Introduction

Music is recognised as one of the arts.

Those who have been brought to tears by a beautiful melody, or have danced until their feet are sore to an energetic rhythm can understand this.
However, at its essence, much of music is rooted in math and science.

Music and Math?

Of course. Even the most basic of musical components - rhythm - is based on math:



The ratio of a minim to a crotchet is 2:1.
Regardless of the tempo (speed) of the music or time signature, this remains true.

Music and Science?

Yes, music is made of sound waves. Sound waves are vibrations that travel through the air, and music is organized sound.
Sound waves are science (physics, to be exact).
If we take any two notes an octave apart, the frequency (Hz) or the upper note is twice that of the lower.
For example, the A above middle C is 440Hz, the one below is 220Hz, the one below is 110Hz, and so on. This is why octaves are so pleasing to hear. The science of frequencies also helps us understand why certain other intervals, like perfect fifths, are also pleasant, whereas others are not.

Music is Undeniably Beautiful and a True Form of Art!

This book does not set out to squash the beauty and mystery of music.
It is designed to help you understand how your music works.
Music is based on math, science and LOTS of patterns.

It is what is done with this knowledge that creates the beauty and mystery.

Musical Keys



Consider a musical key as a key to a puzzle or a treasure map.

The key unlocks the secret to the notes you will play in your music.
A key is built on a scale or set of notes.

Each key represents a distinct combination of notes, creating a unique sound.

This book will explore the two most common types of key in Western music: the major and minor.

Major and minor keys are built from scales. Once we understand how our scales and keys are structured, we can anticipate which notes will emerge and which chords we will likely play.

Before we explore our first scale and key, we should introduce a few important terms. This book will avoid unnecessary jargon, but we want to use the correct words.
This will help if you want to explore things further on the Internet.
It is better that you search for the correct terminology rather than words we have made up to try and simplify things.

We also want to highlight the non-musical term “fundamental” (defined below), which is often used in place of “important.” As you can see from the definition, it’s more than important. It’s, well, fundamental.

On the following page, we use this term deliberately based on its dictionary definition.



***Definition: fundamental**

(adjective)
Forming a necessary base or core; of central importance.

The Tonic

The tonic is the first note of a scale, acting as the central point around which the key revolves; it is the fundamental note of that key.
For example, if we are in the key of C major, the tonic note is ‘C”.
In D major, the tonic is “D”, etc.

A song or musical piece typically begins and concludes on the tonic.
Often called the "home" note, the tonic provides a sense of restfulness within a composition.

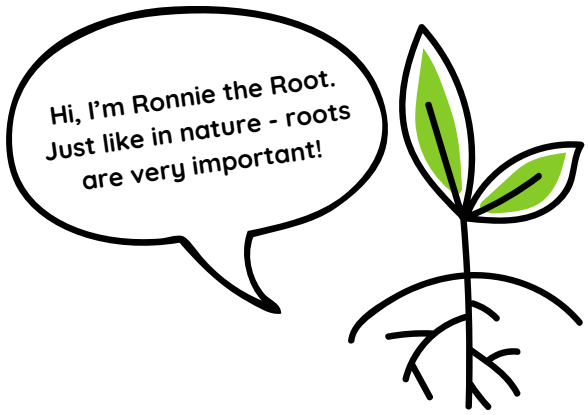
The Root

Just as the tonic acts as a fundamental note of a key, the root is the fundamental note of the chord.

If we talk about a particular chord, for example, a C major chord, “C” is the root.
In an A minor chord, “A” is the root, etc.

You will meet our friendly ”Ronnie the Root” popping up on some of the pages.

Ronnie knows how important roots are, so he has quite the ego!



Tones and Semitones

This book frequently refers to the concepts of tones and semitones, so it is important to understand them.

If you're unfamiliar with these terms, the next page will help clarify things.
If you already know these, you can skip over that page.

This publication uses British English terminology. In American English, these tones and semitones are known as whole steps and half steps.

