[THE ESSENTIAL GUIDE] · 2026

MUSIC THEORY, *DEMYSTIFIED FOR EDM PRODUCERS.*

Understand how music is organized in less than 30 minutes. Designed for DJs, Trance & Techno producers. No advanced notation, no unnecessary jargon. Just the essentials.

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RESSOURCES · 2026

TABLE OF CONTENTS

YOUR JOURNEY

Beyond major and minor — the seven flavours of the diatonic scale, with a focus on the three EDM favourites.

14 **Quick reference**

All the essential theory on a single page.

HOW TO USE THIS GUIDE

Each chapter is designed to be read in 3 to 5 minutes. The diagrams are deliberately simplified to prioritize understanding. You can read everything in one sitting, or come back chapter by chapter as needed.

Throughout this guide, we use the letter naming convention (C D E F G A B) that's standard in English-speaking music communities and in every digital audio workstation (DAW). We primarily use the American terminology *whole step / half step*, with the British equivalents *tone / semitone* mentioned where helpful.

01

THE FOUNDATIONS

CHAPTER 01

[WHAT IS A NOTE?]

> Before talking about scales or chords, we need to understand what a note actually is. The answer is both physical and cultural.

A NOTE IS A VIBRATION

Sound is produced by vibration : a guitar string, a speaker membrane, air inside a tube. The **faster** the vibration, the **higher** the note. The **slower** the vibration, the **lower** the note.

This vibration speed is called *frequency*, measured in Hertz (Hz). The tuning reference note A, for example, vibrates at 440 Hz.

IN PRACTICE : FROM NOTES TO FREQUENCY BANDS

A note is one precise frequency. But our ears perceive sound in broader **bands** – this is the vocabulary shared by sound engineers, mixing engineers, and electronic music producers.

BAND	RANGE	TYPICAL CONTENT
Sub-bass	20 – 60 Hz	Sub, kick fundamental
Bass	60 – 250 Hz	Bassline, kick body
Low-mids	250 – 500 Hz	Warmth, low body
Mids	500 Hz – 2 kHz	Vocals, leads, snares
High-mids	2 – 4 kHz	Presence, clarity
Highs	4 – 6 kHz	Air, brightness
Brilliance	6 – 20 kHz	Hats, cymbals, sparkle

Some sounds are harmonic, others are inharmonic – and whether to tune either of them to the key of the track is always a **producer's choice**, not a rule. A techno *kick* is harmonic enough to carry a real note (~50 Hz ≈ G1, ~65 Hz ≈ C2) ; some producers tune it so it locks in with the bassline, others leave it where it lands and let the bass do the harmonic work. A *hi-hat* is inharmonic – its partials aren't linked by musical ratios, so it has no clear fundamental – but its dominant frequency band still occupies a slot in the spectrum and can clash with the melody. Some producers filter or pitch-shift it ; others leave it raw and treat it as a colour layer rather than a pitched one. **Every musical sound lives in the frequency spectrum ; some carry a note, others a colour.**

The magic rule: if you double the frequency of a note, you get the « same » note but higher. That's what we call an **octave**.

WHY « OCTAVE » ?

Because between two notes an octave apart, you count **eight** white keys on a piano : C, D, E, F, G, A, B, **C**. An octave is the interval that brings us back to the starting point, but one « level » higher.

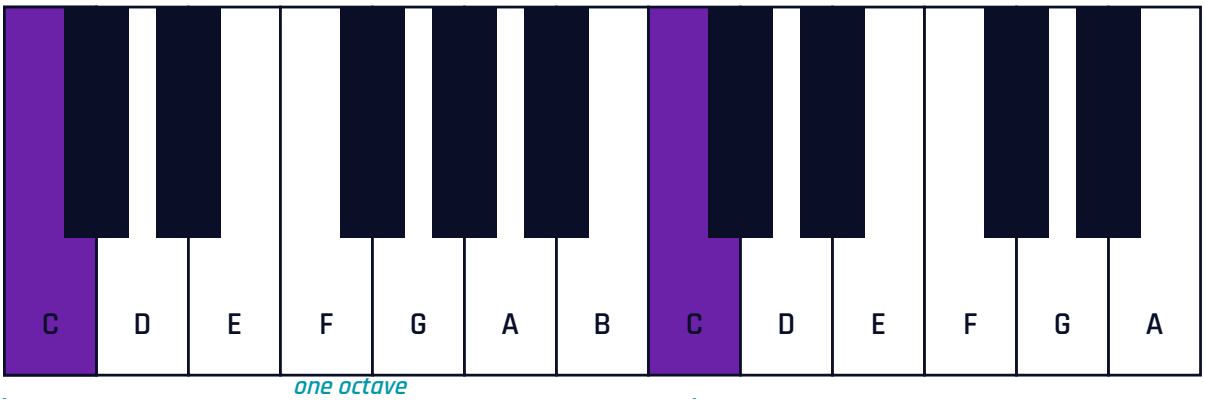


Figure 1 · The keyboard reveals a repeating pattern : 2 black keys / 3 black keys. This pattern repeats at every octave.

WHERE DO NOTES SIT ON THE FREQUENCY SPECTRUM?

Every note has a precise frequency. The map below covers the range of an 88-key piano (A0–C8): each key sits in one of the producer's frequency bands — sub-bass, bass, low-mids, mids, high-mids. Above C8 — in the *highs* and *brilliance* bands — there's no piano fundamental, and usually no melody playing, but the audible spectrum continues there with cymbals, hi-hats, and the upper harmonics of every pitched sound.

