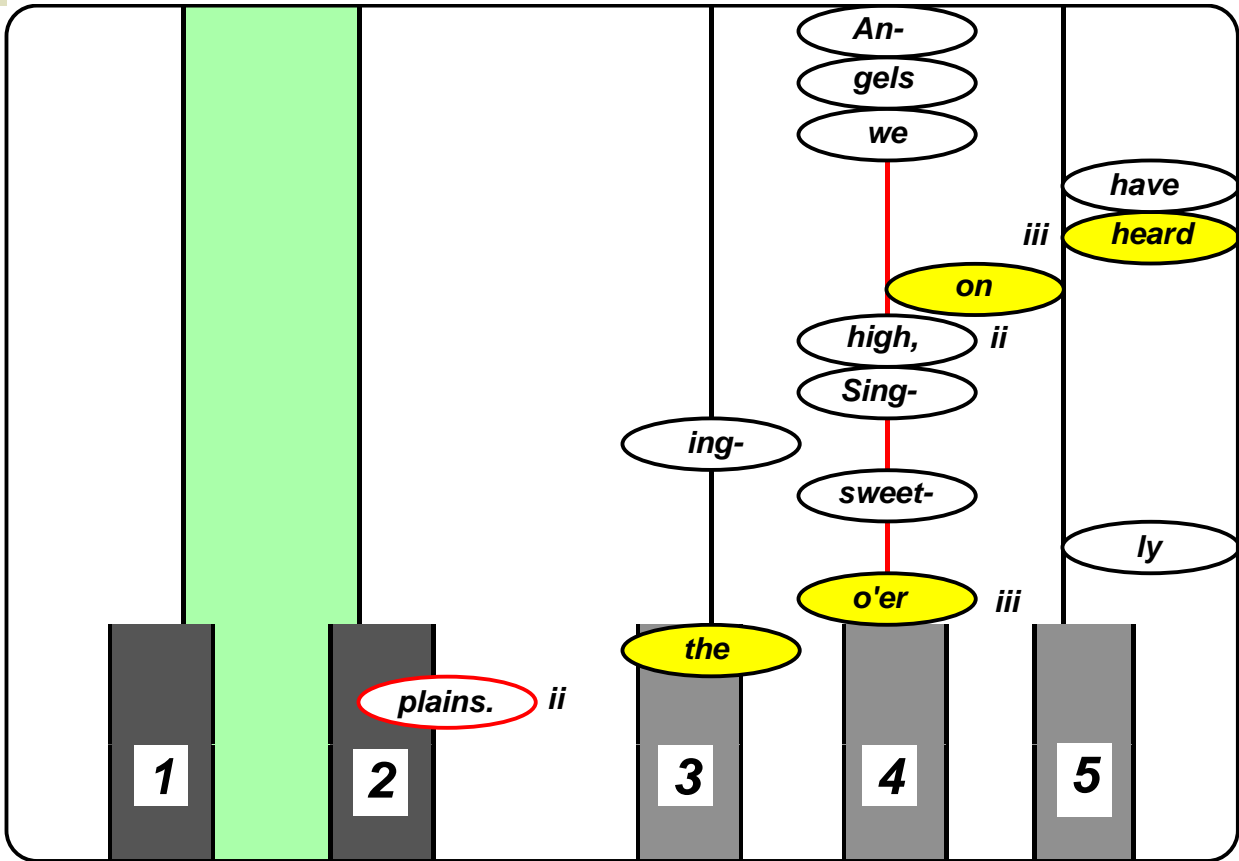


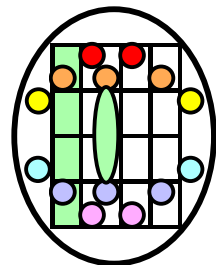
Introduction to the Music Innovator's Workshop

MIW-10

About Our Keyboard Notation, Instructional Materials, and Sheet Music



From the Music Innovators Workshop



From the Music Innovators Workshop LLC

Founded 1998 - continuing the research and development work begun in the 1960's

Location Fair Oaks, CA 95628

Nature of Activities Research, Development, Publication, Teaching

Field of Study Piano Graphics and Education

Areas of Concentration Innovative Keyboard Music Notation
Keyboard Basic Instruction

Website URL's musicinnovators.com
kmaps.com pianoGUI.com
musicwi.com pianogooney.com

Thesis *Viewing music notation as a visual art form in its own right opens up musical art to possibilities that go beyond what has been accomplished by our amazing traditional notation. Notation that shows PITCH in graphics that are directly proportional to the distance between the musical sounds and that show RHYTHM that is proportional to the timing of the sounds, along with the addition of COLOR graphics, provides significant enhancements to its visual impact. The use of these graphics also makes it possible to write notation that is quicker to learn, easier to read and play, and more pleasing and interesting to view.*

Summary of Research Results Decades of research based on experimentation and on experience with scores of students have resulted in the development of several notational formats and related instructional materials that provide effective options for learning and playing the keyboard with less stress and difficulty.

Brief Outline of Notational Formats Resulting From the Research

Key Diagram Format, Basis for the "Singing Keyboard" - SK Versions. Focused on providing keyboard notation for song melodies. Vertically oriented staff for tracking left/right movements of the the fingers on the keyboard. Five line vertical staff for each octave is based on the locations of the black keys on the keyboard. Large notes approximate the physical width of the white keys on the keyboard. Notes for each of the 7 octave groups are identical except for the colored backgrounds that distinguish them from each other. Rhythm is indicated with color coding.

