LOW END HAZE

THE BASS WORKBOOK

YOU LOVE BASS. PLAY MORE.

Beginner to advanced, in ten-minute blocks. Technique, theory and riff writing, shaped by the playing of Frank Bello, Justin Chancellor and Mike Starr.

HOW THIS BOOK WORKS

This is a workbook, so it expects a bass in your lap. It runs from your first clean note to writing a long piece in odd meter, and it is built for people who get ten minutes between dinner and bedtime, on a good day.

Three parts, three tracks. Each part has one chapter per track, and each part ends with a boss. The boss does not care how busy you were this week. It also does not care about the school run, your inbox or your lower back.

	TECHNIQUE	THEORY	RIFF WRITING
Part I: Beginner	Ch 1. Clean notes, steady eighths, first pick strokes	Ch 2. Note names, shapes, the minor pentatonic, counting	Ch 3. Rhythm first, three-note riffs, motif and variation
Part II: Intermediate	Ch 4. Gallops, sixteenths, legato, palm mute, drop D	Ch 5. Intervals, triads, keys, the dark modes	Ch 6. Thrash riffs, sludge riffs, bass-led intros, song form
Part III: Advanced	Ch 7. Odd-meter picking, chords, harmonics, effects	Ch 8. Odd meters, polymeter, exotic scales, drones	Ch 9. Role swap, development, long-form structure

Part IV: Workshops sits after the three bosses: tone and gear, ear training, rhythm reading, slap and pop, walking lines, and two complete songs taken apart. Dip in whenever you like.

Every chapter also has a block of extra drills near its end. Skip them on a first pass and come back when a skill needs more work.

FRETROT SAYS

Ten minutes. You have spent longer than that on the toilet with your phone today, and you did not come out of there any better at anything.

The ten-minute rule

Every exercise is sized to fit a ten-minute block. One block is a real practice session. Three blocks in a week beats one heroic Saturday that never happens. You know the Saturday. It has been coming for six years.

1. **Two minutes:** warm up with the last exercise you finished.
2. **Six minutes:** one new exercise, slow, with a metronome or drum loop.
3. **Two minutes:** play something you like. This part is not optional. Skipping the fun bit is how people end up selling their gear on Marketplace to a man called Darryl.

How to read an exercise

Each exercise has a number, a tempo range and a tick box. Start at the low tempo. Move up 4 to 8 bpm only after three clean passes in a row. Tick the box when you can play it at the top tempo without tensing up. Ticks are saved on this device. Lying to a checkbox is still lying.

> **If it hurts, stop.** Tired is fine. Burning forearms are fine. Sharp pain in a wrist, thumb or finger joint is your body filing a complaint. Shake out, lower the tempo, lighten your touch. Blisters are fine. A blister that pops on the fretboard is a rite of passage and also disgusting. Wipe it down.

THREE PLAYERS, THREE LESSONS

This book leans on three bassists. You will not find their riffs here. Their lawyers are scarier than our monsters. Every exercise is original, written to train the habit that makes each of them sound the way they do.

STEAL FROM FRANK BELLO

Anthrax. He plays mostly with his fingers at thrash tempos, which is hard and is why Chapters 1, 4 and 7 keep drilling alternating fingers and stamina. He also refuses to sit under the guitars all night. He fills the ends of phrases with melodic runs and jumps octaves to change the energy. His own heroes are Geddy Lee, Geezer Butler and Steve Harris, which explains a lot.

STEAL FROM JUSTIN CHANCELLOR

Tool. Pick player, drop D for most songs, and a pedalboard he treats as part of the instrument: wah, pitch shifter, fuzz, delay, flanger. He often carries the main riff while the guitar plays texture, works in the upper register, then drops an octave when the song needs weight. He has said riffs come to him while walking the dogs and usually turn out to be in an odd meter once he counts them. Chapters 7 to 9 are built around that.

