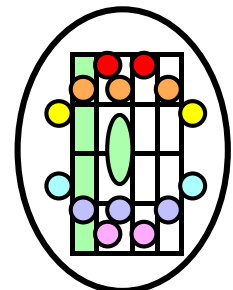


The Case for Key Maps

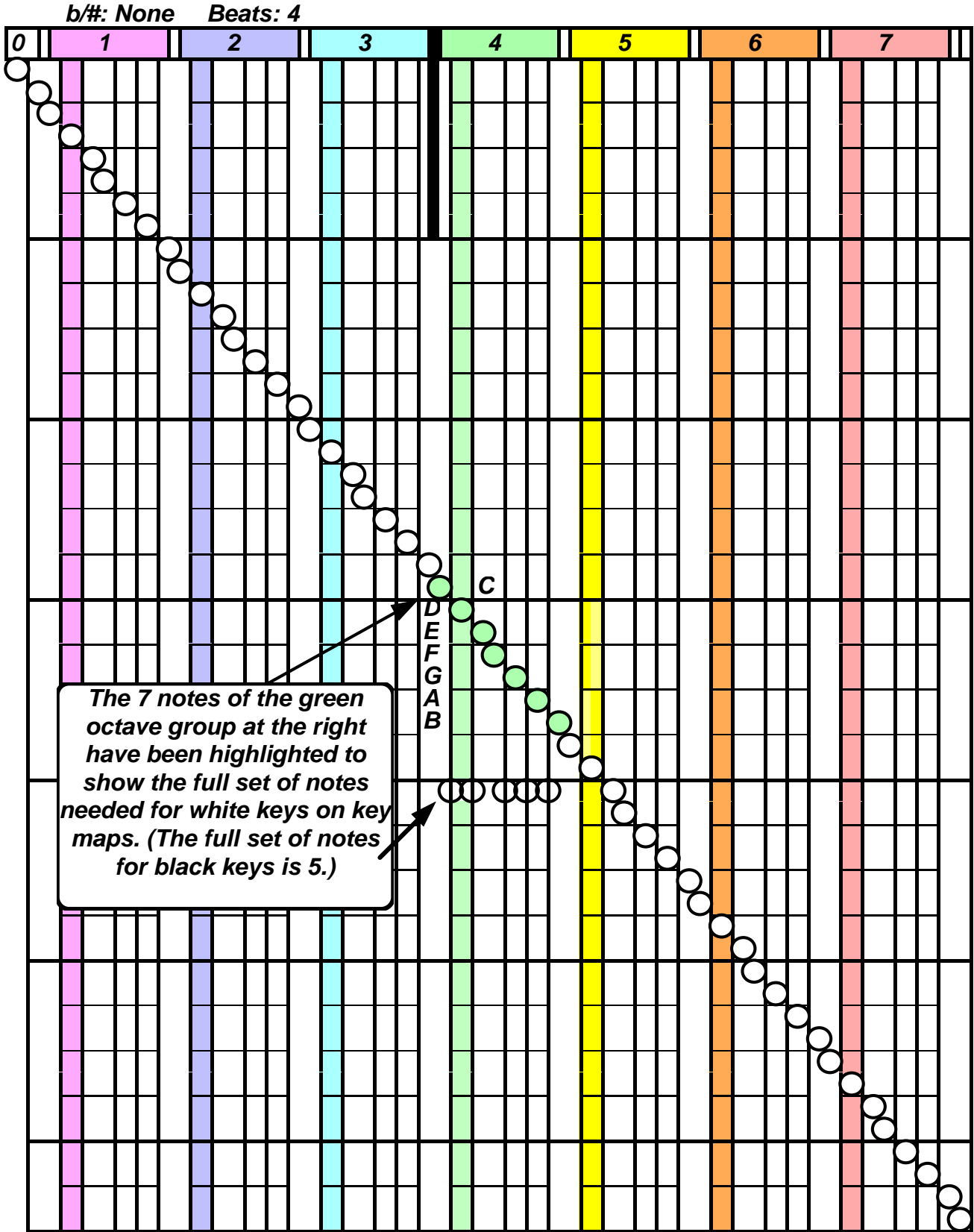
KMA



*From the Music
Innovator's Workshop*



The 7 Key Map Notes For all 52 Piano White Keys



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About the Nature of Music Notations

To begin, it seems appropriate to take a quick look at the basic nature of the music notations that are designed to record the composers' musical ideas and make them playable.

It is noteworthy that music notations have a seemingly IMPOSSIBLE task. Music notations take two INVISIBLE phenomena and attempt (more or less successfully) to make them visible!

Music is made up of SOUND, which is invisible, and TIME - that is also invisible. These things can't be seen, nor can they be touched. Yet every single sound must be rendered with a note that visibly shows a pitch dimension and a sound dimension.

These notes must be so easy to read that the sounds can be reproduced accurately and rapidly in real time. This is a very tall order and presents a great challenge for any music notation.

Though traditional and key map notations both provide directions for playing music, traditional notation has a DIFFERENT FOCUS than key maps. Because traditional notation must be independent of any instrument, it must focus on indicating what SOUNDS to play.

In contrast, key maps are able to concentrate exclusively on the KEYBOARD. Key maps are free to SHOW (visually) which KEYS to play - making them much easier to learn and read.

Once a student has learned to play from key maps, with a modest amount of skill and understanding, we hope and recommend that the student begin learning to read from traditional notation as well, the gold standard for all general purpose music notations.

Introduction

Key Map Advantages. *Our intent in this unit is to make the case for key maps, a keyboard notation intended for use with any musical keyboard. Throughout this unit, we refer to the piano keyboard, but nearly everything that is said applies to the other keyboard instruments as well. For key maps to get used, they must show some advantages over the de facto standard of notation, what is usually referred to as standard or traditional notation (TN). This means that some of the following discussion will focus on comparing the two notations relative to their advantages and disadvantages. Our thesis is that for keyboard instruments, the key maps have a number of distinct advantages over TN.*

Our Respect for Traditional Notation. *That being said, our great respect for TN must remain perfectly clear. TN remains the nearly universal standard for music notations. The case we are making for key maps is directly focused on using it for the piano and other KEYBOARD instruments. The maps were designed, based on the visual and tactual layout of the standard keyboard. Key maps should replace TN sheet music only where their distinct advantages warrant replacement. Otherwise, the key maps act as supplemental notation.*

Notation Compatibility. *These two notations are fully compatible. Key maps do NOT create some kind of a renegade notation that contradicts or disrupts TN. Playing the notes correctly from either notation results in the SAME sounds. The underlying music theory remains completely intact with the key maps. Finally, students will find that learning to play the keyboard with key maps prepares them to advance seamlessly to the more complicated TN.*

Key Maps in Brief

- What is a Key Map?** *A key map is music notation specifically designed for pianos and other keyboard instruments. Key maps are vertically oriented contour maps of the keyboard with notes that show the LOCATIONS of the keys that must be played to perform a musical composition. For rhythm, the physical length of each note is proportional to its length in beats, showing exactly how long to hold each musical sound.*
- Reading Pitch** *Reading pitch on the maps is enabled by the fact that the keys of the keyboard form 7 identical 12-key visual patterns (C to B). We call these patterns of keys, Octave Groups. These octave group patterns of the keys provide the basic structure for each map. The octave groups are distinguished from each other by their locations from left to right, and by their colors on the maps. For beginners, colored labels are placed on the keyboard. The colors on the labels match the colors of the octave groups on the maps.*
- Reading Rhythm** *Notes on key maps have vertical lengths that are proportional to their time durations in beats. Reading the rhythm is enabled by equally spaced thin horizontal lines that cross the staff at each BEAT and contrasting heavy lines that are equally spaced and cross the staff at the end of each MEASURE.*
- Basic Pitch Terminology** *Most of the terminology of traditional notation is used for key maps. Traditional PITCH NAMES (A thru G) are used for the notes and keys. However, the black keys (and their notes) are given what we call "addresses" in addition to their traditional names. These addresses are the numbers 1, 2, 3, 4, and 5 beginning with C#/Db as key 1 and continuing on with the next 4 black keys at the right to A#/Bb as key 5. These addresses are the norm for the key maps. The OCTAVES are numbered from 0 thru 8 in accordance with American Standard Pitch Notation (ASPN) terminology. (Middle C is the first note of Octave 4.)*
- Basic Rhythm Terminology** *The terminology for rhythm on key maps is based on beats rather than on the whole note. (There are notes of - 1 beat, 2 beats, 4 beats, 6 beats, 1/2 beat, 1/3 beat, 3/4 beat, etc.) The number of beats of a note is determined by reading the beat lines crossing the staff at equal intervals.*
- Examples for Reference** *The key map examples on the next few pages can be referred to as you review the explanatory materials that follow them.*

Comparison of Notes - Middle of the Keyboard

Traditional Grand Staff

Note sequencing is horizontal - from left to right.

Rhythm notation is omitted from this page as we begin by focusing on pitch notation.

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

Key Map

Note sequencing is vertical - from top to bottom of the page.

To aid in comparing the notations, Middle C's are colored **red**. The other C's are colored **green**.

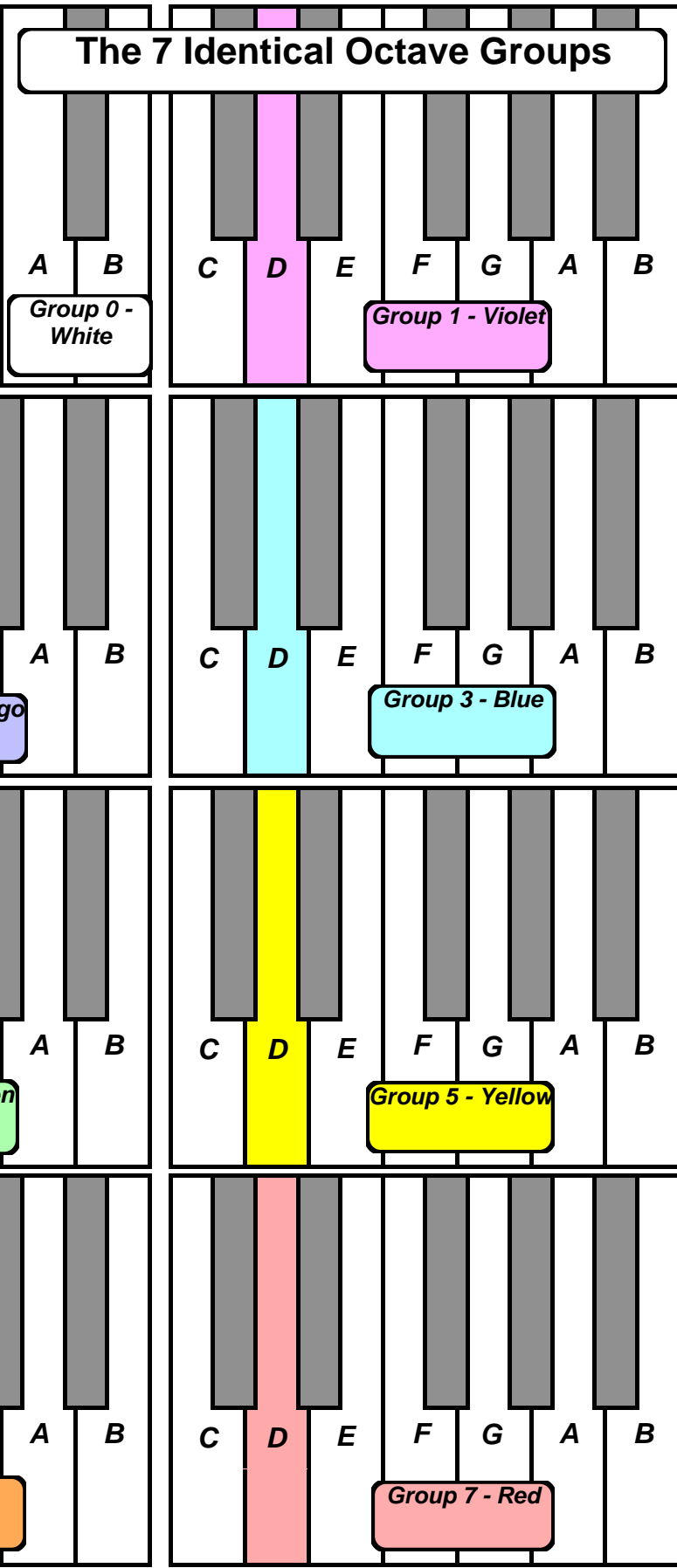
The thick vertical black line visualizes the division between the bass and treble keys on the keyboard - between B and Middle C.

