

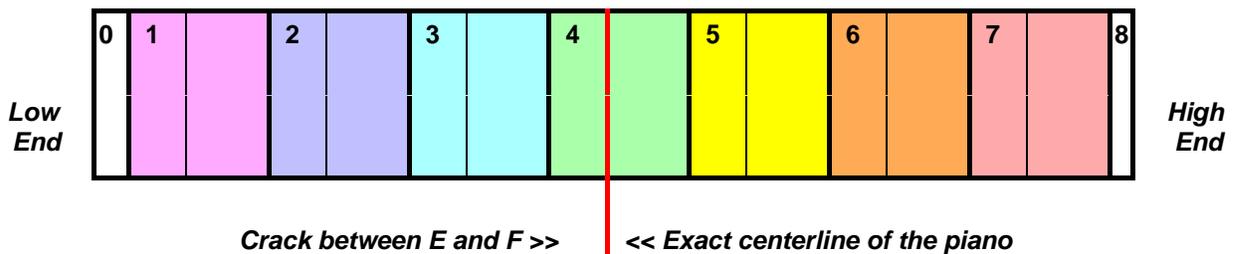
About Beginning Piano Study With Key Maps

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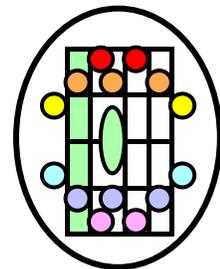


Benefits of Playing From Key Maps Before Learning the Grand Staff

Diagram of a Piano Keyboard Labeled to Show the Locations of the 7 Identical Octave Groups and Their Sub-Groups



From the Music Innovator's Workshop



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Introduction

The grand staff notation and the key map notation are both viable and robust notations for the keyboard. The GRAND STAFF is the world standard for notating keyboard music as well as music for other instruments and voice. The KEY MAPS are a new and virtually unknown version of keyboard tablatures that have centuries of history behind them. We believe that the key maps have many virtues that make them a valuable addition to the resources available for playing the piano (and other keyboard instruments).

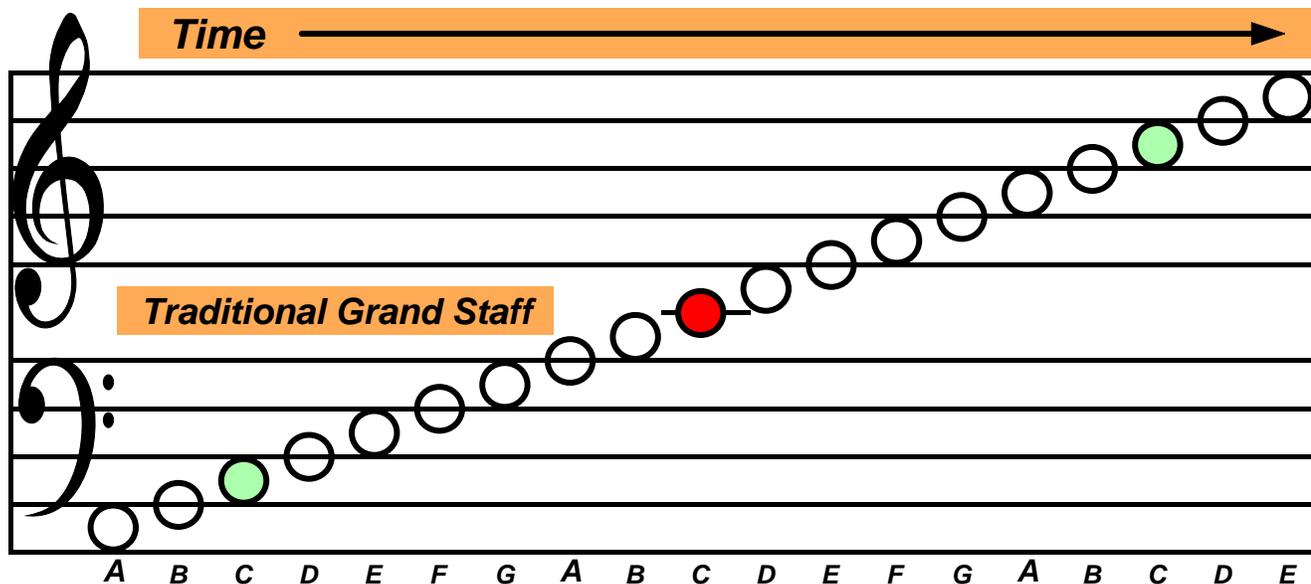
Comparing the Notations. In this article we make the case for including key maps among the resources available. Key maps can supplement the grand staff in many ways, especially for beginners, because the key maps are so very much easier to learn and read. Don't take our word for it. The purpose of this article is to let you see this for yourself. We will look at features of both notations, and let the features make the case.

About the Notation's Rhythm and Pitch. The decision about starting piano study with key maps or with the grand staff will depend on the pitch elements of the notations. Both notations have their own rhythm notation which is well suited for the pitch notation used. The great advantage of beginning with key maps can best be demonstrated while focusing on pitch. Its main benefits show up in its pitch notation. Pitch is what we'll focus on in comparing the notations. (We'll simply state here that we believe that the rhythm notation of the key maps is much simpler and easier to learn than the rhythm notation of the grand staff.)

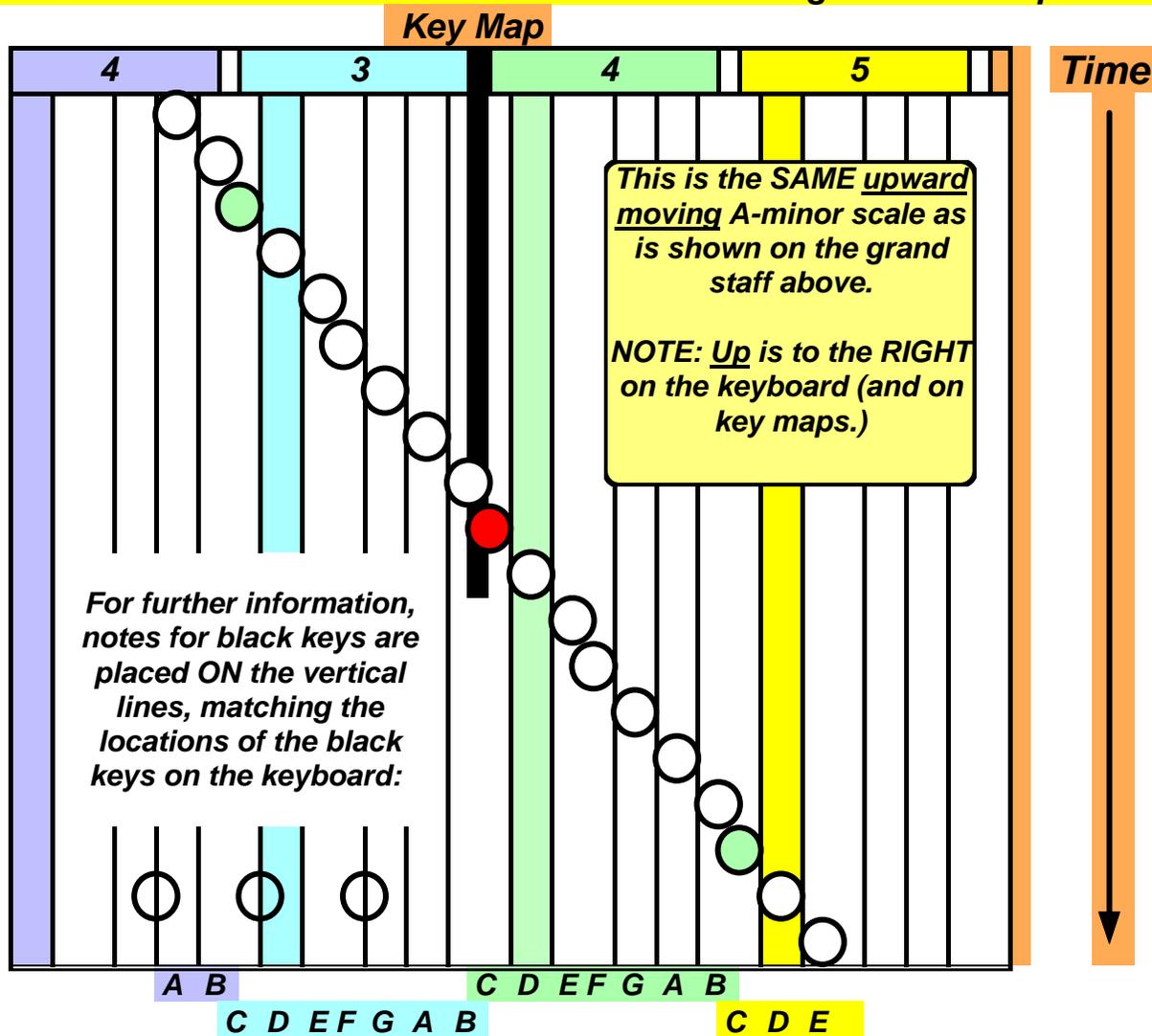
A View of the Two Notations. The notation at the top of the next page shows an upward moving A-minor scale extending from the lowest note on the grand staff to the highest note on that staff. The notation on the key map staff below it shows the exact same upward moving A minor scale.