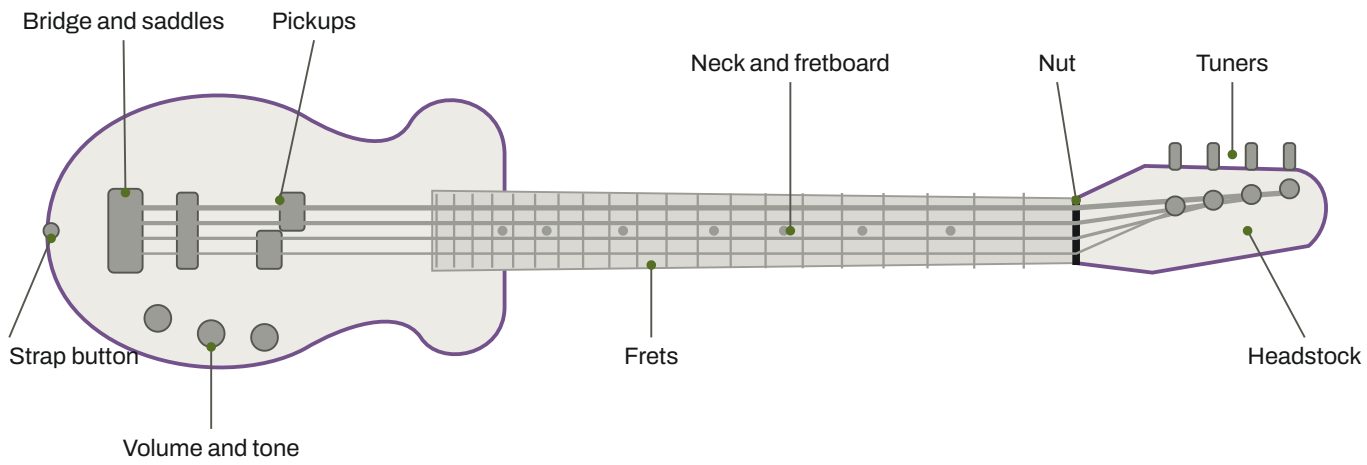
STEAL FROM MIKE STARR

Alice in Chains, the first two albums. A hard pick attack on a growling bass through a big tube amp, tuned a half step down with the rest of the band. His lines are simple on paper and heavy in the room: few notes, long notes, the right notes, locked to the kick drum. Several songs open with the bass alone stating the hook. Chapters 3 and 6 train weight, space and the bass-led intro.

HABIT	BELLO	CHANCELLOR	STARR
Plucking hand	Fingers, hard and fast	Pick, lots of midrange	Pick, heavy attack
Home tuning	Standard	Drop D	Half step down
Rhythm world	Gallops and driving eighths	Odd meters, shifting accents	Slow and mid tempo, deep pocket
Role in the band	Counterpoint and fills around the riff	Often is the riff	Foundation, plus the hook when it counts
Chapters	1, 4, 6, 7	4, 7, 8, 9	3, 6

BEFORE YOU PLAY

The parts you will hear about in this book `not to scale`



Tuning

Three tunings appear in this book. Low string to high string:

TUNING	STRINGS	USED FOR
Standard	E A D G	Parts I and II, most thrash
Half step down	Eb Ab Db Gb	Grunge weight. Every shape stays the same, everything sounds one fret lower
Drop D	D A D G	Part III. Only the lowest string changes, down two frets

Use a clip-on tuner or the tuner on the site. Tune up to the note, never down to it: if you overshoot, go below and come back up. The string holds pitch better that way.

> **Drop D in ten seconds.** Play the open D string and the low string together. Lower the low string until the two notes stop wobbling against each other. You now have two D strings an octave apart. Enjoy the smugness.

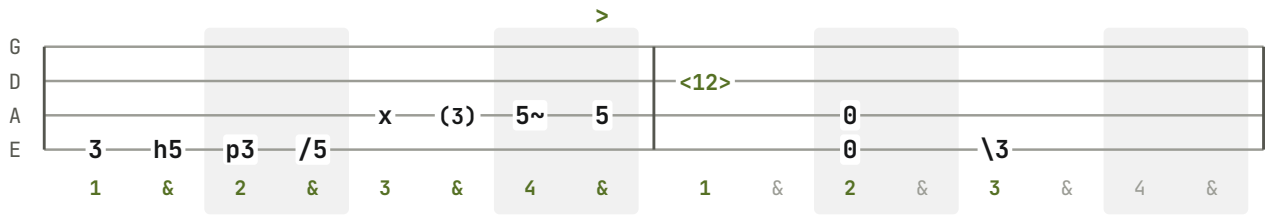
THE CLATTER SAYS

Tune the fucking thing. Every time. In the whole history of music nobody has said 'great riff, shame it was in tune'.

