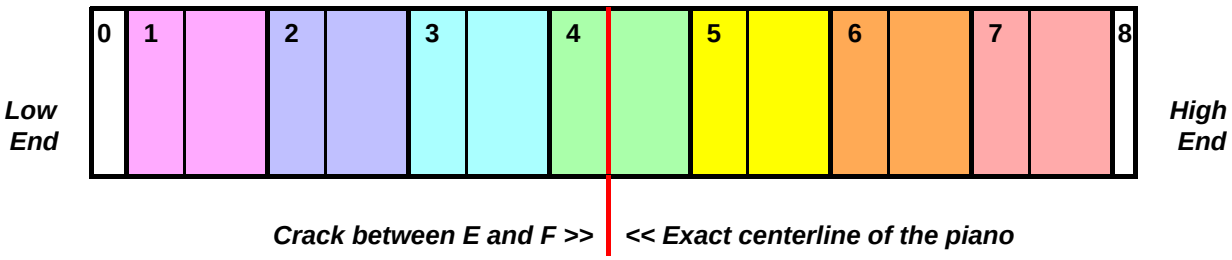
1905-17

Advantages of Key Maps Illustrated

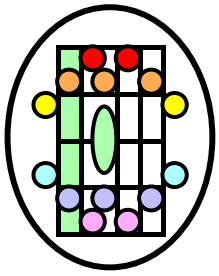
KMA

1. Notes move left and right in sync with finger movements and visually identify which keys to play. 2. Notes are drawn to scale for both PITCH and RHYTHM.

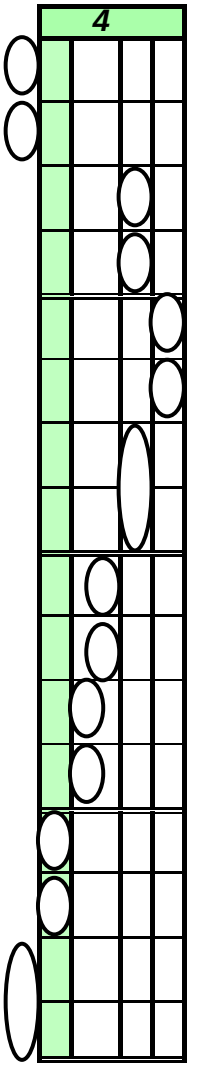
Based on a Piano Keyboard Labeled With The Rainbow Colors of the 7 Identical Octave Groups



From the Music Innovator's Workshop



Why Key Maps and Diagrams?



Twin-
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twin-
kle
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How
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what
you
are;

The vertical lines stand for the black keys. The spaces between them are for the white keys

I have a background in industrial engineering. Industrial engineers work on how to make or build things. They work on figuring out how to make something in the shortest time and at the least cost. Then they try to figure out some easier way to make it in even less time and at a still lower cost. Then they try to figure out somthing else to take it's place that will do the same job in less time and ....

You get the idea. The mentality is "make it BETTER, but make it easier, make it cheaper, make it faster!" This mentality has been responsible for much of the wealth and prosperity found in the modern world. It applies to most of the things that we do at the office, at the factory, at home, or at pla.... No, not at play. Some of the things that we love and do have no business going faster, or cheaper , or more simply. What does this have to do with music? Music is play ... its art ... its pleasure. (But it can be VERY hard work!) No room for industrial engineering?

