



RAY HARMONY
AUTHOR OF *HACK MUSIC THEORY*

12 MUSIC
THEORY
HACKS
TO LEARN
SCALES
& **CHORDS**

**"The most brilliant, fast, easy and fun
music theory book I've ever seen!"**

—DEREK SIVERS, CD Baby founder,
TED speaker, musician, author



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–DEREK SIVERS, CD Baby founder, TED speaker, musician, author of
Anything You Want: 40 Lessons for a New Kind of Entrepreneur

“This is the kind of book I wish I had when I first started out.”

–IHSAHN, Emperor

“Trust Ray, and in no time you’ll have a watertight music theory skillset you once thought impossible to obtain.”

–PAT LUNDY, Modestep, ex-Funeral for a Friend

“Ray manages to make learning music theory fascinating, digestible, and damn right cool!”

–JOE COPCUTT, AxeWound, Zoax

“If you have been put off music theory in the past, then this is the book to inspire and empower you.”

–VICTORIA WILLIAMSON, PhD, Vice Chancellor’s Fellow Researcher and
Lecturer in Music at the University of Sheffield, UK, author of
You Are the Music: How Music Reveals What it Means to Be Human

“Ray has a totally unique approach of hacking music theory, which gives you the essentials in a fraction of the time.”

–VESPERS, Warp Academy founder, music producer

ABOUT THE AUTHOR



Ray Harmony in his natural habitat.

My name's Ray Harmony (né Holroyd), and I've dedicated my life to using the power of music to inspire positive change in the world, which I do through Revolution Harmony. I'm a British African based in Canada, and an award-winning music lecturer, composer, performer, producer, and journalist, as well as a few other things, too.

I've been studying music for over thirty years, and teaching it for over twenty. My first No. 1 single was back in 1996 in my birth country of South Africa, and during the last few years in Canada I've been making music with multiplatinum Grammy-winning artists (Tom Morello of Rage Against the Machine, Serj Tankian of System of a Down, and many more), then donating all the proceeds to charities that restore harmony between people, animals, and the environment.

Between my time in South Africa and Canada, I immigrated to England where I spent a decade (2001–2011) lecturing music theory and composition at Ealing, Hammersmith and West London College, one of Europe's largest colleges. I was also the course director and lead internal verifier for the music department, and was honoured to win EHWLC's prestigious Vocational Qualification Hero and Learner First awards.

My education is a unique blend of 'classical' from the UK's Royal Schools of

Music (piano, guitar, and theory, all to the highest grade) and ‘contemporary’ from the USA’s Musicians Institute in Los Angeles, where I graduated from their guitar program. I studied education and did my teaching qualification at EHWL College in London.

I’ve been writing for various publications (Kerrang!, Terrorizer, and more) every month since 2009, and I used to be the editor of a guitar magazine as well, until I once again moved countries. I’ve run a couple of record labels, too, but nowadays I spend all my time making music, teaching music, and writing about music.

Learn more at HackMusicTheory.com

Come say hello at RayHarmony.com

This book is dedicated to all my past, present, and future students.

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12 Music Theory Hacks To Learn Scales & Chords

HOW TO USE THIS BOOK

Wanna learn Music Theory in 30 minutes?

No prob! Each hack (i.e. a cheat sheet) delivers all the vital info you need to know about that topic. Read through all the hacks in a half hour, and you'll be making good music in less than an hour from now.

Oh yeah, one more thing. To keep you skipping merrily along, I've added a handy glossary for quick reference. All terms in bold have their definitions waiting patiently for you in the back. And it goes without saying, which is silly cos now I'm gonna say it, but the debut of a term will always have its explanation with it. However, later in the book if you come across a term you know was mentioned earlier but now looks Greek, please use the glossary. Unless it's Pythagoras, he looks Greek cos he is Greek.

Wanna learn more about why and how music works?

Great! Read the companion book *Hack Music Theory, Part 1: Learn scales & chords in 30 minutes*. Besides, if you only read the book you're holding right now, you'll miss out on a bunch of bad jokes and deep insights that are only revealed in the companion. So, as soon as you're done with this book, go grab a copy of its big sister at HackMusicTheory.com

Important tips

Music is sound and hearing is believing, so try playing the examples in this book on a piano app, a virtual piano online, or a real piano if you're old-school. Doing this or not doing this won't affect your understanding of the content, but hearing it all come to life sure is fun.

Also, you definitely don't need to read this book in one sitting, though you easily could. Please remember, however, that understanding music theory is an accumulative action, so you'll probably have questions at the end of each hack that will be answered in subsequent hacks. And, just like in a murder mystery where you have to get to the end before the whole picture becomes clear, our music theory story is still unfolding, too. All shall be revealed soon, so keep reading!

Lastly, you'll get the best results from reading this book cover to cover, and then repeating that until it's all soaked in. I've been told that using the book as a pillow while you're sleeping also helps this osmosis. (Disclaimer: please don't sue me if you sleep on your e-reader and the screen cracks.)

HELLO

Musical harmony has the power to improve personal harmony, mindfulness, health, and connections, and can even fuel revolutions towards a societal harmony. Power to the people, and that power is music!

Growing up in apartheid South Africa, I was surrounded by people of all colours united through music, and only through music. Heroic bands like the multiracial National Wake and – my personal favourites – South African singers Lucky Dube and Johnny Clegg, created the pot of gold out of which Nelson Mandela would later build the Rainbow Nation. Most inspiringly, they did this in the 1970s and 1980s, right under the nose of the apartheid regime. Music is invisible and can be orally shared, making it impossible to confiscate or suppress. We can feel music but we can't touch it, and if that's not the best party trick ever, I don't know what is! Black and white together in harmony, like the keyboard of a piano: that was my introduction to the power of music and why I believe access to music education should be a human right.