Reading tab

Tab is a picture of the strings. The bottom line is your lowest string. Numbers are frets. Zero is the open string. The row under the staff is the count, and the count is half the music, so read it. Ignore it and you will play all the right notes at the wrong time, with total confidence, like a wedding DJ.

Every symbol used in this book `4/4 · standard tuning`



Left to right: fret 3, hammer on to 5, pull off to 3, slide up to 5, dead note, ghost note, vibrato, accent. Second bar: natural harmonic at fret 12, two strings at once, slide down to 3.

SYMBOL	NAME	WHAT TO DO
`5`	Fretted note	Press just behind fret 5 and pluck
`0`	Open string	Pluck without fretting
`h7`	Hammer-on	Do not pluck. Slam a finger onto fret 7 from the note before
`p5`	Pull-off	Do not pluck. Flick the fretting finger off, sounding fret 5 below it
`/7` and `\5`	Slide	Keep pressure on and glide to the fret
`x`	Dead note	Fretting hand rests on the string without pressing. Pluck for a click
`(5)`	Ghost note	A real pitch played very quietly
`5~`	Vibrato	Wobble the string after plucking
`>` above the staff	Accent	Hit this one harder than its neighbours
`<12>`	Harmonic	Touch the string directly over the fret wire, pluck, lift

Reading the fretboard diagrams

Same view as tab: low string at the bottom, nut on the left. Green dots are roots. Purple dots are everything else. The label inside a dot is a note name, a scale degree or a finger number, and the caption says which.

FRETROT SAYS

Tick a box you have not earned and I will know. I live in the grey paste under your strings. I see everything.

Posture, in four checks

- [ ] Strap set so the bass sits at the same height standing and sitting
- [ ] Fretting wrist nearly straight, thumb behind the neck around the second finger
- [ ] Plucking forearm resting on the body, hand loose
- [ ] Shoulders down. If they creep toward your ears, the tempo is too fast

PART I

BEGINNER

Clean notes, a steady pulse, the map of the neck, and your first riff. The Hollow is waiting at the end. It has nothing better to do.

CHAPTER 1

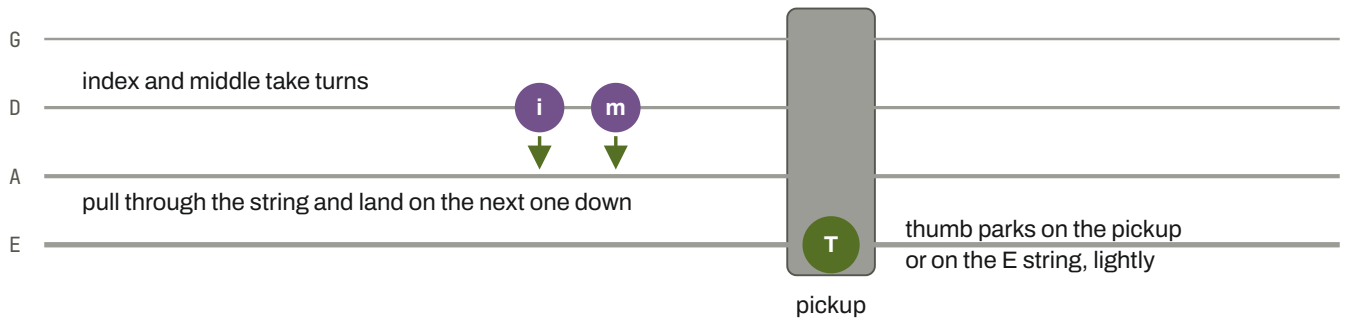
TWO HANDS, ONE SOUND TECHNIQUE

Tone starts in the plucking hand. Before any speed, you need one thing: every note the same volume and the same length. Thrash, grunge and prog all sit on top of that. Nobody ever got kicked out of a band for boring, even notes. Plenty got kicked out for the other thing.