Sequencing of notes on the grand staff proceeds from left to right. Sequencing of notes on key maps proceeds from the top to the bottom of a page in sync with the movements of the fingers on the keyboard.

Grand Staff - Horizontal Key Map - Vertical



Middle C is shown in red. The other C's are shown in green for comparison.



What is the Basis of the Claim That the Key Maps Are Easier to Learn and Read Than the Grand Staff? To be clear, this is specifically in relation to keyboard music. There are many reasons that key maps are easier to learn and read, but they all stem from two basic reasons. One - The key map diagrams are designed as maps of the keyboard, showing visually which keys to play and when to play them (rhythm on a timeline). They are designed to be easy to read, and the design is intuitive, showing where to put the fingers on the keyboard. Rhythm is intuitive also, with the physical lengths of the notes proportional to their time lengths in beats. We call this notation TruScaled because both pitch and rhythm are to scale.

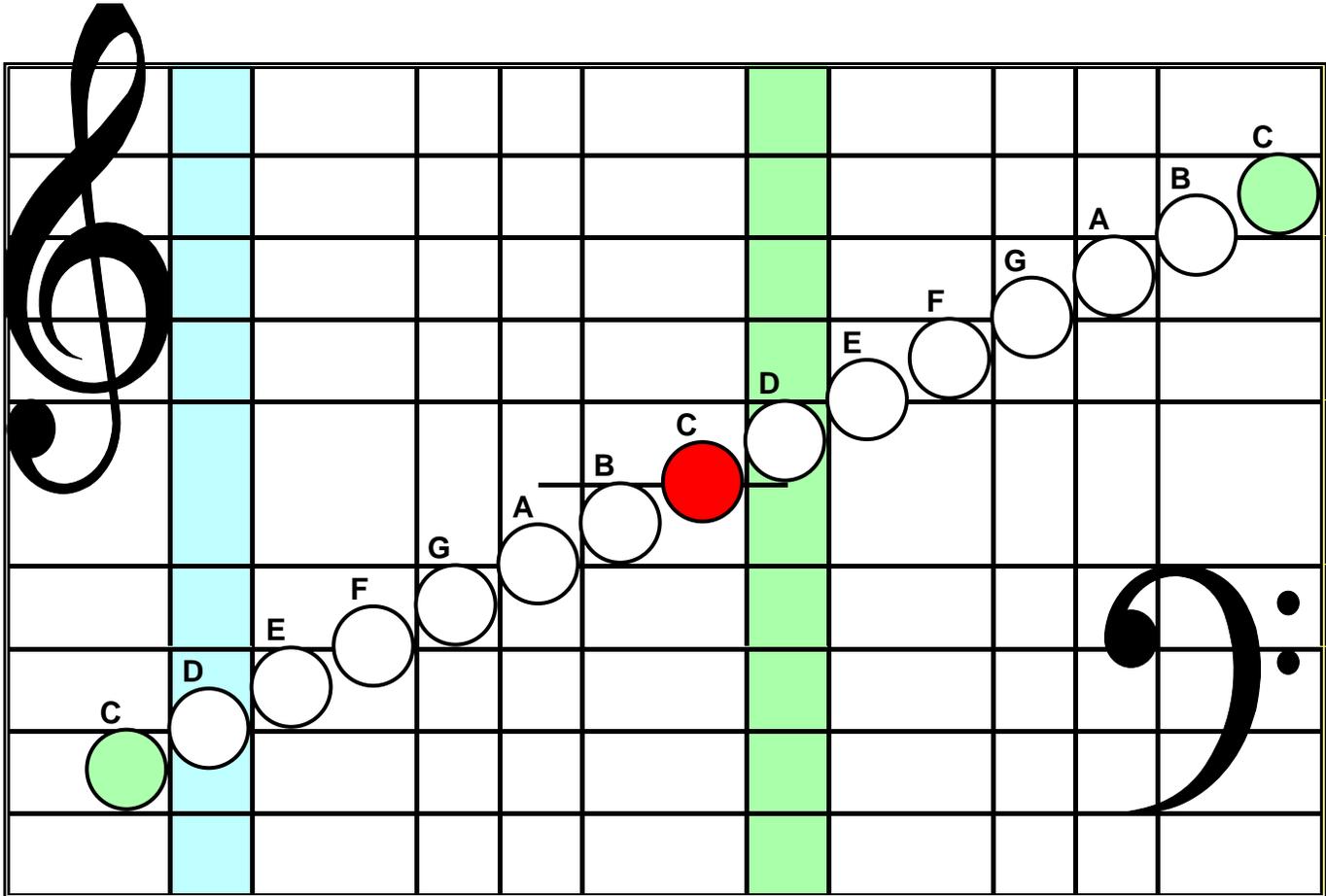
Two - The other main reason that the key maps are easier for the keyboard is that the grand staff is NOT designed for the keyboard, while key maps are. The traditional grand staff design concept is entirely different. The grand staff provides codes for WHAT SOUNDS TO PLAY, and other codes for what RHYTHM to play. It is neutral with regard to what instrument is played! It provides a wonderful international language for making music. It is a miracle that this notation can be universally accepted and used throughout the world for almost any instrument. And it is clearly focused on indicating which SOUNDS to play. Unfortunately, there is no attempt to make the piano easy to learn and play!

What Makes Key Maps Easier to Read and Play? The basic reasons were given above. Easier is a relative term. There is nothing "easy" about learning to play keyboard. It is actually one of the most difficult things that people learn to do. Key maps are not easy to learn and play. They are EASIER to learn and play than traditional notation. Easier in this context means it takes less time and effort to learn important aspects of the key maps than it does to learn the same important aspects of the traditional notation. It also means that there is less to learn to accomplish the same objectives.

Easier Based on a Notation That is a Graphic Display of the Keyboard. Easier means the key maps VISUALLY show something that the other notation only shows by means of codes and a good bit of logic. Key maps show which keys to play. Traditional notation uses only codes. Key maps show the rhythm in relative visual terms on timelines. Traditional notation shows rhythm with complicated codes. Key maps use a multitude of colors to make learning and reading easier. In essence, the key maps SHOW which keys to play in true visual scale. The traditional notation shows this in codes. Codes are not a bad thing. But they can take much longer to learn. Learning to read and interpret music written with sharps and flats in the various keys is a major case in point.

Puzzle - Notes at the Middle of the Keyboard

Middle C is shown in red. The other C's are shown in green for comparison.



This puzzle (just for fun) shows a key diagram staff superimposed over the grand staff. The horizontal lines form a grand staff, and the vertical lines form a key diagram version of a key map. The notes form an UPWARD moving C major scale on the grand staff. The notes form a DOWNWARD moving C scale on the key diagram. It's necessary to remember that key maps progress DOWN the page, unlike the ACROSS the page sequencing of the grand staff notes.

The Common Denominator. There is a common denominator for the two notations, and that is the piano keyboard itself. Both notations at a minimum must inform the reader where and when to put the fingers on the keyboard. How the keys are arranged on the keyboard is a major determinant of how hard it is to locate each key - and how the notation deals with this arrangement determines how difficult the notation is to learn and play. Therefore, we need first to review the major features of the keyboard and their affect on playing before comparing the features of the notations.

Keyboard Feature - The 88 Keys. There are a lot of keys – 52 white; 36 black. This means that the notation needs to provide a way for instantly recognizing and choosing individual keys from among a very large group of choices.

Feature - White and Black Keys. This is a wonderful feature of the keyboard. This color distinction instantly reduces the number of keys that one has to look at to find the next key to play.

