WHY THERE ARE 88 KEYS ON THE PIANO

THE MACKAY METHOD FOR PIANO

VOLUME 1

STEPHEN R. MACKAY
88 Logic gives you the answers to how the piano works with 88 keys so you can play any size keyboard. The 88 logic series will help you enjoy playing piano and reading sheet music because you will understand why sheet music is written the way it is.

"THIS IS THE FIRST BOOK AND DVD YOU SHOULD EVER PURCHASE BEFORE STARTING MUSIC LESSONS - IT WILL BENEFIT LEARNING TRADITIONAL METHODS IN MANY WAYS."

STEPHEN R. MACKAY

"IN ALL MY 60 YEARS OF PLAYING THE PIANO, I HAVE NEVER HEARD OF SUCH A BETTER EXPLANATION AS TO WHY THE PIANO HAS 88 KEYS"

DAVE SMITH, AGE 73, UK - PIANIST
WHY THERE ARE 88 KEYS ON THE PIANO

VOLUME 1

www.pianodiy.com.au
Stephen R. Mackay is what some people might call an entrepreneur. Stephen didn't like piano when he first tried and wanted to try guitar. When Stephen's brother, Andrew showed Stephen a song on the piano, Stephen rose to the challenge and found that he could teach himself. Whilst Stephen has been fond of piano since then and started to play at cafes and functions, Stephen was requested to turn his way of teaching himself into a book.

88 Logic - The Mackay Method of piano is the book that shows the way that Stephen taught himself. When Stephen teaches 88 logic coupled with traditional teaching such as kadai, solfage and music theory, Stephen's students have progressed quicker than usual and have been able to develop their own songs from understanding more about the piano.

88 Logic also has a supporting product to demonstrate the uses in chord construction in a practical tutorial called Europiano. Both DVD products are available at www.pianodiy.com.au.

Stephen continues to develop products and tutorials for learning piano on the basis of the 88 Logic program and has been assisting Australian Musicians in the development of several other book series such as Band Elite program. www.kidrockentertainment.com.au.

To contact Stephen directly, you can email him at info@pianodiy.com.au.
Contents:

Chapter 1
The Problem and the Solution
The 88 Logic Foundations of Piano

Chapter 2
The 88 Logic Methodology

Chapter 3
The Piano lesson

Chapter 4
The Evolution of sheet music using the 88 Logic: Mackay Method for Piano
Chapter 1
The Problem and the Solution
The 88 logic foundations of the piano

The problem of the piano is that the reason why there are 88 keys is not widely known, or taught as part of traditional learning.

88 logic- The Mackay Method offers any learning piano player the method to understanding how knowing why there are 88 keys on the piano benefits your playing.

88 Logic also offers practical exercises to get you familiar with the piano instantly so you can understand how theory works with the piano and ultimately teach yourself to play. Although the method starts with learning the 88 keys, once applied, this knowledge can be used on any size keyboard for maximum play-ability.

For your benefit, there are mental notes through the text to increase your memory when you start playing.

The Piano keyboard

The piano is made up of 88 keys, 52 are white and 36 are black.

This is what the piano keyboard looks like in its 88 keyed form.

88 logic applies to any size keyboard, however firstly, you must understand the 88 keyboard layout.
When you first go to piano lessons, or if you watch a video on youtube, you are told and shown that piano starts on Middle C.  

Middle C  
Because there are 88 keys on the piano, then the middle key would presumably be key 44, right? No- Some piano learners ask this question and the answer is that this is wrong.  
Due to middle C being key 40 on the piano.  
Consider the following diagram.  

The piano shown here has the bottom key, the Middle C key and the top key highlighted.  
The key numbers is presumed as key 1 (bottom left key), key 40 (Middle C) and key 88 (the top, or right hand top) key.  