Plucking hand: alternate, always

Use your index (i) and middle (m) fingers in strict turns. Never the same finger twice in a row, even when it feels easier. Easier is how bad habits get in, and bad habits are like houseguests: free to acquire, a bastard to remove. That one habit is what gets you to Bello tempos later without rebuilding your technique.

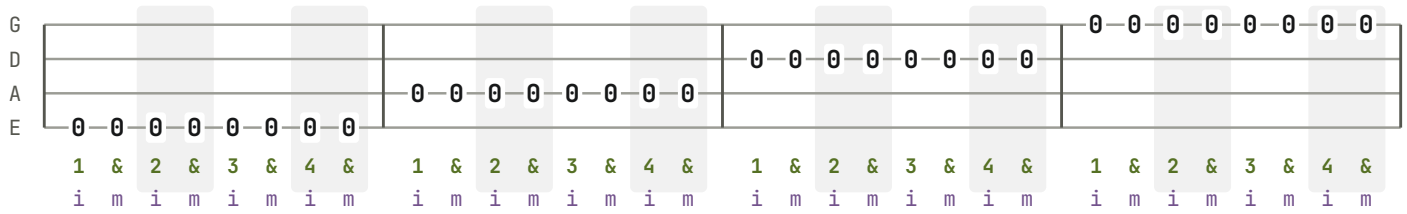
Plucking hand: the rest stroke `same view as tab: G on top, low E at the bottom`



- **Rest stroke.** Pluck across the string and let the finger land on the next string down. That landing mutes the lower string for free.
- **Anchor.** Thumb on the pickup when you play the E string. When you move to higher strings, let the thumb drop onto the E string to keep it quiet.

- **Depth.** Use the pad of the fingertip. Dig in more for attack, less for speed.

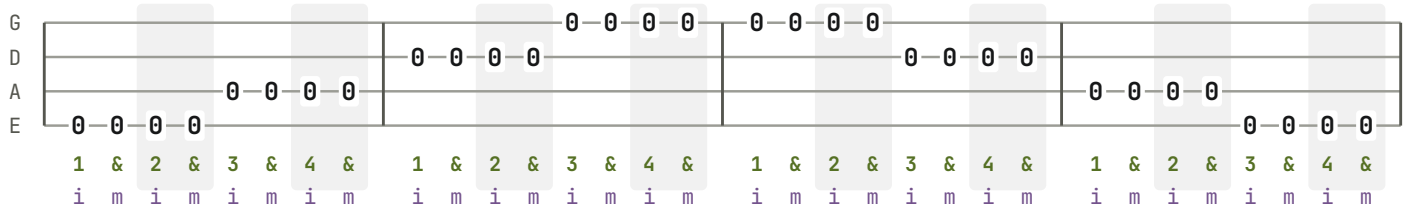
Ex 1.1 **Alternating fingers on open strings** `4/4 · standard tuning · 60 to 100 bpm`



Count out loud. If one finger sounds louder, slow down until they match.

Ex 1.2 **Crossing strings without breaking the alternation**

`4/4 · standard tuning · 60 to 100 bpm`



Going up, keep alternating. Coming down, you may drag one finger across two strings (a rake). Both are fine. Stopping the alternation on the way up is the one to avoid.

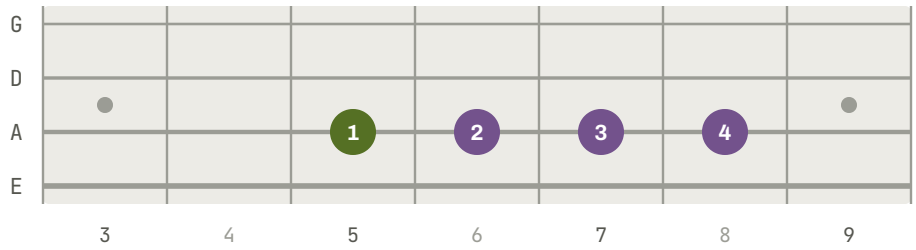
THE HOLLOW SAYS

Uneven notes taste like wet cardboard. Feed me something better.