Key Map Format. Similar to SK Versions - similar staff is also vertically oriented, but more compact. Focused on beginning and intermediate keyboard players. Notes are much smaller than in the SK Versions to save space. The notation is to scale, both for pitch and rhythm. Horizontal spacing of notes is proportional to the spacing of the musical sounds. Vertical length of each note is proportional to time. Rhythm is based on a timeline. The notes are easy to read and the notation is powerful enough to notate most of the classic keyboard literature. There is a unique place on the staff for every note of the chromatic scale.

Reader's Timeline (RT) Versions of the Grand Staff. This is a more "reader friendly" version of traditional notation - focused on the needs of intermediate and advanced keyboard players. The rhythm is shown to scale on a timeline. Pitch is notated on the grand staff, but notes for white keys are all white and notes for black keys are all shaded to distinguish them from the notes for the white keys. The player, then, does not need to learn to read the complicated key signature coding of the grand staff before playing advanced pieces. Double sharps and flats are notated as their natural enharmonic equivalents.

Introduction

This unit illustrates how our keyboard notations, instructional materials, and sheet music progress from music for beginners on to a level where students are ready to read and play from advanced materials, including traditional music notation. The notation progresses from the very easy-to-read keyboard diagrams illustrated on the following pages, through several stages until it arrives at our Readers Version of the Grand Staff (traditional notation on a timeline).

Before the keyboard notation can be understood or read, one must know how the keyboard is laid out with its seven identical groups of keys that we are calling "octave groups" (C D E F G A B). See the diagram of a piano keyboard on the next page. This understanding is necessary because the key diagrams (and maps) are designed to match the layout of the keys on the keyboard. (Technically, these diagrams are keyboard tablatures.) The notation diagrams (sheet music) and labels placed on the keyboard are both colored the 7 colors of the rainbow (in order) to help the player match the notes in the notation with the matching keys on the keyboard. Graphically, these colors have the same effect as do the colors on contour maps showing elevations in progressively different colors.

The next page, which displays a condensed diagram of the piano keyboard, shows how the keys are grouped into "octave groups" and how the colors are placed across the keyboard, with the colors of the rainbow (or color spectrum) in their natural order.

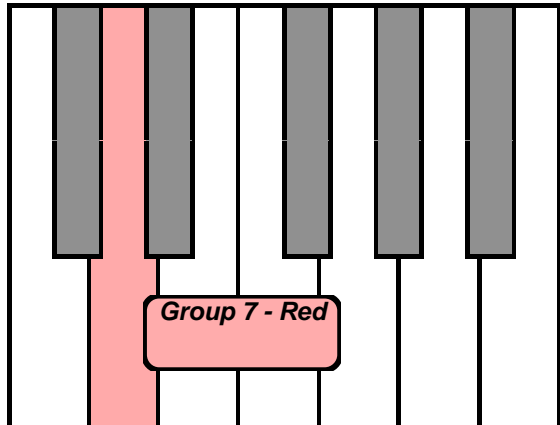
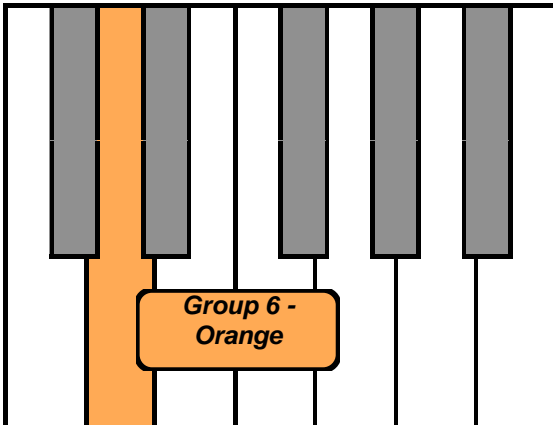
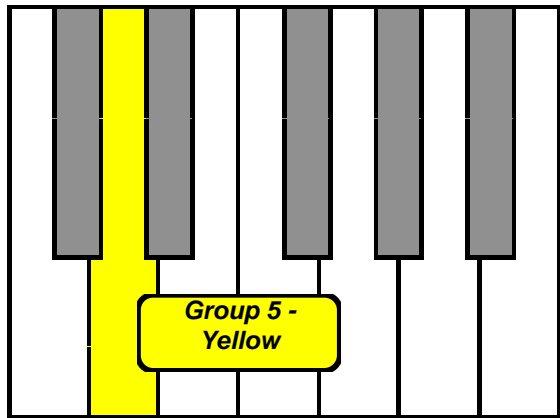
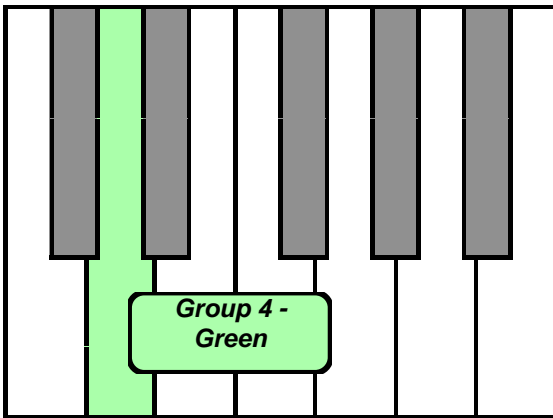
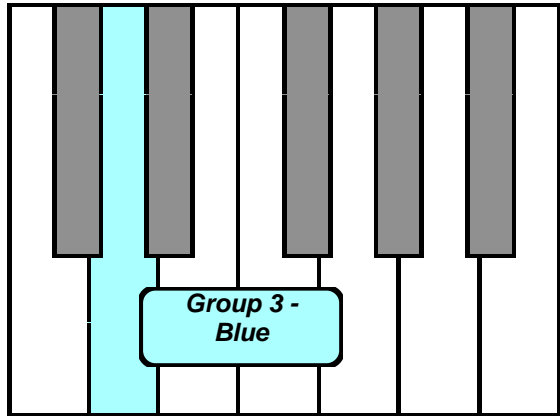
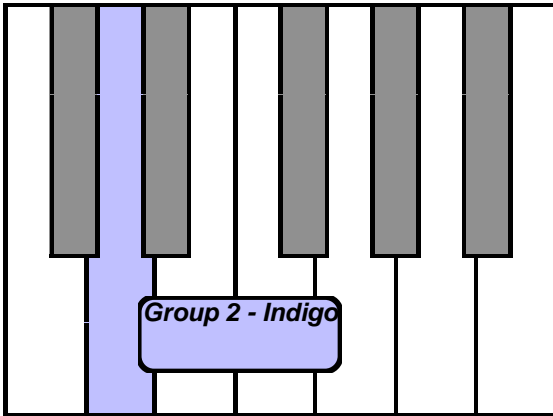
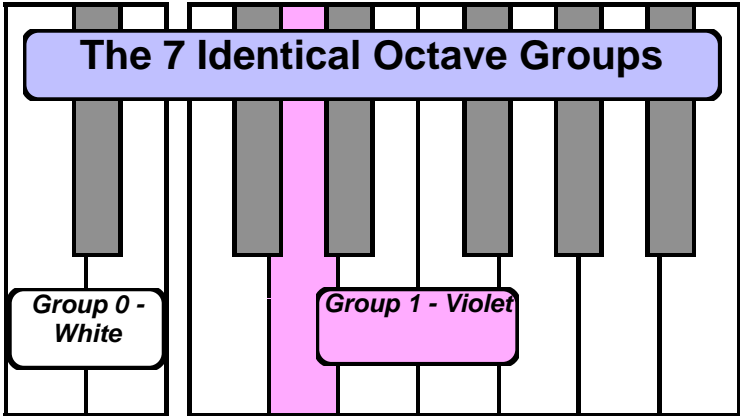
Then the following page shows examples of two of the seven colored labels that are placed on the keyboard so that the beginning player can learn to match the notes with the matching octave groups on the keyboard. (For those who have problems with color vision, the colored labels and the key maps are labeled with the standard octave numbers from 1 to 7 for the octave groups, from low sounds at the left end of the keyboard to the high sounds at the right.)