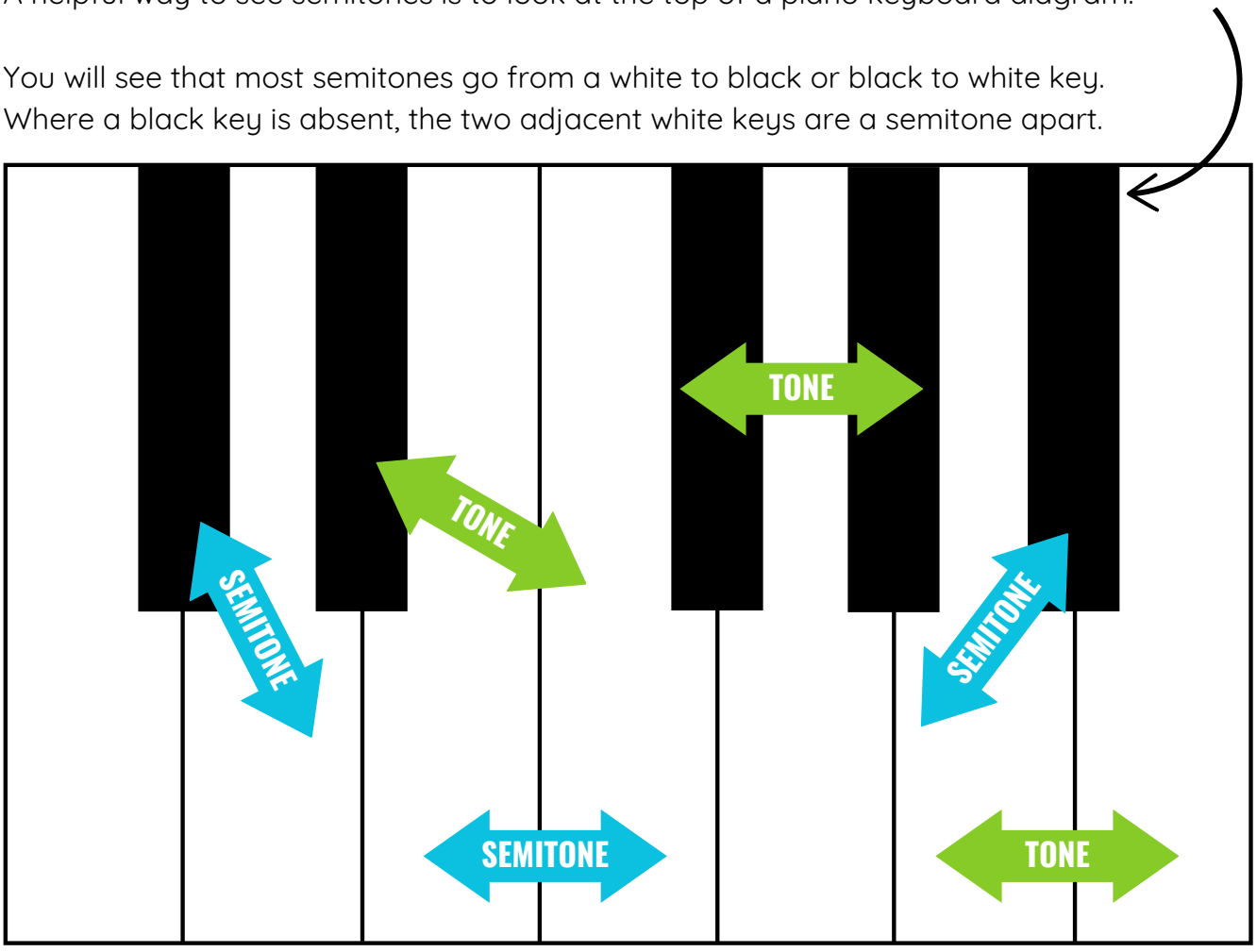
Tones and Semitones

A semitone is the interval between one piano key and one directly next to it.

A tone spans the distance of two semitones/keys.

A helpful way to see semitones is to look at the top of a piano keyboard diagram.

You will see that most semitones go from a white to black or black to white key. Where a black key is absent, the two adjacent white keys are a semitone apart.



Examples of semitones:



Examples of tones:

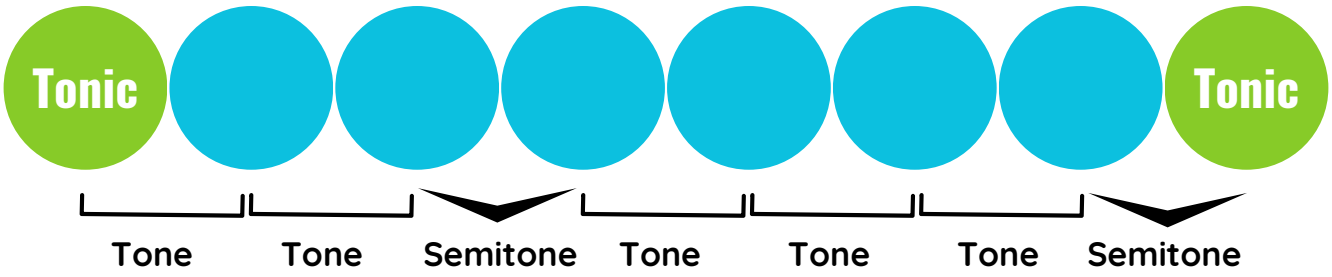


Building a Major Scale

The term “Scale” comes from the Latin “Scala,” which means ladder.
When we build a scale, we produce a ladder of each of the seven letters in the musical alphabet.

This becomes very important when we build scales that include the black keys.

To create a major scale, choose a note - this will be your tonic note - and follow this pattern of tones and semitones as you ascend through the musical alphabet.



This is the formula for building every major scale. Your “building blocks”.

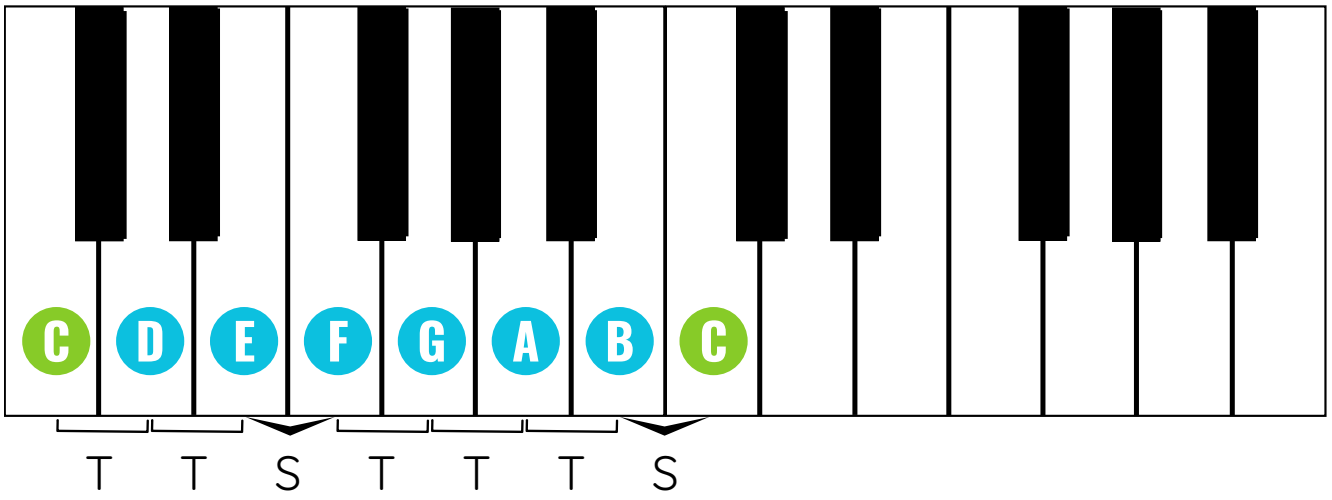
Notice the use of green dots at the start and end of our scale construction.
These will be our tonic notes as a scale starts and ends on its tonic.

In the illustrations within this book, green dots denote the tonic note, red dots indicate the root note, and blue dots represent the other notes in the scale or chord.



C Major Scale

If we take the note “C” as our tonic note, then follow the pattern of tones (T) and semitones (S), we get the following:



Our C Major Scale is:

C D E F G A B C



Our scale has each of the seven letters from the musical alphabet.
We use “C” twice as it is our tonic note.
All scales have the tonic note as the starting and ending notes.

Your First “Try It” Section!

This book is designed for interactive use. It encourages you to experiment with theory concepts, such as creating major scales and chords.