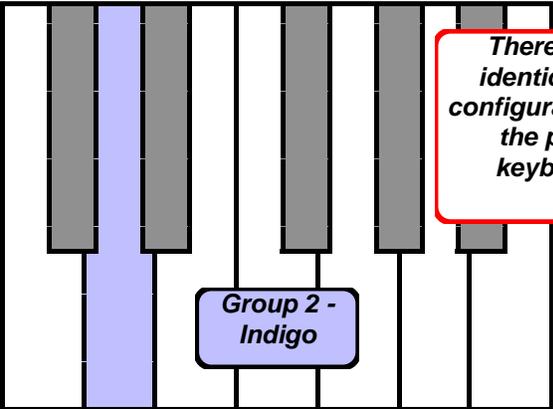
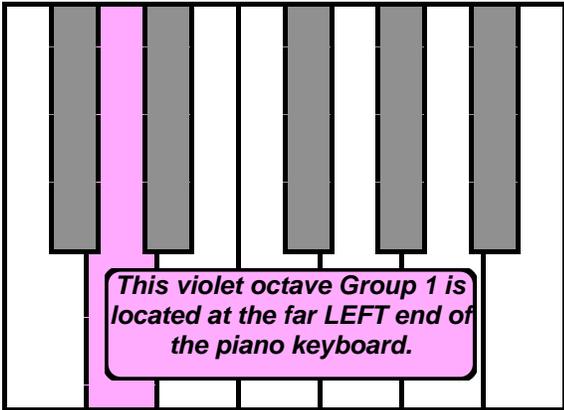
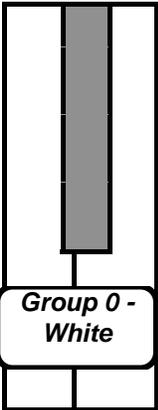
Feature - Raised Black Keys. This is a great feature. For one thing, it makes these keys for the flats and sharps more visible than they would otherwise be. But the great value of this raised feature is that it also helps the player find his or her way about the keyboard by touch and feel while keeping the eyes on the notation.

Finding the White Keys. What the raised black keys also do is make it possible quickly to identify the WHITE keys. Without the raising of the black keys it could be difficult to identify the white keys quickly enough to play a piece. You can FEEL and identify where all the keys are because of the raised black keys. They make it possible to play with your eyes closed. You can even play if you are visually impaired or blind!

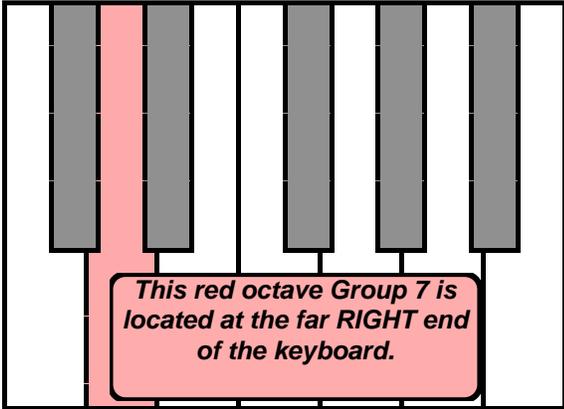
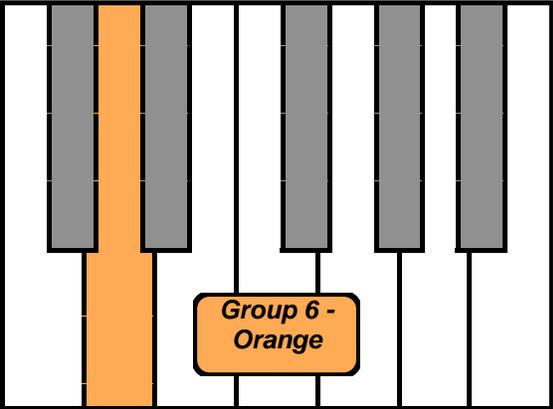
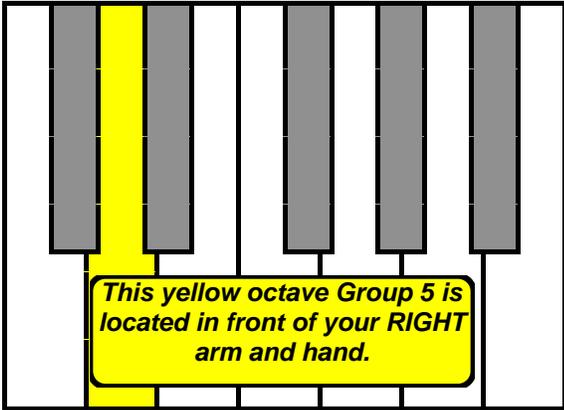
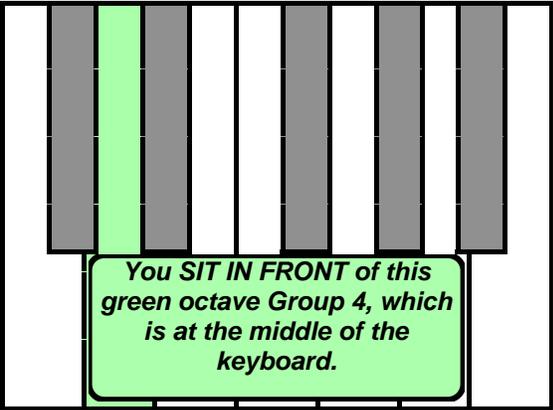
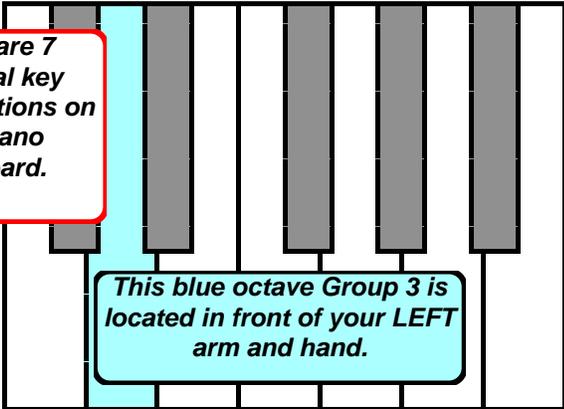
Feature - Name Identities of the Keys. Another essential element of the keyboard is the naming of the keys. The names, of course, match the keys to the notes of the notations. These names aren't a part of the physical structure of the keyboard, but they clearly are essential for identifying the keys in the minds of those playing the instrument. The names of the keys are A B C D E F and G (and their # and b designations) in both notations. In addition, key maps also use a numeric "address" for identifying the black keys - greatly simplifying references to the black keys.

The 7 Octave Groups of the Piano + 4 Keys

A piano has 7 identical octave groups. Other keyboards with fewer keys are grouped the same way, but they have fewer groups. Each octave group is colored on key maps with a different rainbow color to help you know which group to play in.



There are 7 identical key configurations on the piano keyboard.



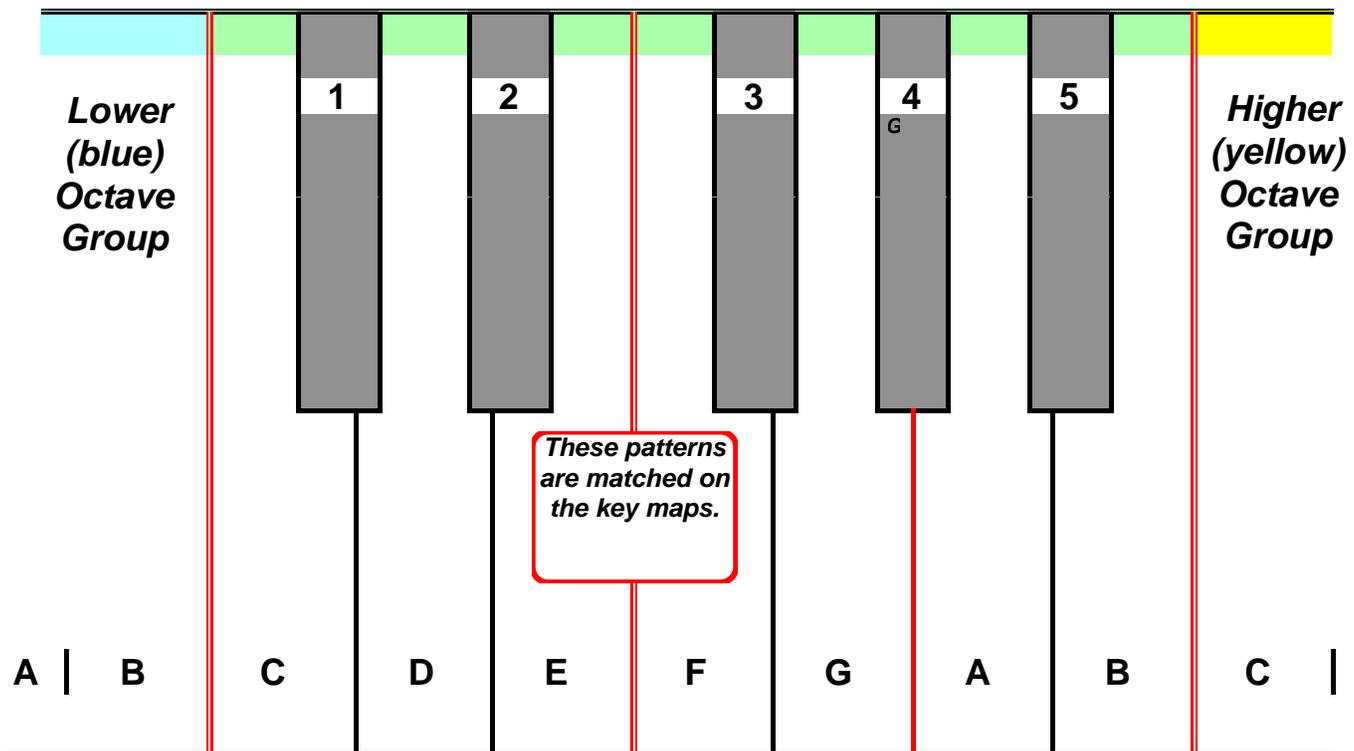
H
i
g
h
e
s
t

K
e
y

Keyboard Feature - The Octave Group Patterns. The features that we have observed so far provide the foundation for making it possible to play the keyboard. But there is more. These features are not definitive enough to make the keyboard playable. From what we have observed, 88 keys are just too many for a player to find fast enough actually to play the keyboard.