This diagram notates the same upward sequence of sounds as notated on the grand staff above.

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

A piano has 7 complete octave groups. Other keyboards with fewer keys are grouped the same way, but they have fewer groups.

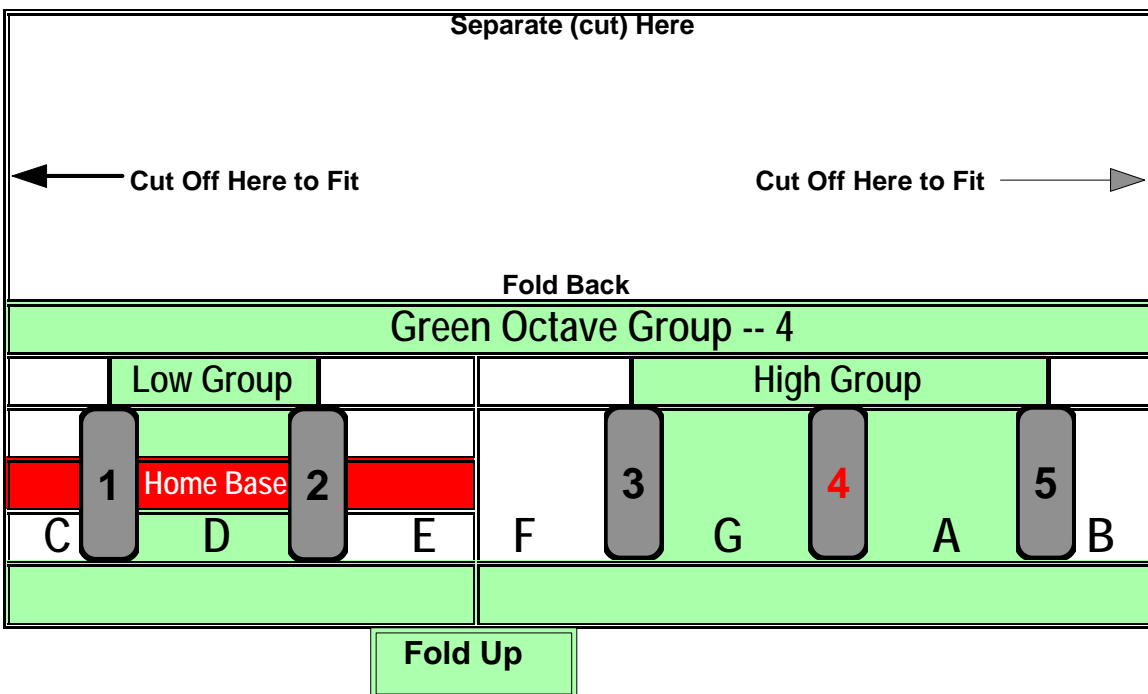
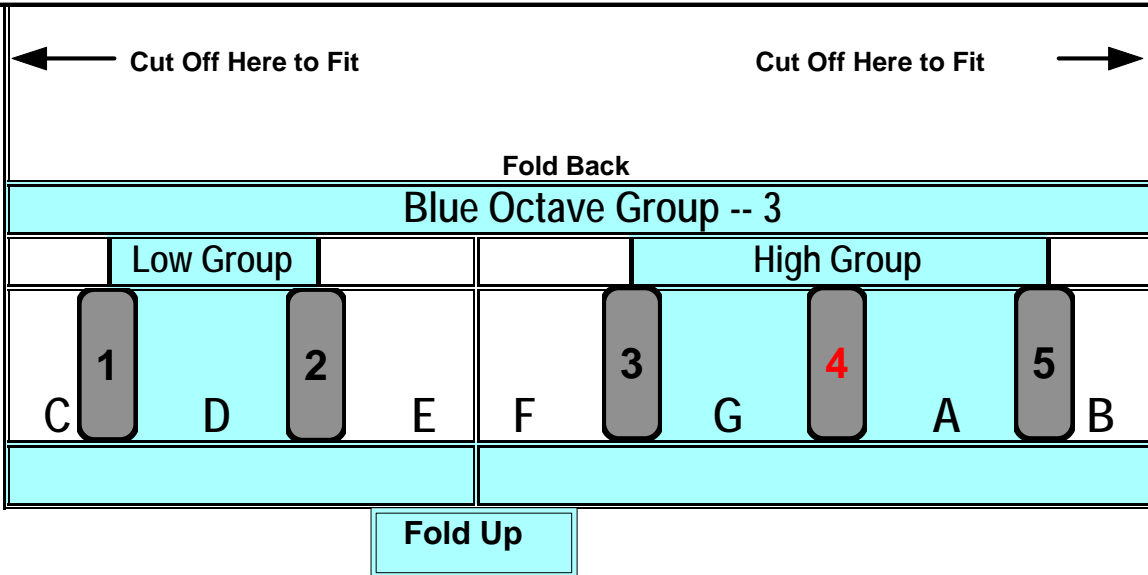
Each octave group is color coded with one of the colors of the rainbow (in order), providing a distinctive sequential identity for each group.



Octave Group Locator Labels

For those just learning to play from the key maps, these octave group locator labels are provided. There are 7 labels, one for each of the 7 octave groups of the piano keyboard (C through B). The labels are to be cut out and placed standing upright immediately behind the black keys of each octave group.

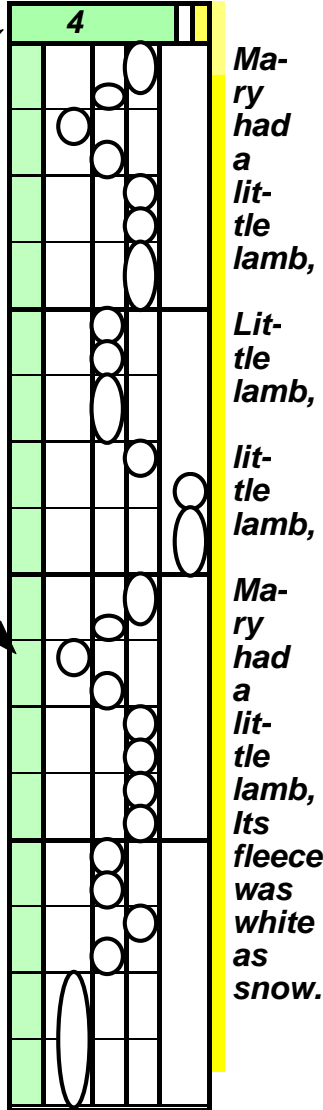
The labels identify each octave group by color (and number). They also provide a name for each white key and a numerical "address" (1, 2, 3, 4, and 5) for each black key. These labels provide a direct visual link between the key map notes and the keys on the keyboard. The labels can be discarded as soon as the student becomes thoroughly oriented to the keyboard.



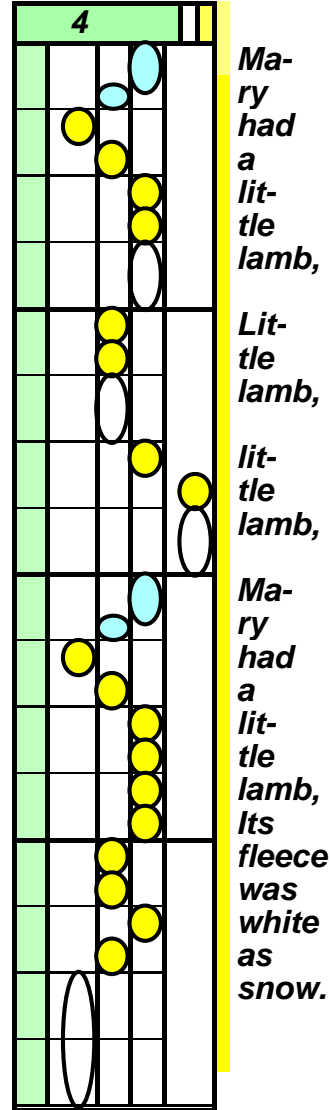
Mary Had a Little Lamb

Hands: Unless otherwise specified - RH plays from Middle C and up. LH plays below Middle C. Colored rhythm option is shown at the right.

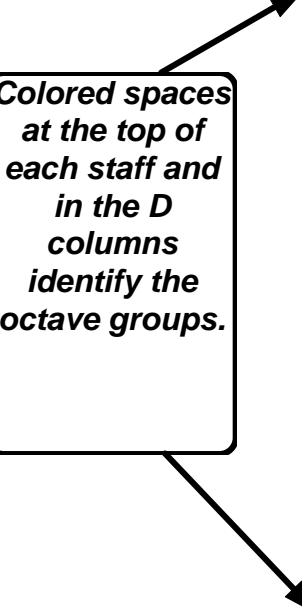
(Basic RH Version)



(With Colored Rhythm)



Colored spaces at the top of each staff and in the D columns identify the octave groups.



The colored rhythm is shown on key maps occasionally as a decorative touch - for those of us who like the effect of the colors. The colors are a code for the rhythm, but are not needed, because the rhythm is fully shown on the timeline structure of the underlying staff. On the other hand, these color codes do provide the rhythm notation for our Key Diagram versions. For those who are interested ...

- White is for 1 beat notes and multiples.
- Yellow is for 1/2 beat notes and multiples.
- Green is for 1/3 beat notes and multiples.
- Blue is for 1/4 beat notes and multiples.

Away in a Manger

Martin Luther Carl Mueller

Quietly #: 1 Beats: 3 vLS CS Cds

Leadsheet version with triad chords in the blue octave. Chord roots have a pink shading.

Lead sheet for 'Away in a Manger' (left version). The sheet is divided into three measures: 3, 4, and 5. The first measure (3) is shaded light blue, the second (4) is shaded light green, and the third (5) is shaded yellow. Chord roots are marked with pink circles. The lyrics are: A-way in a main-ger, No crib for a bed, The lit-tle Lord Je-sus Laid down His sweet head, The

Lead sheet for 'Away in a Manger' (right version). The sheet is divided into three measures: 3, 4, and 5. The first measure (3) is shaded light blue, the second (4) is shaded light green, and the third (5) is shaded yellow. Chord roots are marked with pink circles. The lyrics are: stars in the sky — Looked down where He lay The lit-tle Lord Je-sus a-sleep on the hay.