Engaging with the "Try It" and "Play It" pages at the piano is highly encouraged.

The author shares a personal learning story to emphasize the importance of this interactive approach.

> “During my youth, I travelled for a year, spending nine months in Asia, Australia, and New Zealand, followed by three months in six Spanish-speaking countries in South America.
>
> To prepare, I dedicated time to learning Spanish using audiobooks, a phrasebook, and a dictionary. After a few months of intensive learning, this ultimately enabled me to read Spanish novels and even write my travel journal in Spanish.
>
> Then came the big day: I arrived at the airport in Santiago, Chile.
> I approached the information desk to carry out the simple task of ordering a taxi. To my dismay, no words came out.
> When I finally spoke, I realized my attempts sounded jumbled, and, of course, no one could understand me.
>
> I completely overlooked the importance of practising speaking throughout my learning journey!
>
> Elizabeth ”

The relevance of this story lies in the gap between theory and practice.

While understanding a concept is important, practical application is crucial.

We recommend you “Try” out anything on the “Learn” pages in addition to the actual “Try” sections as you work through this book.

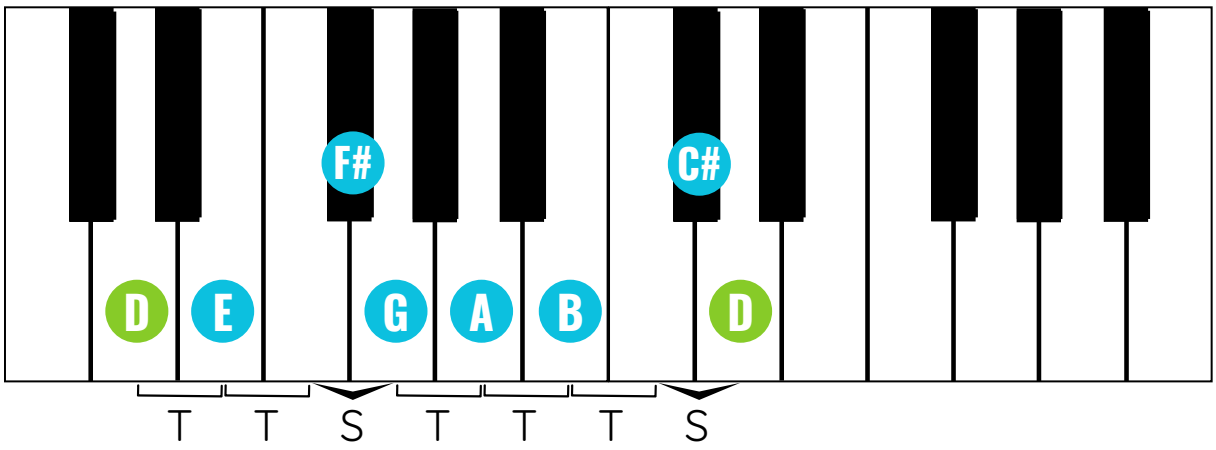
Other Major Scales

Let's explore some more major scales together.
Remember we follow the formula:
Tone - Tone - Semitone - Tone - Tone - Tone - Semitone (T T S T T T S).

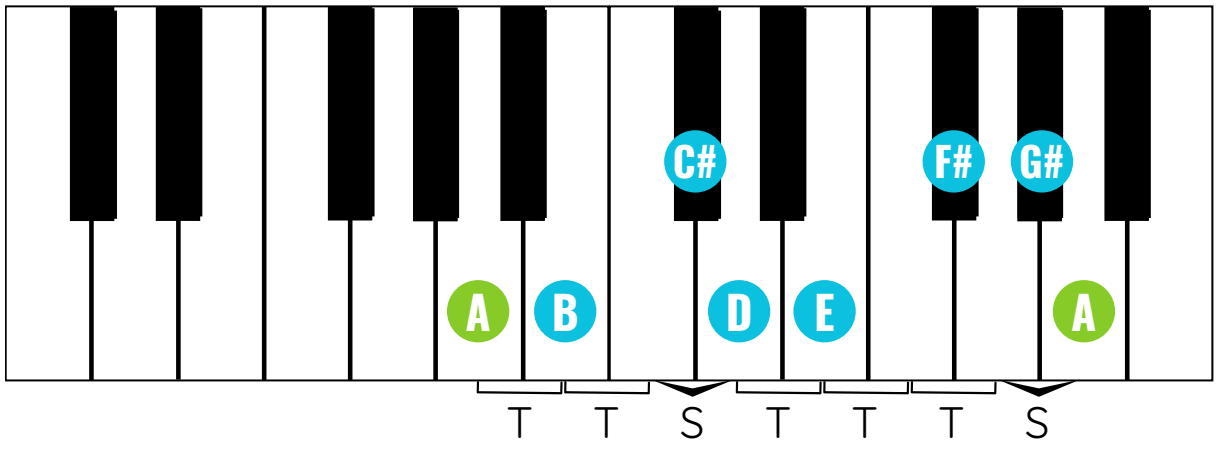
You might have already experimented with C major.
It's usually the first scale piano players learn due to the simplicity of all white keys.

Try playing each of these scales. Don't worry about which fingers to use - plenty of scale books are available if you want to learn the correct scale fingers!

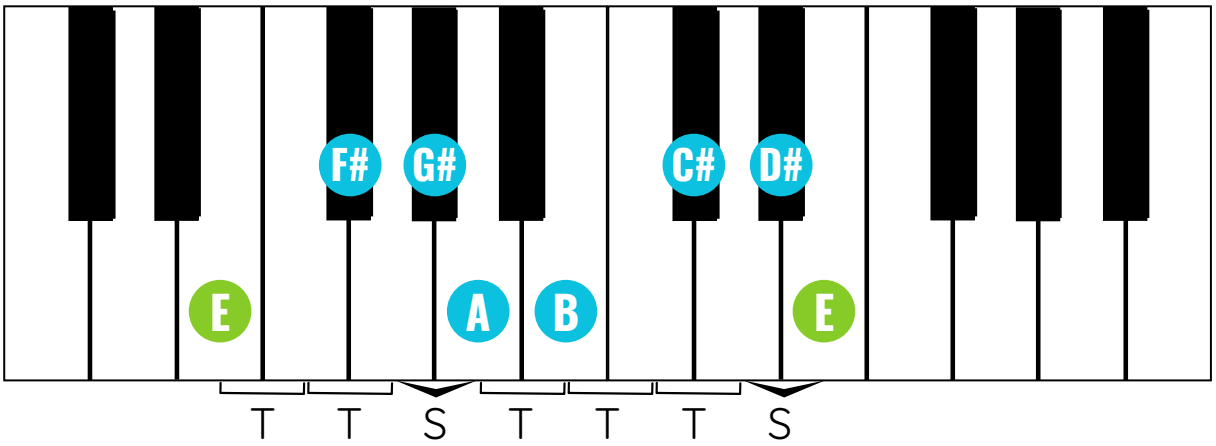
D Major: This scale has two sharps: F# and C#