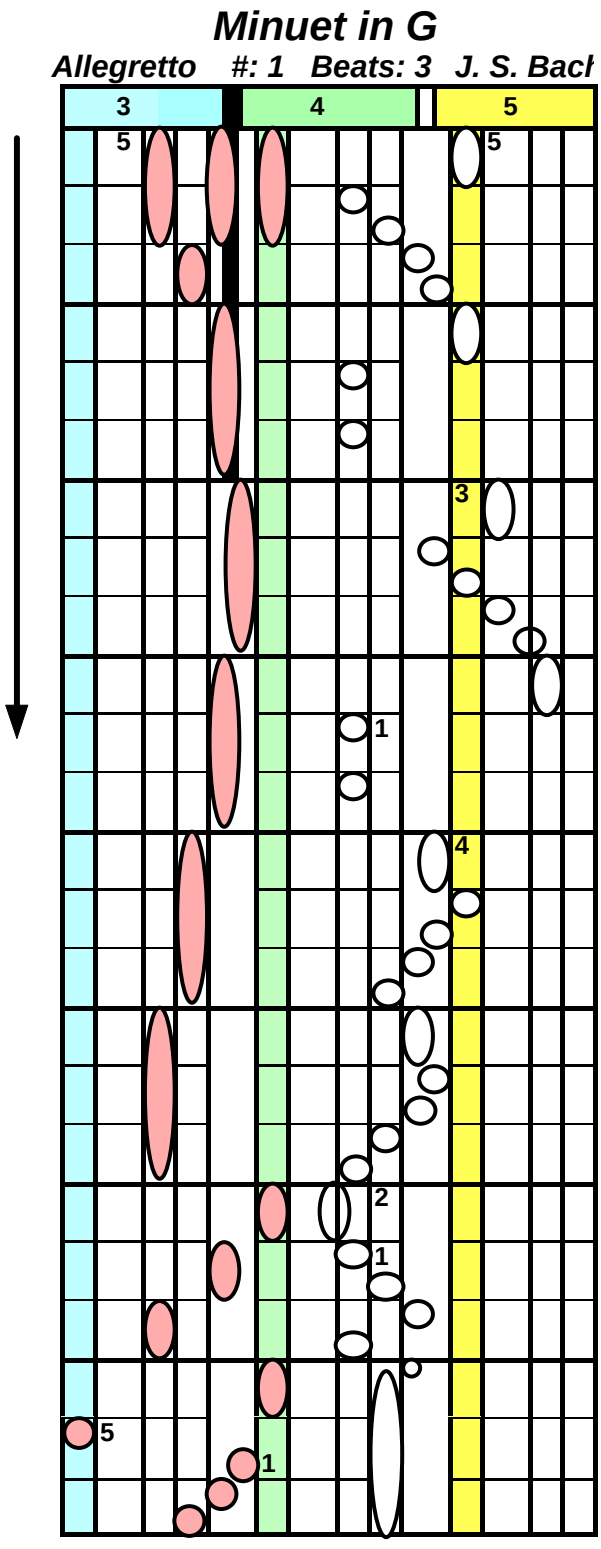
Let's talk about the piano. Is the piano music? What a silly question. No, the piano is a MACHINE. Do industrial engineers have anything to do with pianos? You bet they do. If pianos were made the old way (before industrial engineering) they would be so expensive, hardly anyone could afford one. But this really isn't the point. A pianist is a machine operator - like it or not. (Of course, he or she could also be a talented virtuoso, able to make incredibly beautiful music on the piano. But this doesn't change the fact that the piano is a MACHINE!)

The piano is a very complicated machine to run. You can run it the hard way or the smart way. Which way would you choose? Which way is which? Consider this. Let's say that you want to run a computer (computing machine) but don't know how. A few years back, you had one choice: Learn to use the complicated code that has been designed to let you communicate with the computer. It was called DOS (Disk Operating System). Only a few genius's learned this complicated coding system and were able to run a computer.

Fast forward to today. Even little kids run computers now. How did this happen? The simple answer is "windows." It's a graphical user interface. It lets you point and click at what you want. No code to learn. Now anyone can run a computer. What does this have to do with the piano? Just this. The piano is run by knowing a similarly complicated code. It's called the Grand Staff. This is an abstract code that bears no similarity to what you see when you look at the keyboard. This is the hard way to do piano.

The smart way is to use a graphical user interface that basiclly lets you "point and click" the piano keys that are notated on your sheet music page. Key maps provide you with such a notation. This unit will help you see how this "point and click" approach works for the keyboard.