Movement causes vibration, and vibration causes sound, which is why on an astronomic level the planets are making 'music of the spheres,' and on a microscopic level our bodies are making 'cell symphonies.' We are music, literally. Every culture we know of uses music to enhance life and unite people. Before the days of recording, there was a far larger percentage of musicians, because if you wanted to listen to music you had to play it yourself. When it became possible to capture songs and sell them as products, a tectonic shift forced musicians above everyone else with the implication that they have something unique, which is why they're on the record and you're not. However, in reality we're all born with the capacity to communicate through music: we just have to understand the language. Everyone, and I do mean everyone, can learn music. There are really no reasons not to learn music, and countless reasons to learn it. You don't even need to have an instrument, as most music in this digital age is produced on computers. In fact, I composed and recorded the music for my all-star charity single 'Hello,' featuring Tom Morello (Rage Against the Machine) and friends, on a laptop in my living room, using nothing more than REAPER digital audio workstation (\$60) and virtual instruments, some of which are even available for free.



On a planet with over seven billion humans, music is our only shared language, and harmony is our only hope. By learning the language of music, also known as music theory, you can create harmony in your life and your community. Thank you for having the courage and commitment to make the world a better place through music. Together we are all the Revolution Harmony. Amandla Awethu!

PREFACE

Theory! Scary, huh? As a music lecturer, I discovered that this six-letter ‘dirty word’ always caused an impressive array of strong reactions from my new first-year students. No other word can end the party quicker than this one. Students react in a variety of ways to this word: first, there are the flinchers, who physically tense up – often with the addition of lip curling that even the most potent salt and vinegar chips can’t induce. Then there are the sighers, who would make great trumpet players with their huge cheeks and lungs, often including eye-rolling for extra emphasis. Then there are the pee-ers, who suddenly have full bladders and need to be excused for lengthy toilet breaks, even though it’s only two minutes into the first lecture of the day. Finally, there’s the nerd – yes, just the one – who perks up and aims their pen at that blank 300-page notebook, ready for action. Don’t get me wrong, nerds are awesome – but this is a book for the flinchers, the sighers, and the pee-ers. This is a book for us, the 99%.

Please stop reading for a moment. No, not yet, that was too soon. Okay, please stop reading after this sentence and take a few seconds to scan your body. Scanning, scanning, scanning. Finished? Good. If you found your shoulders tense and your lips curled, then read on. If you found your cheeks puffed out and your eyes wandering, then read on. And, of course, if you found yourself spontaneously in the bathroom with nothing to do, then definitely read on. However, if you belong to the perky 1%, then you’re probably better off reading the classic *AB Guide to Music Theory* from the Associated Board of the Royal Schools of Music.

We’ve now established that we’re all in the right place. Welcome to a better future! A future that will find you happy, healthy, successful, rich, and – obviously – famous. Erm... theory can and absolutely will make all of these a reality, probably... well, maybe... actually, maybe not. Fine, my book isn’t going to do any of those things for you. But it kept you reading, didn’t it? That’s my mission, to keep you reading and learning, and hopefully also entertained along the journey. By the time we reach our destination of the final book in this series, you’ll have the knowledge to figure out why your favourite song is so powerful, and, better yet, you’ll actually be able to compose your new favourite song yourself, even if you don’t play an instrument – that’s what computers are for. Also, if you need an internationally-recognised qualification, or just want to be the proud owner of a shiny music certificate, you’ll have the level of education needed

to write the London College of Music's highest grade Popular Music Theory exam, which is held worldwide. So while I can't help you diminish debt, I can help you understand what a diminished fifth interval is and amaze you with the story of why it was banned from music, all while helping you become qualified.

I'll be honest with you. Theory is a six-letter dirty word to most musicians, but, hey, musicians love dirty words, right? And just like all the other dirty words, theory is easy to learn and fun to use! See what I did there? No? Confused? Well, this is the last time you'll be confused when it comes to theory, as here's my promise to you: using my two decades of music teaching and industry experience, combined with my minimalist methods of explaining, I'll break down music theory into its simplest form and then show it to you using the simplest way possible, all via a series of simple hacks. I'll start at the very beginning, so you don't need any prior theory experience. Just bring your love of music and I'll bring everything else. Remember, theory is music, and music is fun. Enjoy this! Besides, contrary to what music snobs would like you to believe, theory really is easy, as there are a mere twelve notes in all music. Every element of theory has been used to write songs, and every song has theory behind it, so let's go backstage and get behind the scenes to find out how it all works. Right, please follow me...

1. PITCH & RHYTHM

There are only ever two ingredients that make up all music: pitch and rhythm.

Rhythm is a *pattern in time*.*

Pitch is the *frequency of vibrations, resulting in the highness or lowness of a sound, aka a note*. It can be expressed in **melody** (horizontal) – a *sequence of notes sounded one at a time*, or in **harmony** (vertical) – *two or more notes sounded together*, or in both.

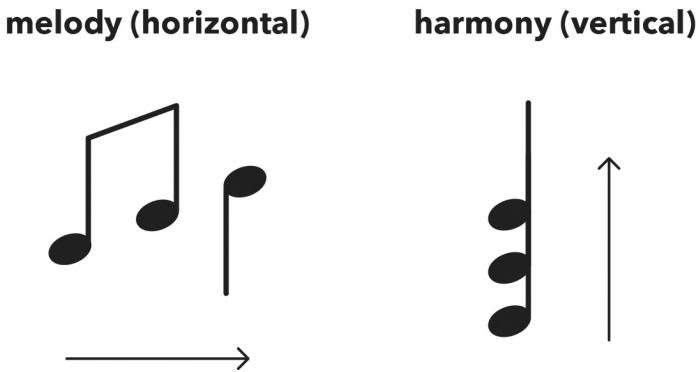


Figure 1.1 Music notation showing the horizontal movement of an unfolding melody, versus the simultaneous vertical stacking of notes to form harmony (e.g. a **chord**, *three or more notes sounded together*).