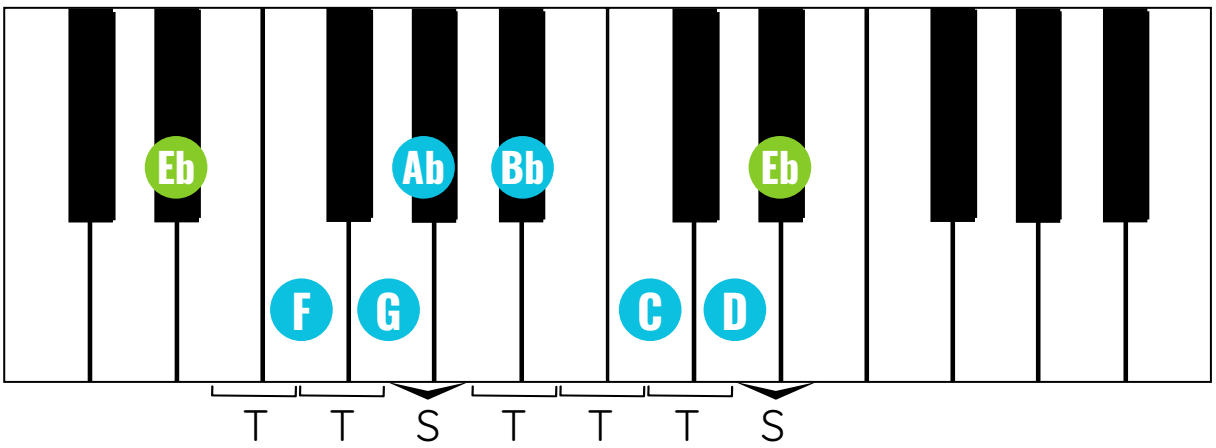
A Major: This scale has three sharps: F#, C#, G#



E Major: This scale has four sharps: F#, C#, G# and D#



Eb Major: This scale has three flats: Bb, Eb and Ab





Some scales use sharps (#), while others use flats (b) to make sure that each letter name is only used once.

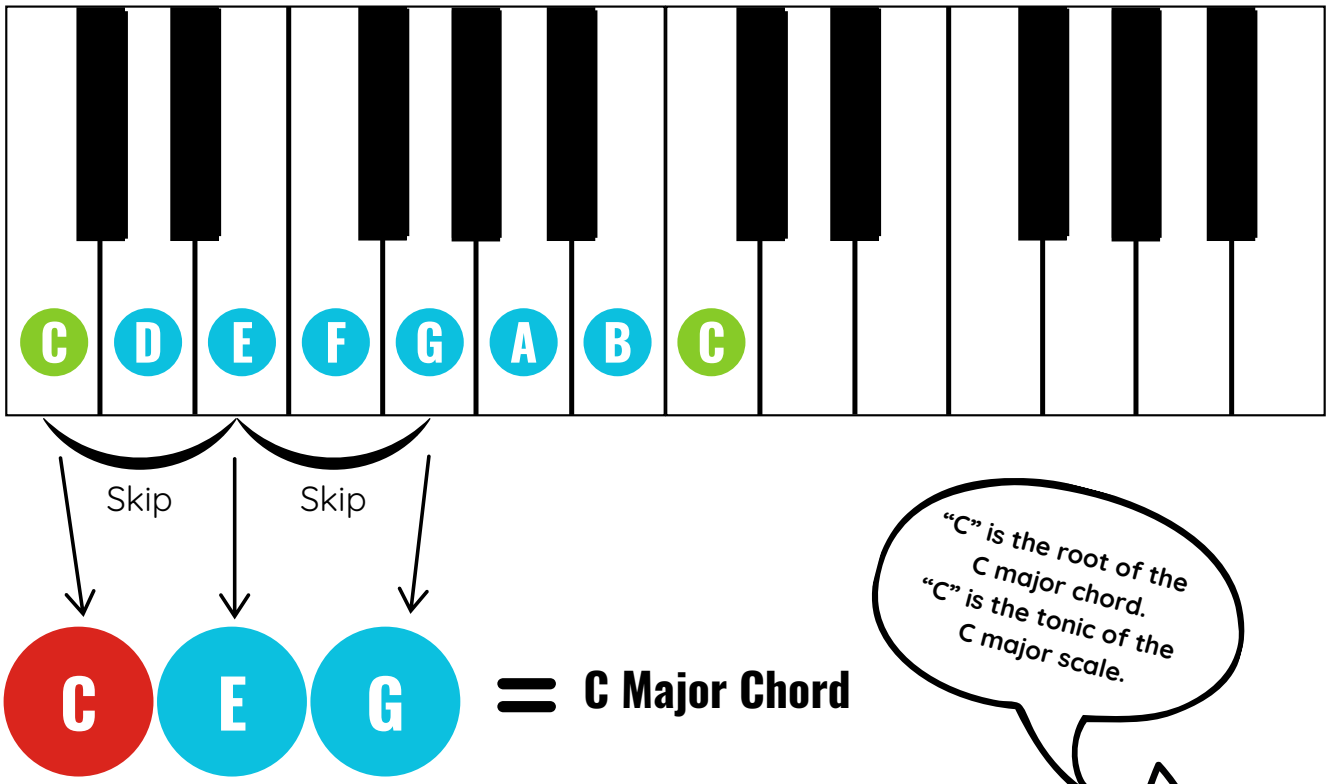
For example, the E major scale can't have Ab because A is already there. On the other hand, the Eb major scale needs Ab since G is already used.