Fretting hand: one finger per fret

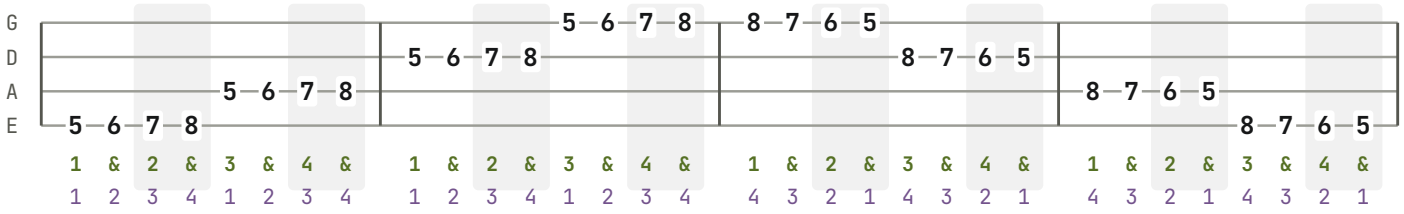
Four fingers cover four frets. Press just behind the fret wire with the fingertip, using only enough pressure to stop the buzz. Most beginners squeeze three times harder than they need to, which is where the hand cramps come from. The neck is not trying to escape.

One finger per fret, fifth position `labels are finger numbers`



Finger 1 is your index. Leave fingers down behind the one that is playing. Below fret 5 the stretch is wide: it is fine to pivot the hand instead of forcing it.

Ex 1.3 **The spider** `4/4 · standard tuning · 50 to 90 bpm`



Numbers under the count are fretting fingers. Ugly, useful, and the single best warm-up in the book. It sounds like a robot falling down stairs. Do it anyway.

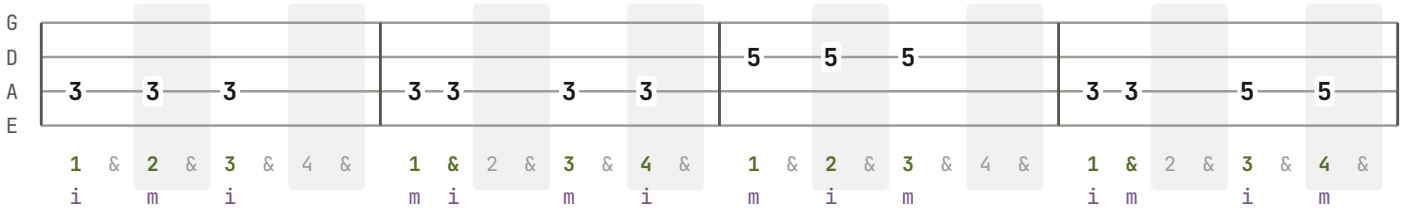
FRETROT SAYS

Your fingertips will hurt for two weeks, then go numb, then peel like a sunburnt snake. That is progress. Do not eat the peelings. People will ask questions.

Muting: the notes you stop

A bass note that rings into the next one turns a riff into fog. You have two mutes. The fretting hand lifts pressure without leaving the string. The plucking hand lands a finger on the string. Rests in tab are played. You play them by stopping the sound. Silence is the cheapest note you own and you are still being stingy with it.

Ex 1.4 **Play the rests** 4/4 · standard tuning · 70 to 100 bpm

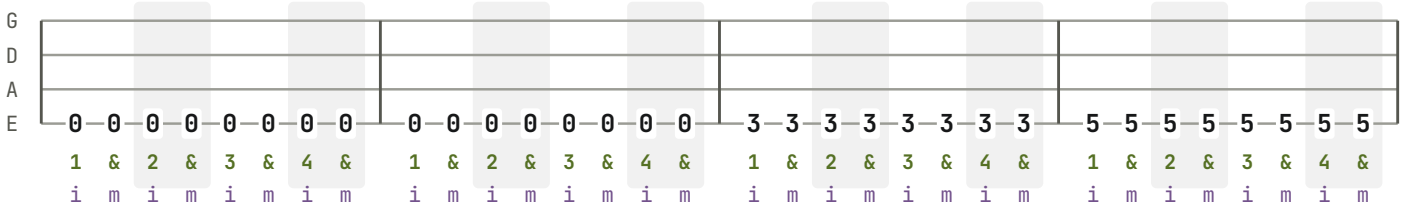


Every dot on a beat is silence you create. Record ten seconds on your phone and listen for ringing.