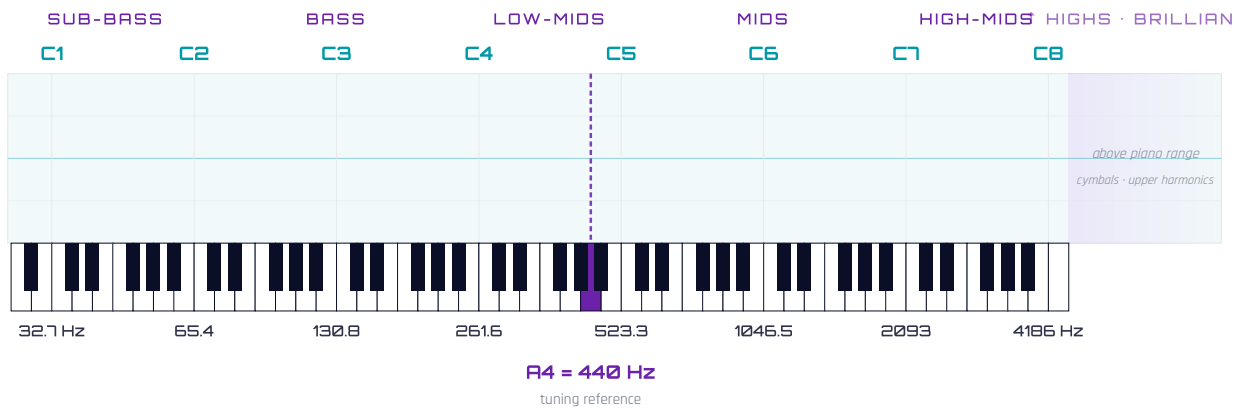


*Figure 2 · The full 88-key piano range A0–C8 — just over seven octaves. Each octave doubles the frequency of the previous and occupies the same horizontal width — equal width for equal musical intervals, the way your ear actually hears them. The violet key marks **A4 = 440 Hz**, the universal tuning reference. The audible spectrum continues into the highs and brilliance bands above C8 (cymbals, hi-hats, upper harmonics), but no piano fundamental reaches there.*

Two practical takeaways: a note doubles its frequency every octave (C1 = 32.7 Hz, C2 = 65.4 Hz, C3 = 130.8 Hz…), which is why each successive octave occupies the same width on the map above — equal spacing for equal musical intervals. And the fundamental of any pitched musical sound sits at exactly one key on this map. Whether you describe a frequency in note names or in Hz, you're pointing at the same place.

02

THE DISTANCES

CHAPTER 02

[WHOLE STEPS, HALF STEPS, SHARPS AND FLATS]

> The octave is divided into 12 equal steps. This division is the foundation of all Western music.

THE HALF STEP, SMALLEST UNIT OF MEASURE

Between two adjacent notes on a keyboard (white or black, it doesn't matter), there is one **half step** (called a *semitone* in British English). It's the smallest distance used in Western music.

Two consecutive half steps form a **whole step** (a *tone* in British English).

HALF STEP (SEMITONE)

The distance between two **adjacent** keys on the keyboard.

C → C♯ · E → F

WHOLE STEP (TONE)

Two half steps. One key is « skipped » between the two notes.

C → D · F → G

A NOTE ON TERMINOLOGY

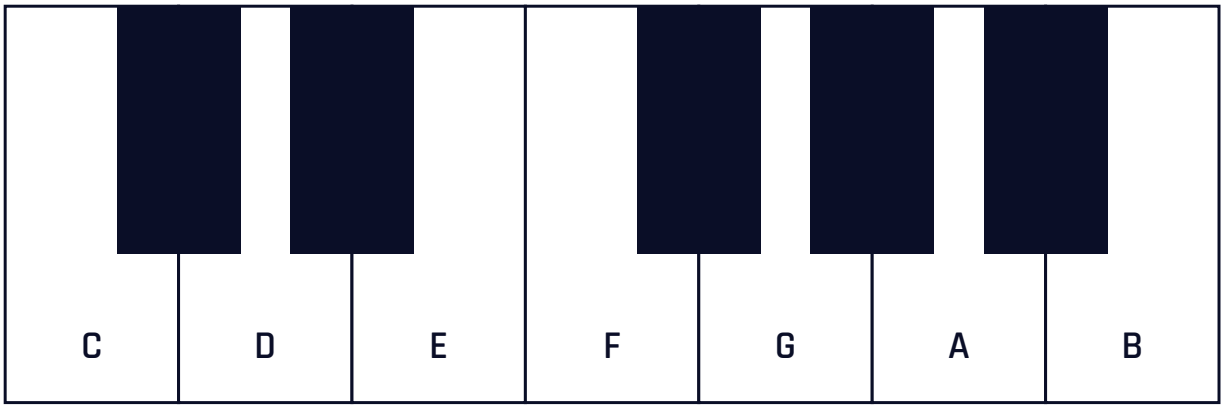
This guide uses the **American convention** – *whole step* and *half step* – throughout, because it lines up with how DAWs and modern producers describe intervals (you'll see "+12 semitones" in pitch shifters, "+1 step" in MIDI editors, etc.). The British equivalents *tone* and *semitone* mean exactly the same thing and are perfectly correct ; you'll meet them in older literature and conservatory training.

THE BLACK KEYS : SHARPS AND FLATS

Every black key has **two names**, depending on which direction you approach it from :

- If you go **up** a half step from a white key, you add a **sharp (♯)**. Example : C + ½ step = C♯.
- If you go **down** a half step from a white key, you add a **flat (♭)**. Example : D − ½ step = D♭.

So C♯ and D♭ are the **same key**. This is called *enharmonic equivalence*. It's like two routes to the same destination : the name depends on the path you took.



Every black key has two names (enharmonic)

Figure 3 · The five black keys in one octave, with both their names.

SO WHEN DO YOU WRITE C♯ VS D♭?

Since C♯ and D♭ are the *same* key, why bother having two names? The rule comes from how scales are **spelled**: in any major or minor scale, every letter (C, D, E, F, G, A, B) appears **exactly once**. We pick the sharp or the flat that respects this one-letter-per-degree rule.

Two concrete examples:

- **D major** is spelled D – E – F♯ – G – A – B – C♯ – D. The third note has to be **F♯**, not G♭, because G is already used as the fourth degree. Writing G♭ would put two G's in the scale and skip F entirely.
- **F major** is spelled F – G – A – B♭ – C – D – E – F. The fourth has to be **B♭**, not A♯, because A is already the third degree.

The takeaway: each key sticks to **either sharps or flats** — never both within the same scale. So when you see a producer chart that labels a note B♭ in one project and A♯ in another, they're the same physical key, but only one of them *spells* the scale correctly. Your DAW doesn't care; readability for the human does.

> **WORTH REMEMBERING**
>
> There is **no black key** between E and F, nor between B and C. These two pairs of notes are therefore separated by only a **half step**, not a whole step. This irregularity in how black keys are arranged is the key to everything that follows.

03

THE FIRST PATTERN

CHAPTER 03

[THE MAJOR SCALE]

A scale is simply a pattern of intervals. A formula. The major scale is one of the two patterns every producer should know — alongside the minor scale we'll meet in the next chapter.