Building the C Major Chord:

Now, let's return to C Major, often classed as the piano's easiest key.

Chords are built from the scale notes.
As we are building a C major chord, we take "C" as our root note; we go up a skip (two notes/letter names) and then up by another skip.

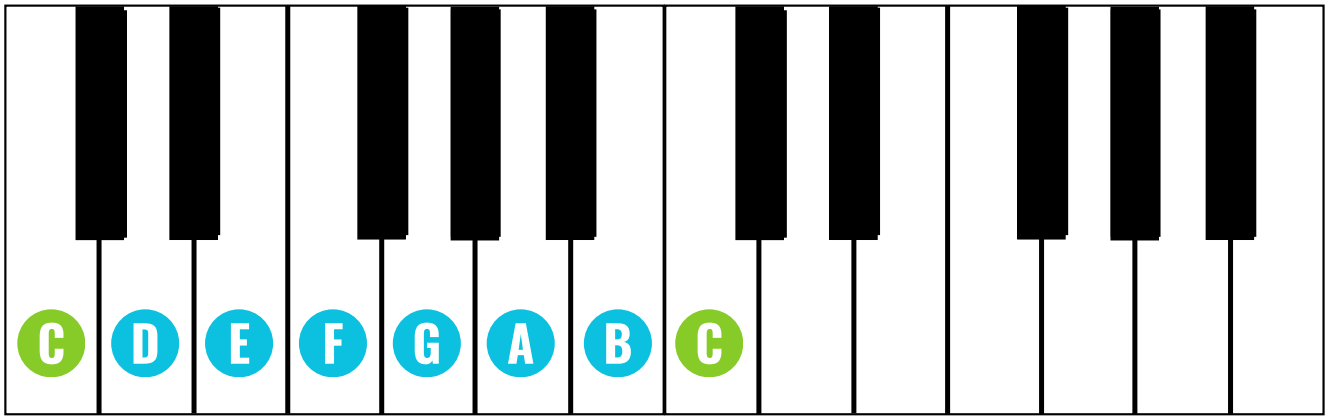
C Major Scale:



Remember, the root note is the fundamental note of the chord, which is also the note it gets its name from.

Scales Degrees and Roman Numerals

C Major Scale:



1	2	3	4	5	6	7	8/1	Degrees of the Scale

I			IV	V				Roman Numerals

We can build a chord starting on any degree/note of our major scale and repeat the process of going up a skip (two notes/letter names) and then another skip.

The chords most frequently used in Western music are those constructed on scale degrees 1, 4, and 5, corresponding to the Roman numerals I, IV, and V.

On the following page, we will build the F and G major chords, Chords IV and V.

Degrees of the Scale

"Degrees of the scale" is simply assigning a number to each scale note in ascending order. Degree 8 is also a return to degree 1 - our tonic.

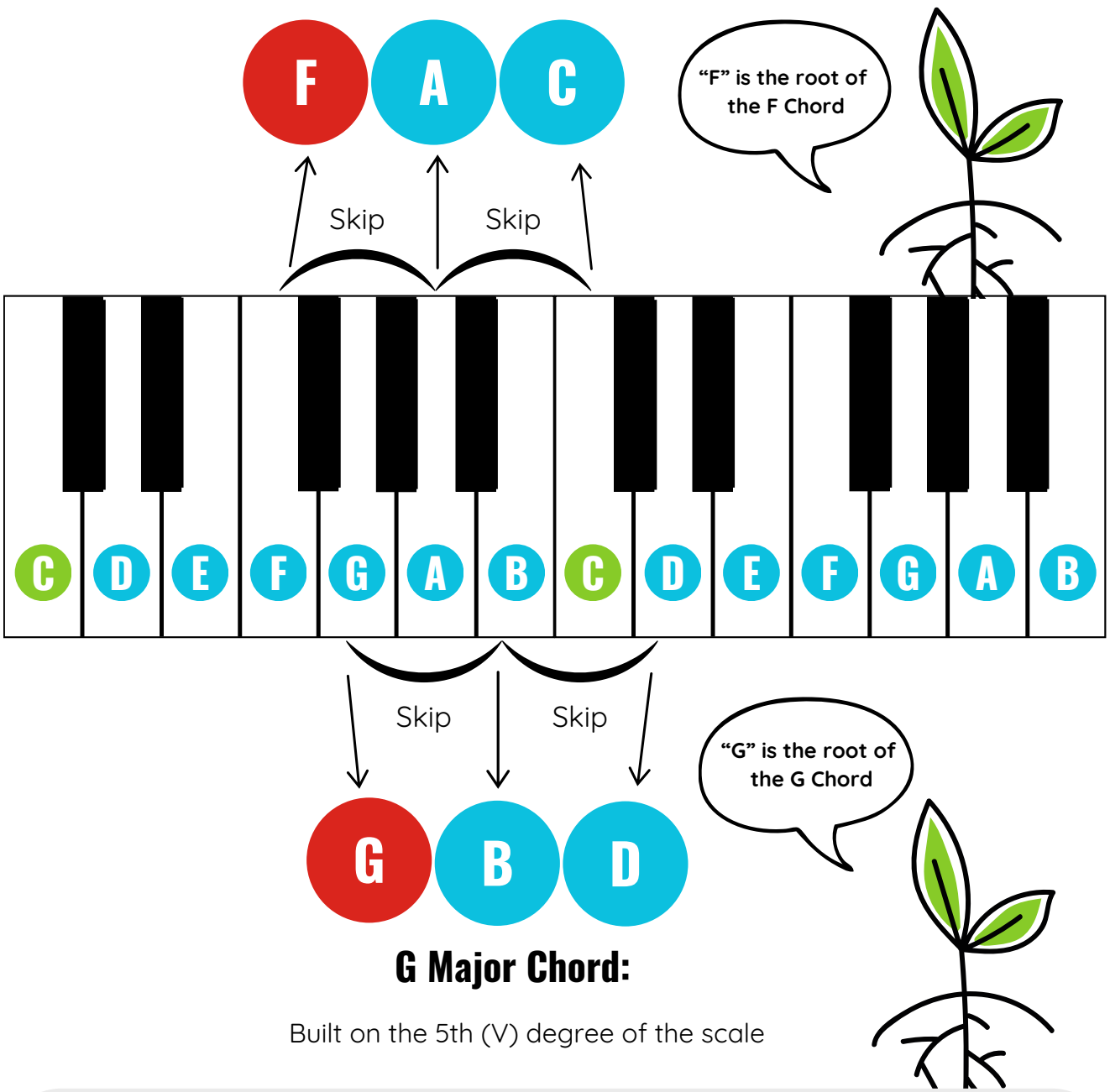


Roman Numerals

We use Roman numerals to describe chords in music.
We will learn more about why we do this as we progress through the book.