OK, but what do we do with the "hard way" code that everyone uses? Think of the complicated code that we formerly used to run computing machines. We didn't get rid of it! In fact it has become much more complicated than in the early days of computing because we now do so very much more with computers than when they were first used. And that code is essential. That's really how people communicate with computers and tell them what to do. What we've done with the graphical user interface (windows) is that we found a way for the great majority of people using computers to avoid these codes. The experts that make the computers work need to use the code, but the rest of us that just want to use the computers don't need to know that code. We just "point and click" to make them do what we want.

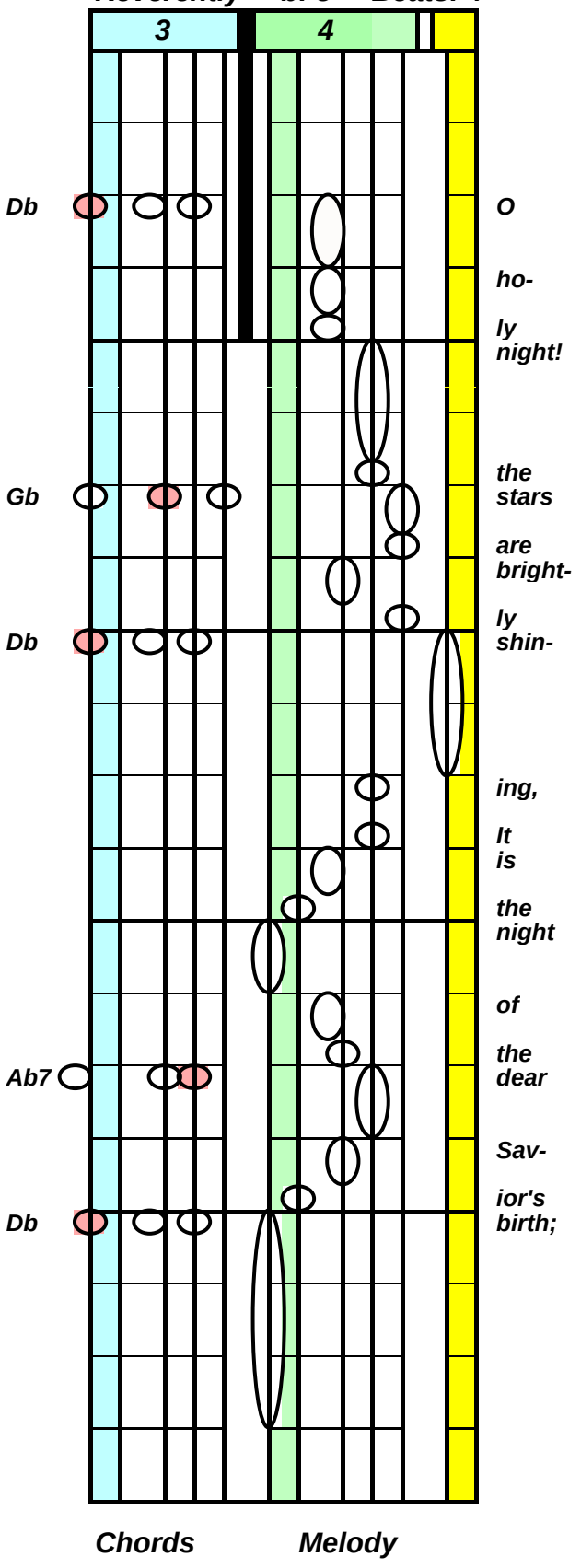


Pink notes are for the left hand.
White notes are for the right hand.