THE UNIVERSAL PATTERN

You've heard the major scale a thousand times — its bright, settled quality is everywhere in pop, film and electronic music. What makes this pattern sound « happy » and « stable » isn't the notes themselves but the **sequence of intervals** between them.

Major scale pattern : W – W – H – W – W – W – H *(W = whole step, H = half step)*

Start from any note on the keyboard and apply this pattern : you'll get a major scale. The starting note is called the *tonic*, and it gives the scale its name.

EXAMPLE : C MAJOR

The simplest scale of all, because it uses **only the white keys**.

EXAMPLE : G MAJOR

Starting from G, we apply the *same* pattern. The pattern requires a whole step between the 6th and 7th notes, and a half step up to the tonic. To respect this rule, we must use **F♯** instead of F natural.

FUNDAMENTAL IDEA

The « black » notes used in a scale aren't arbitrary : they're **mathematical necessities**. They guarantee that the pattern W-W-H-W-W-W-H is respected. Without them, the scale wouldn't sound « major » anymore.

04

THE OTHER COLOR

CHAPTER 04

[THE MINOR SCALE]

> Where the major scale evokes brightness and joy, the minor scale brings a melancholic, dramatic, sometimes dark color. Same principle, different pattern.

THE NATURAL MINOR PATTERN

> **Natural minor scale pattern :** W – H – W – W – H – W – W

Same logic as for the major scale : apply this pattern from any starting note and you get a minor scale.

EXAMPLE : A MINOR

Like C major, the scale of **A minor** uses no accidentals : all white keys.

Wait — same notes, different scale?

Exactly. **C major** and **A minor** share the same seven notes, but they don't sound the same. A scale isn't just a collection of notes — it's a *pattern of intervals*. Starting on C, **C major** follows the *major pattern* — bright, open, « happy ». Starting on A, **A minor** follows the *minor pattern* — darker, more melancholic. Same ingredients, different recipe. The starting note changes where each interval lands, and your ear hears a completely different flavor.

C MAJOR - STARTING FROM C

A MINOR — STARTING FROM A

Same seven white keys in both — but each scale is anchored on its own tonic (the leftmost key), so the half-steps land in different positions. That shift in pattern is what your ear actually hears.

RELATIVE MINOR : EVERY MAJOR SCALE HAS A MINOR TWIN

Since **A minor** and **C major** use exactly the same notes, we say they are *relative* to each other. They share the same set of notes, but they have different centers of gravity — C for one, A for the other.

Every major scale therefore has its minor « twin ». To find it, simply go **three half steps down** (a minor third) from the major tonic.

MAJOR KEY	NOTES THAT ARE SHARP OR FLAT	RELATIVE MINOR
C major	— none	A minor
G major	F♯	E minor
D major	F♯, C♯	B minor
A major	F♯, C♯, G♯	F♯ minor
E major	F♯, C♯, G♯, D♯	C♯ minor
B major	F♯, C♯, G♯, D♯, A♯	G♯ minor
F major	B♭	D minor
B♭ major	B♭, E♭	G minor
E♭ major	B♭, E♭, A♭	C minor
A♭ major	B♭, E♭, A♭, D♭	F minor
D♭ major	B♭, E♭, A♭, D♭, G♭	B♭ minor

*A major key and its relative minor share **the exact same set of notes** — they're literally the same scale played from a different starting note.*

SHARPS AND FLATS ARE A CONSEQUENCE, NOT A CHOICE

The accidentals in the table above aren't arbitrary. The interval pattern W–W–H–W–W–W–H (major) and W–H–W–W–H–W–W (minor) *force* specific notes to be raised or lowered depending on where you start. G major needs F♯ because the pattern lands on a black key for the 7th degree — there's no choice. Classical notation collects these forced accidentals into what's called a **key signature**, written once at the start of the staff. In a DAW, the project «Key» field plays the same role: tell the software which scale you're in and you don't have to remember the accidentals at all — the pattern does the work.

BEYOND THE NATURAL MINOR

There are two other common variants of the minor scale: the **harmonic minor** (7th degree raised by a half step) and the **melodic minor** (6th and 7th degrees raised when ascending, natural when descending). They enrich the emotional palette but all rely on the natural minor you've just learned.

05

THE MEASUREMENTS

CHAPTER 05

[INTERVALS]

> An interval is the distance between two notes. It's the basic vocabulary for talking about chords, melodies and harmony.

WHY NAME THEM?

This is a universal name that works for *any* pair of notes, their **interval**.

An interval is calculated in two steps: first the **degree name** (second, third, fourth...) by counting the note letters, then the **quality** (major, minor, perfect...) by counting the exact number of half steps.

ESSENTIAL INTERVALS

INTERVAL	HALF STEPS (FROM THE TONIC)	EXAMPLE FROM C	FEELING
Minor second	1	C → D♭	tense
Major second	2	C → D	natural step
Minor third	3	C → E♭	melancholic
Major third	4	C → E	bright, happy
Perfect fourth	5	C → F	stable, open
Perfect fifth	7	C → G	very stable
Major sixth	9	C → A	sweet
Minor seventh	10	C → B♭	tense, bluesy
Major seventh	11	C → B	cinematic
Perfect octave	12	C → C	identical

WHY 4THS AND 5THS ARE CALLED « PERFECT »

Fourths and fifths behave differently from thirds: they are the same in both the major *and* the minor scale. That's why we call them **perfect** rather than major or minor.

By contrast, **thirds** are the big difference between major and minor: the third is what «colors» a chord. A major third (4 half steps) → major chord. A minor third (3 half steps) → minor chord.

06

HARMONY

CHAPTER 06

[CHORDS]

> As soon as you play multiple notes simultaneously, you enter the world of chords.
> The basic building block is the triad: three notes stacked together.

BUILDING A TRIAD

Take a scale. Start from the 1st note, *skip* one, take the next, *skip* again, take the third. You get a **triad**: three notes that sound together as a chord.

For example, in C major:

C + E + G = ***C major*** *chord*

THE TRIAD QUALITIES

Once you have three stacked notes, the *distance* between them determines the chord's **quality** – its character. Three qualities cover everything we'll need:

MAJOR

Major third + perfect fifth
(4 + 3 half steps)

C – E – G

open, bright feeling

MINOR

Minor third + perfect fifth
(3 + 4 half steps)

A – C – E

intimate, sad feeling

DIMINISHED (°)

Minor third + **diminished** fifth
(3 + 3 half steps)

B – D – F

tense, calls for resolution

Major and **minor** are the workhorses – every progression you'll write leans on them. The **diminished** triad is the special case: it appears exactly where the scale's interval pattern produces a 3+3 half-step stack – on the **7th degree of any major scale** (*vii°*, e.g. B–D–F in C major) and the **2nd degree of any natural minor scale** (*ii°*, e.g. B–D–F in A minor). You don't *land* on it as a home chord; you pass through it for tension, then resolve elsewhere. We'll meet it on the diatonic tables of the next two chapters.