F Major Chord:

Built on the 4th (IV) degree of the scale



G Major Chord:

Built on the 5th (V) degree of the scale

We extended our C major scale, allowing us to continue skipping notes to construct the chords.

Primary Chords in C Major:

Primary chords are fundamental in Western music, spanning genres from classical to jazz and pop.
They are like a foundation which holds everything together.

Primary chords are built on the first, fourth, and fifth scale degrees, represented by the Roman numerals I, IV, and V.
In the Key of C Major, these correspond to the chords C, F, and G Major.

C Major Chord:

Built on the 1st (I)
degree of the scale



F Major Chord:

Built on the 4th (IV)
degree of the scale



G Major Chord:

Built on the 5th (V)
degree of the scale



Primary Chords in C Major

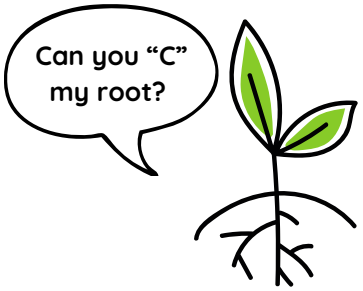
I	C major	=	C E G
IV	F major	=	F A C
V	G major	=	G B D

C Major Broken Chord

It's your time to try the chords, beginning with C major.

This exercise is easier if you alternate using your right hand (RH) and your left hand (LH)

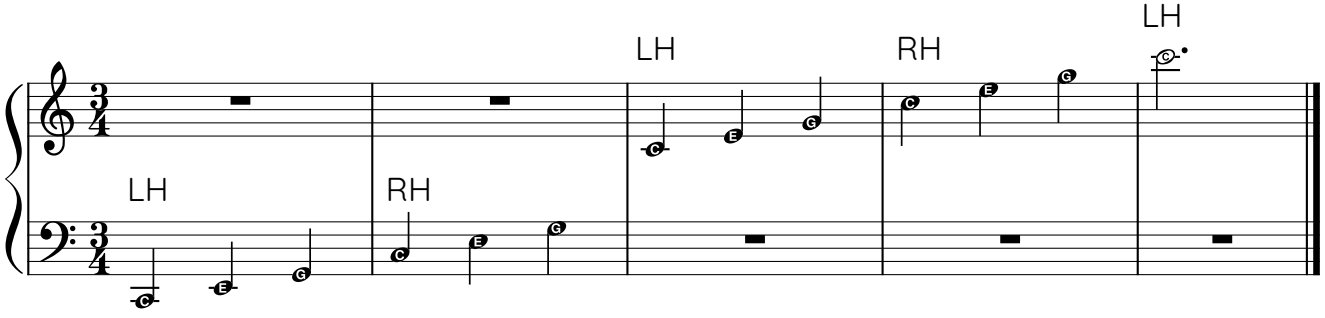




In this exercise, you will play the notes of the C major chord across multiple octaves. Begin with low C (two C's below middle C) and play C-E-G, ascending an octave with each new bar.

- Use fingers 5-3-1 for your left hand.
- Use fingers 1-3-5 for your right hand.
- Play the final note (high C) with your left hand (LH). Don't play all the chord notes in this bar.

These are called "broken chords" since the notes are played separately instead of simultaneously.



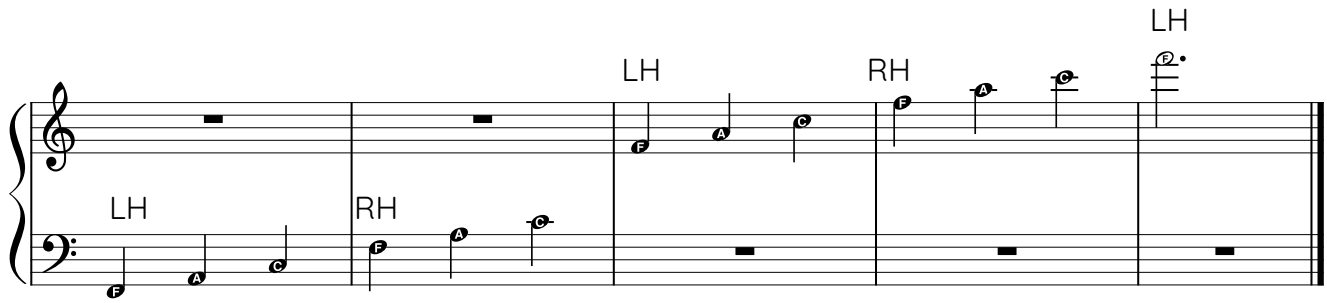


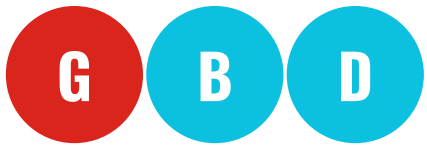
Try this exercise while keeping the sustain pedal pressed down.
If you make a mistake, lift the pedal up and down to reset and try again.
The sustain pedal is located on the right if you have multiple pedals.
If you have just one pedal, that's the one you should use!