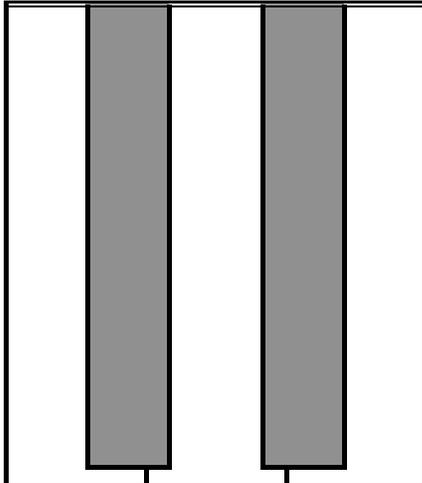
Repeating patterns of the white and black keys as shown below are needed to make the instrument playable by limiting the areas that must be searched for finding keys designated by the notes of a piece.

**Octave Group at the Middle of the Keyboard - One of 7
Identical Repeating Patterns on the Piano Keyboard**



Feature - Subgroups of 2 and 3 Black Keys. The arrangement of these keys, with its groups of 2 and 3 black keys, is an unmistakable pattern that provides the model for the 7 identical patterns of keys that make the piano playable. There are 3 identical octave groups on both sides of this octave group at the middle of the keyboard. (This diagram identifies the black keys with their "addresses" used in key maps. The colors across the top also appear in the key map notation.)

5-Key Low Group



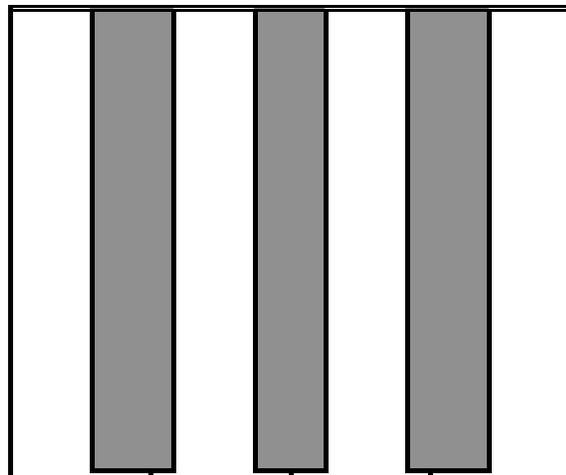
Low Group -- has 2 black keys in the center of this pattern. There are 7 low groups on the piano.



Each Octave Group contains 2 Subgroups: A 5-key Low Group and a 7-key High Group

Within each Octave Group, the Low Group has lower sounds than its High Group.

7-Key High Group

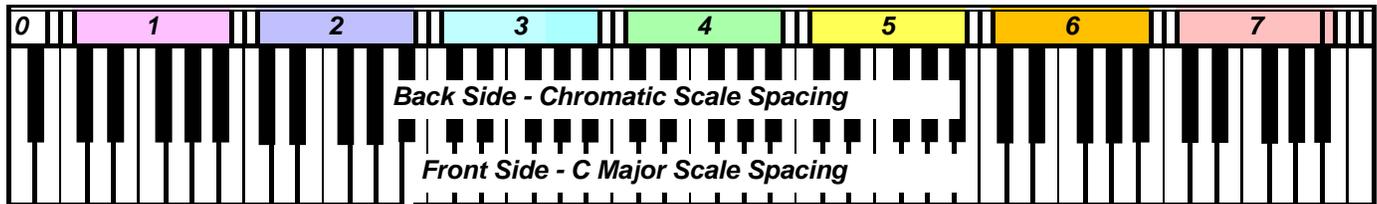


High Group -- has 3 black keys in the center of the pattern. There are 7 high groups on the piano.



Diagram of the Piano Keyboard

The 7 Octave Groups With Standard Numbering and Key Map Coloring



About the Compatibility of These Notations. We have designed the key maps to be compatible with traditional notation. You will see, as we compare these notations, how they dovetail in many ways. Our intent is that many of the students who learn to play from key maps will go on and learn to play from the grand staff as well - as do many of our own students.

Ready to Look at the Notations. This concludes our brief survey of the features of the piano, features that we often take for granted. These features make it possible to play the great piano concertos, sonatas, and pieces as well as *Mary Had a Little Lamb* and *Twinkle, Twinkle, Little Star*. These features make it possible to create music notations that capture the sounds of these pieces and make them playable. Now let's see how well the notations that we are reviewing take advantage of these features.

What is the Basic Nature of the Grand Staff? The grand staff is a general purpose notation that is designed to be used for ANY instrument or voice. This means that its notes indicate which sounds to play rather than indicating which keys to play on any instrument. To be perfectly clear: IT IS NOT DESIGNED FOR THE PIANO! It does NOT show you which keys to play. It tells you which SOUNDS to play (pitch) and when to play them (rhythm). This provides no difficulty to advanced piano players, but it is a huge hurdle for beginners.

The Grand Staff Rhythm. (Not Illustrated) The rhythm of the grand staff is shown by means of color coding of the notes, either black or white. In addition, there is a series of lines and dots that further specify relative rhythm length. All rhythm lengths are relative to the time length of the "whole note" which is a white note without any of the lines and dots that code the lengths of the other notes. Again, this provides no difficulty for advanced players, but it is a major hurdle for beginners.

What is the Basic Nature of the Key Map Notation?. The key map notation is designed FOR THE KEYBOARD. The musical staff is a diagram of the keyboard. The vertical lines of the diagram (the musical staff) stand for the black keys. (Refer to the diagram on the next page.) The horizontal spacing of these lines is exactly proportional to the spacing of the black keys, which in turn are spaced proportional to their sounds. The notes for black keys are placed directly on these staff lines. The notes for white keys are "attached" to these staff lines to show visually exactly which key is to be played. The notes for the white keys are also horizontally spaced to be proportional to their sounds. Some beginners find it difficult to see how the notes on this sheet music relate to the actual keys on the keyboard. Many beginners immediately grasp the connection between the notes and the keys.

The Key Map Rhythm. (Not Illustrated) The vertical staff lines are treated as timelines. Beats are marked by horizontal lines crossing the the staff at (visually) equally spaced intervals. Notes are vertically sized to show their lengths in beats. Thus, each note visually shows its length in beats by its length relative to the vertical spaces between the beat lines. This is relatively easy for beginners to understand, but the great difficulty is in figuring out how rhythm itself actually works. The result of the key map sizing and spacing is a notation in which both the pitch and the rhythm spacing are visually proportional to their sounds.

Spacing of the Notes and Sounds - C Scale

Time →

Half-steps look the same as whole steps.

Traditional Grand Staff

Notes are equally spaced but the sounds are half-steps and whole steps. You need to know the note names and their codes to read the intervals.

C D E F G A B C D E F G A B C

Pairs of notes a half-step apart from each other are marked with yellow.

Key Map

Half-steps are visible as overlapping notes.

Horizontal spacing of the notes varies with the size of the interval. Overlapped notes are 1/2 step apart (yellow). The other notes are a whole step apart.

C D E F G A B C D E F G A B C

Time ↓

A Look at the Design of the Grand Staff

Staff Lines. The grand staff consists of 11 equally spaced horizontal lines. The middle line (middle C) only appears when there is a Middle C note to be played. The staff lines that extend beyond the 11 line grand staff also only appear when they are needed to identify a note. Therefore, when you look at a grand staff, you will see a 10 line staff, with a space where the middle line has been removed, as in the grand staff on the next page.