The three triad qualities above are the foundation. Stack a fourth note (a 7th), swap the third for the 2nd or 4th (sus2, sus4), or layer a 9th on top (add9), and you get the **extension chords** producers reach for most – covered in Chapter 9. **Augmented** and **half-diminished** are special cases that show up occasionally; we'll only flag them in passing where they're relevant.

NAMING AND BUILDING ANY CHORD

A chord's name has two parts: **root** + **quality**. «C major» is the major triad rooted on C. «A minor» is the minor triad rooted on A. The recipe of intervals is the same for any root – pick a starting note, apply the recipe, and you have the chord.

> **Major chord:** root + **major 3rd** (4 half steps) + perfect 5th (7 half steps).
> **Minor chord:** root + **minor 3rd** (3 half steps) + perfect 5th (7 half steps).

Same fifth in both — only the third changes. A few examples to make the recipe concrete:

C major : C + E + G (C → E is 4 half steps; E → G is 3.)

C minor : C + E♭ + G (C → E♭ is 3 half steps; E♭ → G is 4.)

G major : G + B + D

F minor : F + A♭ + C

F♯ major : F♯ + A♯ + C♯

Compare **C major** and **C minor**: same root, same fifth — only the third changes. That single half step flips bright to dark.

> #### HEADS-UP — SAME NAME, TWO DIFFERENT THINGS
>
> « C minor » can mean two completely different things depending on context:
>
> - the **C minor scale** — a 7-note scale (C, D, E♭, F, G, A♭, B♭), the melodic palette of a minor key;
> - the **C minor chord** — a 3-note triad (C, E♭, G).
>
> The chord *lives inside* the scale: C–E♭–G are the 1st, 3rd, and 5th degrees of the C minor scale. When someone says « the track is in C minor », they almost always mean the **scale/key**. When they say « play a C minor », they usually mean the **chord**. Context decides — and the same overlap exists for every root (« A major » is both a scale and a chord, etc.).

SEVEN DIATONIC CHORDS PER SCALE

Take any major or minor scale and build a triad on *each* of its seven notes — using only notes from the scale. You get **seven different chords** that all live in the same key. These are the **diatonic chords** of the scale: the harmonic palette every progression in that key will draw from. They're labelled by the **degree** they sit on, written as Roman numerals (I, ii, iii, IV, V, vi, vii°) — not by note name. The next section explains the notation.

A PRIMER ON ROMAN NUMERALS

Roman numerals number chords by their **scale degree** — the position of the chord's root in the scale. The point of this notation is that it's *scale-independent*: « I – V – vi – IV » means the same harmonic move in any key, only the actual notes change.

- **UPPERCASE** (I, IV, V) = **major** triad on that degree
- **lowercase** (ii, iii, vi) = **minor** triad on that degree
- The little circle (vii°) marks a **diminished** triad

Read « I – V – vi – IV » as « major on the 1st, major on the 5th, minor on the 6th, major on the 4th ». Transpose to any key — same shape, different notes. This is why producers and arrangers write progressions in Roman numerals: it captures the *harmonic intent*, independent of the key the track ends up in.

WHAT'S NEXT

You now know what a triad is, what gives it its quality, and how the seven diatonic chords get labelled. The next two chapters work through them concretely: in the **major** scale (Chapter 7), then in the **minor** scale (Chapter 8).

07

THE MAJOR SIDE

CHAPTER 07

[CHORDS IN THE MAJOR SCALE]

> In any major scale, the seven diatonic chords follow a fixed pattern of qualities – same shape in every major key, only the actual notes change.

THE 7 DIATONIC CHORDS OF THE MAJOR SCALE

On each degree of the major scale, stack thirds (the skip-take-skip pattern from the previous chapter) using **only notes from the scale**. You get seven interconnected chords:

DEGREE	ROMAN NUMERAL	NOTES (IN C MAJOR)	TYPE
1st (tonic)	I	C – E – G	major
2nd	ii	D – F – A	minor
3rd	iii	E – G – B	minor
4th (subdominant)	IV	F – A – C	major
5th (dominant)	V	G – B – D	major
6th	vi	A – C – E	minor
7th	vii°	B – D – F	diminished

*In **any** major key, the qualities follow this pattern: **I major, ii minor, iii minor, IV major, V major, vi minor, vii° diminished**. The pattern doesn't change – only the actual notes do. Transpose the table to G major and you get G – Am – Bm – C – D – Em – F♯°.*

THE SECRET OF MILLIONS OF SONGS

The progression **I – V – vi – IV** (C – G – Am – F in C major; A – E – F♯m – D in A major; G – D – Em – C in G major) is one of the most used progressions in pop, dance and film music over the past 50 years. Now that you know Roman numerals, you'll recognise it everywhere.

08

THE MINOR SIDE

CHAPTER 08

[CHORDS IN THE MINOR SCALE]

> The natural minor scale yields its own seven diatonic chords, with a different mix of qualities. This is the harmonic palette behind most melancholic, cinematic and EDM tracks.

THE 7 DIATONIC CHORDS OF THE NATURAL MINOR SCALE

Same skip-take rule on each degree, this time using the natural minor pattern. In **A minor** (relative of C major — same notes, different center of gravity):

DEGREE	ROMAN NUMERAL	NOTES (IN A MINOR)	TYPE
1st (tonic)	i	A – C – E	minor
2nd	ii°	B – D – F	diminished
3rd	III	C – E – G	major
4th (subdominant)	iv	D – F – A	minor
5th	v	E – G – B	minor
6th	VI	F – A – C	major
7th	VII	G – B – D	major

*In **any** natural minor key, the qualities follow this pattern: **i minor, ii° diminished, III major, iv minor, v minor, VI major, VII major**. Notice that A minor and C major share exactly the same chords — they're the same diatonic palette, only re-centred.*

THE MINOR « EPIC » PROGRESSION

In minor-key dance music, the progression **i - VI - III - VII** (Am – F – C – G in A minor) is everywhere — house, trance, progressive, cinematic, pop. It's sometimes called the « Andalusian » or « epic » progression. Listen for it once and you'll start hearing it across the whole spectrum.