The pages that follow present a sampling of our three notational series with some explanatory comments. These comments are intended to clarify major notational details but are not extensive enough to provide a complete picture of how the notations work. Other units, however, are available to fill in the details.

With regard to the colors of the notes, color coding is used extensively on our maps and diagrams. Notice that the same color can be used for a variety of purposes - determined by the contexts in which they appear. The meanings of these codes are fully described in our units explaining each notation version.

A piano keyboard, viewed from left to right, is made up of the 7 octave groups shown here. Colored labels are placed on the keyboard identifying the keys with these colors.

The staff on the sheet music is colored with these colors, showing where to play the matching octaves on the keyboard.

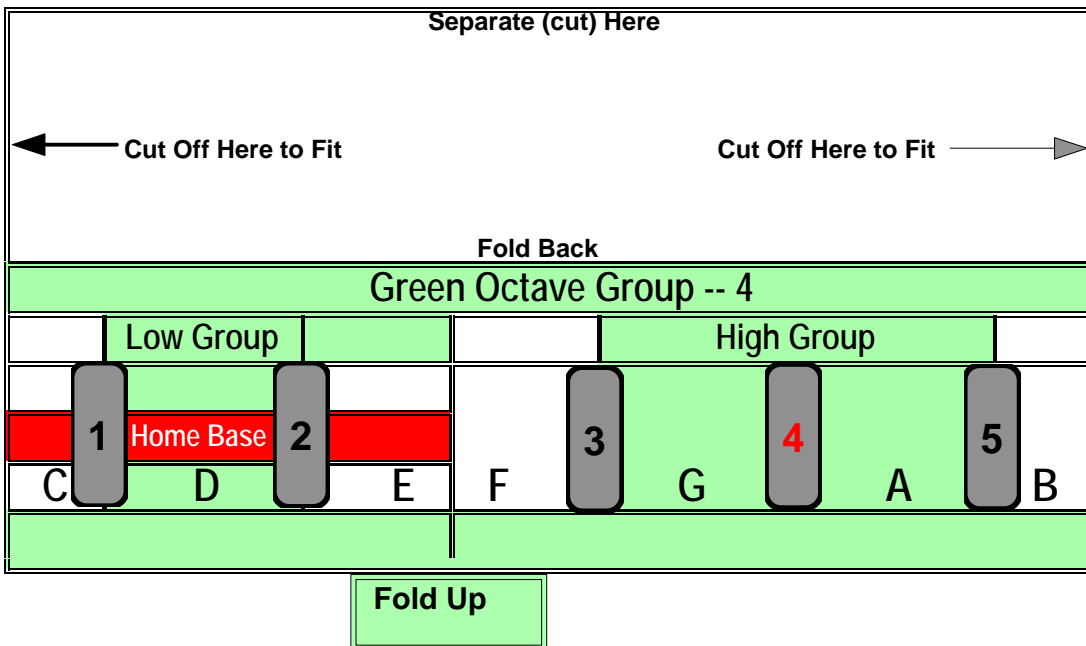
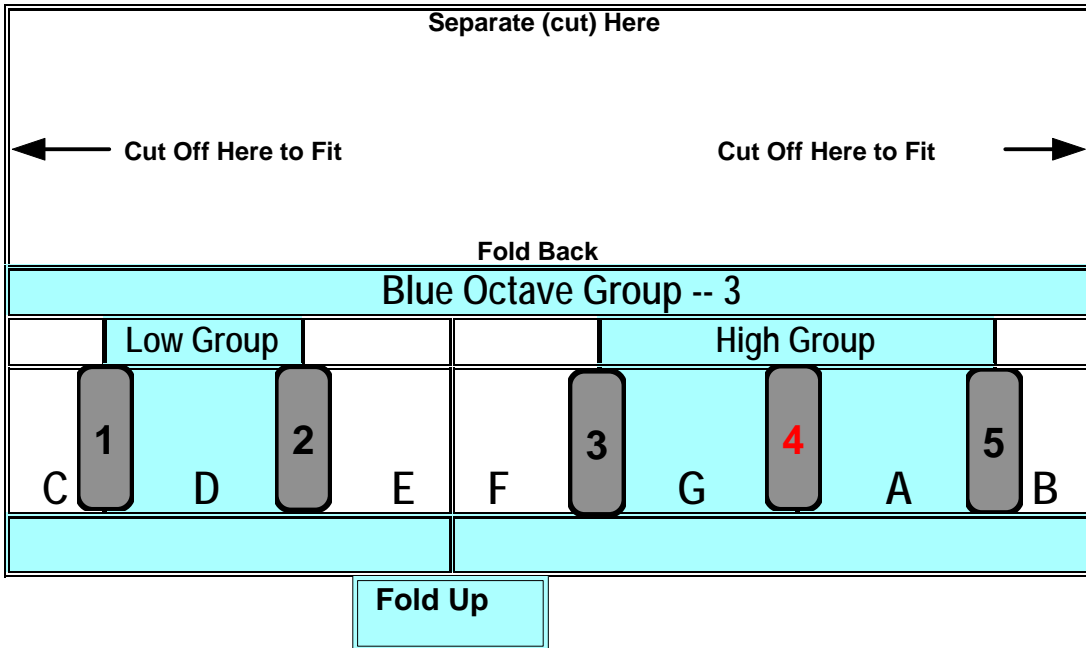