Hands are crossed. Red notes are LH; White are RH.

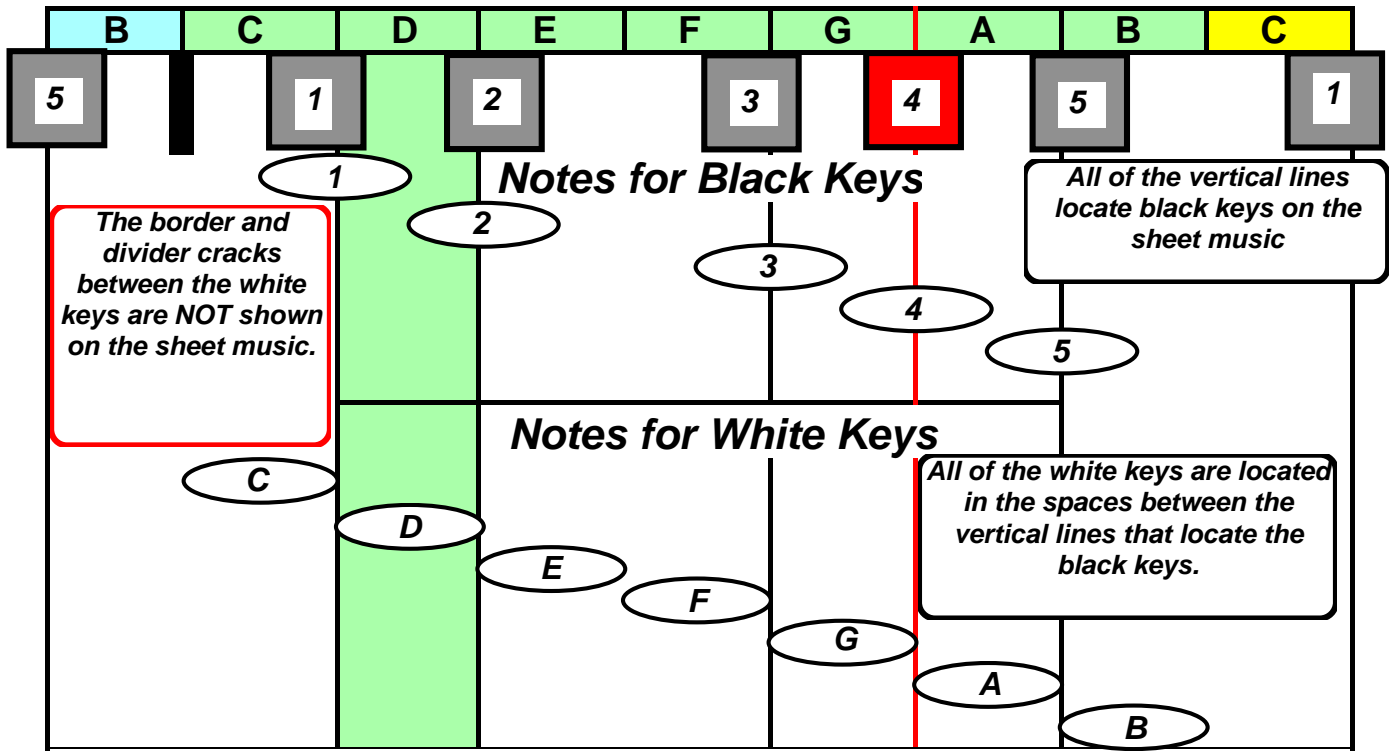
End of crossed hands.

Key Map - Advanced Level
This advanced page is from a piano arrangement of J.S. Bach's Toccata and Fugue in D minor for organ.

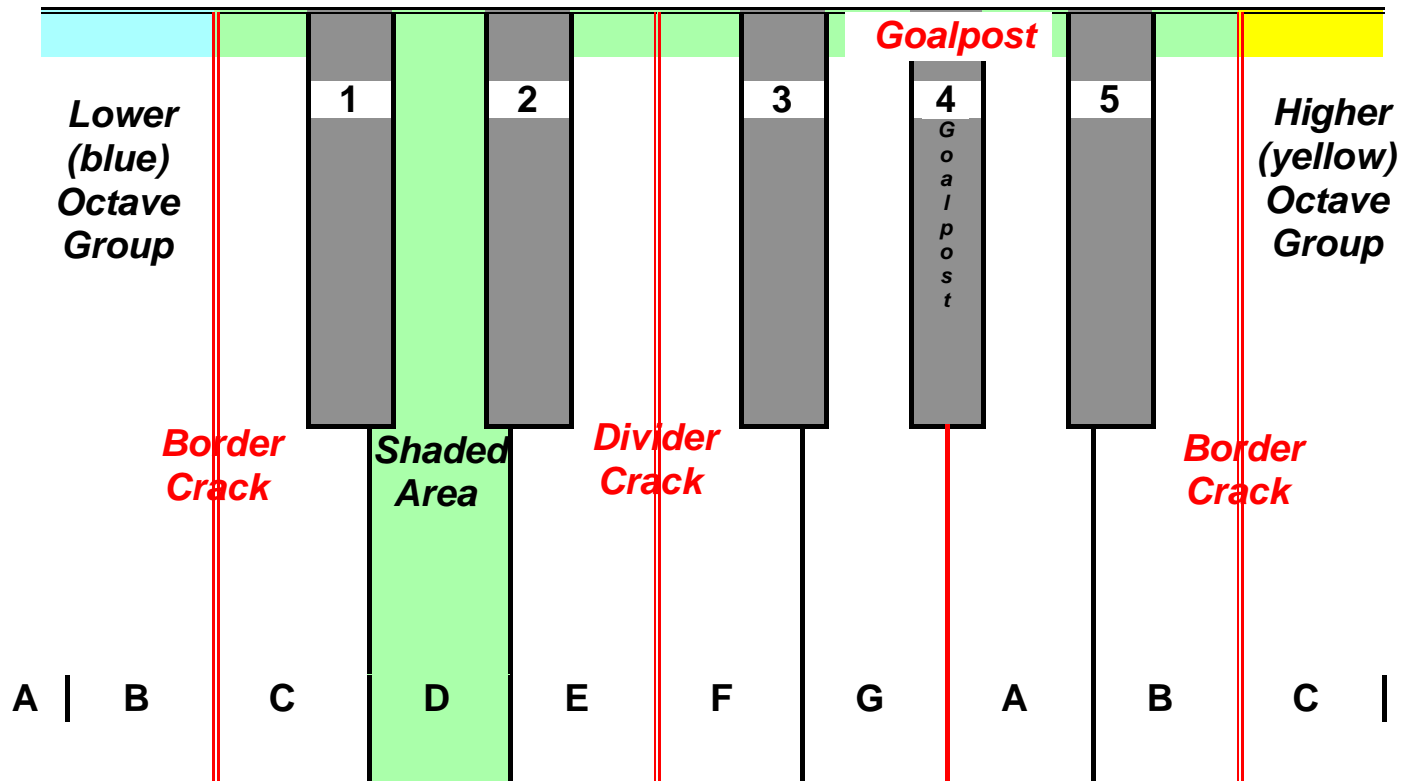
The width of each staff is determined by the pitch range of the notes on the staff.

Key Diagram and Keyboard Layouts Compared

Key Diagram (Enlarged Key Map) of the 12 Keys of an Octave Group



Layout of the Keyboard - "Green" Octave Group With Labels



Differences in Information Processing

Question. *Is there a major fundamental difference between the notations that gives the key map notation an advantage for keyboard notation over TN?*

Answer. *Yes, there is a major fundamental difference that gives the key maps an advantage. There are ALSO a lot of small differences flowing out of that major difference. The major difference is one of information processing. Both notations provide direct visual and coded information. The difference is that KEY MAPS provide information MAINLY in direct visual form - while the TN provides information MAINLY in coded form.*

It's not that direct visual information is GOOD, and coded information is BAD. But they differ in ways that affect people's ability to learn and respond to them. The issue here is a piano student's ability to learn and respond to the kind of information provided by the notation. This is not rocket science. Its a simple concept to understand.

Example - Child and a Dog. *Take a child who has a dog and is old enough to use the word, and say, "dog." Show the child a picture of a dog (visual information), and the child will be able to say "dog." Show a sketch of a dog, and the child will be able to say "dog." Show the child the word, "DOG," (coded information), and the child will only be able to say "dog" after he has learned the coded information (written language). The idea here simply is that we can normally respond instantly to familiar direct visual information, but our response to coded information is dependent on a prior period of time required for first learning the code. The response is also dependent on how well and how quickly the code converts to the desired response.*

The Issue of Information Processing. *TN provides all of the information that a person needs to put his/her fingers on the right keys at the right time - but only after the person has learned to respond quickly to a great variety of coded information. Key maps can provide this information in a more direct form. They provide information in a visual form that matches what the pianist sees on the keyboard. With key maps finding the correct key becomes a simple matching game.*

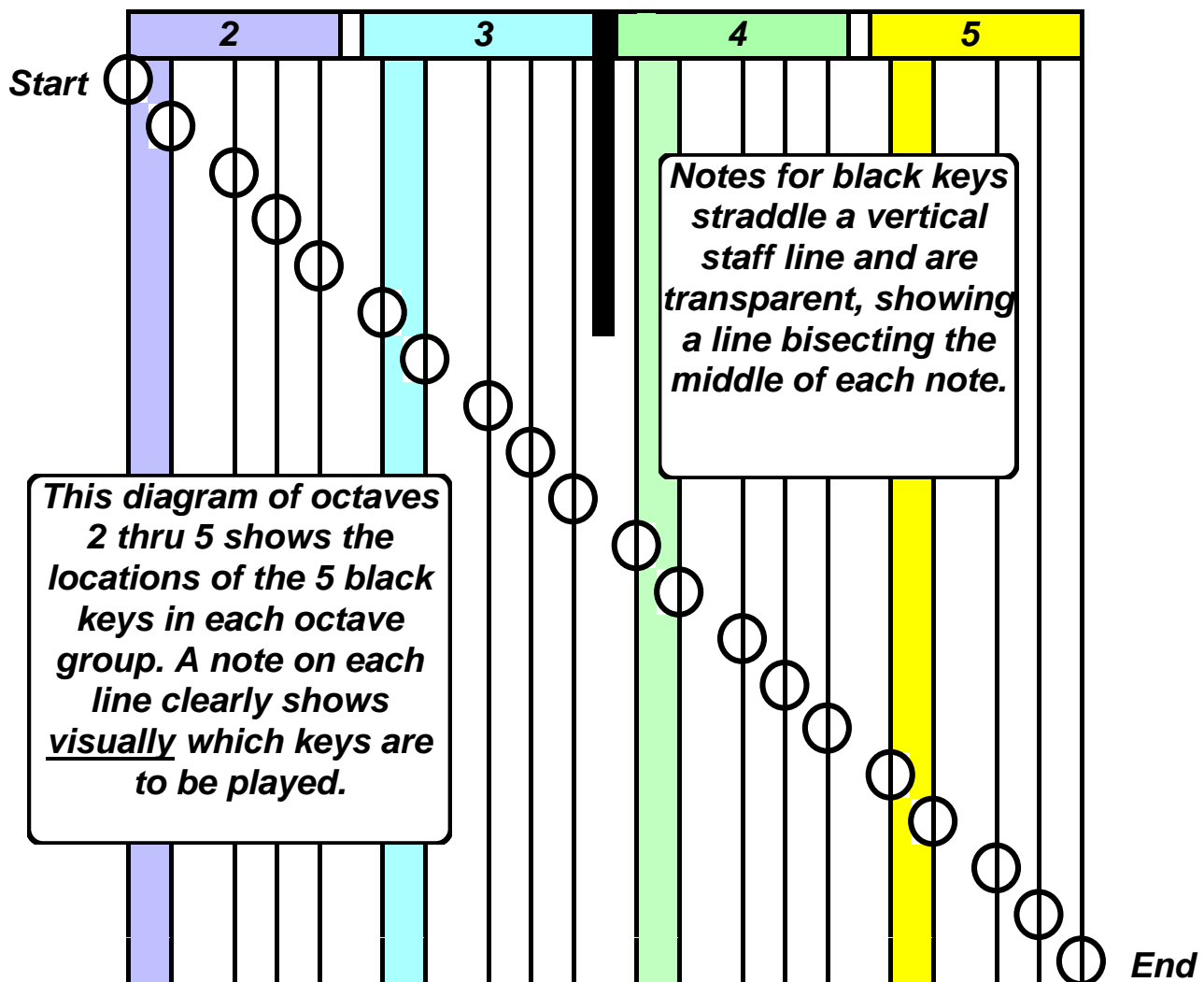
Learning to Play. *Learning to play involves a whole lot of things besides learning to read the notation. All of this other learning, however, is directly affected by how hard it is for students to figure out which keys to play, and when.*