09

ROLES OF HARMONY

CHAPTER 09

[CHORD FUNCTIONS]

> Inside any scale, the seven diatonic chords don't all do the same job. Each plays one of three **roles** – tonic, subdominant, or dominant – and most progressions are just a sequence of these roles, dressed up with different chord choices.

THREE ROLES, SEVEN CHORDS

Every diatonic chord falls into one of three families that describe its harmonic gravity:

TONIC (T)

Home. The chord of rest and arrival. Where progressions return to. Stable, settled.

SUBDOMINANT (SD)

Departure. Motion away from home. Opens up the progression. Neutral tension.

DOMINANT (D)

Pull. The strongest pull back to the tonic. Unstable, wants to resolve. The « leading » chord.

The textbook order is **T → SD → D → T**: leave home, drift further, build tension, resolve. Most popular progressions are dressed-up versions of this skeleton.

FUNCTION MAP – MAJOR SCALE

In a major key, the seven diatonic chords distribute across the three families like this:

FUNCTION	CHORDS	IN C MAJOR	NOTES
Tonic (T)	I, iii, vi	C, Em, Am	I is the strongest tonic; iii and vi are softer substitutes.
Subdominant (SD)	ii, IV	Dm, F	IV is the classic « departure »; ii is its minor-flavoured twin.
Dominant (D)	V, vii°	G, B°	V is the textbook dominant. vii° is rare on its own (often used as a passing chord).

FUNCTION MAP — NATURAL MINOR SCALE

Same idea, different distribution:

FUNCTION	CHORDS	IN A MINOR	NOTES
Tonic (T)	i, III, VI	Am, C, F	i is home; III and VI are tonic substitutes (and account for much of minor-key colour).
Subdominant (SD)	ii°, iv	B°, Dm	iv is the smoother choice for landing; ii° (diminished) is a tenser, darker variant — perfect for passing tension or atmospheric textures.
Dominant (D)	v	Em	The diatonic v is weak — there's no leading tone in natural minor, so v doesn't pull strongly to i. Tracks that want a strong cadence borrow harmonic minor to raise it to **V** (E major in A minor).
Subtonic	VII	G	The major chord built on the subtonic (the whole-step-below-tonic 7th degree). Strictly, *not* a dominant — no leading tone, no tritone tension toward i. But its strong harmonic landing makes it the EDM go-to substitute for the missing dominant — listen for it in i–VI–III–VII.

*Natural minor genuinely has a **4-role** structure (T / SD / D / Subtonic) instead of major's 3 — that's a consequence of the missing leading tone, not a quirk to memorise.*

> **The harmonic skeleton.** T → SD → D → T is the spine of countless progressions. Read your favourite progression by mapping each chord to its function and the structure jumps out.

10

VOICING

CHAPTER 10

[CHORD INVERSIONS]

> A chord is defined by the set of notes it contains, not by the order they sit in. Change which note is at the bottom and you've made an *inversion* – same chord, same name, different feel.

THREE POSITIONS FOR ANY TRIAD

A triad has three notes. Whichever one sits in the **bass** (the lowest voice) defines the position:

ROOT POSITION

Root in the bass.
Stable, settled.

C – E – G

the «default» voicing

1ST INVERSION

3rd in the bass.
Lighter, less rooted.

E – G – C

often used in passing

2ND INVERSION

5th in the bass.
Suspended, unstable.

G – C – E

wants to resolve

All three are **still C major** – they contain the same C, E, and G. Only the order changed. But the bass note carries enormous harmonic weight, so each inversion *feels* different.

SLASH-CHORD NOTATION

Inversions are written with a slash. The letter before the slash names the chord; the letter after names the note in the bass.

NOTATION	CHORD	BASS NOTE	WHAT IT IS
C	C major	C (the root)	Root position
C/E	C major	E (the 3rd)	1st inversion
C/G	C major	G (the 5th)	2nd inversion

Slash chords also cover non-inversion cases – C/D means «C major over a D bass note», a sonority that's not strictly an inversion of C (D isn't in the chord). Slash notation is the standard way to specify «these chord notes, that bass note», whether or not it's a textbook inversion.

WHY INVERSIONS MATTER – VOICE LEADING

The biggest practical reason to use inversions is **voice leading**: choosing voicings that make notes move by small steps between chords rather than big leaps. Smaller leaps sound smoother, especially in a bass line and in a pad.

Compare C – F – G – C (the classic I–IV–V–I) in two voicings:

ALL ROOT POSITION

Bass leaps: C → F → G → C

C–E–G → F–A–C
F–A–C → G–B–D
G–B–D → C–E–G

Bass jumps a 4th up, a 2nd up, a 5th down. Feels punchy but choppy.

WITH INVERSIONS

Bass walks: C → A → B → C

C–E–G → F/A (A–C–F)
F/A → G/B (B–D–G)
G/B → C–E–G

Bass moves by step. Same chord progression, smoother feel.

IN PRACTICE — DAW WORKFLOW

Three places where inversions earn their keep in a producer's session:

- **Pad voicing.** When chords are layered as a pad, all-root-position voicings stack with big leaps in the lower voices and sound boomy. Try the same progression with 1st-inversion chords — the pad sits higher, leaves room for the bass, and breathes.
- **Independent bass.** Slash chords let you split the bass and pad parts. Write Am – F – C/E – G instead of Am – F – C – G and the bass walks A → F → E → G — much more melodic than A → F → C → G.
- **Pedal point.** Keep one note (often the tonic) in the bass while the chords change above. C – F/C – G/C – C is a I–IV–V–I progression with C nailed to the bass throughout.

11 BEYOND THE TRIAD

CHAPTER 11

[SPECIAL CHORDS]

> A triad — root, third, fifth — is just the starting point. Stack one more note, replace the third, or add a high colour tone, and you unlock the chord families that fill modern productions: **7ths**, **sus chords**, and **add9**.

ADDING A 7TH — STACK ONE MORE THIRD

Take a triad. Apply the same skip-take rule one more time and you land on the **7th** degree above the root. Stacking it on top gives a four-note chord — the **seventh chord**.

