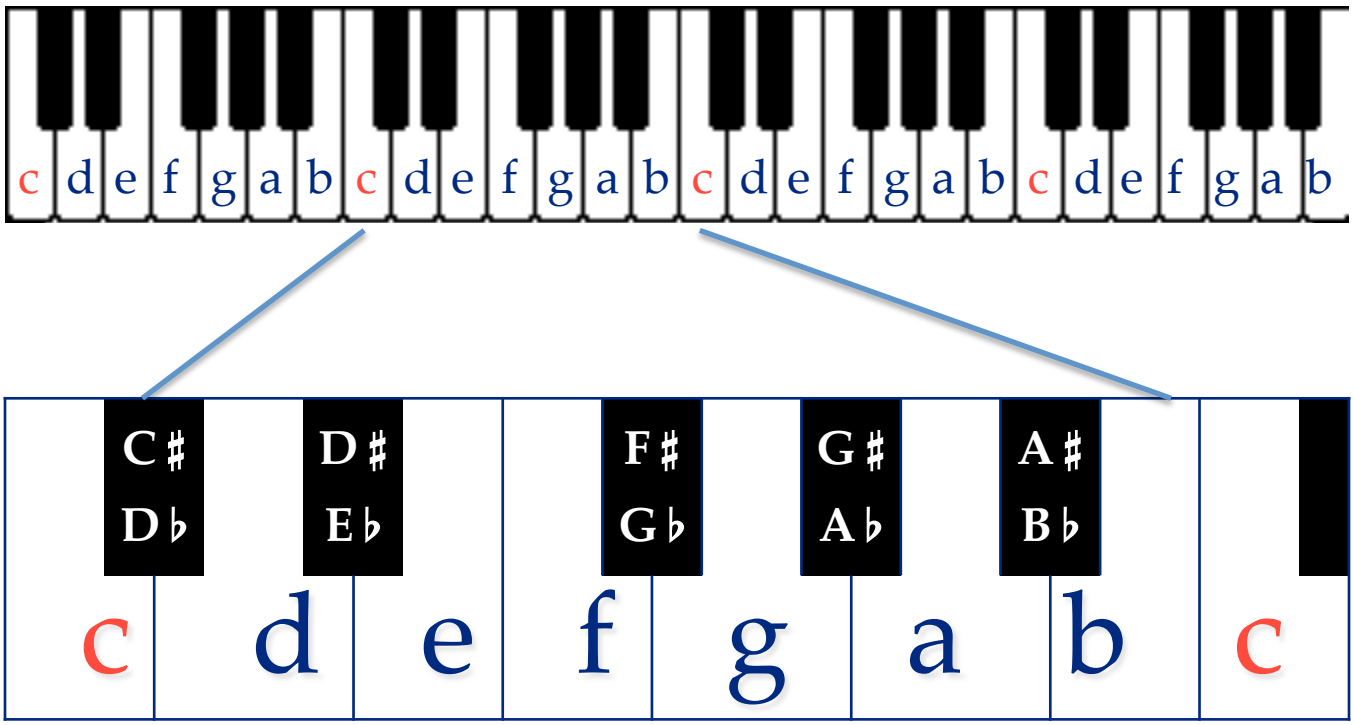
- Chromatic step
- ½ step
- Semitone

Accidentals

Notes between whole steps are designated by *accidentals*, which are used to modify the natural notes.

Most Common		
♯	Sharp	Chromatic step up
♭	Flat	Chromatic step down
♮	Natural	Cancel active sharp or flat
Not so common		
𝄪	Double Sharp	Two chromatic steps up
𝄫	Double Flat	Two chromatic steps down

Western Piano Keyboard



Note names (‘c’, ‘d’, ‘e’, etc.) represent the names of **white keys**.

The names of the **black keys** are a little more complicated. Notice above that each black key has two names. They use what are called *accidentals* to indicate their relationship to the white keys they touch. Sharp is higher, flat is lower.