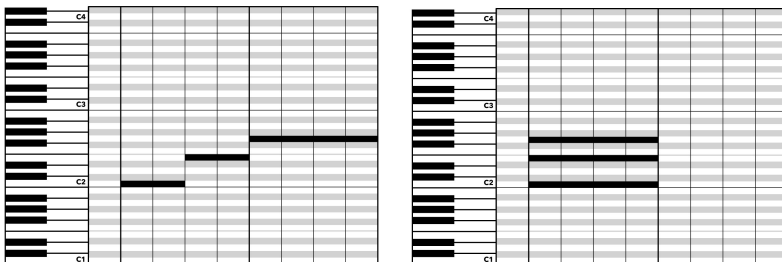


Figure 1.2 MIDI notation in a digital audio workstation's piano roll, showing melody (left) versus harmony (right)

*Rhythm is independent of **tempo**, or the *speed at which music is played*. A rhythm can be played fast, slow, or somewhere in between, but it's all still the same rhythm.

2. NOTES & ENHARMONICS

This is your alphabet, literally and musically. The first seven letters of our English alphabet are used for the *white notes on a piano*, aka **naturals**, and for the five black notes we just add sharps (\sharp) or flats (\flat) to those first seven letters. All music is made from just these twelve notes – it's that simple!

Sharp (\sharp) 1 step up (e.g. C \sharp is 1 step* up from C)

Flat (\flat) 1 step down (e.g. D \flat is 1 step down from D)

Enharmonic is a *different name for the same note* (e.g. C \sharp and D \flat are enharmonics).

When you count through all twelve steps (i.e. notes) and end up on the same letter again, that's known as an **octave**: *same note, but a higher or lower pitched version*.

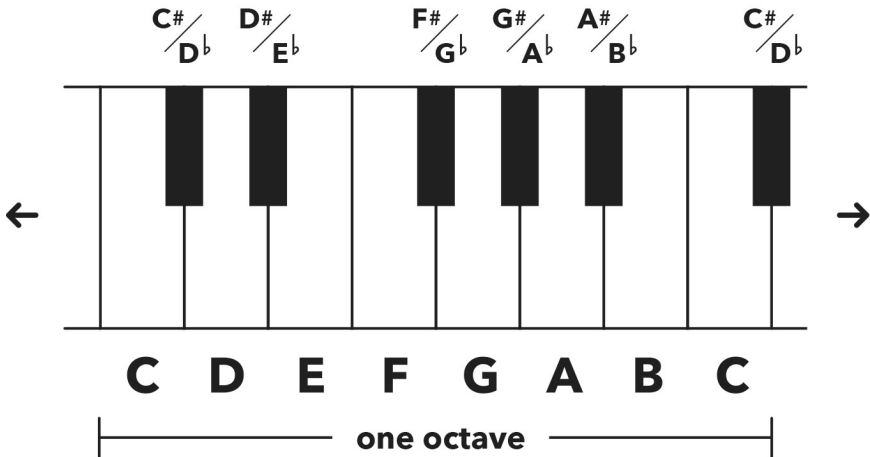


Figure 2.1 Notes on a piano keyboard

***Step** is not a musical term, and is therefore ambiguous. We will upgrade this with an unambiguous musical term in the following two hacks.

3. TUNING* (BONUS)

Tuning means two things. First, we tune our instruments and voices in order to play and sing the correct pitches. Second, it's the precise pitch of each note that we tune our instruments and voices to that makes up our tuning system.

We use a system known as equal temperament to tune all our musical instruments in the west. Whether you're working with a keyboard, guitar, voice, MIDI sequencer, or any other instrument, you're already experiencing this tuning system.

Equal temperament *divides the octave into twelve equal steps*, known as semitones. A **semitone** is the *smallest space between notes in western music, and is a distance of one step*. This mathematical averaging actually pushes our new musical notes slightly out of tune from where Mother Nature placed them and Pythagoras discovered them.

Just intonation is the *original 'pure' tuning system that uses whole-number ratios, and works only from one fundamental note at a time*. This was fine for simple medieval music, but just intonation simply doesn't cut it anymore, as nowadays we demand freedom to musically travel to any note, any chord, any time!

Advantage of equal temperament: We can play any chords, without having to retune.

Disadvantage of equal temperament: Our music is a tiny bit out of tune.

*Tuning is one of the most fascinating yet complicated musical (not theoretical) topics, which is why I've included it. If you wanna push on with the theory though, feel free to skip this hack as it's pretty much just backstory. Besides, a lot of pro musicians don't even know this stuff!