Like triad qualities, the quality of the added 7th isn't a free choice — the scale picks it. Within a major scale, the **diatonic 7ths** are:

DEGREE	CHORD	IN C MAJOR	TYPE
I	Imaj7	C – E – G – B	major 7th
ii	ii7	D – F – A – C	minor 7th
iii	iii7	E – G – B – D	minor 7th
IV	IVmaj7	F – A – C – E	major 7th
V	V7	G – B – D – F	**dominant 7th**
vi	vi7	A – C – E – G	minor 7th
vii°	viiø7	B – D – F – A	half-diminished (m7♭5)

In a natural minor scale, the same logic gives a different distribution:

DEGREE	CHORD	IN A MINOR	TYPE
i	i7	A – C – E – G	minor 7th
ii°	iiø7	B – D – F – A	half-diminished
III	IIImaj7	C – E – G – B	major 7th
iv	iv7	D – F – A – C	minor 7th
v	v7	E – G – B – D	minor 7th
VI	VImaj7	F – A – C – E	major 7th
VII	VII7	G – B – D – F	dominant 7th

Notice that A minor's 7ths are the same chords as C major's, just relabelled – they share the same notes.

Two short labels you'll see everywhere: Cmaj7 is C major + a major 7th (B). C7 alone, with no « maj », always means C + a **minor** 7th (B♭) – it's the dominant 7th, the chord built on the 5th degree of a major scale. Cm7 is C minor + a minor 7th. So « C7 » and « Cmaj7 » are *different chords* with different bass notes – don't mix them up on a chord chart.

WHAT 7THS BRING TO A TRACK

- **maj7 (Imaj7, IVmaj7)** – silky, dreamy. Use them when a plain major triad sounds too « daylight ».
- **m7 (ii7, iii7, vi7)** – soft, smoky, less pleading than a plain minor.
- **dom7 (V7)** – the cadence amplifier. Replace the V triad with V7 in any progression and the pull back to I gets noticeably stronger. The dom7 is unstable on purpose.

SUS CHORDS – REPLACING THE THIRD

A **sus chord** takes a triad and replaces the 3rd with the note next to it – either the 2nd (giving **sus2**) or the 4th (giving **sus4**). The chord ends up with no third at all, so it's neither major nor minor. It sits « suspended » – open, undecided.

SUS2

3rd replaced by the **2nd**.
(root + 2nd + 5th)

Csus2 = C – D – G

bright, airy, modern

SUS4

3rd replaced by the **4th**.
(root + 4th + 5th)

Csus4 = C – F – G

tense, expectant

A sus chord **wants** to resolve back to its parent triad – the suspended note slides by step onto the missing 3rd. Csus4 → C (F drops to E) is one of the most natural moves in popular music, used to delay arrival on a target chord. Csus2 → C works the same way (D rises to E).

ADD9 — KEEP THE THIRD, ADD A COLOUR NOTE

An **add9 chord** is a major (or minor) triad with the **9th** stacked on top — the same note as the 2nd, but an octave up. Unlike a sus2, the 3rd is *still there*: you keep the chord's major or minor quality and add a high colour tone.

> **Cadd9 = C + E + G + D** (root, 3rd, 5th, 9th). The 9 sits above the 5, painting the chord with a shimmery, open quality.

ADD9 VS 9 — THE EASY MIX-UP

This pair is the most common chord-chart confusion, so it's worth nailing:

NOTATION	NOTES (IN C)	CONTAINS THE 7TH?	SOUND
Cadd9	C – E – G – **D**	No	Bright triad with a sparkly top note.
C9	C – E – G – **B♭** – **D**	Yes (♭7)	Dominant 7 + 9. Jazzy, funky, urgent — wants to resolve to F.

The rule: writing « 9 » on its own (like C9, G9) implicitly means « dominant 7th plus 9th ». Writing add9 means « just the 9, leave the 7th out ». In a producer's session, Cadd9 is the bright pad chord; C9 is the funky bass-house stab.

WHEN TO REACH FOR WHICH

- **maj7 / m7**
- **V7** — at the end of a build, just before the drop, to give the resolution to I extra weight.
- **sus4** — to delay the chorus chord by half a bar, then resolve.
- **sus2** — for an open, ambient feel, particularly on a held pad. Doesn't always need to resolve.
- **add9** — a one-note upgrade to any plain triad in a chord pad.

CHAPTER 12

[THE CIRCLE OF FIFTHS]

> Here is the ultimate tool. In one diagram, it connects every key and reveals the hidden logic of harmony.

Start from **C major**, at the top of the circle (no accidentals). At each step in the **clockwise** direction, you go up a *perfect fifth* and add **one sharp** to the key signature. Going **counter-clockwise**, you go down a fifth and add **one flat**. The relative minors are placed inside the circle.

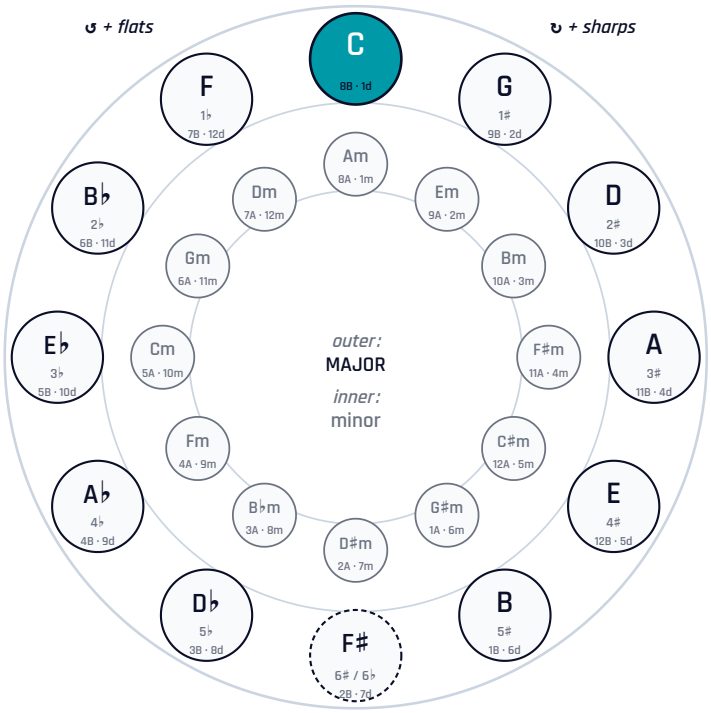


*Figure 4 · The circle of fifths. Each bubble also shows its **Camelot** and **Open Key** designation (see reference tables below). Neighboring keys share the most notes in common.*

WHY IS THIS SO USEFUL?