The engine: steady eighths

Most heavy music runs on eighth notes on the root. It is the least glamorous skill here and the one drummers love you for. Nobody has ever thrown underwear at a bassist for steady eighth notes. They should.

Ex 1.5 **Root drive in E minor** 4/4 · standard tuning · 100 to 160 bpm



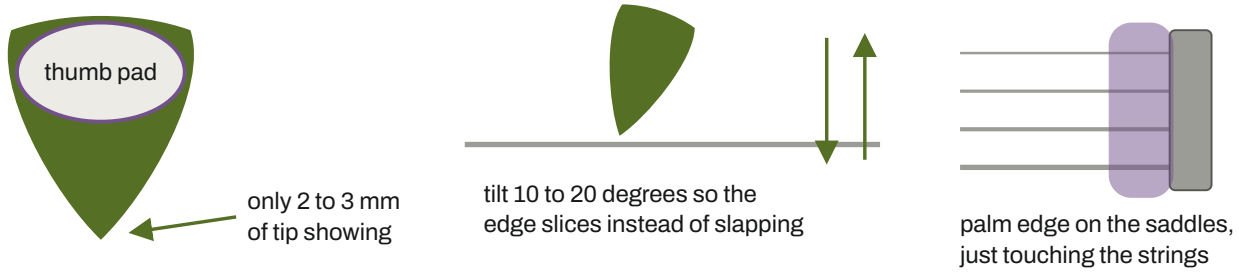
Two bars of E, one of G, one of A. Loop it for two minutes without stopping. Loosen your grip as the tempo rises.

> STEAL FROM FRANK BELLO
>
> At 160 this exercise is already in thrash territory. The trick is that the fingers move less as the tempo goes up. Small strokes, light touch, let the amp do the volume.

First pick strokes

Chancellor and Starr both get their sound from a pick. Learn it now, alongside fingers, so you never have to say you only do one. Pick versus fingers is the dullest argument on the internet, and that is a crowded field.

Pick grip, pick angle and where the palm mute lives

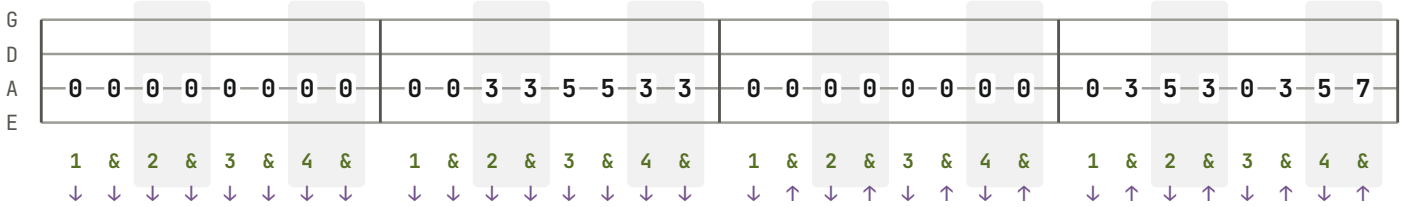


GRIP

ANGLE, DOWN AND UP

PALM MUTE

Ex 1.6 **Downstrokes, then down-up** `4/4 · standard tuning · 70 to 120 bpm`



Bars 1 and 2 are all downstrokes, the heavy sound. Bars 3 and 4 alternate. Move from the wrist, not the elbow.