H
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K
e
y

Octave Group Labels

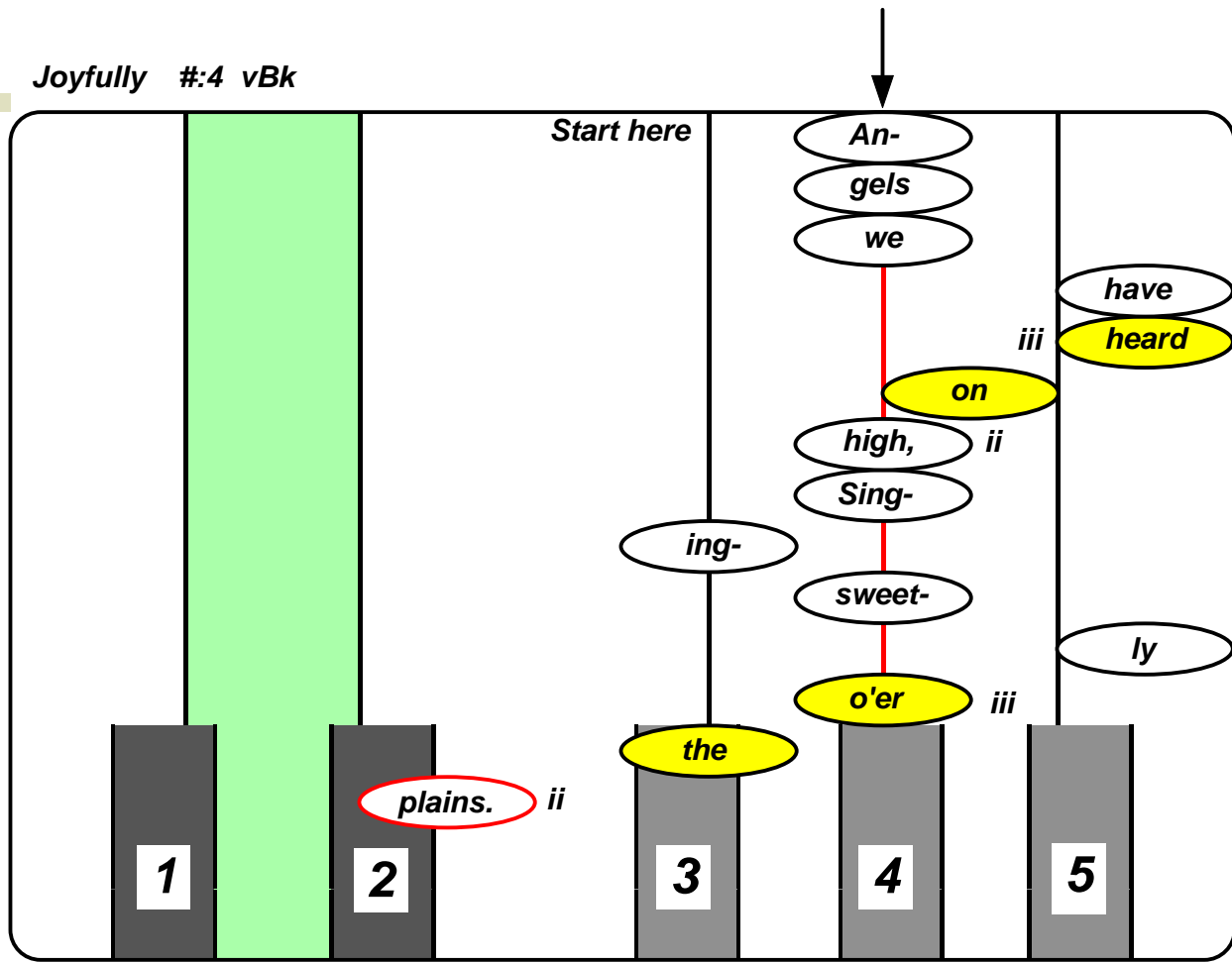
These are two of the 7 labels used for the full keyboard. The green label is placed at the center of the keyboard. The C of this group is "Middle C." The labels must be printed at a size that matches the size of the keys on the keyboard. These labels, standing upright, are slipped behind the black keys of each appropriate octave group on the keyboard. The labels remain semi-permanently on the keyboard until no longer needed by the student.