4. MAJOR SCALE

A **scale** is a *family of notes that work together*. The original family is the **major scale**, often referred to as the ‘happy scale’ due to its cheerful sound. All major scales are exactly the same scale, made up from exactly the same formula but starting on a different note. This formula is derived from playing all the white notes on a piano, beginning with C. Therefore, the major scale formula (counted in steps, aka semitones) is: 2 2 1 2 2 2 1

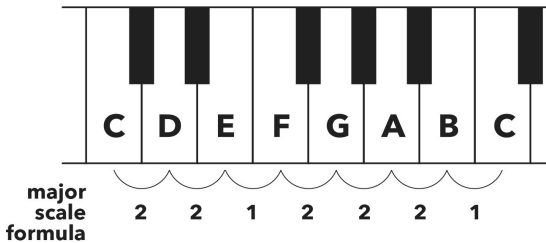


Figure 4.1 Major scale formula derived from white notes on a piano, starting on C

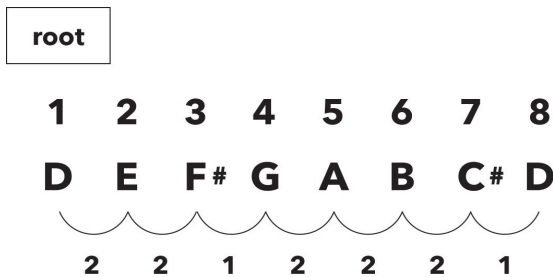


Figure 4.2 To find the D major scale, start the major scale formula on D

When writing out music, each note is assigned the number of its degree in the scale, from 1 to 7. We then use 8 to complete the scale and represent a version of the root an octave higher. This is called **spelling**, and is the *numerical way of writing music* (e.g. major scale = 1 2 3 4 5 6 7 8).

VOCAB EXTRAS

Root / root note / tonic *first note of a scale* (e.g. D is the root in D major)

Interval *space between any two notes, measured in semitones* (e.g. twelve semitones is the interval of an octave)

Semitone *smallest interval in western music and is an interval of one step* (e.g. C to C#)

Tone / whole tone *interval of two semitones* (e.g. C to D)

5. MINOR SCALE & RELATIVES

When you start on the 6th note of a major scale (the ‘happy scale’), you get a **minor scale**, aka **natural minor scale** (nicknamed the ‘sad scale’). By using one of the other notes within a scale as your root, you create different emotions without changing any notes.

For example, if you emphasise the 6th note in the C major scale as your root, you get the A minor scale. And vice versa: if you’re in A minor and you want the major scale hiding within, emphasise the 3rd note (i.e. C) as your root. These two scales are **relatives**, or **relative scales**, as they are *scales that have the same notes, but a different root* (i.e. they start in a different place).

The **relative major** is *the scale you get when you start on the 3rd note of a minor scale*. The **relative minor** is *the scale you get when you start on the 6th note of a major scale*.

The formula for the natural minor scale is derived from playing all the white notes on a piano, starting on A. Counted in semitones, it is: 2 1 2 2 1 2 2

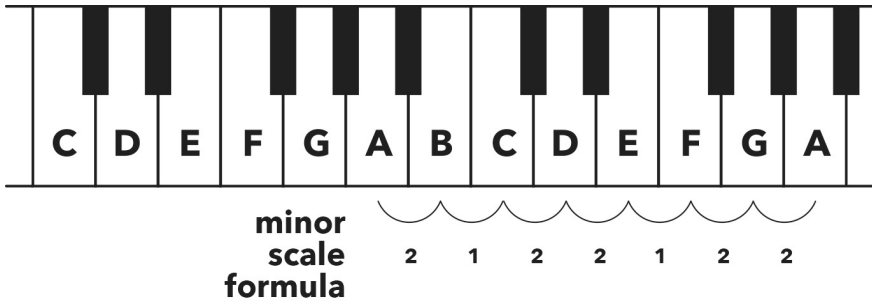


Figure 5.1 Minor scale, aka natural minor scale, formula derived from white notes, starting on A

VOCAB EXTRAS

Key the *scale in use* (e.g. a melody in the A minor scale is in the key of A minor)

Key signature the *sharps or flats in a scale* (e.g. F# and C# in D major – see Figure 4.2)

6. FINDING RELATIVES

To find the relative minor, count three semitones *down* in pitch from the major scale root.

To find the relative major, count three semitones *up* in pitch from the minor scale root.

Remember, there is always a note (i.e. letter) skipped between the roots of relative scales, aka relative keys.

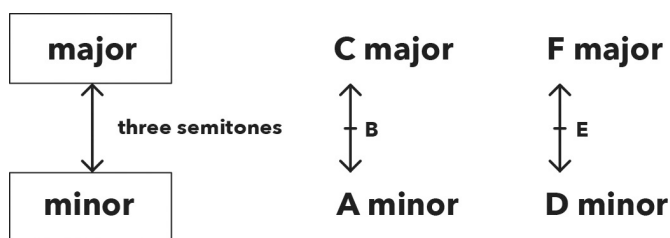


Figure 6.1 Shortcut to finding relative keys

Majors to relative minors (three semitones down)	Minors to relative majors (three semitones up)
B major = G \sharp minor	D minor = F major
E \flat major = C minor	B \flat minor = D \flat major

Figure 6.2 Examples of relative keys

7. WHY FLATS EXIST

Every major and minor scale must contain the first seven letters of the alphabet, otherwise things get confusing.

If you're working out a scale and you get to an A, and your formula says the next note is one semitone up (A \sharp), it must be referred to by its enharmonic (B \flat), otherwise the scale will have two As and no B. This is the *sole reason for the existence of flats*.