Black Keys as the Staff

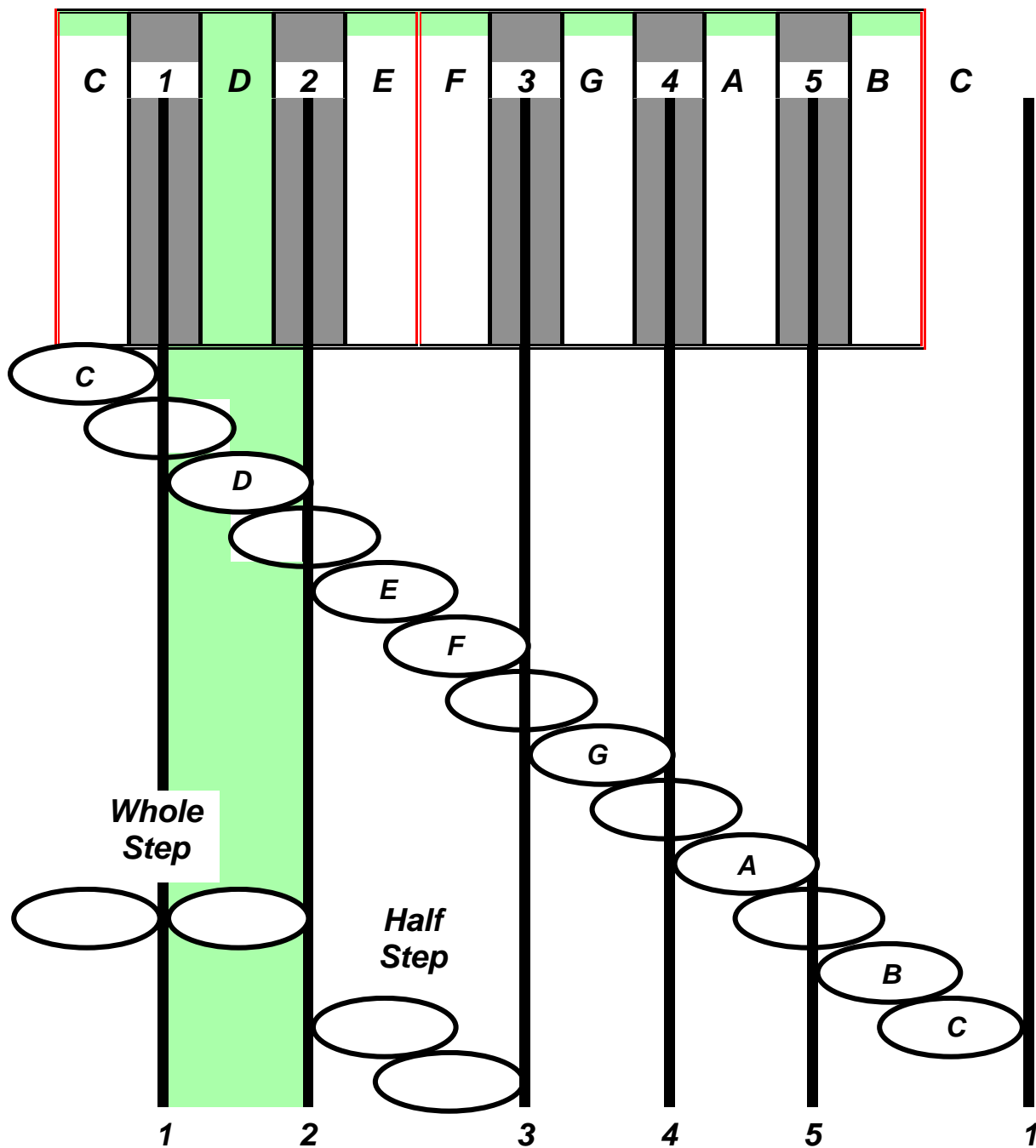
A fundamental basic concept for key maps is the simple idea of using the black keys of the keyboard as the musical staff.

This idea has been around for centuries but has not been acted upon often for the lack of the necessary technology. (The present key maps are created on a commercially available computer spreadsheet.)

Using the black keys as the vertical the staff lines provides a simple and direct basis for identifying and locating the keys of the keyboard from their notes on the staff. Additionally, this makes the notes move to the left and right in sync with the movements of the fingers on the keyboard!



How the Notes Show the Locations of the Keys



With this arrangement the notes graphically show exactly where to place your fingers to play a given sound! For the notes to show musical intervals accurately, they must all be 1 whole step in width. Two notes with edges touching are a whole step apart. Two notes overlapping by half are a half step apart. Other intervals are proportionally larger.

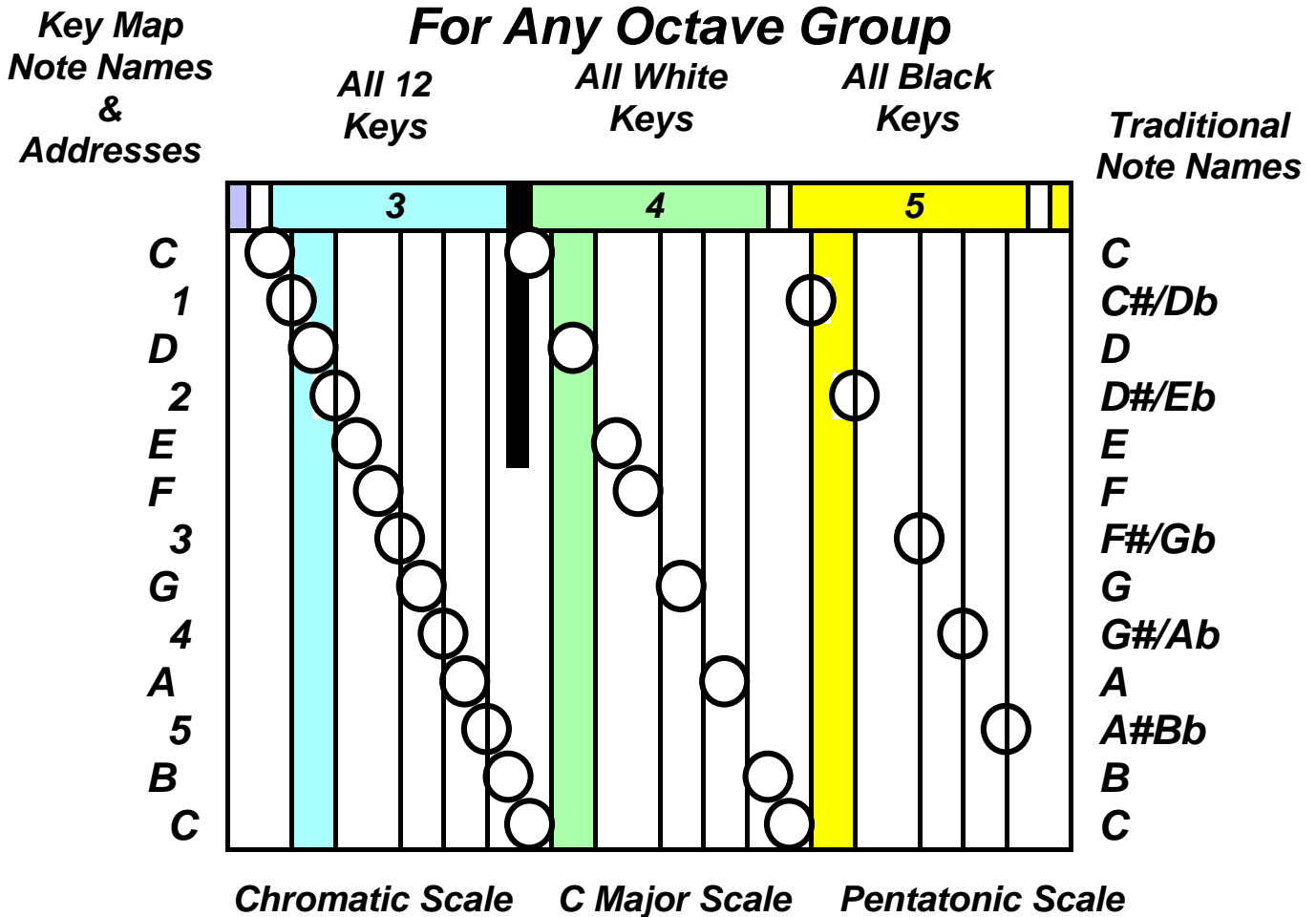
Finding a Key by its Location

Finding the keys to play depends first on knowing the visual layout of the keyboard, the matching layout of the key map, and the addresses (numbers 12345) of the black keys. Then it's like finding anything on a map. You just match what you see on the map with what you see (or feel) on the keyboard, paying attention to which octave group the key is found in.