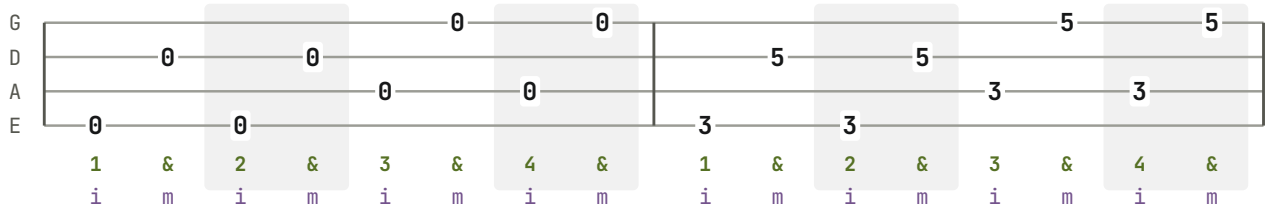
> STEAL FROM MIKE STARR
>
> Downstrokes with a firm pick near the bridge pickup give the grind you hear under those early Alice in Chains riffs. Play this exercise at 80 and hit every note as hard as the first one.

More drills: hands

Five short drills that widen what Chapter 1 started. Each one fixes a specific weakness.

Ex 1.7 String skipping

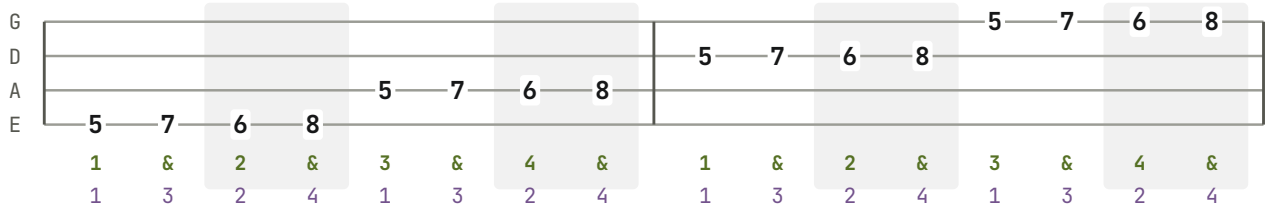
4/4 · standard tuning · 60 to 100 bpm



Jump over a string without touching it. Bar 2 is octaves: G and G, then C and C.

Ex 1.8 Spider, shuffled fingers

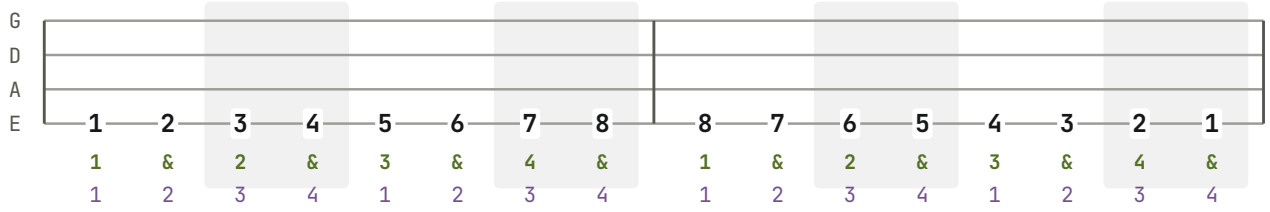
4/4 · standard tuning · 50 to 90 bpm



Fingers 1, 3, 2, 4. The ring finger and pinky hate this, which is the point.