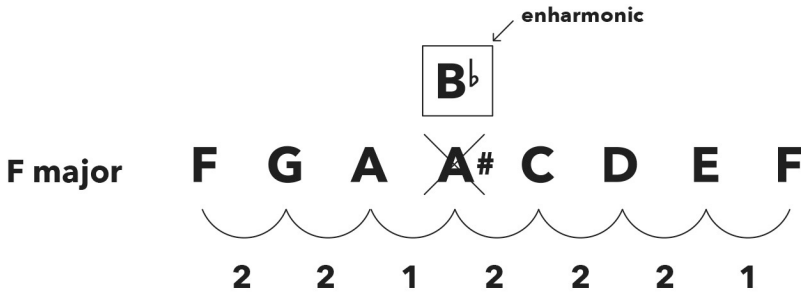


Figure 7.1 In F major, one semitone up from A must be referred to as B \flat

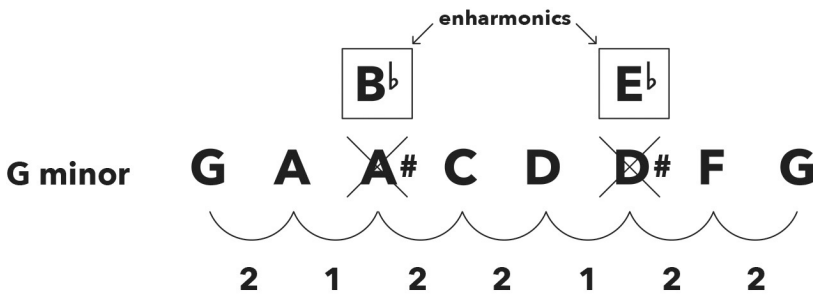


Figure 7.2 In G minor, we rename A \sharp to B \flat and D \sharp to E \flat , in order for the scale to contain all seven letters

Remember, key signatures consist of *either sharps or flats*, not both.

8. DIFFERENCE BETWEEN MAJOR & MINOR SCALES

‘Happy’ major scales and ‘sad’ minor scales share four notes (1 2 4 5), while the other three notes (3 6 7) are different. The reason for these scales’ opposite emotions must therefore lie within these three different notes.

The 3rd, 6th and 7th notes are *one semitone lower in natural minor scales than they are in major scales*. To represent this one semitone down, we add a flat (*b*) to their spelling.

By their spelling, these flats tell us that their associated notes are one semitone down from where they are in a major scale. They don’t tell us that the notes (i.e. letters) themselves are flats, like in A minor (below) where the *b* 3 is C, a natural note.

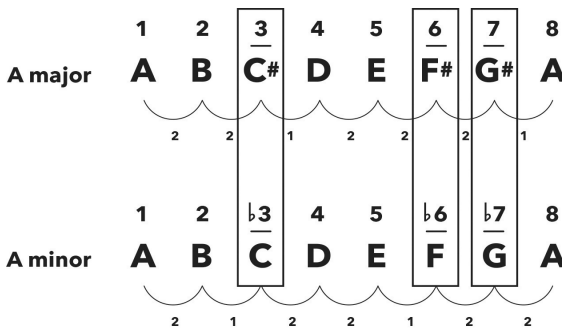


Figure 8.1 Comparison of A major scale to A natural minor scale

Major scale	1	2	3	4	5	6	7	8
Natural minor scale	1	2	<i>b</i> 3	4	5	<i>b</i> 6	<i>b</i> 7	8

Figure 8.2 Comparison of major and natural minor scale spellings

All major scales have the same underlying semitone formula and therefore the same spelling, and all natural minor scales have the same formula and spelling.

Remember, we write spellings and notes the way we say them. For example, flat three is written as *b* 3 (sign before number), and F sharp is written as F# (sign after letter).

9. DIFFERENCE BETWEEN MAJOR & MINOR TRIADS

Triads are the *simplest chords*, as they consist of *only three notes*. Chords are built by playing a note in the scale, then skipping over the adjacent note to the right and playing the note above it, and then repeating this play-skip pattern until you have the desired chord.

The first triad in A major is A C \sharp E (known as the A major triad), which sounds happy.

The first triad in A minor is A C E (known as the A minor triad), which sounds sad.

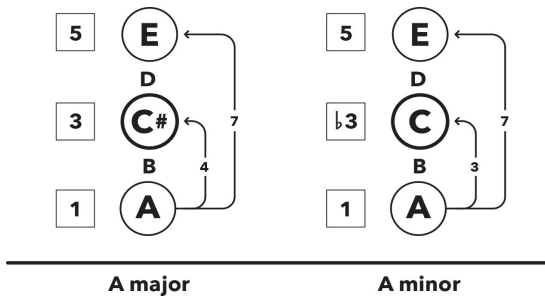


Figure 9.1 Comparison of A major triad to A minor triad

Only one note is different from the A major triad to the A minor triad, the 3rd, yet the emotions are opposite. This reveals that the **third note**, or **3rd**, is the *magic ingredient in music that gives chords and scales their happy or sad sound*.

The 3rd in a minor triad is closer to the root (three semitones) and therefore less harmonious, causing a **dissonant** or *clashing sound* and emotion. The 3rd in a major triad is further away from the root (four semitones) and therefore vibrates more harmoniously, causing a **consonant** or *pleasing sound* and emotion.

The note that completes these triads is called the perfect 5th, due to its perfect mathematical ratio to the root. By the way, the same is true about the octave, which is why it's also referred to as the perfect 8th.

INTERVALS

Minor 3rd (spelling = $\flat 3$) three semitones

Major 3rd (spelling = 3) four semitones

Perfect 5th (spelling = 5) seven semitones

Octave / perfect 8th (spelling = 8) twelve semitones

10. SEVEN TRIADS

Major and minor scales have seven notes, and seven notes mean seven triads, one triad starting from each note in the scale. Therefore, every scale has a family of seven triads living within it, and as long as we stick (for now) with these seven triads when we're making music, it will always sound good.

The first triad we get in any key is known as the **root triad**: a triad *built on the first note of a scale*. Then we repeat the play-skip-play-skip-play triad building formula from each of the other notes to uncover the remaining triads in that key.