The five black keys of each octave group are given "addresses" in addition to their standard names. From left to right, the addresses are (as shown), 1, 2, 3, 4, and 5. In our music, we refer to these keys by their addresses rather than by their standard names - for clarity and simplicity.

An SK Key Diagram For Beginning Students

Diagrams of this kind are to be cut out and placed upright behind the black keys (but in front of the labels shown on the previous page) to show the direct connection between the notes and the keyboard. They are sized to fit the standard keyboard. Students play several songs in this format so that they can psych out how the diagrams work. Then they can progress to reading a full page format that is large enough to notate an entire song. Students that are able to play the songs on these SK diagrams are also ready to begin playing from key maps.



Notice that notes placed ON (straddling) the vertical lines are played on BLACK keys and that notes BETWEEN these lines are played on WHITE keys. Notes with red borders are played with the left hand. For the SK Diagrams, rhythm is color coded within each note. White is 1 beat; yellow, 1/2 beat. The Roman numerals refer to multiples of the basic time values indicated by the colors.

About Our Graphical User Interface - A large part of the success of our keyboard notation can be attributed to the fact that it provides a "graphical user interface" for the keyboard - similar in concept to the WINDOWS software now used in computers and other electronic devices. With this concept, one points to an object on the computer screen (using a "mouse" device) to make the computer carry out a desired action described on the screen. Similarly, one can see a note on our sheet music that visualizes a key on the keyboard and simultaneously press (play) the visualized key on the keyboard - a one to one relationship.

Computers run on software that is based on a code that only a relatively few people know and understand. This code is transformed by the computer into the view that one sees on the computer screen. With this graphical view on the screen, and the help of the keyboard and mouse, one can control the computer with relative ease. This is in sharp contrast to the early days of computers when one had to know the underlying code before being able to control the computer. In those days, only a few people were able to run a computer.

The best known "graphical user interface" on computer screens is called "WINDOWS." Windows makes it possible for anyone to learn to control a computer after a modest amount of instruction. In very much the same way, TRADITIONAL MUSIC NOTATION IS LIKE THE CODE underlying the computer operations. Traditional music notation IS CODE! It is a code that takes a great deal of time and effort to master. As with computer code, a few people are able to master it - after a great deal of effort.

In the Music Innovator's Workshop, we refer to the musical notation used on our preparatory sheet music and instructional materials as KEY DIAGRAMS and KEY MAPS, or key map notation. This notation shows (maps) where you place your fingers on the keyboard. It does the same thing for the musical keyboard as Windows does for the computer. It is a "graphical user interface" for the musical keyboard. This sheet music SHOWS you visually WHICH keys to play, and in what sequence. Key maps also graphically show the rhythm.

Our key maps don't mean "instant piano" any more than Windows means "instant computing." One must put some effort into learning how the device works. But learning to play from key maps is VASTLY easier and faster than learning to read the musical code called "traditional notation."

Progressive Nature of the Notation Versions - Our Notation comes in three basic versions; Key Diagrams, Key Maps, and RT Grand Staff (Reader's version of the traditional grand staff on a Timeline). These versions are progressive in nature. The KEY DIAGRAMS are the easiest to learn and are suitable for notating songs and other simple melodies. (See the Key Diagram on the next page.)

KEY MAPS are also easy to learn and read, but also are suitable for notating a broad variety of advanced pieces and are more compact on the page. The RT GRAND STAFF NOTATION introduces the traditional grand staff in a version that is much easier to learn than the standard version of this notation. After learning to read this notation, a student can progress to reading the traditional grand staff notation with a minimum of additional effort. Thus, students progress through all of these versions as their playing and reading skills develop over time.

Because key diagrams and maps are the easiest to learn and read, they are the most suitable for beginners, though the key maps are also suitable for notating advanced pieces. The RT Grand Staff versions are called READER'S VERSIONS because they are versions of the grand staff that we have modified to make more READER FRIENDLY - easier to learn, easier to read.

KEY DIAGRAMS AND MAPS are notated on vertical staves derived from the 5 black keys of each octave group of the keyboard (from C up to B). This type of notation is sometimes referred to as "piano roll notation" because of its resemblance to the music rolls of the old-fashioned player pianos, with their punched holes for the keys to be played. Beginners learn to match the keys on the keyboard with their notes on the key maps with very little effort.

About Learning to Play the Keyboard - Learning to play the keyboard is difficult and full of challenges - physical, mental, and emotional. Learning to read and play the keyboard from traditional notation is also difficult and full of challenges. We have seen over and over again that these COMBINED CHALLENGES are just too much for many students. Hence, the enormous dropout rate for piano students.

Learning to play the keyboard while AT THE SAME TIME learning to read traditional notation is just too much of a challenge for many students! If the goal is to learn to play from traditional notation, it can be postponed until the student first has gained a reasonable amount skill at PLAYING the keyboard.