This diagram shows the piano if the keys were, key 1 (bottom left key), key 44, (middle key) and key 88 (on the right hand top) There is a reason why piano learners start on middle C.  
Sometimes piano teachers don’t quite know why piano learners start on middle C as they don’t have this book. So lets break down the piano into smaller patterns to get the answer.
The Octave

Breaking down the piano from its 88 keys into sections means identifying OCTAVES. An OCTAVE on the piano is a group of keys put into a pattern of 8 white keys and 5 black keys. The octave starts with a key, in this diagram, the C key and finishes on the C key also. If you don’t add the next C key on the octave, you then the octave would look like this:

A Problem with the octave

\[
\begin{array}{c}
12 \\
\times 7 \\
\hline
84 \\
\end{array}
\]

The piano doesn’t add up, if we think of octaves as groups of 12 keys. If you think 7 white keys and 5 black keys, then you won’t find the solutions to why there are 88 keys on the piano. This is where CONFUSION comes in, as when learning the piano, the one rule which isn’t usually told to you, is that if you are counting octaves as 8 white keys and 5 black keys, when you land on the 8th white key, or 13th key in the octave, then you have to count that 8th key or 13th key as number 1 in the next set of octaves. For example:
The Octave have keys that have names. When the keys are given names, we then call them notes. See the picture to the left, the notes are C, C# or Db, D, D# or Eb, F, F# or Gb, G, G# or Gb, A, A# or Bb, B, then finally C. What do these “♯” and “♭” mean?
Sharps happen when the note is counted from the LEFT to right side.

Flats happen when the note is counted from RIGHT to left side.

Octaves alone don’t give the answer

Mental note: The Piano is a wood instrument. When the wood is sharp, it goes against the grain. When the wood is flat, the wood is flat.

As to clarify, the need to include the 8th white key (the C) in the octave count, giving us 13 keys in total, we look at the “solfege” training that singers use the octave for:

DO, RE, ME, FA, SO, LA, TI, DO

Can you see how Do is repeated, that is because every pattern on the piano repeats itself.

$\frac{13 \times 7}{91}$

Having 13 keys per octave and 7 octaves doesn’t solve the 88 keys either. Remember if we are using the 13th key as number one, 6 times, then we must take 6 keys out of the equation, thus we are left with 85 keys.
When we actually see that we need to count the 8th key, or the C start of the octave, then we realise we are actually taking out 6 keys in the keyboard, thus, have this answer of how many keys we can see in the octave.

\[
\begin{array}{c}
13 \\
\times 7 \\
\hline
91 \\
- 6 \\
\hline
85
\end{array}
\]

When we actually see that we need to count the 8th key, or the C start of the octave, then we realise we are actually taking out 6 keys in the keyboard, thus, have this answer of how many keys we can see in the octave.

You can see now that the first and thirteenth keys are used 6 times, which take away the full amount of 91 keys and show that the “bottom” three keys make up the missing keys from the located 85 keys. To further prove that key 86, 87 and 88 are placed here outside of octaves and are in that order, we move onto the 88 logic Methodology.

**Summary**

So in summary, the first thing that you are presented with when learning the piano is that you should start at the middle of the piano, but middle C isn’t necessarily the middle.

You then have understood the an octave is a group of 8 white keys and 5 black keys giving the total of 13 keys per octave.

You also understand that the 88 keys on the piano isn’t just about the octaves, as the total keys in the octave are 85 and that there are 3 more keys to find.

In finding them, we will determine the missing 3 keys power and how this applies not only to the reason why there are 88 keys on the piano, but how this helps you to play the piano INSTANTLY.
Chapter 2
The 88 logic Methodology

Mental note: 88 Logic is in essence, is the logical reason for why there are 88 keys on the piano.

In this chapter, you will be shown the following:
* The Solution - Where the piano reveals itself
* Why there is 88 keys on a piano
* The flow of the piano
* The code of practice
* Why the piano is set out the way it is

The Solutions

The problems that we face are that in counting each octave without the Do or C, thereby giving you 12 keys in the octave, we have determined that there would be 4 keys missing as the total is 84 keys.