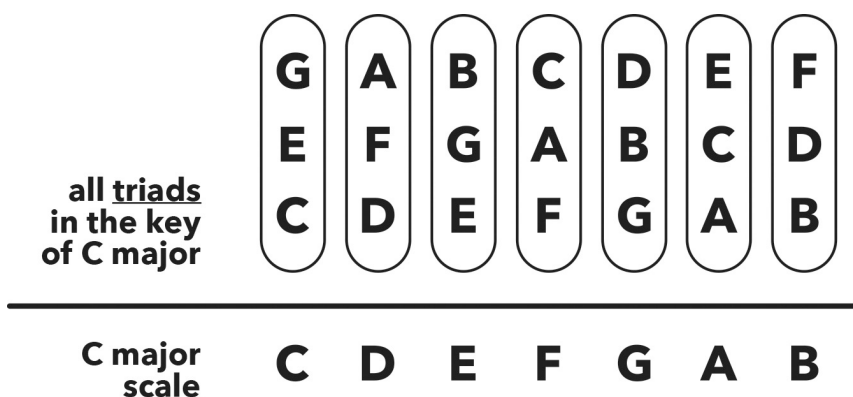


Figure 10.1 All seven triads in the key of C major

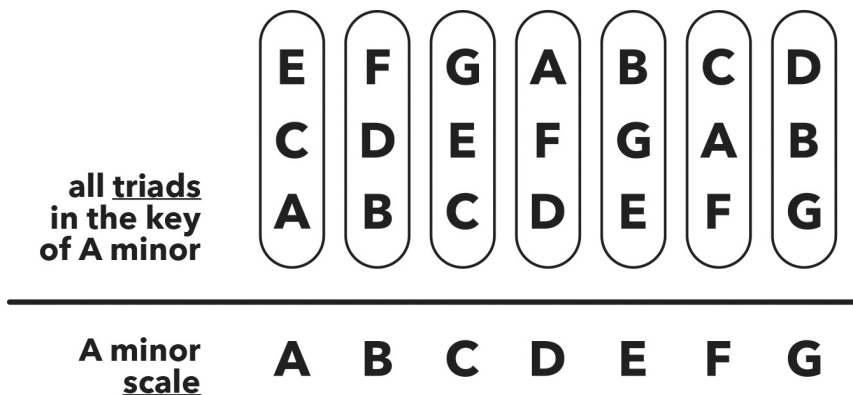


Figure 10.2 All seven triads in the key of A minor

11. TRIADS IN MAJOR KEYS

All major keys always have *four minor triads* and only *three major triads* (out of seven triads total), which means that in a major key there are more minor triads than major triads. In other words, in the ‘happy’ key there are actually more ‘sad’ chords than ‘happy’ chords.

This emotional complexity allows us to express sadness within a happy home, and it’s how we make music tell the true story of our complex feelings. When we compose a **chord progression** (i.e. *the chords you string together to tell your musical story*), we can eloquently communicate our inner narrative both by the chords we select and by their order.

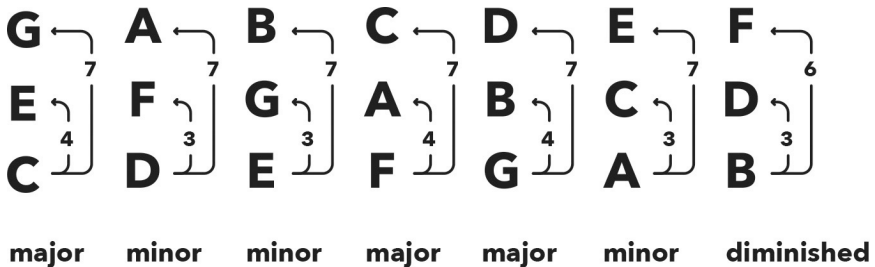


Figure 11.1 The seven triads in all major keys

The **diminished triad** is a *special type of minor triad*, and you can think of it as the black sheep of our family. The three semitones (minor 3rd) between its bottom and middle notes make it a minor, but the six semitone interval (instead of seven semitones) between its bottom and top notes is a diminished 5th,* making it a diminished triad.

INTERVAL

Diminished 5th (spelling = $\flat 5$) six semitones

*The diminished 5th is sometimes referred to as a **tritone**. ‘Tri’ means three, and a ‘tone’ is two semitones, describing its six semitones (3 x 2 semitones). In medieval Europe this dissonant interval was named the **devil in music** and subsequently banned.

12. TRIADS IN MINOR KEYS

Major and natural minor scales are relatives of each other, which means that all major and natural minor keys always have *three major triads* and *four minor triads* (one minor triad being the diminished ‘black sheep’).

By starting on (or emphasising) the 6th triad in a major key, you get the triads in a minor key: minor, diminished, major, minor, minor, major, major.

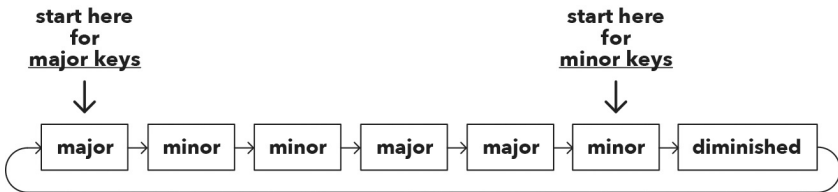


Figure 12.1 The one sequence of seven triads for all major and natural minor keys

A triad can be either *major*, *minor*, or *diminished*. This is known as its **chord quality**.