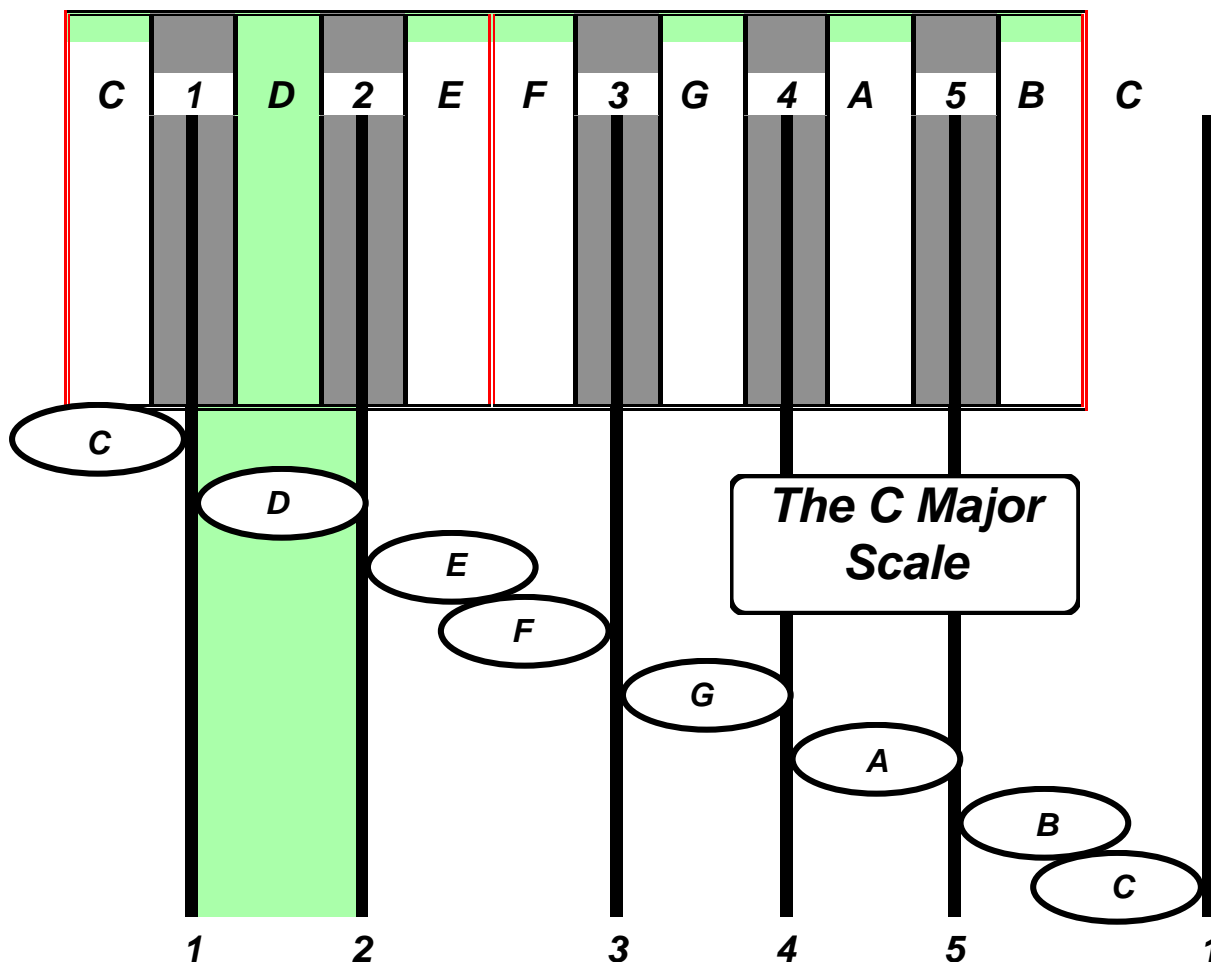
- C - Below 1**
- 1 - Play 1**
- D - Above 1; Below 2; Between 1 and 2**
- 2 - Play 2**
- E - Above 2**
- F - Below 3**
- 3 - Play 3**
- G - Above 3; Below 4; Between 3 and 4**
- 4 - Play 4**
- A - Above 4; Below 5; Between 4 and 5**
- 5 - Play 5**
- B - Above 5**
- C - Below 1**

Keyboard Terms:
Below = Left of
Above = Right of

Knowing the name of a note is not required for finding the key.



Another Major Pattern Built Into the Keyboard



Another fact of life when working with a piano keyboard is that one of our most common musical patterns, the major scale, is not made up of half steps. (Nor is another common pattern, the minor scale.) The developers of the keyboard decided to make the evenly spaced "handles" of the white keys form a C Major scale, even though these handles did not reflect the true spacing of the sounds. Rather, the spacing provided a major scale without any sharps or flats. This occurred even though the true spacing the sounds was reflected in the upper part of each white key. The key maps deal with this inconsistency, (and basically correct for it) by showing the true spacing of the sounds by placing the notes as shown above. The notes for E and F overlap by half, as do the notes for B and C. This shows the true half-step spacing of the sounds without interfering with identifying the correct keys to play for the scale. Note also that the major scales for all 12 keys have this exact same spacing. This same pattern is simply placed in the needed place on the staff to identify the sounds of the chosen scale, with all of the whole and half steps in their proper places.

The Sounds of the Notes and Keys

This unit focuses on the intimate relationships among the sounds of the piano, the relative locations of the keys, and the notes derived from these sounds and keys.

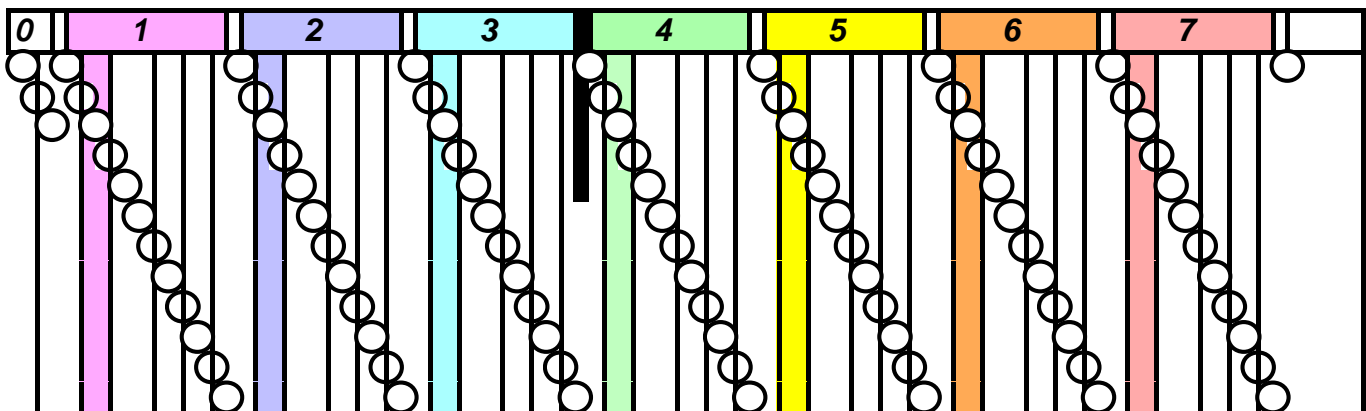
The sounds, of course, came into existence first. Then the piano was developed to produce these sounds, and (mostly) coded notations were developed to record and communicate the sound patterns that people wanted to hear. The key maps were developed to expand on these notations by showing, visually, which keys need to be played to make the desired sounds.

The 88 sounds of the piano fall into several very simple patterns that can readily be heard and seen. These patterns can be replicated on the key maps so that it is very easy to SEE which keys to play. In addition, these patterns can be felt and otherwise sensed by the hands and fingers on the keyboard. without looking at the keys.

The Chart Below. This chart demonstrates two basic visual/sound patterns common both to the keyboard and to key maps. One of these patterns is the recurring pattern of half steps across the entire keyboard. Eighty-eight overlapping key map notes are shown on the staff visualizing the locations of the 87 half steps of the keyboard.

The other basic visual/sound pattern is shown by the staff behind the notes. This staff shows the locations the 7 visually identical Octave Groups. Each of these groups is visually identical to the other 6 groups. The sounds of each group progress from Group 1 by a doubling of the sound frequency from one group to the next. This doubling is called going up an octave. All of the 12 notes in an octave group have names (ABCDEFGG) or addresses (Black keys: 12345). The names and addresses are the same in all of the octave groups.

Key Map Chart Showing Notes for All 88 Piano Keys

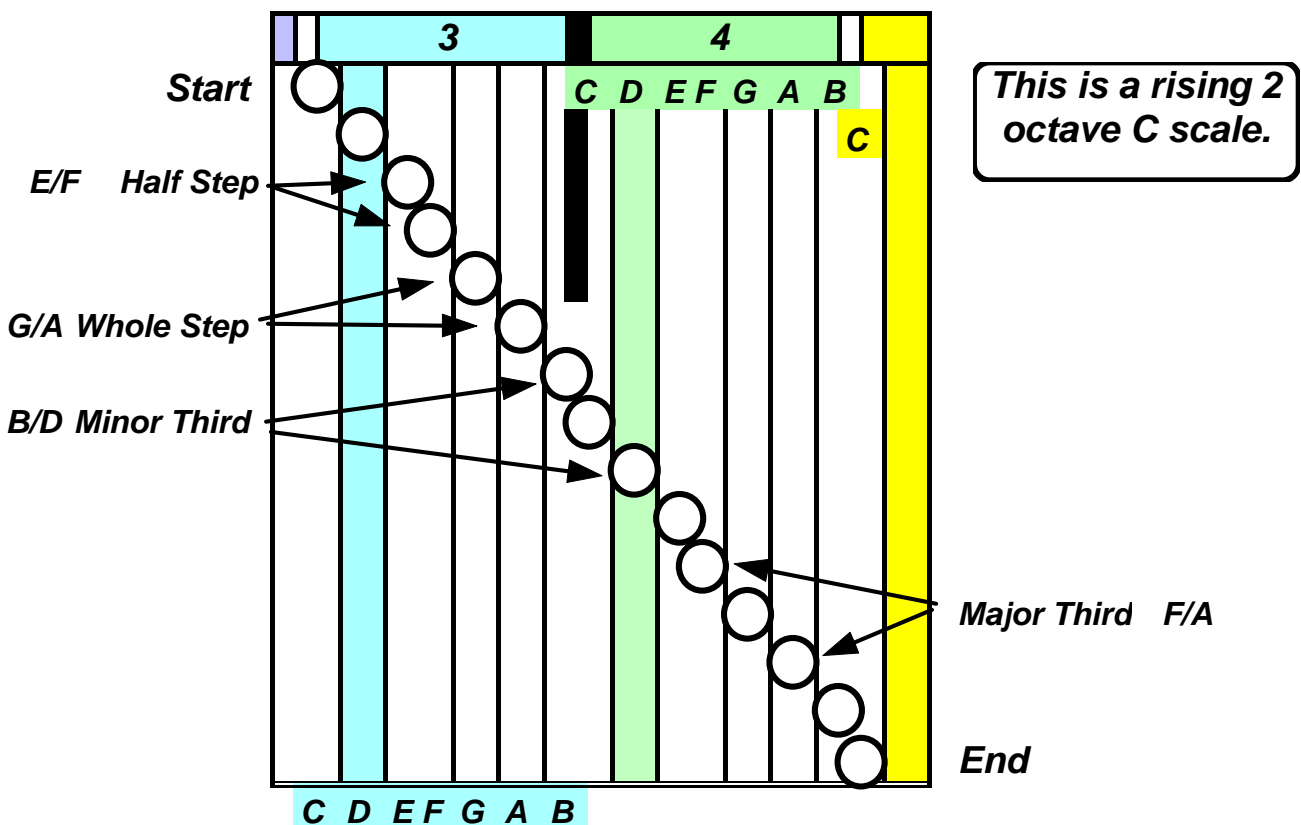


Spacing of the White Keys on the Keyboard

One of the most important and useful features of the key maps is that the horizontal spacing of notes is consistent with the spacing of the sounds and with the spacing of the keys on the keyboard. This begins with the sizing of the notes in the horizontal plane. (Vertical sizing relates to rhythm.) All notes, without exception are the width of a whole step. This is the width of the narrow spaces on the staff. (There are only 2 space widths on a key map, narrow and wide. The wide space is 50% wider than the narrow.) There is room for 2 overlapping notes in the wide spaces (B/C and E/F). The other natural notes fall in the narrow spaces (D/G/A).