Naming the Lines and Spaces. The lines and spaces of the grand staff are identified by two symbols. These are the "treble clef" identifying the top 5 lines, and the "bass clef" identifying the bottom 5 lines. In music, the "natural" ascending sounds are named ABCDEF and G. The lines and spaces of the grand staff are given these names, beginning with A in the bottom space of the staff (at the arrow on the diagram) and proceeding up the staff and up the alphabet at the same time. The letters proceed up the staff from space to line to space until they reach G. Then the whole process begins again and again on the next line or space until there is no need to go further. See the diagram on the next page.

Naming and Counting Notes. Here is an interesting fact about the notes. The sounds have names, the lines and spaces on the grand staff have names, the keys on the piano have names - BUT the notes don't have their own names. Yet reading the notes is how we play the piano. How can this be? The simple answer is that the notes receive their names by their locations on the staff. So when a student is learning the names of the notes, he or she is really learning the names of the lines and spaces on the staff. The musical staff is what gives the notes their (pitch) identities!

The C Major Scale. This scale is a very special one. It is the one and only major scale that you can play on the piano using only white keys. Every other scale requires one or more of the black keys. Not only that, but if you will notice, the GRAND STAFF is also built on the C major scale. The only scale that can be played with the notes on the diagram on the next page is the C major scale. That diagram has all of 52 natural notes, but it doesn't have a single one of the notes for 36 black keys on the keyboard. We can't be finished reviewing the grand staff until we find the 72 missing sharp and flat notes for the black keys.

Design of the Grand Staff Showing the Natural Notes For All 52 White Keys of the Piano

Grand Staff notes are played from left to right. Thus, playing these notes will sound from the lowest to the highest when played. The C's are all colored to make the C scales easier to see. The colors are those of the key map octave groups.

52 notes for 52 white keys.

Notice that there are 52 different natural notes to play and learn. Example: Every note is in a unique position relative to the staff. Also, the notes have no visual connection to the keys that they stand for on the keyboard. They are indicating the SOUNDS of the notes by their names and locations.

A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C

Ten Centuries of Development. With regard to the intended design of the grand staff we must plead ignorance. We know that Guido d'Arezzo developed some of its structure back in the 11th century in Italy and that it has been developing ever since. What we can say about its design comes entirely from looking at it and seeing how it works. So, what is the design?

The Basic Plan of the Staff. This staff is a series of equally spaced horizontal lines providing locations for musical notes. The note locations proceed up from the first space which is named A. The note locations alternate from space to line to space again, as far up as the musical sounds require. The sound space between each pair of notes in this scale is a whole step, except for the half-step spacing between B/C and E/F pairs. This provides a C Major scale when one begins playing with any of the keys named C. Rhythm is determined by whether the note is white or black, and by stems and flags attached to the notes (not shown). The next 2 pages show the Grand Staff notes for the black keys. The 5 note locations for the black keys on KEY MAPS are also shown.

The 36 Flat Notes For the Grand Staff Black Keys

As one plays the notes of a piece that has 5 flats, one must remember that all of the B's, E's, A's, D's, and G's must be LOWERED by 1/2 step.

The "key signatures" change all of the following notes to flats (b): B, E, A, D, and G.

36 notes for 36 black keys.

Here are the grand staff FLAT (b) notes for all of the 36 BLACK keys on the piano. These are the SAME notes used for the white keys. But because they are flat notes, the pianist must, for each of these notes, play the key directly to the LEFT of the key that the natural note stands for.

B DE GAB DE GAB

Below are the key map FLAT (b) notes for all of the 36 BLACK keys on the piano. The same 5 notes are used in each octave group. Each note visually points to the image of the key to be played.

b: 5

5 notes for 36 black keys.

For key maps, the black keys are given "addresses" in addition to their standard names - and are generally referred to by these addresses. Starting with C#/Db on the left, the black keys are numbered from 1 thru 5 in each octave group, as can be seen above.

The 36 Sharp Notes for the Grand Staff Black Keys

As one plays the notes of a piece that has 5 sharps, one must remember that all of the F's, C's, G's, D's, and A's must be RAISED by 1/2 step.

The "key signatures" change all of the following notes to sharps (#): F, C, G, D, and A.

36 notes for 36 black keys.

Here are the grand staff SHARP (#) notes for all of the 36 BLACK keys on the piano. These are the SAME notes used for the white keys. But because they are sharp notes, the pianist must, for each of these notes, play the key directly to the RIGHT of the key that the natural note stands for.

A CD FGA CD FGA CD FGA CD FGA CD FGA CD FGA CD FGA

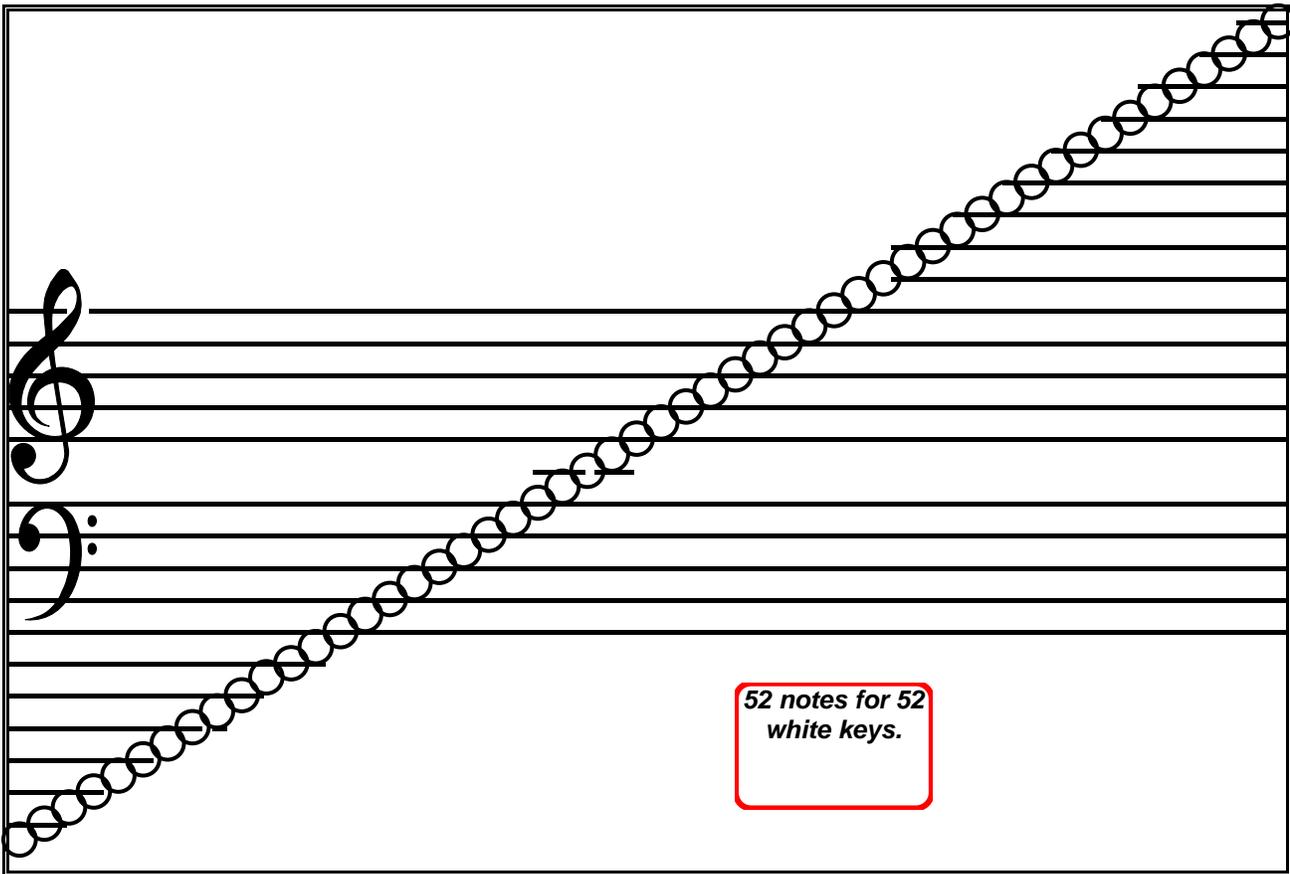
Below are the key map SHARP (#) notes for all of the 36 BLACK keys on the piano. The same 5 notes are used in each octave group. Each note visually points to the image of the key to be played on the keyboard.