Each of the seven triads has their own root note (i.e. the triad’s first note). However, the key itself also has a root note, which is known as the **key-note** (i.e. *the scale’s first note*)

TRIADS

Major triad triad consisting of a major 3rd (four semitones) and a perfect 5th (seven semitones) above its root

Minor triad triad consisting of a minor 3rd (three semitones) and a perfect 5th (seven semitones) above its root

Diminished triad special type of minor triad, consisting of a minor 3rd (three semitones) and a diminished 5th (six semitones) above its root

13. CHORD SYMBOLS

Chord symbols are the *quickest and easiest way to notate or document a chord*, which ensures that you can remember it in the future. Chord symbols consist of the *root note* (e.g. C) and *chord quality* (e.g. major). The quality is then abbreviated to **maj** (for major), **m** (for minor), and **dim** or $^{\circ}$ (for diminished). Please note, it's always taken for granted that chords are major unless otherwise stated, so a C major triad can be notated as just C – although Cmaj is clearer and therefore preferred.

Spelling-based chord symbols of 'classical' music	Root-based chord symbols of 'popular' music	Hybrid chord symbols (best of both worlds)
I (upper-case for major chords)	Cmaj (or) C	I _{maj}
ii (lower-case for minor chords)	Dm	II _m
iii	Em	III _m
IV	Fmaj (or) F	IV _{maj}
V	Gmaj (or) G	V _{maj}
vi	Am	VI _m
vii $^{\circ}$	Bdim (or) B $^{\circ}$	VII _{dim}

Figure 13.1 The three different approaches to chord symbols, using the key of C major

Spelling-based chord symbols of 'classical' music	Root-based chord symbols of 'popular' music	Hybrid chord symbols (best of both worlds)
i	Am	I _m
ii $^{\circ}$	Bdim (or) B $^{\circ}$	II _{dim}
III	Cmaj (or) C	\flat III _{maj} (triad from \flat 3 in scale)
iv	Dm	IV _m
v	Em	V _m
VI	Fmaj (or) F	\flat VI _{maj} (triad from \flat 6 in scale)
VII	Gmaj (or) G	\flat VII _{maj} (triad from \flat 7 in scale)

Figure 13.2 The three different approaches to chord symbols, using the key of A minor

The compromise with using the extremely concise notation of chord symbols, is that they don't tell us where the notes should be played, but only what the notes are. The only way to notate with 100% accuracy is to use the old-school staff (or new-school MIDI), which we'll cover later in the book series. However, you don't actually need to know any notation at all in order to make music, as notation is merely a way of documenting what you've made.

GOODBYE

Woohoo!!! Congratulations, I am beyond proud of you for staying the course through the first book of the series. You have now graduated from the first level of MSOL (Music for Speakers of Other Languages)! Okay, I just made that up, but the other bit is true: you've reached what I call the foundation stage of music theory. You're now empowered to understand and use the basics of your new language to appreciate what's going on in your favourite songs and, most importantly, to liberate your imagination and start making your own music. Yes, of course, there's still a lot to learn, but it will all be built on this foundation you have so solidly laid.

As you now know, western music consists of a mere twelve notes, and we usually only use seven of them at a time. These seven-note groups are our scales and form the basis of all our music. Scales are our musical menu, and like my favourite Chinese vegan restaurant downtown, Lotus Pond, where I order by number, you also order by number in Restaurant de la Musique (it sounds way fancier in French, doesn't it?). Perhaps it's a gorgeous summer evening and you're in the mood for something light and sweet, so you tuck into a harmonious buffet of 1 3 5 succulent salads that are deliciously uplifting. To complement your dinner, you grab a melodious mix of 2 7 5 6 freshly-squeezed drinks, which you sip one at a time. This major feast of delights is completely customised, ordered by you for you. Nobody else in the restaurant is eating the exact same meal as you, even though they're all ordering from the same musical menu. There are unlimited combinations of yumminess, as is evident from over half a millennium of music all pretty much ordered from the same menu. So sit down, order a combo meal and drinks, see if you enjoy them, and then do it all again. And again. And again. It's not about coming up with the perfect musical meal, it's about trying everything and finding your own unique preferences, which ironically will probably change as soon as you find 'em!

Please remember, perfection is rather easy to achieve when you make music using theory, but perfection is never the goal. Perfection is usually thought of as the quality of being free from flaws, and understanding the language of music (music theory) will ensure you always compose flawless music – that is, musical words with correct spelling, musical sentences with good grammar, musical paragraphs with thoughtful structure, and musical essays with coherency. However, music is a science *and* an art. Science is theoretical, but art is creative. It

won't take very long for you to master the scientific side, as you're only ever working with twelve elements. However, the musical stories you can tell with them are truly infinite.

Last, please remember this too. Music theory forms a multi-layered protective bubble around music makers, which gives us confidence in knowing that our music is perfectly composed, while also accepting that people's opinions of our music are purely subjective and based on personal taste. Therefore, forming your protective bubble is arguably the most valuable investment you can make as a musician. It allows us to truly have fun creating and sharing our music, without any stress, self-doubt, or the need for validation. Your bubble may only be one layer thick at the moment, but that's enough for you to safely commence your musical journey. Go forth and compose, my fellow bubble buddy, and I'll see you in the second book of the series where we'll add your second protective layer!

Musica longa, vita brevis.

TEST

Section 1: Scales

Q1. The enharmonic of $D\sharp$ is:

Q2. The enharmonic of $G\flat$ is:

Q3. Write one octave of the E major scale:

Q4. Write one octave of the $D\flat$ major scale:

Q5. Write one octave of the G natural minor scale:

Q6. Write one octave of the $F\sharp$ natural minor scale:

Q7. What is $B\flat$ major's relative minor scale?

Q8. What is E natural minor's relative major scale?

Q9. Which scale has the following scale spelling: 1 2 3 4 5 6 7 8?

Q10. Write the scale spelling of the natural minor scale:

Section 2: Chords

Q1. Write the notes of the E \flat major triad:

Q2. Write the notes of the B major triad:

Q3. Write the notes of the B minor triad:

Q4. Write the notes of the F minor triad:

Q5. Name the following triad: G \flat B \flat D \flat

Q6. Name the following triad: E G B

Q7. What is the interval between the root note and the note C in the A \flat maj triad?