O Holy Night

Adolphe Adam

Reverently b: 5 Beats: 4

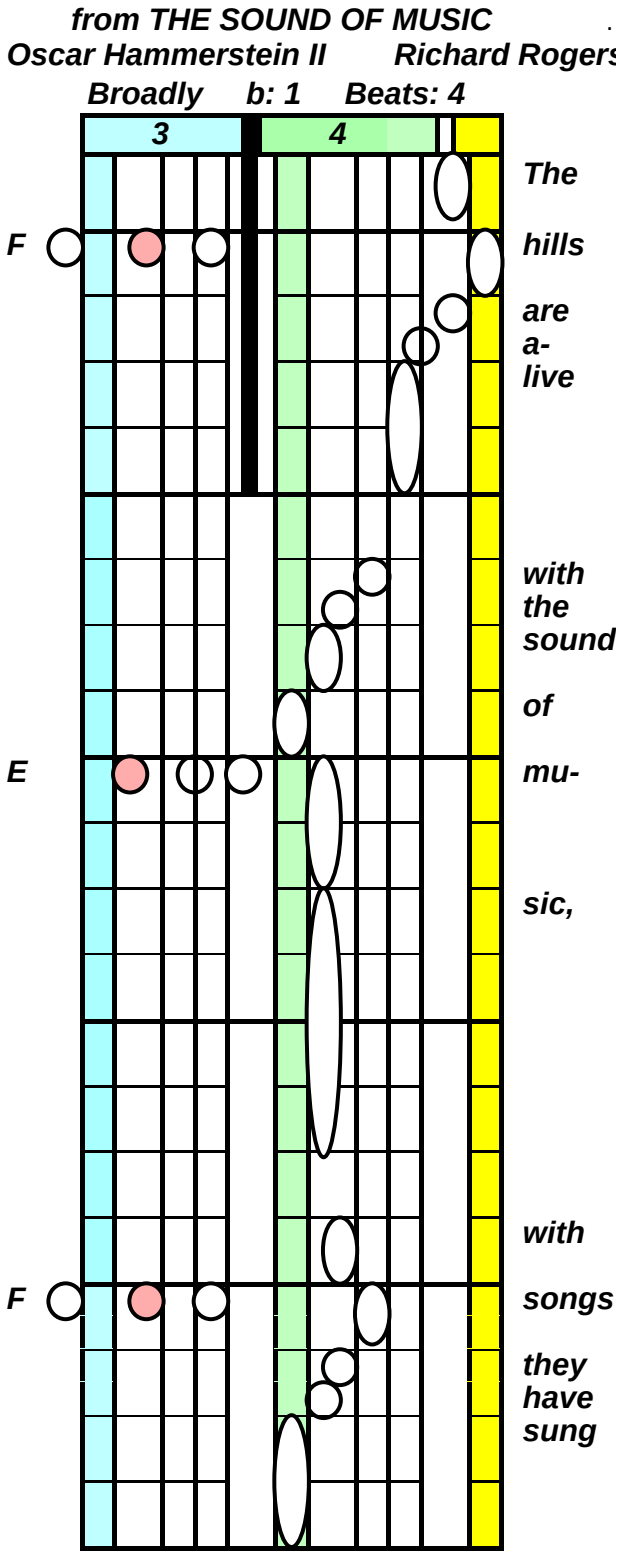


Essentially, we have a similar situation with the sheet music for running the piano machine. The grand staff code, like the computer codes, is essential for doing the many things that we want to do with music. Most of all it's a nearly universal language of music throughout the world and for most of the instruments that people play. Also, most of the music that has already been written down is in that language. These are reasons enough to keep using the grand staff now and in the future. Let's face it, we're stuck with this complicated code, and there's no way to avoid it. Learning to read and write this code should be a major goal of every person who wants to be a well informed musician.

Well then, what's the place for the key maps and diagrams of the keyboard? Key maps are much easier for beginners to read. Children can read them at a younger age because theyre like pictue books. Key maps clearly reduce the stress that goes with learning to play from the grand staff. They are great for people who want to play but can't or won't spend the years that it takes to become proficient with the grand staff notation. Key maps can do most of the things that the grand staff does. They work best for the keyboard because they visually match the movements of the fingers on the keyboard. They can notate any simple to moderately difficult piece with ease. They can notate very complicated pieces as well, though not all. It's the only notation one would need for nearly all of the keyboard music that exists - except that it's not yet widely enough available.