This spacing protocol applies to all horizontal intervals on key maps. To begin, all horizontally overlapping notes are minor 2nds (B/C). All adjacent notes are major 2nds (C/D). Notes with a half step between are minor 3rds (C/E \flat). Notes with a whole step between are major 3rds (C/E) - and so on through all intervals.

This feature makes it possible to determine a small interval's size by sight rather than requiring an analysis based on their note names and signs (b/#).



TruScaled Pitch Spacing Demo

This page demonstrates the ways that the spacing of the notes matches the spacing of the sounds produced by the keys. We refer to this as "TruScaled" notation when paired with the true scaling of rhythm on the timelines of the key maps.

The notes at the top of each staff clearly show the spacing of the same notes placed on the staff below them. This spacing exactly coincides with the spacing of the sounds produced by the notes when played on the keyboard (whole steps, half steps, and a minor third).

C Chromatic Scale

C Whole Tone Scale

C Major Scale

C Harmonic Minor Scale

The patterns formed by these notes can be placed unchanged anywhere on the musical staff for playing the same sound patterns at any chosen pitch level.

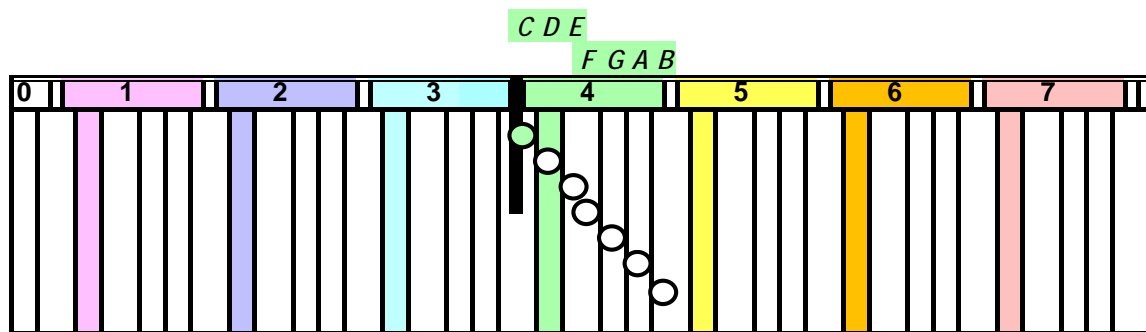
Comparison With the Traditional Grand Staff - 52 vs 7

Here are the notes for all of the 52 white keys (natural notes) on the piano. The notes **MATCHING** the green octave group are shown in **green**.

There are 52 different natural notes to identify and learn. Fortunately, the notes at the extremes, which are very hard to read, are rarely used.

These notes have no visual connection to the keys that they stand for on the keyboard. The notes are codes that connect to the keyboard through their letter names.

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.

Flat Notes For the Black Keys - 36 vs 5

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.

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 DE GAB DE GAB DE GAB 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

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 Address

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 see above.

Sharp Notes For the Black Keys - 36 vs 5

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.

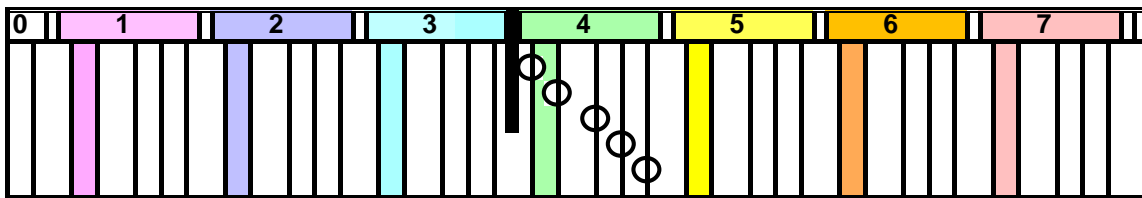
The "key signatures" change all of the following notes to sharps (#): F, C, G, D, and A.

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

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.

#: 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 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.

Example in 6 Sharps - O Little Town of Bethlehem

#: 6 Player must convert all notes EXCEPT B's to sharps while playing.

o lit- tle town of Beth-le-hem, How still we- --- see thee lie! ...

#: 6

Player can ignore the sharps and just play the notes that mark the keys to play.

(#: 6)

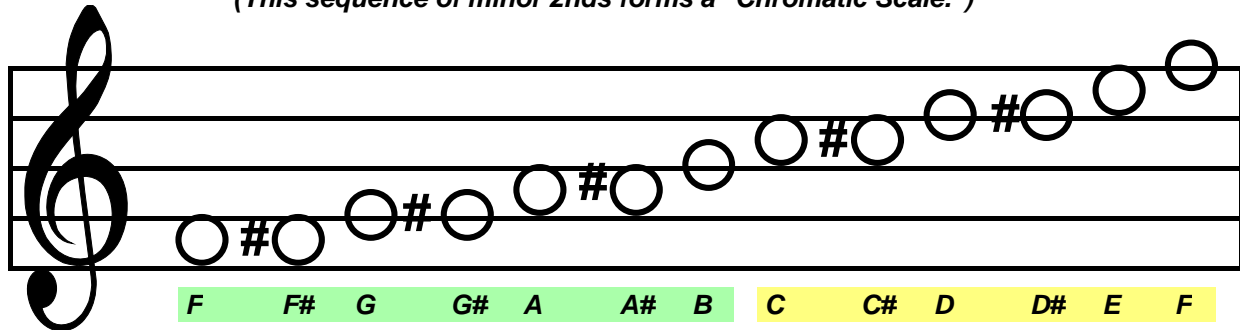
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(#: 6)

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Intervals Compared: Half-Steps - (Minor 2nds)

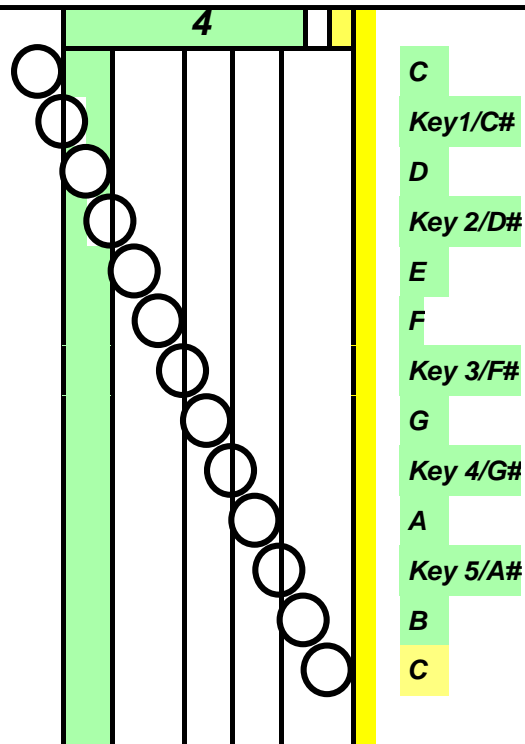
(This sequence of minor 2nds forms a "Chromatic Scale.")



A comparison of intervals provides another interesting contrast. In traditional notation the visual distances between notes provide only a general notion of the true interval size. The notes must be interpreted to determine the actual size of the interval.

*On key maps the intervals between notes are shown in direct proportion to their size in sound and on the keyboard. This provides the pianist with an additional set of useful visual cues when reading the notation. This sense of proportion is especially valuable when reading and playing chords.
(See the next page.)*

The half-step melodic interval sequences shown on this page are played on adjacent keys on the keyboard. A straight line is a better visual rendition of the notes - as shown at the right. The grand staff notes above make a ragged line that does not provide an image that is consistent with the even spacing that occurs at the keyboard and with the sounds that are produced.



Chords Compared: The 4 Root-Position Triads

The image shows two staves of musical notation. The top staff is in treble clef and the bottom staff is in bass clef. Each staff contains eight boxes representing chords. The notes are represented by circles with accidentals (b for flat, # for sharp). Below each staff, the chord names and their qualities are listed.

<i>F dim</i>	<i>Fm</i>	<i>F</i>	<i>F aug</i>	<i>A dim</i>	<i>Am</i>	<i>A</i>	<i>A aug</i>
<i>diminished</i>	<i>minor</i>	<i>major</i>	<i>augmented</i>	<i>diminished</i>	<i>minor</i>	<i>major</i>	<i>augmented</i>

Key Maps - Notes are the same in both octaves – only the octave group colors are change

The image shows two vertical diagrams labeled 'Key Maps'. The left diagram is for F chords and the right is for A chords. Each diagram has two columns of notes (octaves) and two rows (treble and bass clefs). The notes are represented by circles. The root notes are highlighted with colored vertical bars: pink for F and light blue for A. The diagrams are labeled with numbers 2, 3, 4, and 5 at the top, indicating octave groups.

	2	3		4	5
<i>F dim</i>	●	○	○	●	○
<i>Fm</i>	●	○	○	●	○
<i>F</i>	●	○	○	●	○
<i>F aug</i>	●	○	○	●	○
<i>A dim</i>		●	○	○	○
<i>Am</i>		●	○	○	○
<i>A</i>		●	○	○	○
<i>A aug</i>		●	○	○	○

Key Maps - For chords, the colored notes identify their roots.

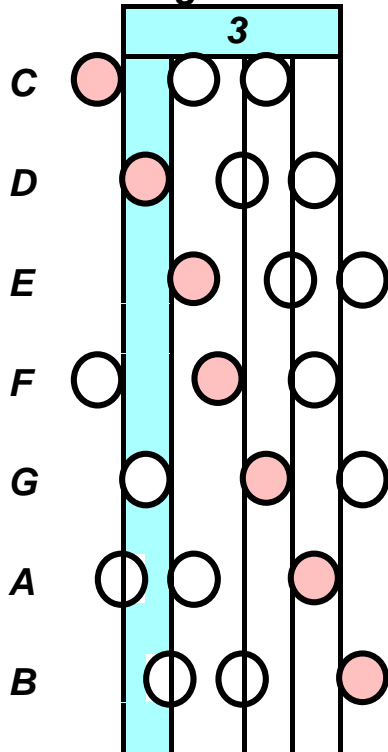
Readable Chord Symbols: A Major Key Map Feature

The importance of chords to music can hardly be overemphasized. While a single melody line can be beautiful and appealing, people get bored very quickly with music that has no chords (harmony). Chords are groups of 3 or more sounds heard at the same time. The key map chords of 3 notes sounding together are called "triads." These triads are played at the same time as the melody is played, making 4 sounds at a time.