Q8. What is the interval between the root note and the note D in the G # dim triad?

Q9. Using chord symbols, write the triads that are built from each degree of the F major scale:

Q10. Using chord symbols, write the triads that are built from each degree of the E natural minor scale:

ANSWERS

Section 1: Scales

A1. E ♭

A2. F #

A3. E F # G # A B C # D # E

A4. D ♭ E ♭ F G ♭ A ♭ B ♭ C D ♭

A5. G A B ♭ C D E ♭ F G

A6. F # G # A B C # D E F #

A7. G minor

A8. G major

A9. the major scale

A10. 1 2 ♭ 3 4 5 ♭ 6 ♭ 7 8

Section 2: Chords

A1. E ♭ G B ♭

A2. B D ♯ F ♯

A3. B D F ♯

A4. F A ♭ C

A5. G ♭ major triad

A6. E minor triad

A7. major 3rd

A8. diminished 5th

A9. Fmaj Gm Am B ♭ maj Cmaj Dm Edim

A10. Em F ♯dim Gmaj Am Bm Cmaj Dmaj

GLOSSARY

chord three or more notes sounded together (e.g. C E G)

chord progression sequence of chords (i.e. the chords you string together to tell your musical story)

chord quality / quality whether a chord is major, minor, or diminished (e.g. Cmaj has a 'major' quality)

chord symbol quickest and easiest way to notate a chord, using root note and chord quality (e.g. Cmaj)

consonant / consonance pleasing sound (e.g. perfect 5th)

devil in music / *diabolus in musica* old-fashioned name for the diminished 5th, probably coined by the Roman Catholic Church

dim / ° abbreviation for diminished triad, used in chord symbols (e.g. Bdim / B°)

diminished 5th / tritone (spelling = $\flat 5$) dissonant interval of six semitones

diminished triad special type of minor triad, consisting of a minor 3rd (three semitones) and a diminished 5th (six semitones) above its root (e.g. B D F)

dissonant / dissonance clashing sound (e.g. diminished 5th)

enharmonic different name for the same note (e.g. C \sharp and D \flat)

equal temperament tuning system that divides the octave into twelve equal steps (i.e. semitones)

flat / \flat one semitone down (e.g. D \flat is one semitone down from D)

harmonic series series of higher notes that are set off from the vibrations of a single note

harmony two or more notes sounded together (i.e. vertical music)

interval space between any two notes, measured in semitones (e.g. twelve semitones is the interval of an octave)

just intonation original 'pure' tuning system that uses whole-number ratios, and works only from one fundamental note at a time

key scale in use (e.g. a melody in the A minor scale is in the key of A minor)
key-note root note of a scale or key (i.e. the scale's first note)
key signature sharps or flats in a scale (e.g. F \sharp and C \sharp in D major)

m abbreviation for minor triad, used in chord symbols (e.g. Am)
maj abbreviation for major triad, used in chord symbols (e.g. Cmaj)
major 3rd (spelling = 3) interval of four semitones
major scale 'happy scale' made from this semitone formula: 2 2 1 2 2 2 1
major triad triad consisting of a major 3rd (four semitones) and a perfect 5th (seven semitones) above its root (e.g. C E G)
melody sequence of notes sounded one at a time (i.e. horizontal music)
minor 3rd (spelling = \flat 3) interval of three semitones
minor scale / natural minor scale 'sad scale' made from this semitone formula: 2 1 2 2 1 2 2
minor triad triad consisting of a minor 3rd (three semitones) and a perfect 5th (seven semitones) above its root (e.g. A C E)

naturals white notes on piano (i.e. not a sharp or flat)
natural minor scale / minor scale 'sad scale' made from this semitone formula: 2 1 2 2 1 2 2
note frequency of vibrations, resulting in the highness or lowness of a sound, aka a pitch (e.g. C)

octave / perfect 8th (spelling = 8) interval of twelve semitones (i.e. same note, but a higher or lower pitched version)
overtones quieter notes that occur in the harmonic series

perfect 5th (spelling = 5) interval of seven semitones
perfect 8th / octave (spelling = 8) interval of twelve semitones (i.e. same note, but a higher or lower pitched version)
pitch frequency of vibrations, resulting in the highness or lowness of a sound, aka a note (e.g. C)

relative major the scale you get when you start on the 3rd note of a minor scale
relative minor the scale you get when you start on the 6th note of a major scale
relatives / relative scale scales that have the same notes, but a different root (e.g. C major and A minor)
rhythm pattern in time (e.g. ta ti-ti ta ta)
root / root note first note of a scale or chord (e.g. D is the root in D major)

root triad triad built on the first note of a scale

scale family of notes that work together

semitone smallest interval in western music and is an interval of one step (e.g. C to C#)

sharp / # one semitone up (e.g. C# is one semitone up from C)

spelling numerical way of writing music (e.g. major scale = 1 2 3 4 5 6 7 8)

step semitone ('step' is not a musical term, and is therefore ambiguous)

tempo speed at which music is played (e.g. 120 BPM or beats per minute)

third note / 3rd magic ingredient in music that gives chords and scales their happy or sad sound

tone / whole tone interval of two semitones (e.g. C to D)

tonic first note of a scale (e.g. D is the tonic in D major)

triad simplest chord, consisting of only three notes (e.g. 1 3 5)

tritone / diminished 5th (spelling = $\flat 5$) dissonant interval of six semitones

whole tone / tone interval of two semitones (e.g. C to D)

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BORING STUFF & COOL PEEPS

REVOLUTION HARMONY

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