And in comparison, we have included the C in one of the octaves and found that we have 85 keys, thus we are missing 3 keys. 88 Logic now comes into play and takes on the missing 4 keys as it so, when you put these 4 keys, the rational way to look at the piano again and as the half of 88 is 44, the half of 44 must be 22. There are 4 quarters which make up the 88 keys, these keys are called the "QUARTER INTERVAL KEYS and their numbers are “22”, “44”, “66”, “88”.

If an assumed half of the piano is the generic starting point for traditional piano, then perhaps half of the assumed half of the piano will offer answers. The methodology of 88 logic will start to reveal answers. 
This will be important to find why the reason the piano has 88 Keys.
To do this, the 88 keys are broken down into 4-quarter intervals for find where relevant keys sit within the octave.  
*Mental note: 88 divided by 4 equals 22.*

Watch the DVD for the method in understanding the significance of the quarter intervals and their place in uncovering the reason for having 88 keys.

It is now, that we turn the piano into a number game. Because the sound of the piano is lower on the left side, and because you are new to 88 logic- The Mackay Method, lets start at the left side of the piano to find quarter intervals.

88 logic- The Mackay Method DVD shows you in greater detail how to move the quarter interval keys into one octave, however it is not necessary to do it yourself, as all you need to do is know where these selected keys are in the top octave.

So, when you put these 4 quarter intervals into the top octave, you can see that the pattern has formed to show the way to TRUE PIANO FLOW.

*This will be important to find why the reason the piano has 88 Keys.*

This may seem confusing, however it is very simple. The Mackay Method takes the keys from all over the piano and places them into one octave. It takes key # 22, # 44, # 66 and # 88 and places them into the top octave of the piano. This is due to finding where to place keys in order to understand chords and sections of the piano first before playing. For a practical demostration, watch 88 logic - The Mackay Method for piano DVD.
Now it becomes obvious that the numbers, or quarter interval keys have been placed in a different pattern than they appear when sitting on the rest of the piano’s keys. We now look at synchronising the placement of the quarter intervals with the octave’s pattern for the sake of finding the true piano flow.

What this means, is that for the first quarter interval, which is key # 22 from the left side of the piano, is the 7th key in the top right octave.

*Mental note: The 22nd note is a black key, whereas the others (44, 66 and 88) are white.*

The second quarter interval, which is a key # of 44 from the left side of the piano, is the 5th key in the top right octave.

Can you see how the keys are starting to be placed in the flow of right to left?

The third quarter interval, which is a key # of 66 from the left side of the piano, is the 3rd key in the top right octave.

The fourth quarter interval, which is a key # of 88 from the left side of the piano, is the 4th key in the top right octave.
So by revealing that the 4 quarters of the piano gives you all the areas of the piano concerned with octaves, you should be able to find the 3 extra keys on the piano. The keys are called LEVERAGE KEYS.

As you can now see, that by placing the four quarters of the piano into the top right octave, the placement takes the pattern of directing you from right to left just as the mathematical basis for division.

True piano flow becomes important for you to be able to define what a major and minor chord is, and how they sound. 88 Logic- The Mackay Method for piano is the only method that will give you an explanation of why the piano has 88 keys for you to develop your own playing from.

If you also add the numbers 1, 3, 5 and 7 you receive 16. Why is this????

When there are 13 keys in an octave, the addition of the quarter interval placements give a number 16.

16 is a number that is divisible by 8. 8 x 2 = 16. The Mackay Method is the only method that shows you why 8 x 2 = 16 in relevance to the piano.

If by placing the keys into the top octave, gives an indication of a value of 16 by addition of the placements.

If we follow the now found true flow of the piano by finding the same keys in which the fourth interval, or 88th key lands on right down to the bottom, you will find an additional 3 keys sitting on the bottom of the piano.

So by revealing that the 4 quarters of the piano gives you all the areas of the piano concerned with octaves, you should be able to find the 3 extra keys on the piano. The keys are called LEVERAGE KEYS.