Perhaps the greatest advantage of key maps over the grand staff is the ease with which one can play in any key, whether in many sharps or many flats. The grand staff gives you complicated codes for the sharp and flat keys whereas the key maps are simply "point and click" for all of the notes, both natural notes and sharps and flats. The rhythm on maps is notated on a timeline that takes the guessing out of knowing how long to hold a note. By contrast, the rhythm on the grand staff is shown in an abstract code.

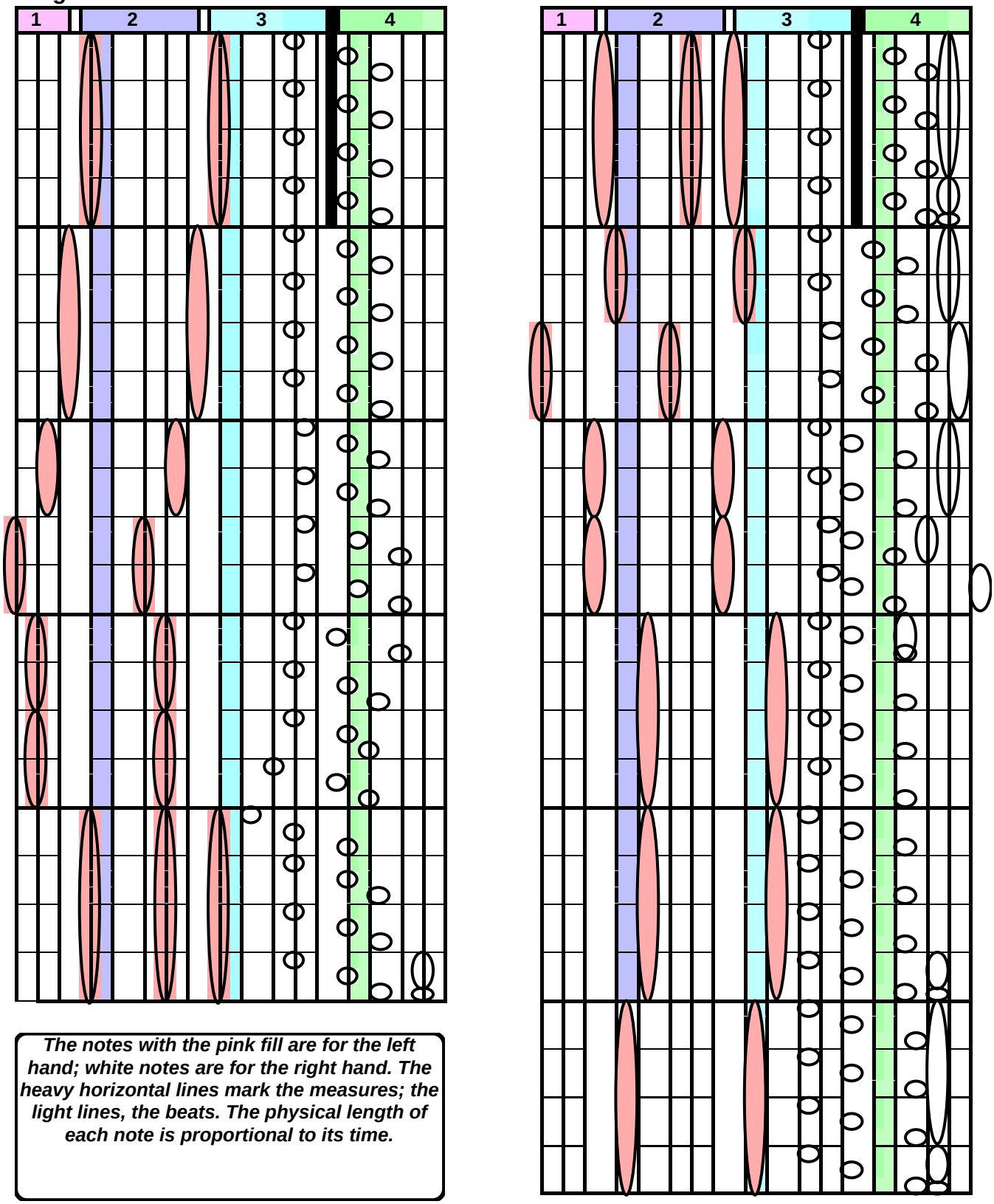
Finally, key maps are designed to be beautiful! They show the pitch and rhythm in a true scaled format unlike the grand staff. They are enhanced with the colors of the rainbow. (Many of the key maps are interesting and beautiful to look at in addition to the beauty in the sounds of the music. Key maps are truly a visual art. This visual beauty is one of the reasons we love to play from key maps!)