SK Diagram Version - It's a Small World

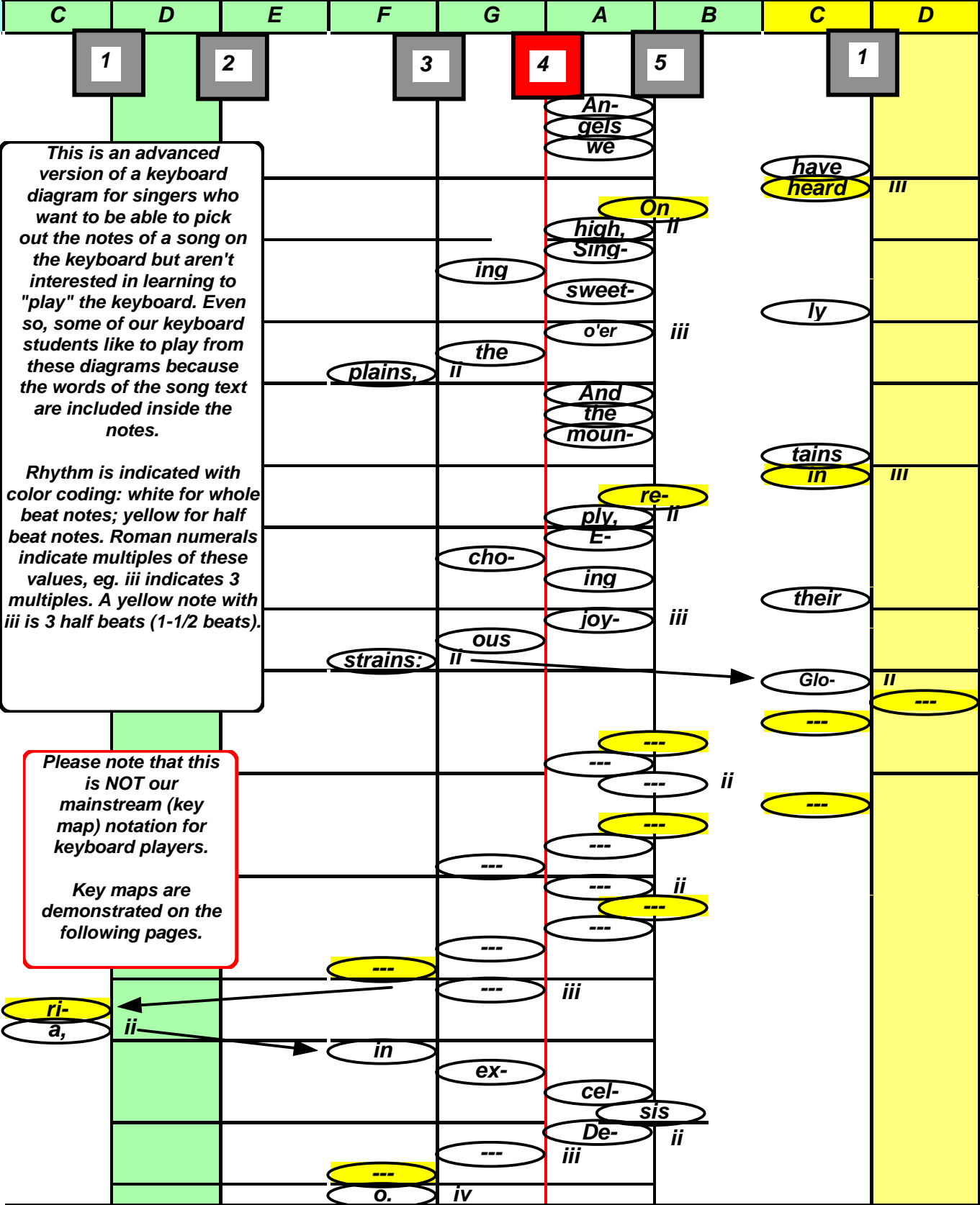
b: 1 Beats: 4 **LH** | **RH** *Pitch and Rhythm Notation*

	C	D	E	F	G	A	B	C
						Goal Post		
				1	2	3	4	5
F				1	It's a	iii	small	White notes are 1 beat and its multiples.
C	Here's a song in the full-page format. Most students can play the melody of a song like this at the first or second lesson - if they already know the tune. (Learning to read the rhythm notation comes later.)			world	af- ter	iii	Yellow notes are 1/2 beat and its multiples.	
F					all,	ii		
C					It's a	iii		
F					world	small		
F					af- ter	iii	Blue notes are 1/4 beat and its multiples.	
Bb					all,	ii		
Gm					It's a	iii		
C	small,	3	ii	small,	ii			
F			world.	iii				

Singing Keyboard Diagram - SK (advanced)

Joyfully b: 1 Beats: 4

Lead Sheet Version



This is an advanced version of a keyboard diagram for singers who want to be able to pick out the notes of a song on the keyboard but aren't interested in learning to "play" the keyboard. Even so, some of our keyboard students like to play from these diagrams because the words of the song text are included in the notes.

Rhythm is indicated with color coding: white for whole beat notes; yellow for half beat notes. Roman numerals indicate multiples of these values, eg. iii indicates 3 multiples. A yellow note with iii is 3 half beats (1-1/2 beats).

Please note that this is NOT our mainstream (key map) notation for keyboard players.

Key maps are demonstrated on the following pages.

Key Map - Elementary

The key maps are built on the same basic pattern as the keyboard diagrams, but in a more compact format. The black keys are represented by the vertical staff lines as in the diagrams, but are arranged so that the horizontal spacing of the notes is scaled to match the spacing of the sounds. **Rhythm on the key maps is on a timeline** so that the visual length of the note tells how long to hold it. The thin horizontal lines across the staff mark the beats. The heavier horizontal lines mark the measures.