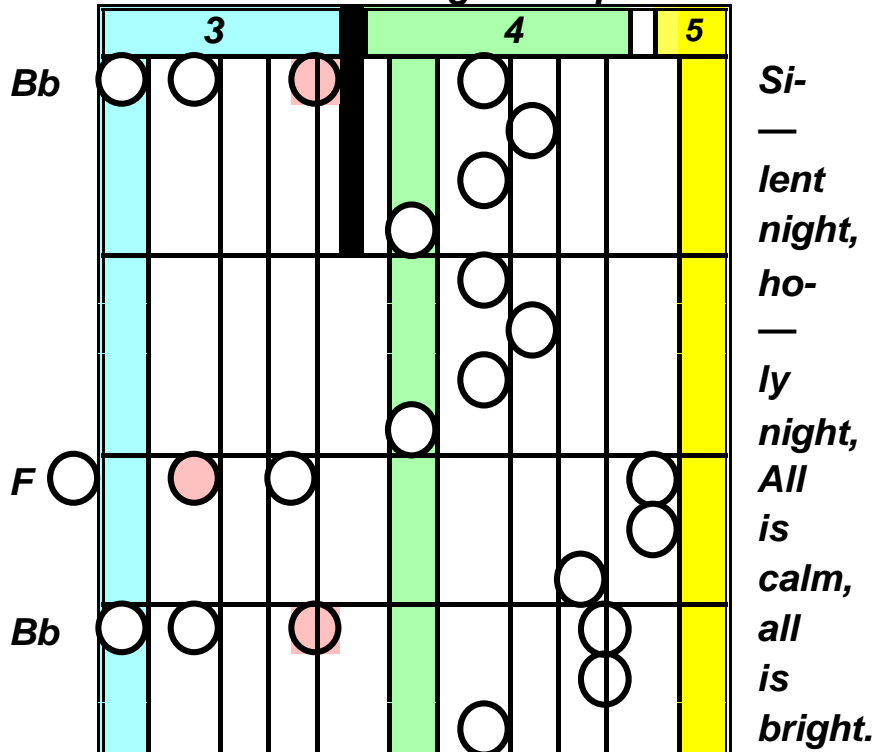
The triads use the same notes as the melodies that we have been looking at. And they are just as easy to find on the keyboard. As you can see below, these groups of 3 notes are found in the blue octave group. To the left of each triad chord you will find the widely-used standard chord symbol. Most of the key map chord symbols are shown along with the standard chord symbol, as you can see below.

These chord symbols work the same way as do the very popular GUITAR chord symbols. They show you where to put your fingers to play the sounds of the chord. The root of each chord is identified by a colored note. All notes of the symbol are shown in the blue octave group, but you can play them anywhere you like.

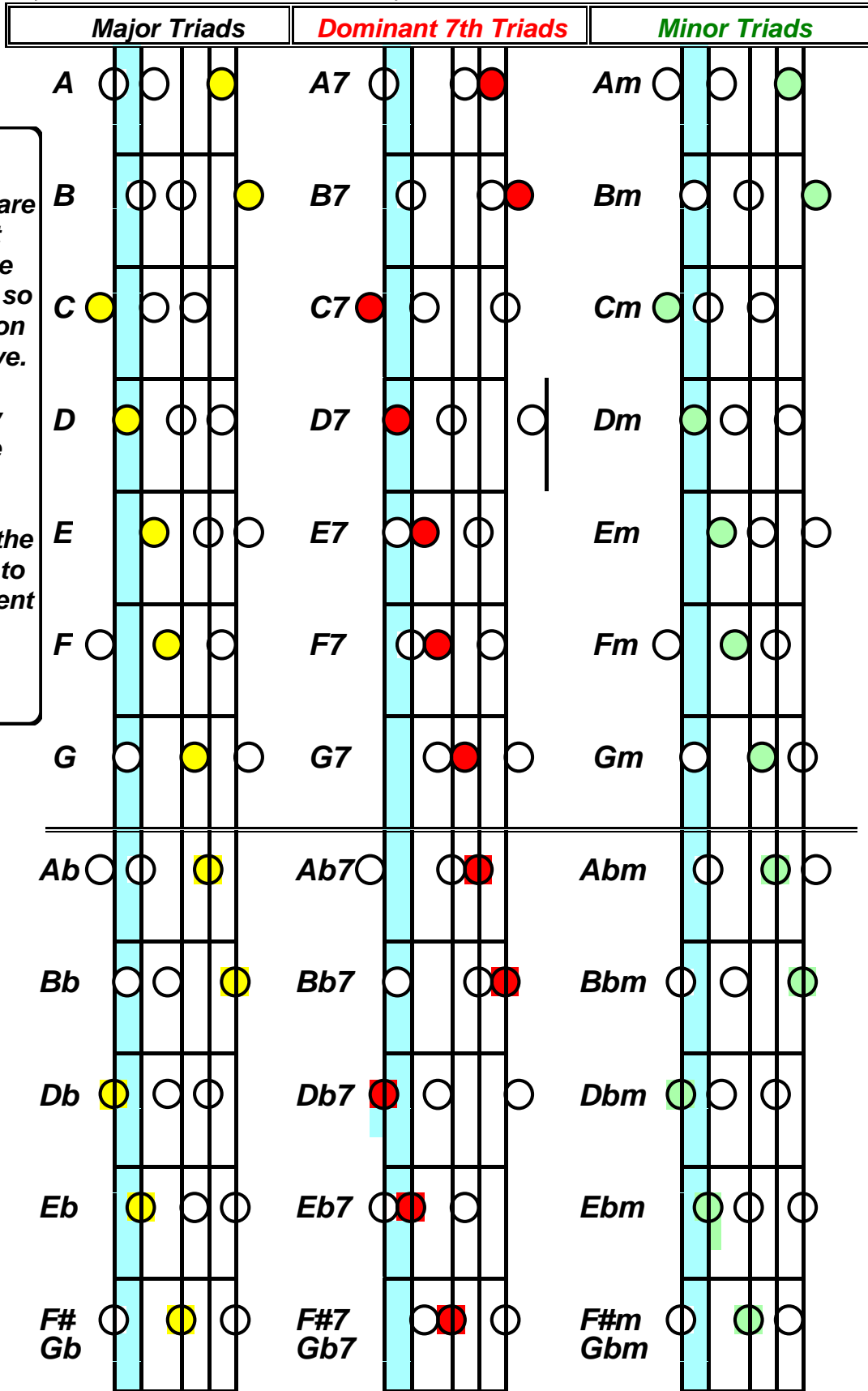
All of the Major Chords
Starting on White Keys



Lead Sheet Version (rhythm omitted)
b: 2 Silent Night Sampler



All Major, Dominant 7th, and Minor Chords

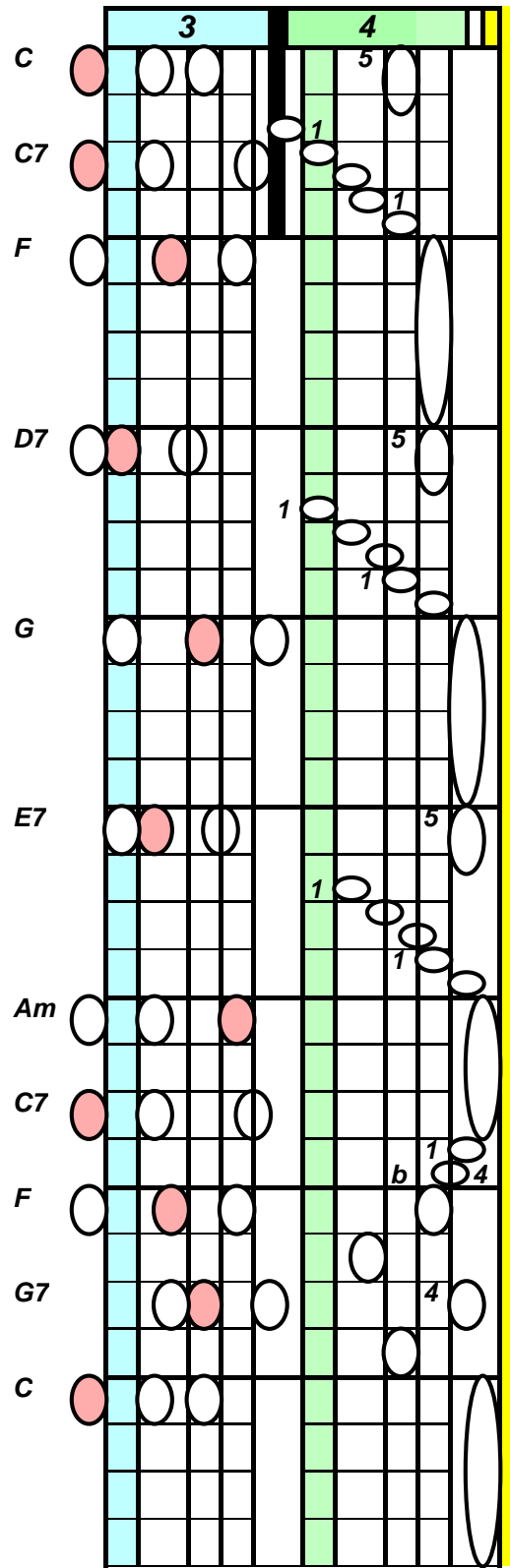
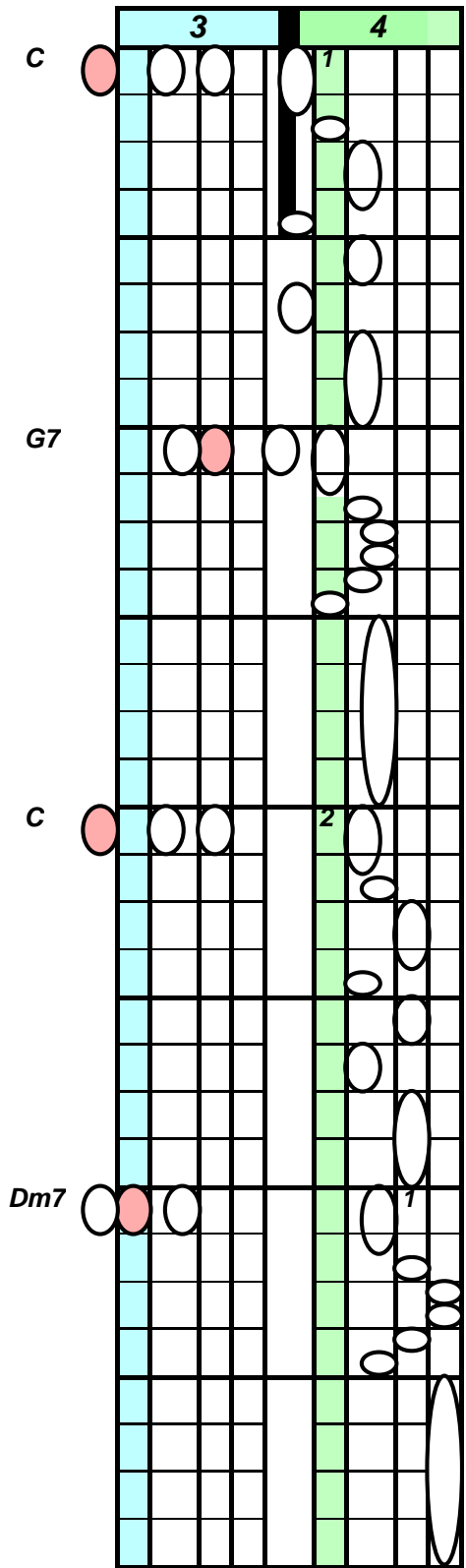


Note

All triads that are NOT in root position have been inverted so as to remain on the blue octave.