The thick vertical black line at the top of each staff provides a visual indicator of the dividing line between the bass and treble notes.

Example - Openng Bars of Beethoven's Moonlight Sonata

Adagio sostenuto #: 4 Beats: 4 MM: 52 vP



The notes with the pink fill are for the left hand; white notes are for the right hand. The heavy horizontal lines mark the measures; the light lines, the beats. The physical length of each note is proportional to its time.

Features of Key Maps

A key map is a special kind of SHEET MUSIC designed for playing a musical keyboard (piano etc). The map visualizes the movements of the fingers on the keyboard, making the keyboard much easier to learn.

The vertical lines map the black keys. These lines appear in groups of 2 and 3 mapping the groups of black keys of the keyboard. The notes on (straddling) these lines are played on black keys. The notes adjacent to these lines are played on the corresponding white keys. THERE IS A NOTE FOR EVERY KEY, making it unnecessary to alter notes with sharps and flats!

A key map combines a HORIZONTAL DIAGRAM of the keyboard, visualizing pitch, with a VERTICAL TIMELINE visualizing rhythm. Unlike traditional notation, the time dimension of the music is vertical, rather than horizontal. This arrangement makes the left/right movements of the notes match the left/right movements of the fingers on the keyboard.

The notes are drawn to scale, just as in an ordinary map. The left/right movements of the notes are proportional (in distance) to the movements of the sounds on the keyboard. The vertical length of each note is proportional to the length (in beats) of each sound.