Can you see the 3 keys left over?

Mental note: Think of music having a flow like waves on the ocean if that helps.
This illustration represents the 3 leverage keys being available in the 7 octaves, but in 8 positions. You can also see the 7 C keys that are starting the octaves. Even though there are 8 keys on the piano altogether, the top C or far right hand side C doesn’t start an octave, but has been useful as to offer the answers to why C is used twice and also assisting in the finding of the Piano’s true flue.
In western society, reading is taught left to right, and so is writing. Reading music is also taught reading left to right. The piano is made out of numbers, and not language, therefore consider math as being a basis for how to approach placing keys together.

Have a look at the following equation. You could solve the following equation:

\[
\begin{align*}
5000 \\
x 110 \\
\hline
0000 \\
50,000 \\
500,000 \\
550,000
\end{align*}
\]

To solve this equation manually, you would have approached the numbers from right to left to get your answer. If you can consider the piano working from right to left to place its numbers, then you will find the flow of the piano.

Mental note: You should watch 88 Logic- The Mackay Method DVD to get a more thorough understanding of the true flow of piano.

88 Logic- The Mackay Method aims at placing the relevant amounts of keys from the 88 keyed piano into one octave. For the purposes of defining the true flow of the piano, we will work from left to right in the first instance, and place all relevant keys into the top right octave.
Chapter 3
The Piano Lesson

The Mackay Method’s 3 levelage keys are the keys that are not part of an octave on the far left of the piano.

88 logic - The Mackay Method that using this 16 key octave gives a reason for the piano having 88 keys. It is a ratio, of 8 semitones (1 key to the right or left) to 8 keys. The point of finding 8 keys (semitones) and 8 keys (non semitones) is to find a root note (chord barrier) and the octave (the same key in the next octave).

Mental note: Count from any 8 semitones and any color 8 keys and you will have found the root note and the octave.

So the reason for the 88 keys on the piano is to be treated as a ratio. The 88 keys means 8:8 keys (8 to 8 keys) anywhere on the piano will give you a way of finding root notes, chord barriers and the major and minor influences on the piano.

This will enable you to play piano and find chords straight away. So when you look at the 16 keys octave, it looks like this.
You can see how counting 8 semitones from the bottom note will give the root note by the diagram. That's the first part of the ratio. The second part of the ratio is to count 8 keys again, but this time, just 8 white keys and you will see that you will find the same key in the next octave. This is the octave and key which the root note works off.

The Root note

The root note is effectively the half of the octave for the key that the octave is in. It provides not only an indication of half way to the octave, but defines the area for chords to be made. 

_Mental note: Root note is kind of like half the octave._

Counting 8 white keys here will give you the landing of the same key you started out on from the left hand side of the piano. You have found the octave.

_Mental note: Compare this octave with the given octave at the beginning of the book._
Within the 8 to 8 keys, you can develop chords, built songs and use the true flow of the piano to find major and minor chords.

**Major Chords** = counting 8 keys with the true flow of the piano.

**Minor Chords** = counting 8 keys against the true flow of the piano.

No other method for piano gives you these findings.

Now we can name the keys to make them notes and to find the major and minor chords. But first, you must understand how to the octaves work with note names.

In **88 Logic The Mackay Method** DVD, they are referred to as base notes. If you now count your 13 keys from the left side of the piano, you will see that A repeats a pattern to find A again.
As before, you can see that the E note, just as before is a root note for A. You could even call E the base note of A as it is almost like half of A.

Now you can see that there are 2 chord barriers clearly defined by the 88 logic 16 key octave. No you can use the TRUE FLOW of the piano, to find the major and minor influences. When finding the TRUE FLOW would mean that you will reveal the major sound and going against the TRUE FLOW would reveal the minor sound.