This greatly reduces the amount of sideways movement of the hand needed to play the different chords.

Do-Re-Mi – From the "Sound of Music"



We Three Kings of Orient Are

Lead Sheet Version

John Hopkins

Moderately #: 1 Beats: 2

Em 3 We
three kings
B7 of O-ri-ent are;
Em Bearing
gifts,
B7 we tra-verse
Em a-far,
D Field
and foun-
G tain,
moor
D7 and moun-
G tain,
F#dim Fol-
low-
ing yon-
Em der star.
B7
Em
D O
D7 ---

G 3 Star
of won-
C der,
Star
G of night,
Star
with roy-
Em al beau-
C ty
G bright.
Em West-
ward lead-
D ing,
G still
C pro-
ceed-
G ing,
D Guide
Bm us
G to
C the
per-
fect
G light.

Comparisons of Rhythm

Introduction. In traditional 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.

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 length is set 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!

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 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 note 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 time values that don't match their names. The 1/2 note is 2 beats; the 1/4 note is 1 beat, and so on. If the student persists, eventually the problem goes away.

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!

All of these problems with TN 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 TN. In fact, for those who persevere and learn to read this rhythm notation, its just fine. It works well. It does the job. And for those who learn to read this notation well, its 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.

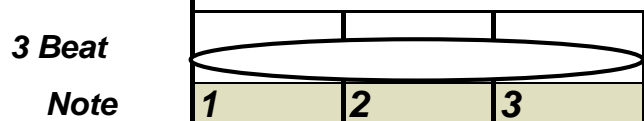
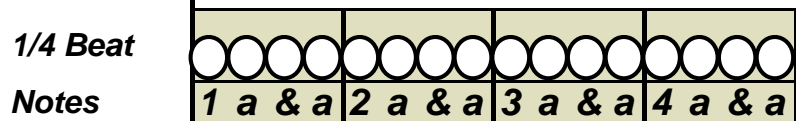
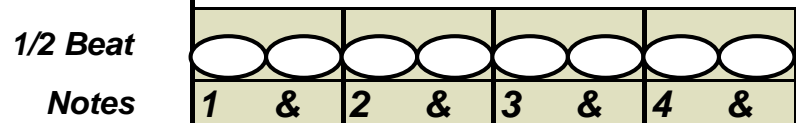
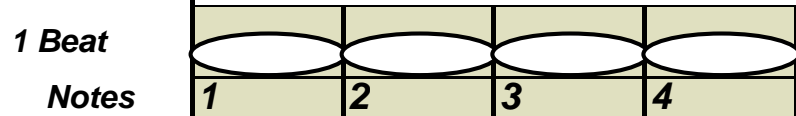
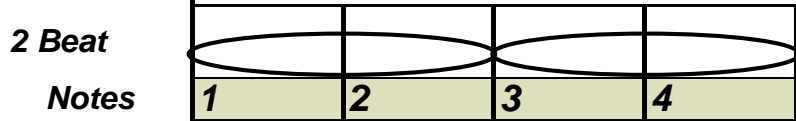
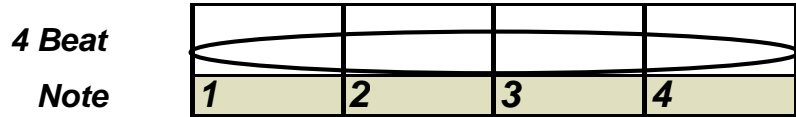
Relative Time Values in Traditional Rhythm Notation

Note Name *With Note Names and Beat Counting Symbols*
In 4/4 time with the quarter note as the beat.

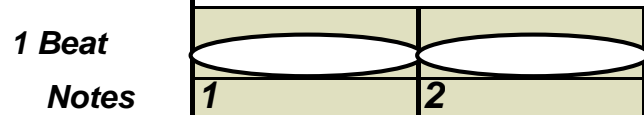
Whole Note	 4 beats	
Note	1 2 3 4	
Half Note	 2 beats	
Notes	1 2 3 4	
Quarter Note	 1 beat	
Notes	1 2 3 4	
Eighth Note		
Notes	1 & 2 & 3 & 4 &	
Sixteenth Note		
Notes	1 a & a 2 a & a 3 a & a 4 a & a	
Dotted Half Note		(The dot after a note extends the note by half its time value.)
Note	1 2 3	(in 3/4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

Time Values of Notes on Timelines

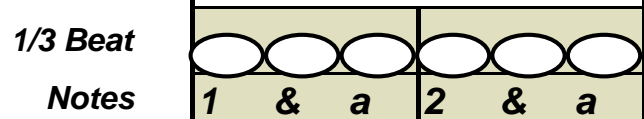
Note Name **Key map notation oriented horizontally for comparison.**
Time in Beats →



In 6/8 time:



In 6/8 time:



Please Note

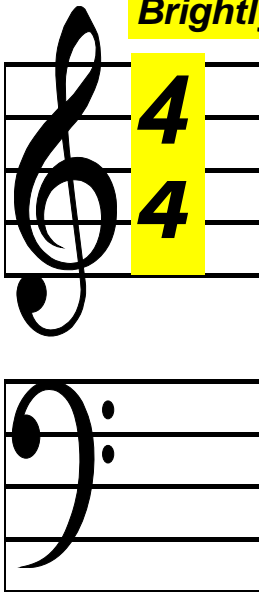
This timeline rhythm, used for the vertical key maps, is shown here in a HORIZONTAL orientation so that it can more easily be compared with the traditional rhythm notation.

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



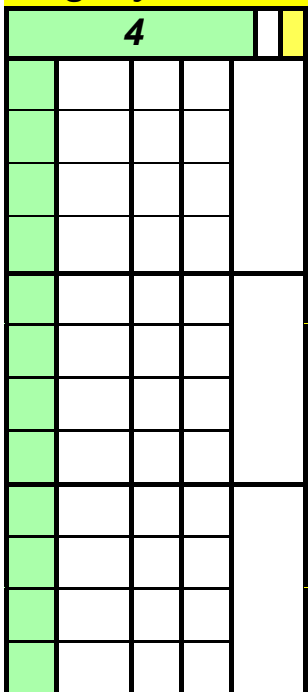
Here are staves for the traditional notation and for the key maps that are set up for the song on the next page. The same TEMPO markings (*Brightly*) are used at the beginning of both versions.

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.

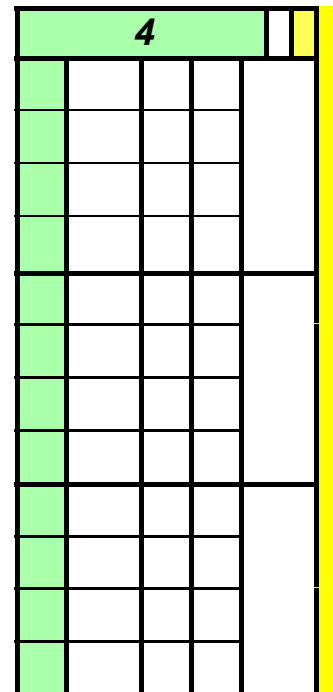
Unfortunately, the locations of the BEATS that follow the first beat of the measure are not shown in the traditional notation. The locations of the beats are determined by time codes in the notes.

Brightly Beats: 4



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.



Twinkle, Twinkle, Little Star - fragment

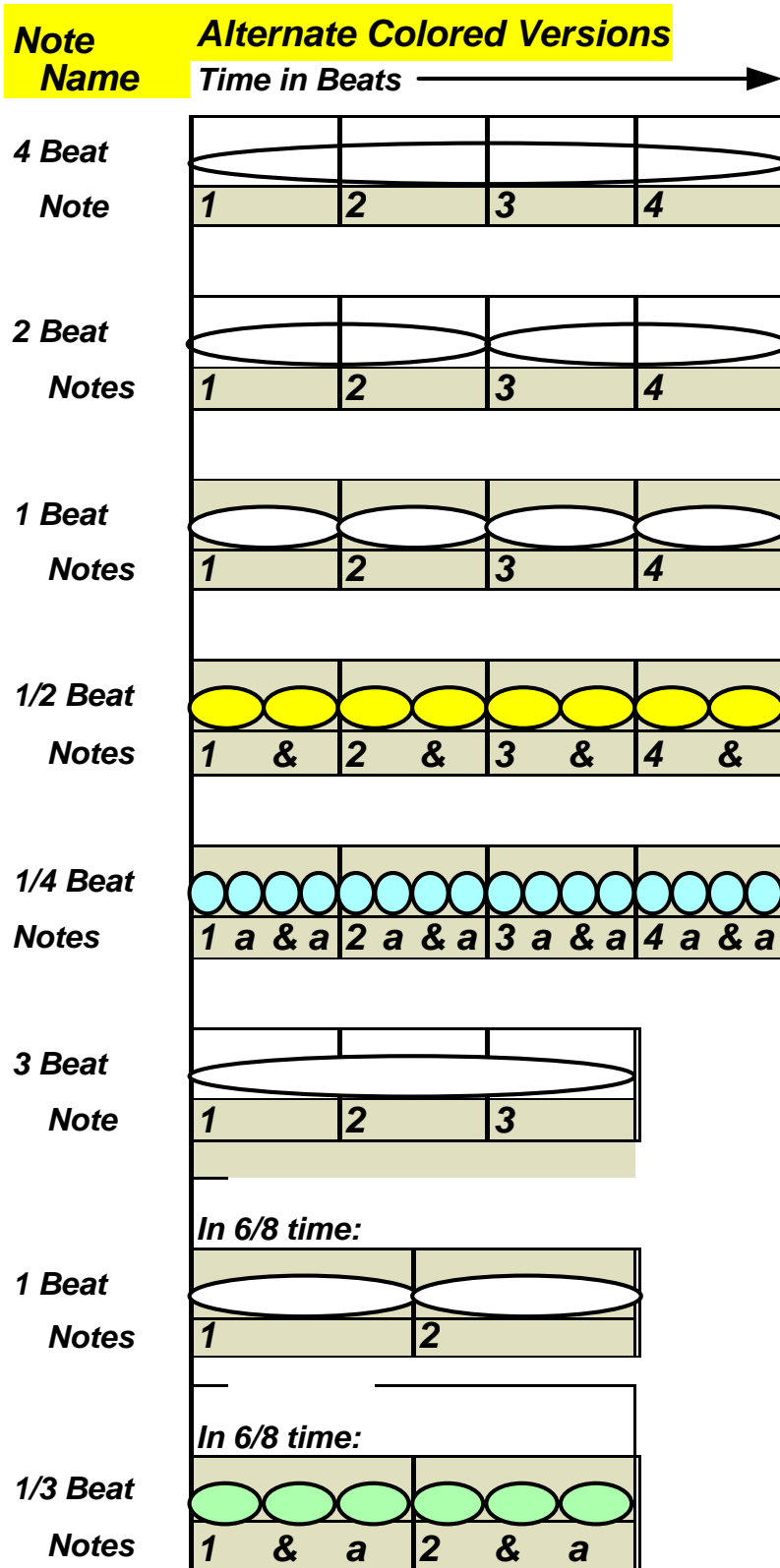
Brightly

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

Time Values of Notes on Timelines



Please Note

Some key map versions have colored shading for notes with fractional beats.

1/2 Beat - Yellow
 1/3 Beat - Green
 1/4 Beat - Blue
 Shorter - Red