Joyfully b: 1 Beats: 4

The image displays three vertical key maps for the piece "Joyfully" in 4/4 time. Each map consists of a 5-line staff with a green header indicating 4 beats. The notes are represented by ovals and circles, with their horizontal length indicating their duration. The first map covers the lyrics from "An-gels we have heard," to "And the mountains". The second map covers "in reply, E-cho-ing their joy-ous strains: Glo-". The third map covers "ri-a, in ex-cel-sis De-o." and includes several dashed lines representing missing notes or rests.

Key Map - Moonlight Sonata - Conclusion

This beginner's arrangement is in Beethoven's original key of C# minor (4# plus B#). It uses both hands but, mostly, only one hand at a time. In this version of the notation (vP), the notes with pink fill are played by the left hand.

Key Map - 2-part Format

This standard version (vS) adds a left hand part to the melody. The LH is assigned to the bass notes (below Middle C). The RH plays the other (treble) notes. The vertical bar between Octave Groups 3 and 4 visualizes this division between the bass and treble notes. When fingering is shown, it is always placed next to its note to avoid confusion with notes above or below the number.

Joyfully *b: 1* **Beats: 4**

The notation for "Joyfully" consists of two staves. The left staff (LH) has a blue background for octave group 3 and a green background for octave group 4. The right staff (RH) has a white background. A vertical black bar separates the two octave groups. Fingering numbers (3, 5, 2, 1, 2) are placed next to notes in the LH. The lyrics are: An-gels we have heard, on high, Sing-ing sweet-ly o'er the plains,

Traditional French Tune

The notation for "Traditional French Tune" consists of two staves. The left staff (LH) has a blue background for octave group 3 and a green background for octave group 4. The right staff (RH) has a white background. A vertical black bar separates the two octave groups. Fingering numbers (1, 2, 5, 2, 5) are placed next to notes in the LH. The lyrics are: And the moun-tains in re-ply, E-cho-ing their joy-ous strains:

Key Map - Leadsheet Format

Key maps for songs are often notated in a leadsheet format, for which they are well suited, showing song text, notated melody and chords in one compact unit. The notated triad chord symbols are shown in the blue octave group with pink shading to identify the root of each triad. Standard modern chord symbols are shown as well.

Joyfully

b: 1

Beats: 4

Version: vS CS

Traditional French Tune

	<p>An- gels we have heard, on high, Sing- ing sweet- ly o'er the plains, And the moun- tains</p>		<p>in re- ply, E- cho- ing their joy- ous stra Glo- --- --- --- --- ---</p>
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Key Map - Intermediate Level

Notes for left hands crossing the border (the vertical black bar) between bass and treble sounds have pink fill for identification.

Joyfully *b: 1* **Beats: 4** *Version: vS* *Traditional French Tune*

	<p>An- gels we have heard, on high, Sing- ing sweet- ly o'er the plains, And the moun- tains</p>		<p>in re- ply, E- cho- ing their joy- ous strains: Glo- --- --- --- --- --- ---</p>
--	--	--	---

Briskly #: 4 Beats: 4 vS

The left hand staff is divided into four measures. Measure 1 (blue background) contains a whole note G2. Measure 2 (cyan background) contains a half note G2 and a half note F2. Measure 3 (green background) contains a quarter note G2, a quarter note F2, a quarter note E2, and a quarter note D2. Measure 4 (green background) contains a quarter note G2, a quarter note F2, a quarter note E2, and a quarter note D2. A sharp sign is placed below the first note in measure 2. Fingerings are indicated by numbers 1-4. A pink oval highlights the first note in measure 2.

Note:
Hands are
crossed.

Note: End
of crossed
hands.

The right hand staff is divided into five measures. Measure 1 (pink background) contains a whole note G4. Measure 2 (blue background) contains a whole note G4. Measure 3 (cyan background) contains a half note G4 and a half note F4. Measure 4 (green background) contains a quarter note G4, a quarter note F4, a quarter note E4, and a quarter note D4. Measure 5 (yellow background) contains a quarter note G4, a quarter note F4, a quarter note E4, and a quarter note D4. Fingerings are indicated by numbers 1-4. A sharp sign is placed below the first note in measure 5. Red borders highlight notes in measures 3 and 4.

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.

Crossovers are LH and RH crossing the bass/treble dividing line at Middle C. RH notes have red borders. LH notes have pink fill.

RT Instructional Version - on a Timeline

The RT versions provide a transition from the diagrams and maps to the grand staff and traditional notation. This instructional version begins with easy songs on the grand staff notated with timeline rhythm notation. For intervals larger than a third, note names are often shown to help with the transition. Natural notes are white, flats and sharps are shaded black or gray. Flash cards are used for help in learning the note names.

Lively (swing it) b: 1 Beats: 4 Traditional American Game Song

C7 F C7

If you're hap-py and you know it, clap your hands. If you're

F Bb

hap-py and you know it , clap your hands. If you're hap-py and you know it, then your

F C7 F

face will sure-ly show it, If you're hap-py and you know it, clap your hands.

RT Version - on a Timeline

Minuet

From the Third French Suite

J.S. Bach

Poco Allegro #: 2 Beats: 3

The first system of musical notation consists of two staves: a treble staff on top and a bass staff on the bottom. The treble staff contains a series of notes, with some notes marked with a small circle above them. The bass staff contains a series of notes, with some notes marked with a small circle below them. The notation is presented in a simplified, rhythmic format.