The F and G Major Chords
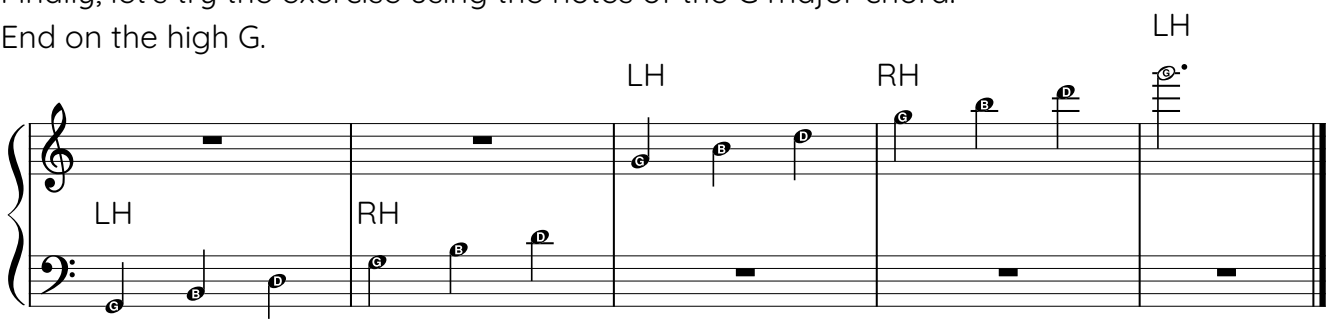


Now, let's try the exercise using the notes of the F major chord.
Again, alternate LH with RH and use finger 5 - 3 - 1 for LH and 1 - 3 -5 for RH.





Finally, let's try the exercise using the notes of the G major chord.
End on the high G.





We have added the note names in the note heads to help you out with the very high notes.

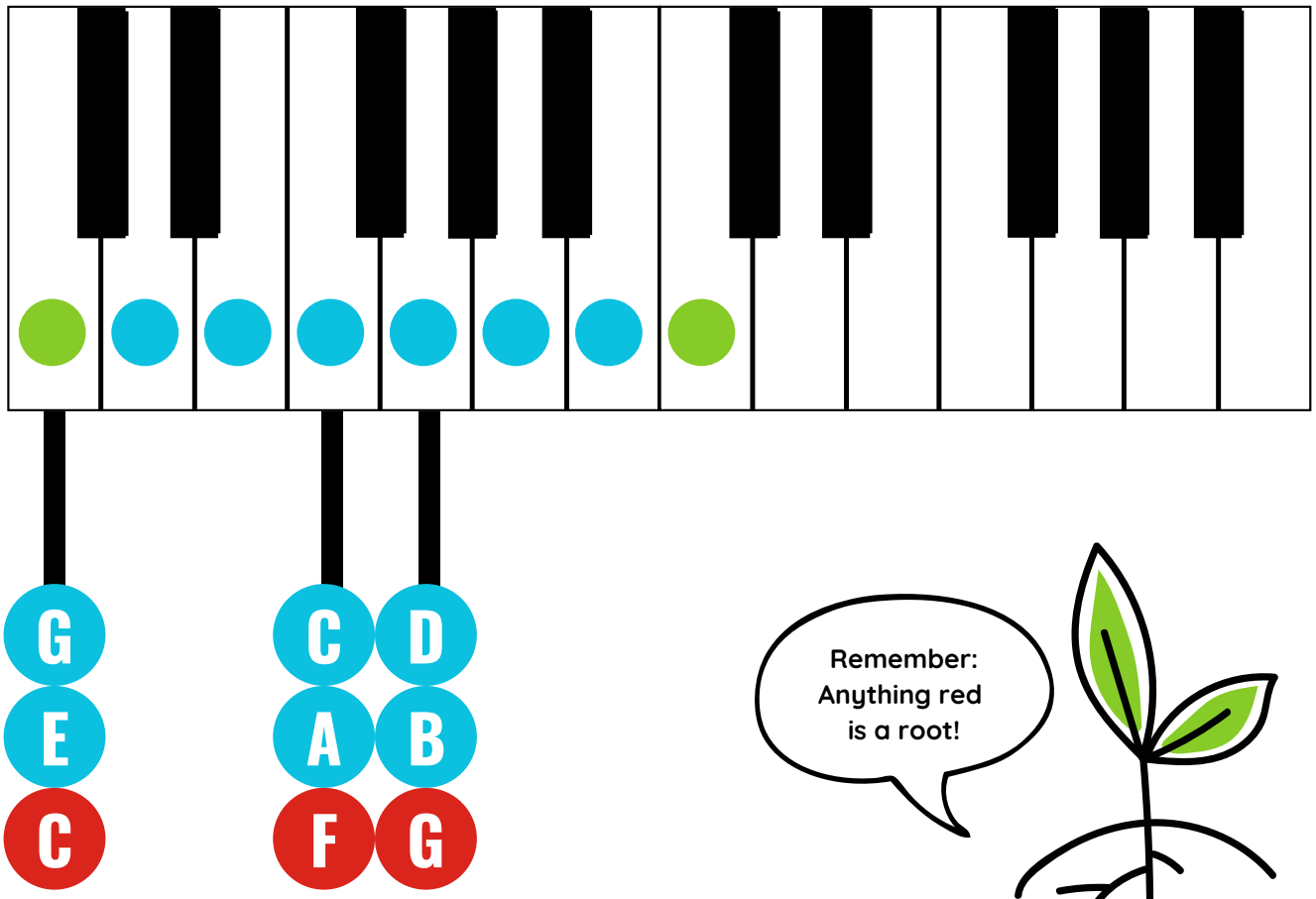
Introducing Blocked Chords

"Blocked chords" refers to playing all the notes of the chord simultaneously, rather than one at a time (which are "broken chords")

Technically, a "chord" means two or more notes played together. We can use the word chord to describe chords of two, three or even more notes.

The broken and blocked chords we are working with at the moment have three notes and they are specifically called a "triad" (from the Latin 'Tri" meaning three).

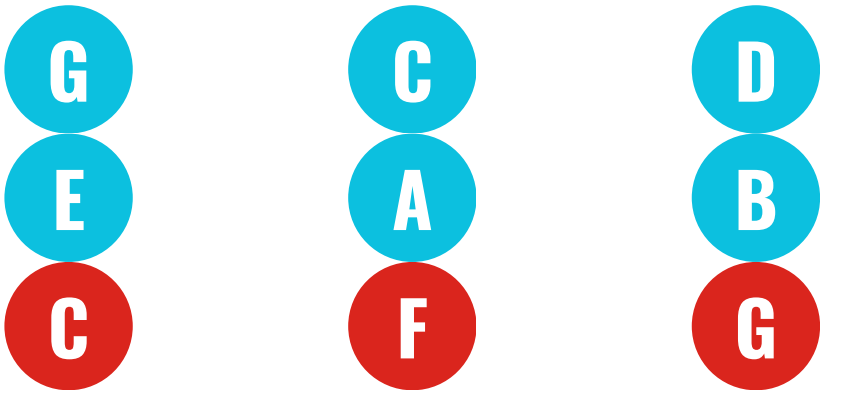
C Major Scale:

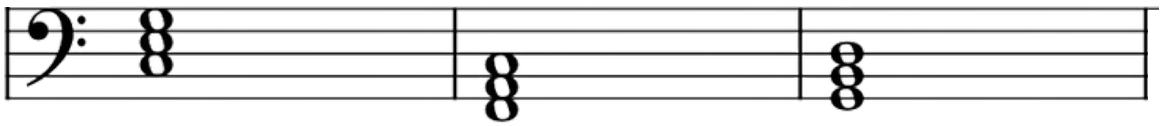


Blocked Chords on the Music Staff

Let's look at our three chords on the music staff.