As you can see, the allocated major and minor influences are found by using the counting flow. Always start whichever side as number one in the counting process as shown above the keys.
As you can see, these are the MINOR influences when you count from the left hand side, against the TRUE FLOW of the piano.

When you count from RIGHT to LEFT you will find the MAJOR influences and see the TRUE FLOW of the piano in action.
Mental Note: A point to consider is that the piano is made from wood. When the wood is flat (or sanded) it is going with the grain of the wood. So when you are with the true flow of the piano, you will call the keys flat. When you are going against the grain of the wood, the wood is sharp.

Sharps and flats also relate to pitch. (i.e.- the sound)

In summary you have learned how moving keys into the top right octave shows the placement of the 4 quarter intervals and shows the true piano flow of the piano being from right to left. Moving right to left has shown that a 16 key octave is possible to start learning how the piano works with the 88 keys, and gives you the ratio to start building chords to start playing songs.

Understanding where Sharps and Flats are allows you to use the term Semitones.

A semitone is the name given to the sound of the keys when moving one note up or down, one count. You have already been moving up and down semitones ever since you started reading 88 logic.

In the next chapter, you will learn how to find chords using the Mackay 16 key octave and true piano flow.
So far, you have learnt
True piano flow
The root note of A
The alphabet of the piano
The 8:8 key ratio and semitones
and thus the reason for the
88 keys on the piano

To take these discoveries further, and really obtain a firm grasp on how the 8:8 key ratio works, we will start to learn how to put chords together using the mackay 16 key octave.

As mentioned in the previous chapter, understanding where Sharps and Flats are allows you to use the term Semitones. A semitone is the name given to the sound of the keys when moving one note up or down, one count. You have already been moving up and down semitones ever since you started reading 88 logicThe Mackay Method.
Knowing how sheet music was developed will help you learn to play piano with sheet music and then you will develop your reading and start using piano books in the 88 logic series to play piano.

Let's find a major chord!

*Mental note: Firstly look at the 16 key octave again*

As you can see, there is the A note, which is at the left side and the root note (E) which is on the right. With keeping the in the true flow of the piano, we must count from right to left to find the major chord.

Hint: half of the 8 keys holds the influence
Remember, always start the key as number one in the counting process.

\[ E = 1, \text{E flat} = 2, \text{D} = 3 \text{ and } \text{D flat} = 4. \]
Congratulations! You found the major influence!
If you play the E, C Sharp and the A together, you have an A major chord.
What does it sound like?????

As you will see in the following diagrams, using the TRUE FLOW of the piano now reveals the Major and Minor influences and depending on which way you count, you will find them. 8 / 2 = 4.

As you can see there is the A note, which is at the left side and the root note (E) which is on the right. These are out starting points for counting.

Depending which place we start counting, will determine the major chord or minor chord, and you will hear the difference.
Congratulations! You have found the minor influence!
If you play the A, C and the E together, you have found a minor chord!!!
What does it sound like to you??????

If you can describe the sound, then you’re on your way to understanding what a musician does. Musician’s describe sounds and interpret sounds to how someone could be feeling or trying to convey through music. So put simply, musicians use music to talk.

8: 8 keys as the ratio means, 8 semitones to 8 keys.
Put this into practice by finding the F major and F minor chords.
Congratulations! You have found the minor influence!
If you play the A, C and the E together, you have found a minor chord!!!
What does it sound like to you??????

8: 8 keys as the ratio means, 8 semitones to 8 keys.

Put this into practice by finding the F major and F minor chords.
You now have the knowledge to find major and minor chords all over the piano's 88 keys. You can even start on black keys and apply chord barriers to find major and minor chords.

To go over this again, watch *88 Logic The Mackay Method DVD*.
Chapter 4
The evolution of sheet music with 88 Logic The Mackay Method

So far you have learned how 88 Logic- The Mackay Method works with giving you reasons for the 88 keys (being the 8 semitones to 8 keys ratio), understand how root notes create chord barriers and how to find major and minor chords.

It is now time to gain an appreciation for sheet music.