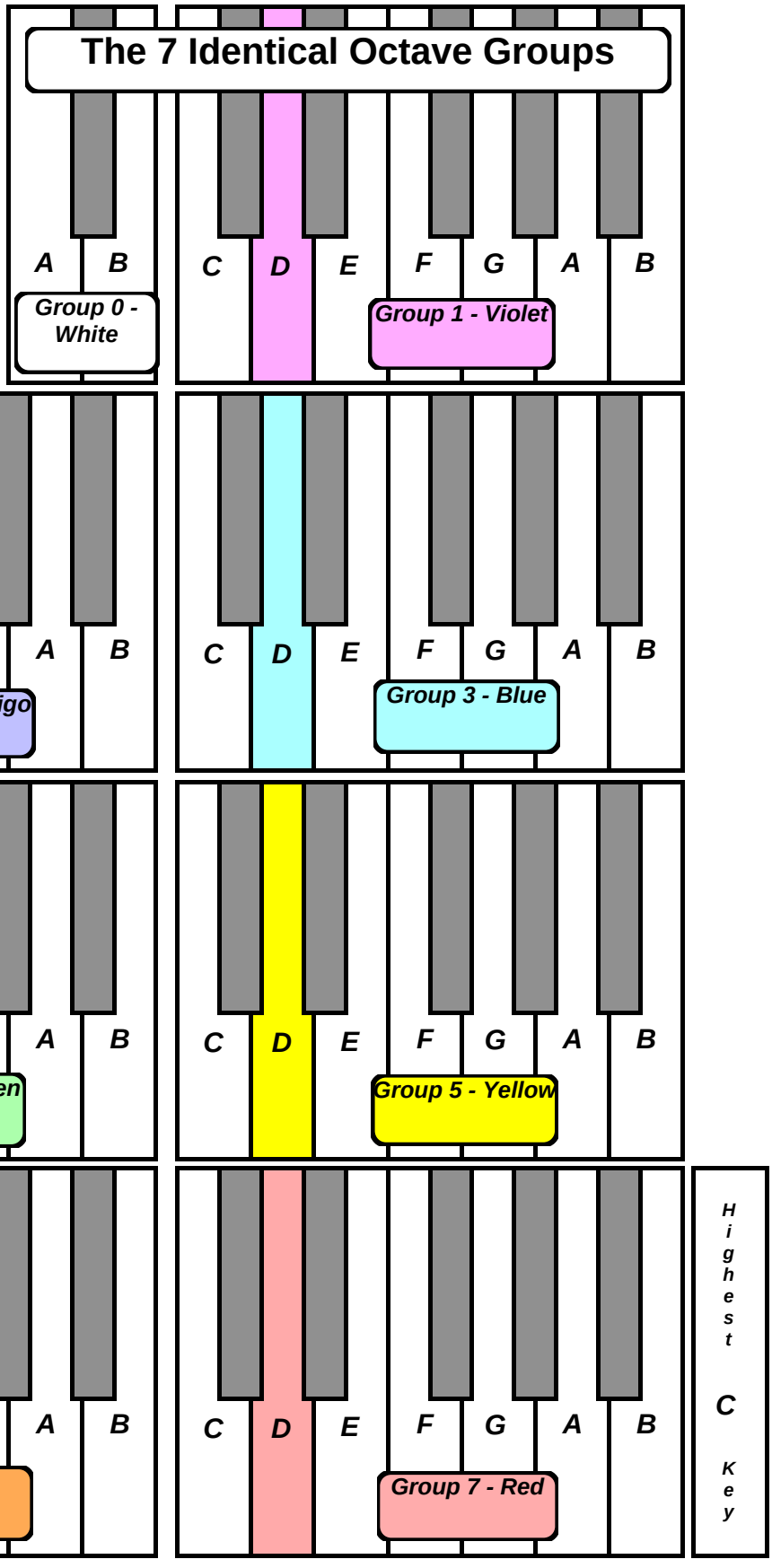
A key map is colored to show the elevations (in sound) of each octave, just as in a contour map of the earth. Given these proportionalities and elevations in color, the map becomes a fascinating and beautiful visual expression of the musical sounds.

The map also shows other information expected of sheet music - such things as tempos, key signatures, title, composer, song text (if it is a song) dynamics, fingering, chord symbols, and the like.

Finally, the key maps are beautiful visual expressions of the music in a manner similar in concept to the decorations of the illuminated manuscripts that we have as treasures from the middle ages.

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 colored on key maps with a different rainbow color to help you know which octave group to play the notes in.



About the 7 Octave Groups on the Keyboard

Before you will be able fully to understand the visual relationship between the map and the keyboard, you will of course need to understand how the keys on the keyboard are organized and color coded.

The typical piano keyboard is laid out in 7 groups of 12-key repeating patterns. Each pattern consists of 5 raised black keys (in groups of 2 and 3) and 7 white keys, as you can see in the (folded up) diagram of the keyboard on the previous page. (There are additional extensions of 3 keys at the left end and 1 key at the right end on typical piano keyboard.) Electronic keyboards are built with the exact same groups, except that these keyboards usually contain fewer of these groups. These keyboards typically contain 4 or more full 12-key groups.