#: 5

Key: 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 Address

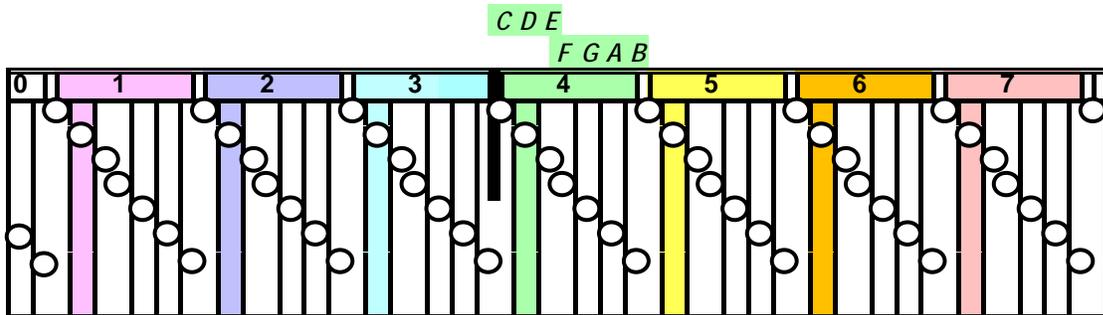
These are the same 5 black keys that were called flats on the previous page. On key maps, because they are the same 5 black keys, their addresses are the same. On traditional notes, the NAMES of the 5 pairs of notes are: A#/Bb, C#/Db, D#/Eb, F#/Gb, and G#/Ab.

Comparison With the Traditional Grand Staff - 52 vs 7



52 notes for 52 white keys.

A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C



The above KEY MAP STAFF covers the full 52 note keyboard. The 7 notes are all of the notes needed to notate all of the white keys - because the identical 7 notes are repeated at each octave.

7 notes for 52 white keys.

Issue - So Many Notes to Learn - or Not

Counting Notes. *When counting the numbers of notes used in each notation, we count the number of different positions in which notes can appear on the basic staff (grand staff or key map) plus all extensions (ledger lines) needed to provide notes for the entire keyboard.*

Counting Notes on the Grand Staff. *The number of note positions appearing on the grand staff plus its extensions is 52, one position for each white key on the keyboard. (See the grand staff on the previous page.) These same positions are used for the notes with sharp, flat, double sharp and double flat signs (#, x, b, and bb). Therefore the note count remains at 52.*

Counting Notes on Key Maps. *The number of note positions on key maps is 12. This consists of 7 notes for the 7 white keys of each octave and 5 notes for black keys of each octave. (See the key maps on the 3 previous pages).*

What's Wrong With This Picture? *Twelve notes or 52 notes? What kind of sleight of hand is this? How can such a discrepancy be possible? Well, this is no trick. What makes this discrepancy possible is the design of the keyboard with its 7 identical 12-key octave groups - and the designs of the notations. The grand staff is designed so that all 88 keys on the keyboard can be identified with 52 note positions. On the other hand, the key maps are designed to match the 12-key positions of each octave group on the keyboard so that the 88 keys on the keyboard can be identified by only 12 note positions.*

A Reason to Begin With Key Maps. *This discrepancy in the number of notes to learn is one of the reasons that we recommend that piano students begin with the key maps. It is granted that students don't begin by needing to learn 52 different notes, or even half that many. But the number is certainly greater than the 12 notes of the key maps. And this is just one of the many reasons that we are making the recommendation.*

Performance Information and Instructions in Common.
The notation appearing on sheet music is often loaded with performance instructions and information of various kinds. These include markings for fingering, tempo, acceleration, deceleration, getting louder and softer, names of composers and arrangers, texts of songs, copyright notices, important dates, country of origin, and the like. Essentially these are the words, abbreviations and special marks needed to guide the performance of a composition. Most of this information remains common to both notations and is not part of our examination of the main features of these notations.

Issue - Coordinating Notes With Movements

It is simply intuitive that the notes of the notations move to the left and right in coordination with the moves of the hands and fingers on the keyboard. The key maps are designed for the keyboard and therefore, coordinate with the movements of the fingers as shown on the next page. Traditional notes would not be expected to coordinate with the keyboard because they are designed to be independent of any instrument.

Conceptual Design of an Octave Group. *The diagram on the second following page shows exactly how the notes of the key map are perfectly coordinated with the keys on the keyboard. This is a great help for beginning students as they can see how the notes clearly show the movements of their hands and fingers to the left and right on the keyboard.*

Example - Silent Night - Bass and Treble Versions

Rhythm notation is omitted.

Si- --- lent night, Ho- --- ly night, All is calm all is bright

Si- --- lent night, Ho- --- ly night, All is calm all is bright

Key Map - Notes in Sync With L/R Movements to Keys

b: 2

Si-
—
lent
night,
ho-
—
ly
night,
All
is
calm,
all
is
bright.

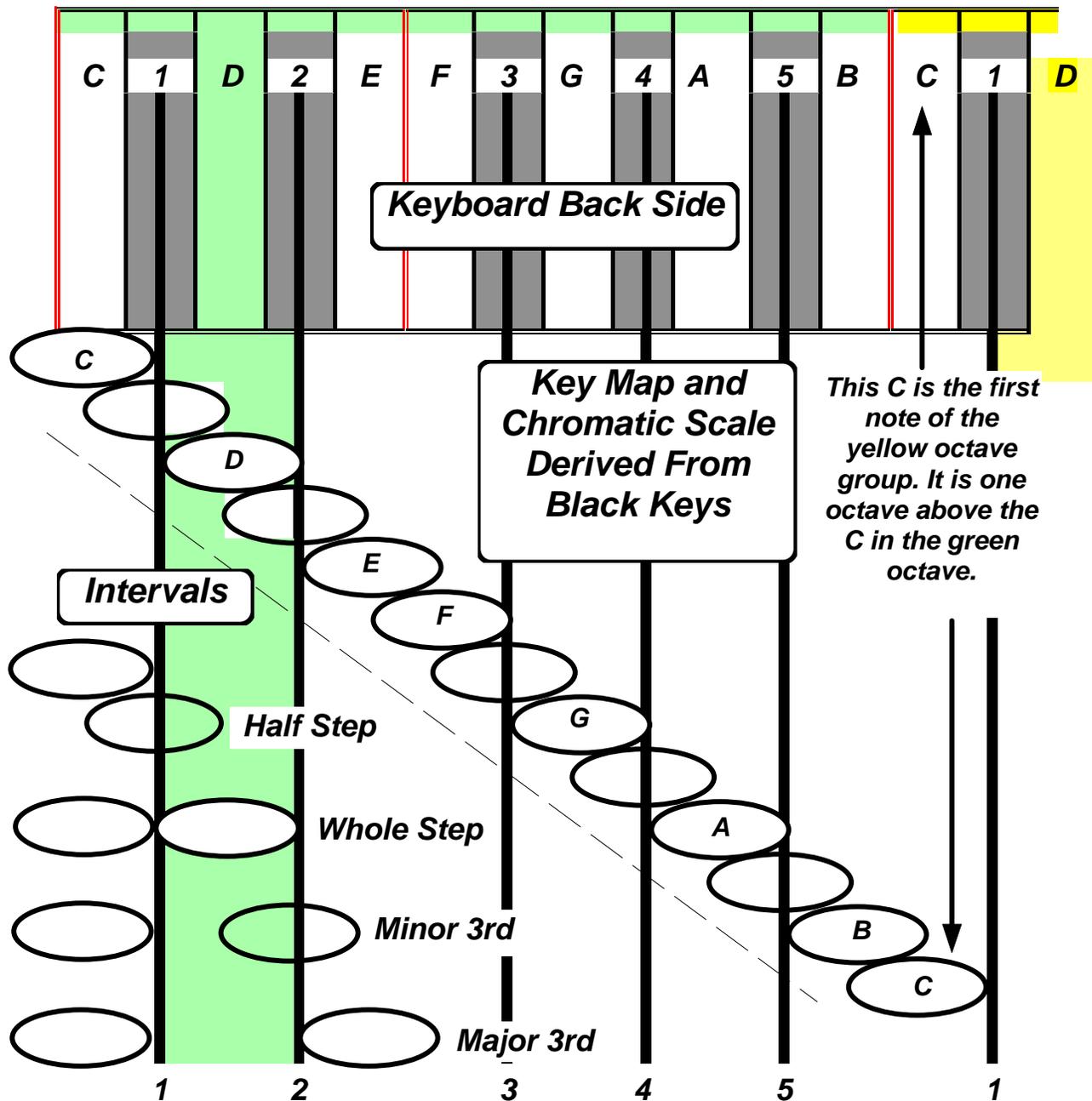
Notice that the key map notes move left and right in sync with the movements of the fingers on the keyboard. The traditional notes progress only up and down and don't sync with finger direction.

b: 2

Si-
—
lent
night,
ho-
—
ly
night,
All
is
calm,
all
is
bright.