The **closer two keys are on the circle**, the more notes they share, and therefore the easier it is to modulate (change keys) between them without sounding strange. That's why composers often move from C major to G major or F major: they are direct neighbors.

IN PRACTICE : HARMONIC MIXING

DJs rediscovered the circle of fifths under another name. When two tracks are mixed together, if their keys sit too far apart on the circle the result sounds dissonant. Mixing in **neighboring** (or identical) keys keeps the harmonic energy coherent — this is **harmonic mixing**.

The three « safe » moves :

- **Same key** — stay in the same key (e.g., C major → C major).
- **Adjacent key** (±1 fifth) — move to a direct neighbor on the circle (C major → G major or F major).
- **Relative major / minor** — switch between a major key and its relative minor (C major → A minor) ; they share every note.

These three moves guarantee a **maximum of shared notes** between the two tracks. The further apart on the circle, the fewer notes in common, and the higher the dissonance risk. To make this work fast in a booth, DJs created a **numeric notation** for keys — see the reference tables below.

KEY NOTATION REFERENCE FOR DJS

Two numeric notations encode keys in a way that makes harmonic mixing fast at a glance. Both are built on the same circle of fifths idea : **±1 on the number** means a neighbor on the circle, and **flipping the letter on the same number** means switching between a key and its relative major / minor.

- **Camelot** — number 1-12 + letter **A** (minor) or **B** (major). The most widely used notation in DJing.
- **Open Key Notation** — number 1-12 + letter **d** (major, from the German *dur*) or **m** (minor). An open standard.

MAJOR KEYS

KEY	CAMELOT	OPEN KEY
C	8B	1d
G	9B	2d
D	10B	3d
A	11B	4d
E	12B	5d
B	1B	6d
F#	2B	7d
D♭	3B	8d
A♭	4B	9d
E♭	5B	10d
B♭	6B	11d
F	7B	12d

MINOR KEYS

KEY	CAMELOT	OPEN KEY
Am	8A	1m
Em	9A	2m
Bm	10A	3m
F♯m	11A	4m
C♯m	12A	5m
G♯m	1A	6m
D♯m	2A	7m
B♭m	3A	8m
Fm	4A	9m
Cm	5A	10m
Gm	6A	11m
Dm	7A	12m

Same Camelot number across the two tables = **relative major / minor pair** (C major and A minor both share the number 8).
Adjacent number on the same letter = **neighbor on the circle of fifths** (8B → 9B = C → G).

13

BEYOND MAJOR AND MINOR

CHAPTER 13

[MODES]

So far, we've worked with two scale flavours: major and natural minor. There are five others. Together, the seven **modes** are the colour palette of the diatonic family — same notes, different tonics, distinctively different moods. This chapter zooms in on the three that show up most in electronic music.

WHAT'S A MODE?

Take a major scale. Now play it from a *different starting note*, treating that new note as the tonic. The set of pitches is unchanged, but the pattern of intervals around the tonic *rotates* — and so does the chord that sits on the tonic. You've made a mode.

Concretely: the seven notes C – D – E – F – G – A – B are C major. Start the same notes from **D** and treat D as home — the result is **D Dorian**. Same notes, but the tonic is D, the chord on D is minor (D – F – A), and the interval pattern relative to that tonic is different from major. Each of the seven white-key starting points gives a mode:

MODE	WHITE-KEY EXAMPLE	PATTERN FROM TONIC	QUICK READ
Ionian	C – D – E – F – G – A – B	W W H W W W H	= the major scale
Dorian	D – E – F – G – A – B – C	W H W W W H W	minor with a **raised 6th**
Phrygian	E – F – G – A – B – C – D	H W W W H W W	minor with a **lowered 2nd**
Lydian	F – G – A – B – C – D – E	W W W H W W H	major with a **raised 4th**
Mixolydian	G – A – B – C – D – E – F	W W H W W H W	major with a **lowered 7th**
Aeolian	A – B – C – D – E – F – G	W H W W H W W	= the natural minor scale
Locrian	B – C – D – E – F – G – A	H W W H W W W	minor with lowered 2nd *and* lowered 5th — unstable

Notice that you already know two modes: **Ionian** is what we've been calling major, and **Aeolian** is the natural minor. The five others are simply different rotations of the same diatonic note set.

The key idea: a mode isn't a different set of notes – it's a different *centre of gravity* within the same set. Treat D as home in the white keys and the music feels Dorian, even though every note is "from C major".

THE THREE EDM FAVOURITES

In practice, three modes dominate electronic and pop music alongside the standard major and minor: **Dorian**, **Phrygian**, and **Mixolydian**. Each one shifts a single note relative to its parent (major or minor), and that one note carries the whole flavour.

DORIAN

Minor with a **raised 6th**.

W H W W W H W

D Dorian = D E F G A **B** C

soulful, groovy, less «sad» than natural minor

PHRYGIAN

Minor with a **lowered 2nd**.

H W W W H W W

E Phrygian = E **F** G A B C D

dark, Spanish, cinematic, exotic

MIXOLYDIAN

Major with a **lowered 7th**.

W W H W W H W

G Mix. = G A B C D E **F**

bright but rooted, bluesy, rock-leaning

THE OTHER FOUR – BRIEFLY

- **Ionian** = the major scale (Chapter 3). The default «happy» mode.
- **Aeolian** = the natural minor scale (Chapter 4). The default «sad» mode.
- **Lydian** – major with a raised 4th. Dreamy, floaty, film-score territory. The Simpsons opening lick. Used sparingly in EDM, often in intros and breakdowns.
- **Locrian** – minor with both lowered 2 and lowered 5. The chord on its tonic is diminished, so it doesn't function as a stable home. Almost never used as the main mode of a track. Worth knowing the name; you can mostly ignore it.

QUICK REFERENCE

[QUICK REFERENCE]

EVERYTHING WORTH REMEMBERING

THE OCTAVE

Double the frequency = go up one octave. The octave is divided into **12 equal half steps**.

WHOLE STEP & HALF STEP

A **half step** (semitone) = distance between two adjacent keys. A **whole step** (tone) = 2 half steps.

MAJOR SCALE

Interval pattern:

W – W – H – W – W – W – H

NATURAL MINOR SCALE

Interval pattern:

W – H – W – W – H – W – W

SHARP / FLAT

½ step up = **sharp** (♯). ½ step down = **flat** (♭). C♯ and D♭ are the same key.

RELATIVE MINOR

Every major key has a minor twin with the **same key signature**. It's 3 half steps below the major tonic.