Reading patterns and shapes is the quickest way to sight-read and learn music.





Root note
C

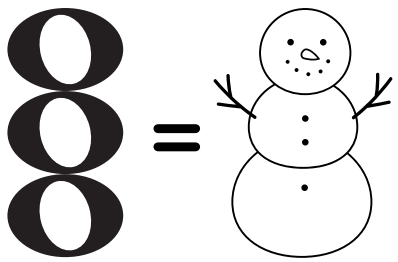
Root note
F

Root note
G





Since the root note is positioned at the bottom, chords played in this manner are known as "root position."
Due to their visual appearance, they are sometimes called the "Snowman shape! "



Your First “Play It” Piece

Now, it’s time to try out what you have learnt.
This book is designed for all ability levels, so you may find it very easy or hard.
Either way, we encourage you to try it out to the best of your ability.

In all of our pieces, we have left out phrase marks to keep the music score as uncluttered as possible.

Pitch

The piece is marked "Both hands 8va," indicating that you should play an octave higher than written.

Left-hand Pattern

The left-hand pattern here plays blocked triads throughout.
Remember, a chord containing three notes is called a ‘Triad’.
The chords are played on beats one and three.

Chord Progression

The piece “First Light” has a chord progression of:
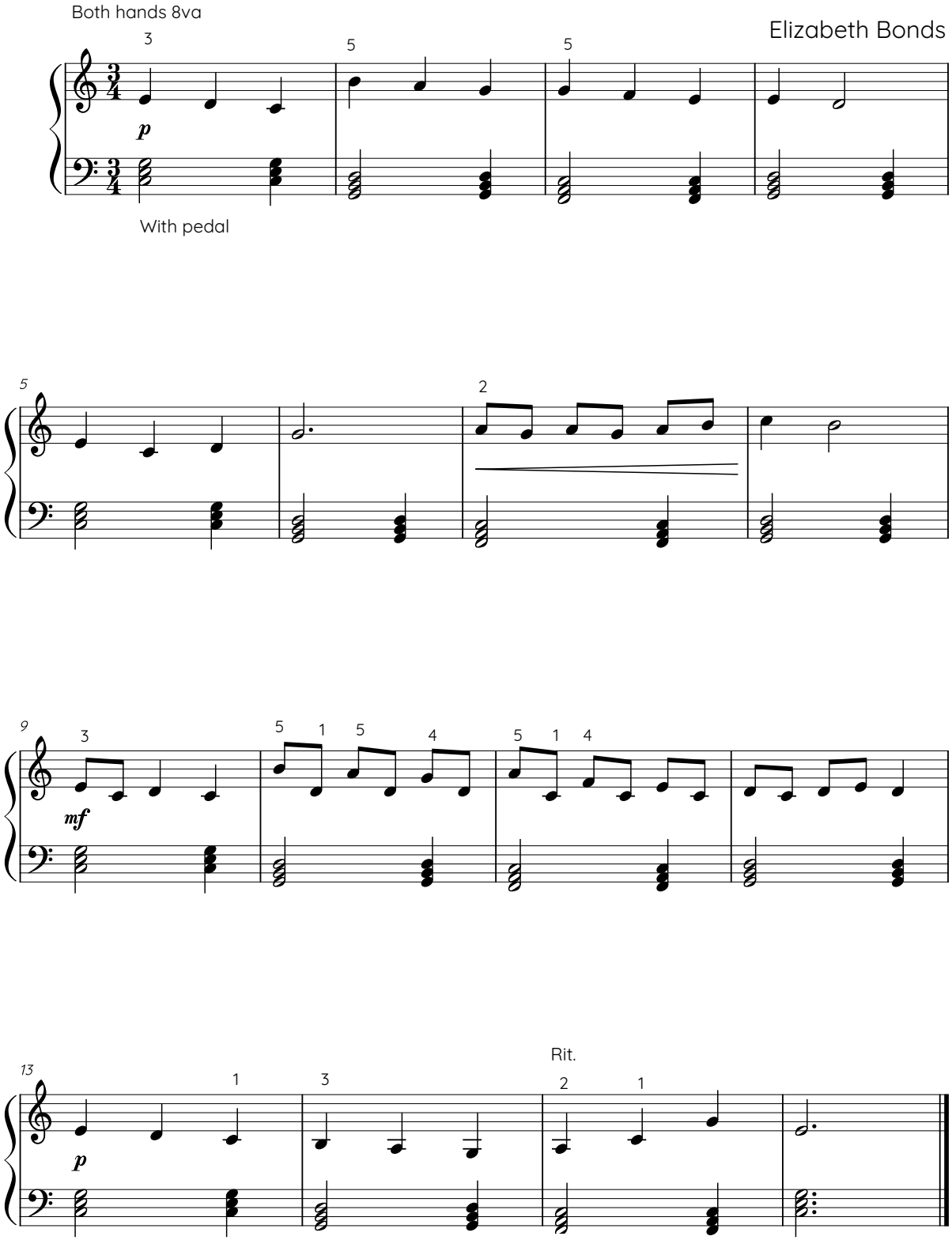
Lines one, two & three:	**C**	**G**	**F**	**G**
Last line:	**C**	**G**	**F**	**C**

A chord progression is a sequence of repeating chords.
We will explore this topic more thoroughly in Unit 3.

Dynamics & Other Markings

If you need help with some musical terms, please visit our website, where many of the common music terms are listed.

First Light



Enjoy this sample?

All 13 units - (147 pages) are available on our book.

Book size is 8.5 x 11 inches - not a little novel size!

Available now on Amazon worldwide