Because you can now find chords and start to feel confident in your new found skill in understanding the piano, you need to learn how to read music and start gaining theoretical understandings.

88 logic- The Mackay Method has given you the keys to unlocking the piano to

Sheet music is made up of root notes on lines and they are placed onto a staff.

------------------

------------------

Keeping with the 88 logic understanding of 8:8 and the half of the 8 semitones to find major and minor chords, we use the same half of the 8 leverage key areas to find the approximate half of the piano. It is straight after the fourth leverage key area.
This staff is then allocated to the left hand and the right hand. The right hand staff is called the treble clef. The treble clef is given a symbol.

\[ \text{\textcopyright} \]

This is to give you the understanding that treble is a higher register, thus on higher pitch of the piano. Usually for the treble clef, you will be playing on the top half of the piano. To find the top half of the piano we look at the leverage keys.

As the leverage keys can be used on every existing octave on the piano.
With the added understanding of the leverage keys shown by 88 Logic - The Mackay Method, we could assume that the top of the piano starts on an A note, however the C note here is referred to as middle C. As the leverage keys is already been shown to you, and mainly used for chord discovery not to half the piano.

On sheet music, the names of the notes appear in symbol form that looks like this:
There is a note here, where this starts, called middle C. Which starts pretty much where middle C is. We now can associate the 16 key octave’s root notes with the notes on the staff.

As E is the first root note from the 16 key octave range, that is the bottom line of the staff, but that is the E after middle C.

Basically, all notes on the piano are related to other notes in terms of their root note powers. The reason E is on the bottom, can be related to the fact it is the first root note found for the 88 keys on the piano.

As you can see, there are notes on lines and notes inside lines. It’s really a case of matching the notes to the keys and understanding that there is a flow. Whether its up or down, the notes are always moving up or down.
The base clef is different to the treble clef as the notes are placed working from start of the 16 key octaves. Their start with as G, which is on the line and the first inside note, is the A (which is the bottom note of the 16 key octave).

This is the easiest way to think of it as the octave which the sheet music will be referring to is the one closest to middle C.

See you in the next volume where we introduce the left hand!

In the meantime, start learning from the DVD and it’s practice exercises.
If you have been watching Youtube to get some insights and tutorials on how to play piano, then the Europiano DVD is for you. With instruction tailored to suit the beginner, Stephen shows you how to play popular songs and learn more songs from them using sequences and transitions. While the DVD goes for about an hour, you learn over 5 songs using 4 chords. This DVD is created for the Youtube market and is a good follow on from his first Epic DVD, 88 Logic. Both DVD’s are available for purchase at www.pianodiy.com.au and you can email Stephen directly for more info on info@pianodiy.com.au
What people are saying about 88 Logic the Mackay Method

“The concept of a mathematical approach is a fantastic one for beginners who are systematically and methodically minded.”
Manu Prasard- Glenaeon Rudolf Steiner School. Sydney - Head of Music - Pianist

“With this DVD, many musicians will have the chance to put on their own show!”
Ian Grace, IGM GLocal. www.iangrace.com.au

“I can’t believe how easy this DVD makes piano. I have progressed further in the last 6 weeks in my personal playing, than that of the past 24 months of lessons.”
John Gaye, Designer

“After 5 minutes of practice, I began to understand how this method works and I can apply it straight away. I’m looking forward to the next DVD!”
Simon Phillips- Marketing Director- Dubsat.

Stephen Mackay reveals the advantage of The Mackay Method

“The Mackay Method works to accelerate the learning process by teaching familiarity with the keyboard. Chord discovery is made easy.

“88 Logic” is a concise tutorial system the introduces us to the piano and explains the layout and flow of the keyboard in a new light. “88 Logic” bridges the gap from not knowing anything about the piano to knowing how the piano works, and why sheet music is written the way it is.

You will learn:
* Why the piano has 88 Keys *
* Chord Discovery*
and more.....