Coordination of the Notes and Keys

*This diagram demonstrates how the horizontal spacing of the staff lines of key maps is derived from the spacing of the black keys on the keyboard. (A key map is a minaturized version of the lower part of this diagram.) So that key map notes can show musical intervals accurately, the notes are always a whole step in width. Two notes with edges touching are a whole step apart. Two notes overlapping by half are a half step apart. All note intervals are proportional to the sound intervals that they represent. We call this **TruScaled**. The sequence of notes on this diagram forms a chromatic scale from the green C to the yellow C.*



Identifying the Black Keys

The Names of the Black Keys. In traditional grand staff notation the names of the black keys are derived from the names of the adjacent white keys. When a black key functions as a flat (b), the letter portion of the name is the name of the adjacent white key on the right (example: (Ab - A). When the black key functions as a sharp (#), the letter portion of the name is the name of the adjacent white key on its left (G - G#). There are no note positions on the grand staff for the black keys. The notes for white keys are altered by flat (b) and sharp (#) signs to identify the black keys.

The key maps have a note for every key, including black keys. Key maps use ADDRESSES to identify the black keys. The black key addresses in each octave group begin with the first black key at the left end of the octave group. The addresses of the keys in every octave group are 1,2,3,4, and 5 which match the key map numbering of the black keys on the keyboard.

Issue - Space for the Sharp and Flat Notes

A Serious Matter. Simply stated, the grand staff doesn't have any note positions for black keys (but the key maps do). This is a serious matter. It is undoubtedly the WORST feature of the grand staff. It provides the greatest amount of stress and anxiety of all the issues facing those learning how to play the keyboard! The issue is avoided like the plague among many of those writing piano courses. Many courses avoid the 36 black keys of the piano entirely until well into the course of instruction. (Our own basic course actually BEGINS with these keys because they are so easy to locate and play. By the way, the black keys are where we must first look to find any of the white keys.)

Are there any redeeming features for this omission? Some come to mind. First, the omission reduces the vertical size of the grand staff significantly. In fact, this is so significant, it actually makes the omission look like a reasonable one. Another reason that comes to mind is its affect on the spelling of the scales. All scales are spelled with a letter and a sign for each black key. By having signs for the black keys (b and #), it is possible for all of the scales to be spelled with the ordering of the alphabet intact (f, g, a,b,c, etc.) This is very helpful for students working on memorizing the scales.

What is so Difficult About Notes For the Black Keys?

The problem is with learning and reading the notation. Because there are no locations for black key notes on the staff, the notes for white keys must be used for the black keys. They must be altered by the # or b (flat) signs. The problem is that most of the time the signs are not placed by the notes but are placed at the beginning of each staff. (They are not placed by the notes unless they are "accidentals" which are infrequent.) Reading notation with flat or sharp notes mingled among the natural notes becomes more and more difficult as the numbers of these signs increases. It is only with years of study and practice that it gradually becomes less of a problem.

Key Signatures Altering the Keys to be Played

D Major

D E F# G A B C# D

Db Major

Db Eb F Gb Ab Bb C Db

Above are two major scales with signs at the beginning of the staff which alter all of the notes that have the same names as the signs. In the top scale, the # signs are placed on F and D. This means the player must play a sharp key for every F and D note encountered. Similarly, in Db major, all 5 of the notes marked will have to be played on the black flat keys. Note that the signs have NOT been placed close to the notes that they are altering.

#:2 D Major

D
E
F#
G
A
B
C#
D

Same Scales as Above

For these key maps, however, the notes visually match which keys are played and which sounds are heard. No special signs are needed or used.

b:5 Db Major

Db
Eb
F
Gb
Ab
Bb
C
Db

The Grand Staff. The only colors functionally used on the grand staff are black and white. These colors are used to distinguish between the half-notes and the quarter-notes. Half-notes and longer (in time) are white. Quarter-notes and shorter are black. There is no other functional use of color on the grand staff. This is the tradition, although there is nothing preventing the use of color. We use a lot of color in our "readers versions" of the grand staff. (see musicw.com)

Colors in the Key Map Notation. There is extensive use of color throughout the various versions of the key map notation. We have already indicated the use of color for identifying each of the octave groups. These colors, by the way, are the colors of the rainbow. The colors at the top of the rainbow are for the highest sounds (red) and the colors at the bottom of the rainbow for the lowest sounds (violet), and the other colors, in order, are between them.

Identifying the Root of a Chord. Two of our other uses of color are demonstrated by the song on the next page. For the triad chords located in the blue octave, the root of each chord is colored pink. In this case there is no color code involved. The pink color simply marks the location of the root of the chord. Simple, but effective.

Five-Finger Positions Colored. One of the most effective patterns recognized in piano playing is the 5-finger pattern that puts the hands in what are undoubtedly the most used of all playing positions. These positions are used extensively in scale playing, and in melodies of all sorts. The color coding is very effective in helping one find and stay in a 5-finger position. Again, we have a very simple and effective coding plan. The contrasting COLORS are NOT coded. Any contrasting colors will do the job. The playing rule is that you STAY in a 5-finger position until the color changes. Then you go to the next color, and so on. Notes that are NOT in a 5-finger position are not colored. At the beginning of every 5-finger position, there is a finger number that locates the hand in the desired position.

About the Chord Symbols. The song on the next page demonstrates our use of chord symbols for many of the songs that our intermediate students learn to play. We use the well known standard chord symbols. For those who can't yet interpret those symbols, we also provide 3-note chord symbols in the blue octave where they are to be played. Students can play with these until they have learned the standard chord symbols. They learn to play the notated chord symbols long before they are able to play from the standard symbols. The notated symbols remain entirely in the blue octave group - which makes them relatively easy to learn and read. (We provide a basic course on learning how to play from chord symbols.)

Alphabet Song

Moderately #:2 Beats: 4

The diagram shows a piano accompaniment for the Alphabet Song in 2/4 time. It consists of two systems of chords. The first system, labeled 'Triads', covers letters A through V. The second system, labeled '4', covers letters A through V. The chords are: D (A), D (B), G (C), D (D), A (E), D (F), A7 (G), D (H), A7 (I), D (J), A7 (K), D (L), D (M), D (N), D (O), D (P), A (Q), A (R), D (S), D (T), A7 (U), A7 (V). Fingerings are indicated by numbers 1-5. The letters are listed to the right of the chords.

Traditional American School Song

The diagram shows a piano accompaniment for the Traditional American School Song in 2/4 time. It consists of two systems of chords. The first system, labeled 'Triads', covers letters A through Z. The second system, labeled '4', covers letters A through Z. The chords are: D (A), A (B), D (C), D (D), A7 (E), D (F), G (G), D (H), G (I), D (J), D (K), D (L), D (M), D (N), D (O), D (P), A (Q), D (R), A (S), D (T), A7 (U), D (V), D (W), D (X), D (Y), D (Z). Fingerings are indicated by numbers 1-5. The letters are listed to the right of the chords.

Comparisons of Rhythm

Traditional Grand Staff. In this notation the time values are in the notes, by means of their stems, flags, and colors; independent of the staff on which they are placed. The organization of these symbols is totally logical - but very puzzling to most students. All of the notes are the SAME size; they are NOT sized for their rhythm.

Key Maps. By contrast, in key maps the time values are derived from the musical staff on which the notes are placed. Key map notes have no time value at all until they are placed on the staff. As they are placed, their physical lengths are sized to be proportional to their time values in beats. A 2-beat note is twice the physical length of a 1-beat note in the same piece of music. The half beat note is half the length of the 1-beat note ... and so on. Key map rhythm notation is remarkable for its simplicity!

Analysis of the Traditional Notation Design - Traditional rhythm notation begins with the very logical design shown on the next page - but then becomes more complex as it adapts to the different metrical patterns that it must cope with.

The Note Time Values. The pattern begins with a whole note. This is the longest note (in time) generally used in notation. Shorter notes are related to this note by halves. The whole note is given a stem and becomes a 1/2 note. The half note is blacked in and becomes a quarter note...and so on. To fill in the gaps in time, notes can be followed by a dot that increases their time value by 1/2. ...a very logical structure. But there are problems.

The Naming Issue. The note beat (time) values don't match their names. This is unfortunate because it causes students no end of frustration as they often keep getting confused by the beat values that don't match their names. The 1/2 note is 2 beats (or sometimes 1 beat; but rarely 4 beats) the 1/4 note is 1 beat (but sometimes 1/2 beat; rarely 2 beats), and so on. When the student persists, eventually the problem goes away.