Accidentals

Most Common		
♯	Sharp	Chromatic step up
♭	Flat	Chromatic step down
♮	Natural	Cancel active sharp or flat
Not so common		
𝄪	Double Sharp	Two chromatic steps up
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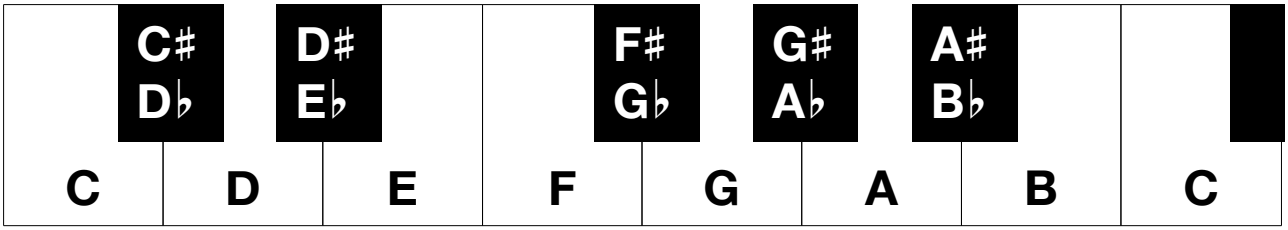
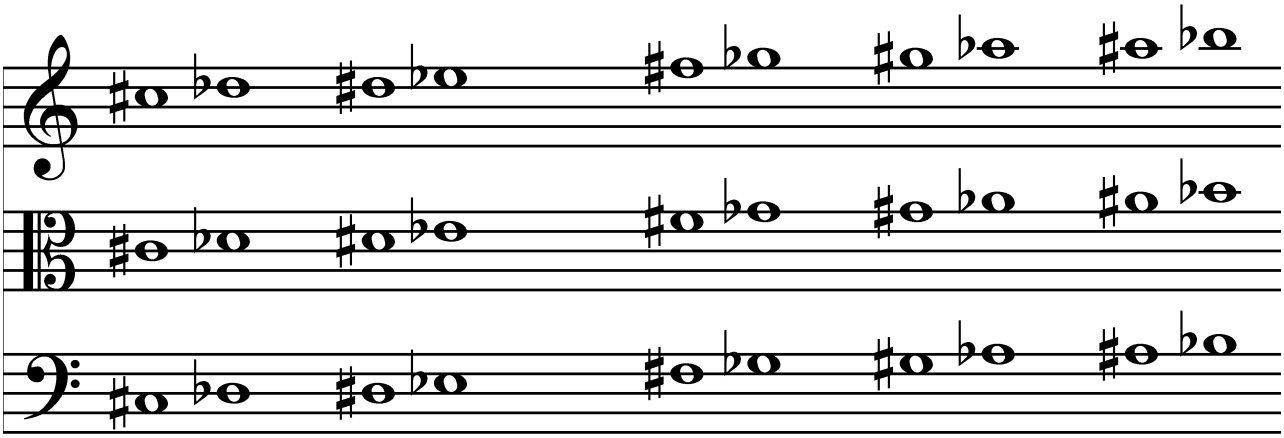


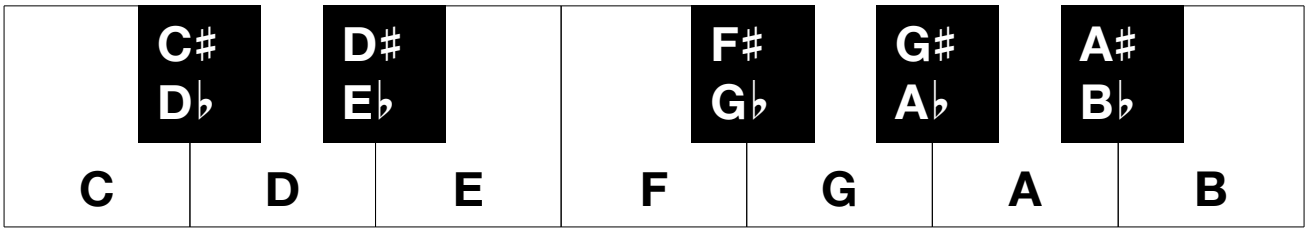
Notice the name of the **black key** between 'F' and 'G' is 'F♯' (F-sharp) and 'G♭' (G-flat). This means that the same note has two names. The names are called ***enharmonic*** spellings and the names are ***enharmonic equivalents***.

For example, the *enharmonic equivalent* of 'D♯' is 'E♭'.

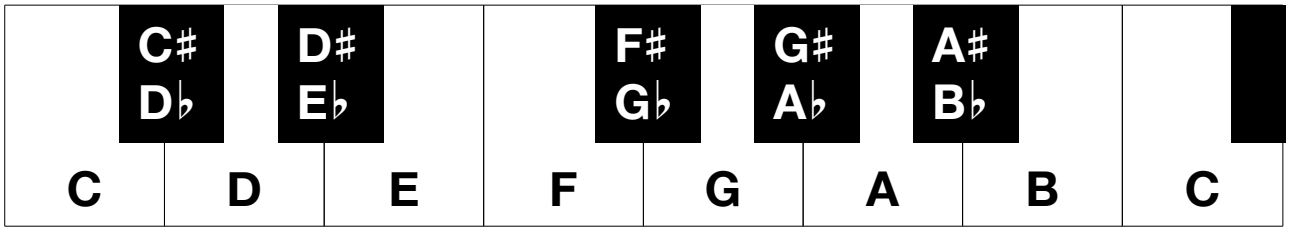
Black Keys

Each pair of notes represent enharmonic equivalents





Natural Enharmonics



Notice there are no black keys between ‘E’ and ‘F’ and between ‘B’ and ‘C’. There are scales and music passages that will indicate an accidental that may seem strange, for example ‘E♯’ or ‘C♭’. But there are no corresponding black keys.

Since the sharp and flat signs indicate a change of one semitone (1/2 step), ‘E♯’ is enharmonically equivalent to ‘F’.

Below is an enharmonic equivalence chart of the notes between which there are no black keys.

E♯	=	**F**
F♭	=	**E**
B♯	=	**C**
C♭	=	**B**