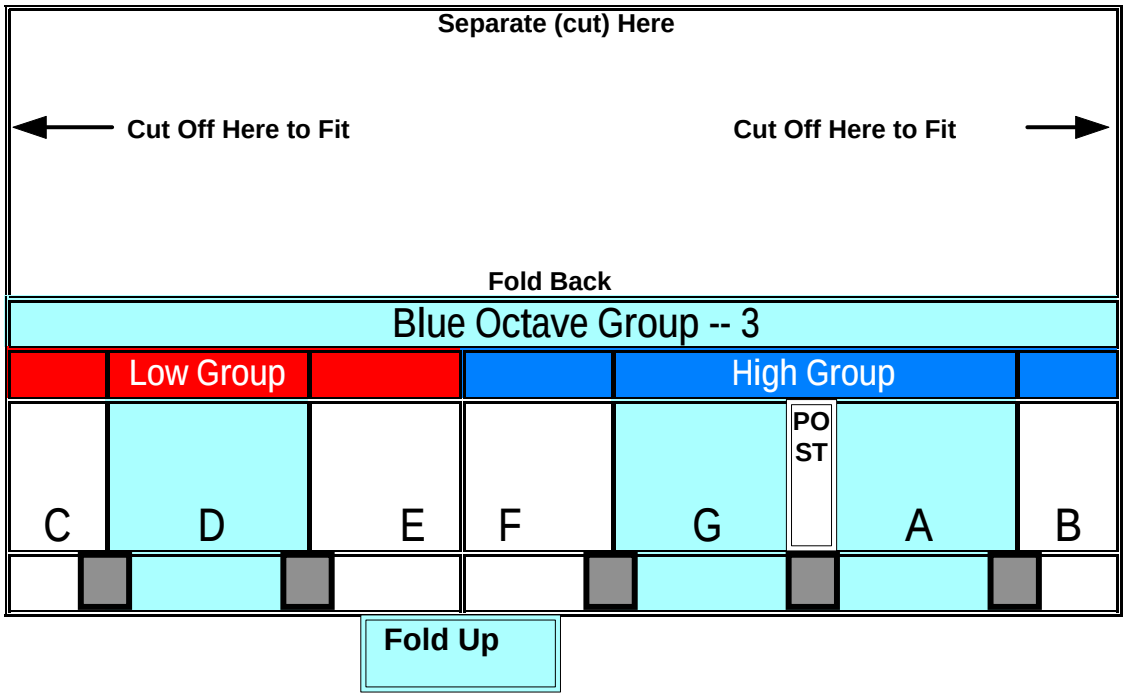
We call this 12-key pattern starting with the key named C and ending with the key named B, an "octave group." The keyboard is built so that you can play a C major scale with just it's white keys. This means that if you start playing a C key and play all of the white keys until you get to the next C key, you have played a C major scale. You can't get a major scale from any other set of white keys. So we call the piano a "C instrument." It is this group of 7 white keys and 5 black keys that we have named an "octave group."

The amazing thing about this grouping is that it is like having 7 identical little pianos with 12 keys each, all lined up next to each other so that you can play all 7 of them as a group. Think of what this means. Essentially, It means that you have only one little 12-key piano to learn to play! The other 6 little pianos are all played in exactly the same way, as exact duplicates of the 12 keys of the little piano that you learn on. Think about it! (Standard notation completely ignores this fact because it's not designed for the keyboard. On the other hand, key maps are designed to take advantage of this fact!)

Key maps are based on the octave group patterns. Since each group looks the same as every other octave group, we need a way of knowing which is which. Our diagrams accomplish this by showing each group in a different color. These colors are the 7 main colors of the rainbow, in their natural order. The octave groups are also numbered from 1 to 7 on key maps so that those who can't distinguish them by color will be able to identify each group by its number.

Octave Group Locator Labels. ***Here are samples of the 7 rainbow colored octave group labels that are available for placing temporarily behind the black keys on the keyboard. These label the keys with the colors of the octave groups shown on key maps. The labels also show the names of the white keys. This way one can easily match the notes in a key map's blue octave group, for example, with the corresponding keys in the blue octave group on the keyboard. The labels can be left in place until no longer needed.***

Sample



Sample