The Varying Beat Values. At moderate tempos in 4/4 time the traditional rhythm works very well, but when faced with other tempos and other metrical rhythms (6/8, 3/4, 3/8, and the like) the notes become very difficult for many people to read. In addition to that problem, at RAPID tempos, 4/4 time becomes cut time and the 1 beat quarter note becomes a 1/2 beat note. Then all of the other note values must also be cut in half to match this change. All of these changes must be made on the fly - while playing. In contrast, at very SLOW tempos, the opposite takes place. The quarter note becomes 2 beats, and all of the other notes must follow suit and have their beats doubled - on the fly!

The Bottom Line. All of these problems with the grand staff might seem overwhelming, and for many students, they are. On the other hand, many students find this notation difficult but learnable. The reality is that this very structured and logical rhythm notation can be, and is learned by many. It is the de facto standard for all musicians who want to be able to read the notation. In fact, for those who persevere and learn to read this rhythm notation, it's just fine. It works well. It does the job. And for those who learn to read this notation well, it's not difficult at all! Bottom line. Its difficult to learn, but once learned, its easy to use. Granted, some music has extremely difficult and complex rhythms - but that's a different issue.

The Logical Structure of the Traditional Rhythm Notation

Note Name

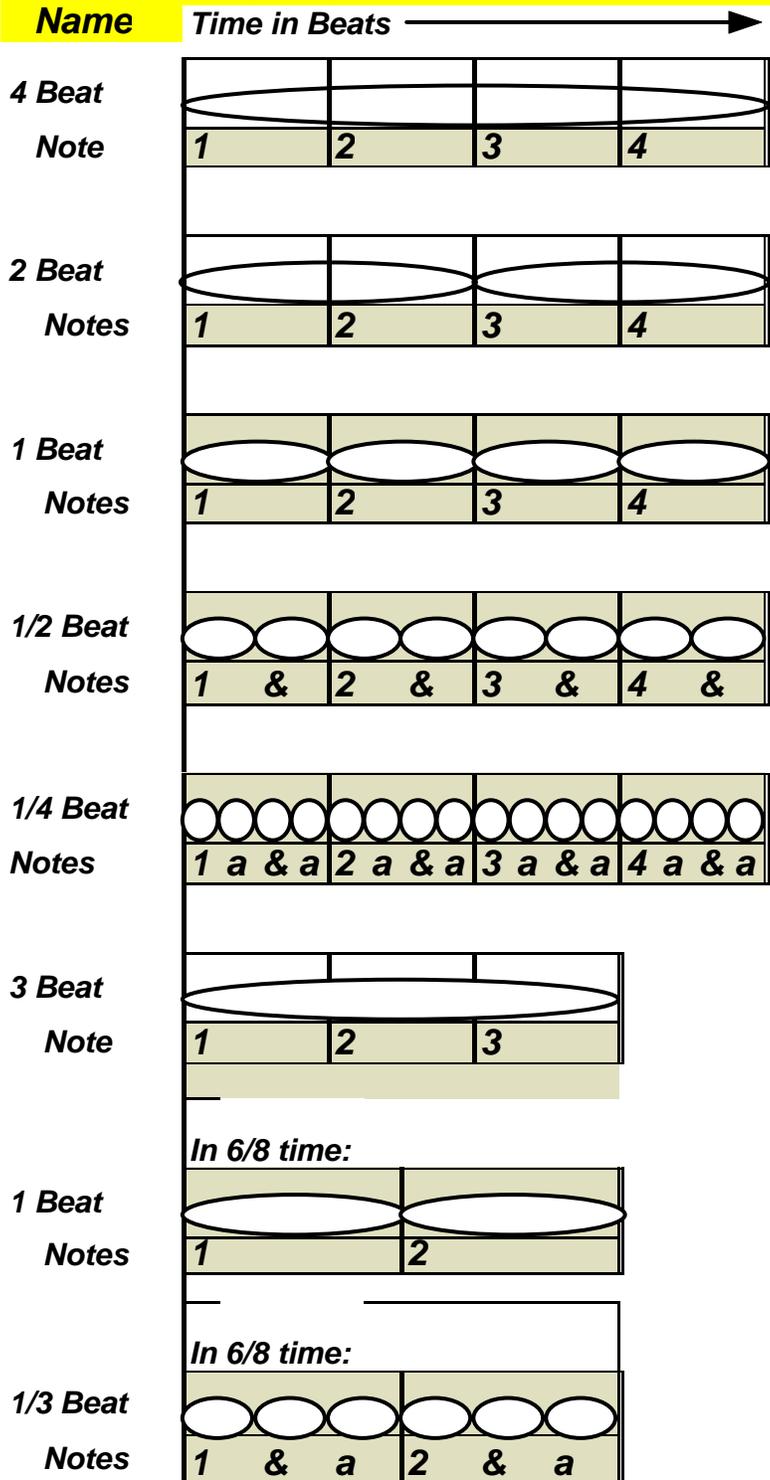
With Note Names and Beat Counting Symbols

In 4/4 time with the quarter note as the beat.

Whole Note	 4 beats
	1 2 3 4
Half Note	 2 beats
	1 2 3 4
Quarter Note	 1 beat
	1 2 3 4
Eighth Notes	
	1 & 2 & 3 & 4 &
Sixteenth Notes	
	1 a & a 2 a & a 3 a & a 4 a & a
Dotted Half Note	 (The dot after a note extends the note by half its time value.)
	1 2 3 (in 3/4 time)
	1 2 (in 6/8 time)
Dotted Quarter Note	
	1 2 (in 6/8 time)
Eighth Notes	
	1 & a 2 & a (in 6/8 time)

Time Values of Notes on Timelines

Note Name **Key map notation oriented horizontally for comparison.**



Please Note

This timeline rhythm, used for the vertical key maps, is shown here in a HORIZONTAL orientation so that it can more easily be compared with the traditional rhythm notation.

Unlike traditional notes, these notes are named for their size expressed as beats. The time length of each note is determined by the space between vertical beat lines (as well as the tempo of the beat and the performer's interpretation of the piece).

A note spanning the space between 2 beat lines is 1 beat long. If it takes up 1/2 the space, it is a half beat long, if it takes up 2 spaces, it is 2 beats long, etc.

Music Staves With Tempo and Meter

Brightly

A musical staff with a treble clef. The time signature is 4/4, with the numbers 4 and 4 highlighted in yellow. The staff is divided into three measures by vertical bar lines.

A musical staff with a bass clef. The time signature is 4/4, with the numbers 4 and 4 highlighted in yellow. The staff is divided into three measures by vertical bar lines.

Here are staves for the traditional notation and for the key maps that are set up for the song on the next page. The same TEMPO markings (*Brightly*) are used at the beginning of both versions.

METER is shown somewhat differently in the different notations.

For the traditional notation, meter is shown by the 4/4 at the beginning of the piece. The meaning of the number is: the song has 4 quarter notes (including rests) in each measure. (This fraction usually implies 4 beats to the measure, but not always.) The MEASURES are identified by the vertical lines crossing the staff each time that the notes add up to the equivalent of 4 quarter notes.

Unfortunately, the locations of the BEATS that follow the first beat of the measure are not shown in the traditional notation. The locations of the beats are determined by time codes in the notes.

Brightly Beats: 4

A grid representing 4 beats. The top row is a header with a green background and the number 4. Below it are 12 rows and 4 columns. The first column is shaded green. A thick horizontal line is drawn across the top of the grid, and a thin horizontal line is drawn across the first row of the grid.

METER in the key maps is also shown by lines across the (entire) staff. These are the heavy horizontal lines showing the beginning of each measure. The number of beats in a measure is shown at the beginning of the piece where the number of beats is clearly stated.

The light horizontal lines across part of the staff mark the locations of the BEATS following the first beat of each measure.

A grid representing 4 beats, identical in structure to the one on the left. The top row is a header with a green background and the number 4. Below it are 12 rows and 4 columns. The first column is shaded green. A thick horizontal line is drawn across the top of the grid, and a thin horizontal line is drawn across the first row of the grid.

Twinkle, Twinkle, Little Star - fragment

Brightly

Here are the staves introduced on the previous page with their notes filled in. On the treble staff, the black notes are quarter notes, 1 beat long. The white notes are half notes and are 2 beats long.

You can determine the lengths of the notes on the key map simply by comparing them with the beat lines on the staff. The small notes are 1 beat long, the larger notes, which are twice their length, are 2 beats long.

Brightly Beats: 4

We Three Kings of Orient Are

Lead Sheet Version

John Hopkins

Moderately #: 1 Beats: 2

We three kings of O-ri-ent are; Bear- ing gifts, we tra-verse a- far, Field and foun- tain, moor and moun- --- tain, Fol- low- ing yon- der star. O ---

Star of won- der, Star of night, Star with roy- al beau- ty bright. West- ward lead- ing, still pro- ceed- ing, Guide us to the per- fect light.