The second system of musical notation consists of two staves: a treble staff on top and a bass staff on the bottom. The treble staff contains a series of notes, with some notes marked with a small circle above them. The bass staff contains a series of notes, with some notes marked with a small circle below them. The notation is presented in a simplified, rhythmic format.

The third system of musical notation consists of two staves: a treble staff on top and a bass staff on the bottom. The treble staff contains a series of notes, with some notes marked with a small circle above them. The bass staff contains a series of notes, with some notes marked with a small circle below them. The notation is presented in a simplified, rhythmic format. A double bar line is present at the end of the system, with a small circle below it.

After Repeat, Go to Next Page

RT Version - Angels We Have Heard on High

Joyfully *b: 1* Beats: 4

Traditional French Tune

An- gels we have heard, on high, Sing-ing sweet-ly o'er the plains,

F C F C F C F

And the mount-tains in re-ply, Ech-o- ing their joy- ous strains:

Dm C F C F C F

Glo- --- --- --- --- ri- a

F Dm G7 C F Dm C

in ex- cel- sis De- -- -- o.

F C F C F C F

RT Version - Excerpt from Beethoven's "Moonlight" Sonata

With Expression #: 4 Beats: 4 vS

(+8va = Also Play one octave lower)

+8va +8va +8va

+8va +8va +8va

+8va +8va +8va

About Our Instructional Materials - Our Instructional Materials are focused on beginning through intermediate levels of study and playing. This encompasses two to four years of study for the average student. These materials do not cover advanced levels of study, as we expect the advanced levels of study to be accomplished using traditional notation. On the other hand, we have not hesitated to provide key map versions of advanced pieces in our collections.

We have developed preparatory instructional materials based on the KEY DIAGRAMS and MAPS and other instructional materials based on the READER'S VERSIONS of the grand staff. These materials provide substantial beginning and intermediate keyboard instruction using the advantages provided by notations that are relatively easy to learn and read.

As with most keyboard instruction, these materials are intended to be used with the help of a COMPETENT TEACHER or coach. Our instructional materials provide a lot of detail, lots of exercises, and graded pieces to play - but they simply don't do the job by themselves. We encourage anyone using these materials to find a competent teacher or coach for guidance through the very long process of becoming a well educated pianist.

The SINGING KEYBOARD SERIES (SK) provides a preparatory level of notation and instruction. It is designed for singers primarily interested in learning to pick out the sounds of songs on the keyboard. (It also serves as the entry level of music and instruction for keyboard students learning to play from the key maps.) The notes are sized on the page to be the same width as the white keys on the standard keyboard - a one to one relationship. The rhythm is provided by a simple color code.

The KEYBOARD PREP SERIES (PK) is based on the keyboard diagrams and key maps. It focuses on learning to read and play single note melodies using both hands and on gaining the physical skills necessary to play skillfully and comfortably. It focuses equally on learning to read and play both pitch and rhythm accurately. There are many exercises, but most of the learning is focused on learning to play songs and other melodies from our collections of children's literature and other classics.

In the CHORD PREP SERIES (PC) the instruction advances to playing two or more notes at the same time. The focus is on playing melodies with the right hand and chords with the left hand. The music continues to be based on the key map notation. Three-note chords are emphasized. This series prepares students to play from key map lead sheets that contain both the notated key map chord symbols and the standard chord symbols used in popular music.

The GRAND STAFF PREP SERIES (PG) is designed to help students add traditional grand staff notation to their developing skills at playing the keyboard. The notes are placed on the grand staff (treble & bass clefs) but rhythm continues to be based on the timeline notation used for the key maps. Sharps and flats are identified with black and gray shading.

Contents of Our Sheet Music Collections and Pieces - A large part of our development effort has gone into notating public domain musical collections and individual pieces, using the versions of notation that we consider most useful. These pieces demonstrate the viability of the notational versions as well as provide playable versions of a great variety of wonderful musical literature. This sheet music is available on our website: www.musicinnovators.com - also available by entering a shorter site name: kmaps.com or musiciw.com.

About Traditional Notation - Traditional notation was developed by composers so that they could record their compositions for themselves and others. It needed to be compact, workable, and easy to write down. Indeed, it reaches these goals very well. It is one of the marvels of civilization and greatly to be treasured. It needs to be preserved, but it also needs to be supplemented with more-readable versions, as with the versions we have been developing.

Our versions are presented with the **GREATEST OF RESPECT** for the marvel of traditional notation. It is an essential tool for musicians playing the classics and for many others as well. We understand that for many musicians, an important goal is to be able to read and play from traditional notation with ease and skill. We also believe that lessons based on our versions of the notation **PROVIDE A DIRECT AND EFFECTIVE PATH** toward that goal. We hope and expect that many who opt to use of our versions will go on to **LEARN TO READ AND PLAY FROM TRADITIONAL NOTATION** as well.

Summary

The **MUSIC INNOVATORS WORKSHOP (MIW)** is a musical research and development project. It was founded in 1998 by a retired industrial engineering educator with a degree in music to explore the possibilities of making the **PIANO (and all keyboard instruments) EASIER TO LEARN AND PLAY**. The focus of this research is on developing versions of music notation that are easier to learn and read, and with the help of these easier versions, make the piano (and other keyboard instruments) easier to learn and play.

One of the main objectives underlying this research is to reduce the high levels of stress experienced by many students when learning how to play the keyboard. **STRESS REDUCTION** has become one of the main focal points for our research. Another key objective recognizes that sheet music is a **WORTHY ART FORM** in its own right. Great care is taken in the development of our notational versions to bring out their visual beauty in color and form.

The years have passed and thousands of hours of research and development have gone by. Scores of students have used and tested the experimental notations during the development process and have greatly influenced the results. These research and development efforts continue (2017).

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