MAJOR VS MINOR THIRD

Major third = **4 half steps** (bright sound). Minor third = **3 half steps** (melancholic sound).

PERFECT FOURTH AND FIFTH

Identical in major and minor. Fourth = **5 half steps**, fifth = **7 half steps**.

MAJOR TRIAD

Root + **major** third + perfect fifth. Example: C – E – G.

MINOR TRIAD

Root + **minor** third + perfect fifth. Example: A – C – E.

THE 7 CHORDS OF A SCALE

In major: **I ii iii IV V vi vii°** – three major (I, IV, V), three minor (ii, iii, vi), one diminished (vii°).
In minor: **i ii° III iv v VI VII** – three minor (i, iv, v), three major (III, VI, VII), one diminished (ii°).

CIRCLE OF FIFTHS

Clockwise = +1 sharp per step. Counter-clockwise = +1 flat per step. Neighbors are « friendly » keys.

[GLOSSARY]

TERMS USED IN THIS GUIDE, IN PLAIN LANGUAGE

ACCIDENTAL

A sharp (♯) or flat (♭) added to a note. Raises or lowers it by a half step.

ADD9

A chord that adds the 9th (the 2nd, an octave up) to a triad without including a 7th. Cadd9 = C–E–G–D.

AUGMENTED

A triad with two stacked major thirds (4+4 half steps). Symbol: + (e.g. C+). Uncommon in EDM; mentioned in passing only.

CADENCE

The closing harmonic move of a phrase, typically a progression that resolves tension back to the tonic. V → I is the textbook cadence.

CAMELOT / OPEN KEY

Two DJ-oriented systems for naming keys numerically (1–12) so harmonic compatibility between tracks is easy to read at a glance. Adjacent codes are related by a fifth.

CHROMATIC

Using all 12 semitones, including notes outside the current scale. Opposite of diatonic.

CIRCLE OF FIFTHS

A diagram arranging the 12 keys in a clockwise sequence of perfect fifths (C, G, D, A, E…). Adjacent keys share six of seven notes.

DIATONIC

Belonging to a single scale. The seven white keys are the diatonic notes of C major; the diatonic chords are the seven triads built using only those notes.

DIMINISHED

A triad with two stacked minor thirds (3+3 half steps). Symbol: ° (e.g. B°). Tense, used as transitional tension; appears as vii° in major and ii° in minor.

DOMINANT

The 5th degree of a scale, and the chord built on it. Carries strong tension that pulls back to the tonic.

ENHARMONIC

Two different names for the same pitch. C♯ and D♭ are enharmonic equivalents — same key on a piano, two spellings.

EXTENSION CHORD

A triad with extra notes added — a 7th, 9th, sus2, sus4, add9, etc. The chord families producers reach for once basic triads start to feel plain.

FUNDAMENTAL

The defining pitch of a sound — the note your ear names when you hear it. Other frequencies (partials, overtones) sit on top, but the fundamental is what gives the sound its note name.

HARMONIC / INHARMONIC

A sound is *harmonic* when its partials line up to give a clear pitch (most instruments, voice). *Inharmonic* when they don't, so no defined pitch (cymbals, hi-hats, snares).

HARMONIC MINOR

A variant of the natural minor with the 7th degree raised by a half step. Adds a leading tone, so V can be played as a major chord.

INTERVAL

The distance between two notes, measured in half steps. Has names (major third = 4 half steps, perfect fifth = 7, etc.).

INVERSION

Re-stacking a chord so the root is no longer the lowest note. C–E–G (root position) → E–G–C (1st inversion) → G–C–E (2nd inversion).

KEY SIGNATURE

The set of sharps or flats that apply throughout a piece, written once at the start of the staff. Equivalent to setting the project Key in a DAW.

LEADING TONE

The 7th degree of a major scale, a half step below the tonic. Pulls strongly to the tonic — the source of cadential resolution.

MELODIC MINOR

A variant of the natural minor with the 6th and 7th raised when ascending, returning to natural when descending. Smooths out melodic motion.

MODE

A scale built by starting on a different degree of a parent scale. The seven modes of the major scale (Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian, Locrian) each have their own colour. See Chapter 13.

OCTAVE

The interval between a note and another at twice (or half) its frequency. Both share the same letter name.

PERFECT FIFTH

A 7-half-step interval (C → G). Stable, « open » quality. The fifth used in both major and minor triads.

RELATIVE (MAJOR / MINOR)

Two scales that share the same set of notes but have different tonics. C major and A minor are relatives.

ROOT

The note a chord is built on. The C in a C major chord (C–E–G).

SCALE DEGREE

The position of a note within a scale, numbered 1 to 7. The 1st degree is the tonic, the 5th the dominant, etc.

SEMITONE (HALF STEP)

The smallest distance in Western music — one fret on a guitar, one key (black or white) on a keyboard. C → C♯, B → C, E → F.

SEVENTH CHORD

A four-note chord — a triad plus the 7th. Three flavours producers use most: maj7 (Cmaj7), m7 (Cm7), and dominant 7 (C7 = major triad + minor 7th).

SUBDOMINANT

The 4th degree of a scale, and the chord built on it. « Pre-dominant » — sets up the tension that V resolves.

SUBTONIC

The 7th degree of a natural minor scale, a whole step below the tonic. Doesn't pull as strongly as the leading tone.

SUS2 / SUS4

TONIC

Suspended chords. The 3rd of the triad is replaced by the 2nd (sus2: C–D–G) or the 4th (sus4: C–F–G) — neither major nor minor in flavour.

The 1st degree of a scale, its «home» note. Gives the scale its name.

TRANSPOSITION

Moving a melody, chord, or progression up or down by a fixed interval, preserving all relative distances. C major → D major shifts everything up two half steps.

TRIAD

A three-note chord built by stacking thirds (root + 3rd + 5th).

TRITONE

A 6-half-step interval (e.g. F → B). The most dissonant interval in tonal music; the engine of V-chord tension.

WHOLE STEP (TONE)

Two half steps. Distance from C to D, or D to E. American «whole step» and British «tone» are interchangeable.

AND NOW?

THEORY IS ONLY A *LANGUAGE*. MUSIC IS WHAT YOU MAKE OF IT.

This guide is only a starting point. The best way to truly understand music theory is to **hear** it. Open your favorite DAW, or put your fingers on a piano, and play the examples. The concepts will come alive instantly.

Happy exploring!