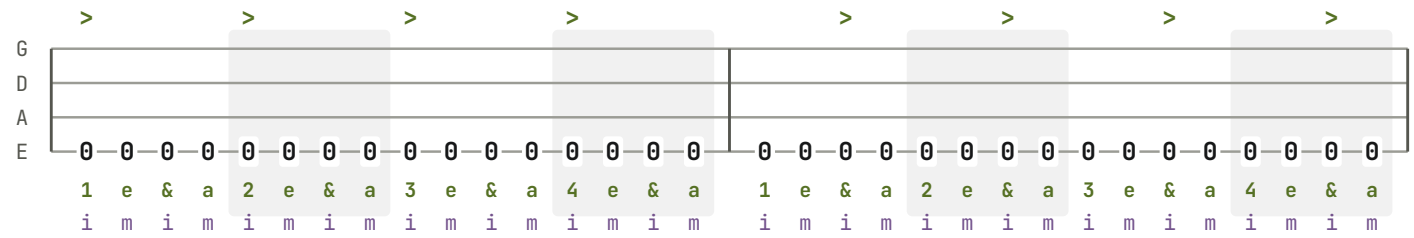
Ex 1.9 Shifting along one string

4/4 · standard tuning · 50 to 90 bpm



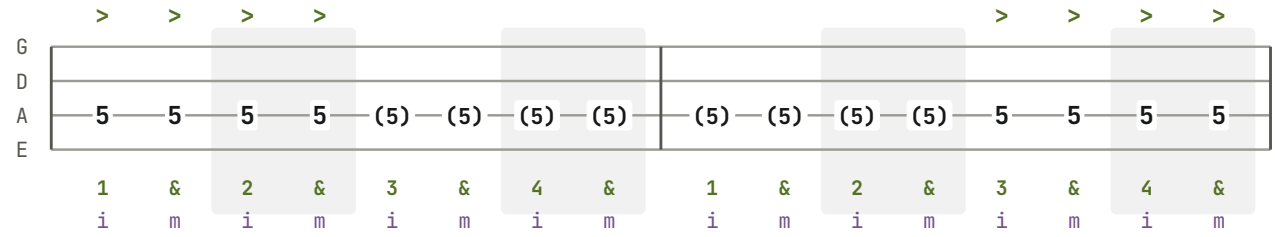
After finger 4, move the whole hand so finger 1 lands on the next fret. The shift should make no sound.

Ex 1.10 **Accents on the beat, then off it** `4/4 · standard tuning · 60 to 100 bpm`



Bar 1 accents the beat. Bar 2 accents the "and". Every other note stays quiet and even.

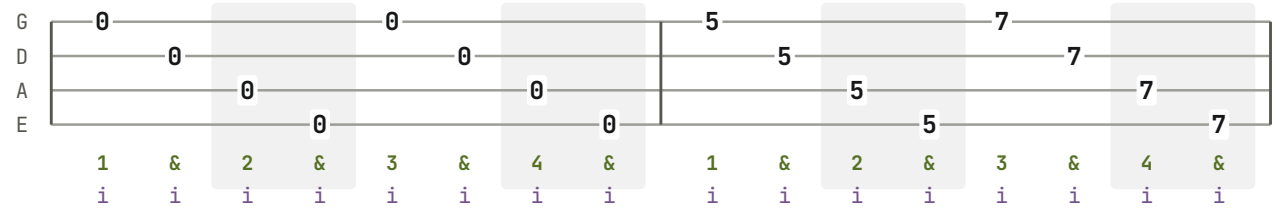
Ex 1.11 **Loud and soft** `4/4 · standard tuning · 70 to 110 bpm`



Four notes as loud as you can play cleanly, four as soft as you can. Same tempo, same length. Volume lives in your hands before it lives in the amp.

Bass-only drills

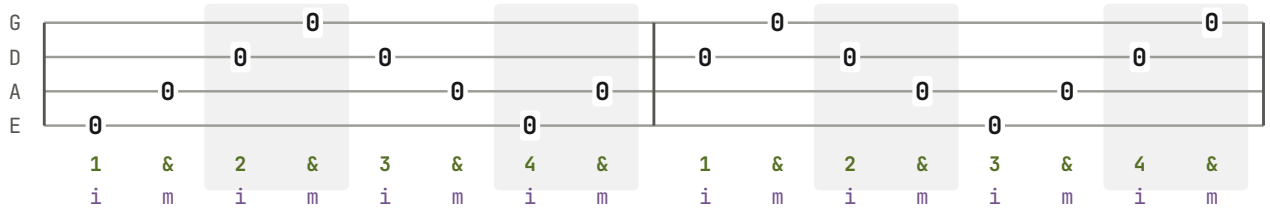
Ex 1.12 **Raking down** `4/4 · standard tuning · 60 to 100 bpm`



Coming down across the strings, let one finger fall through all four like a slow strum. It is faster and smoother than alternating on the way down.

Ex 1.13 The travelling thumb

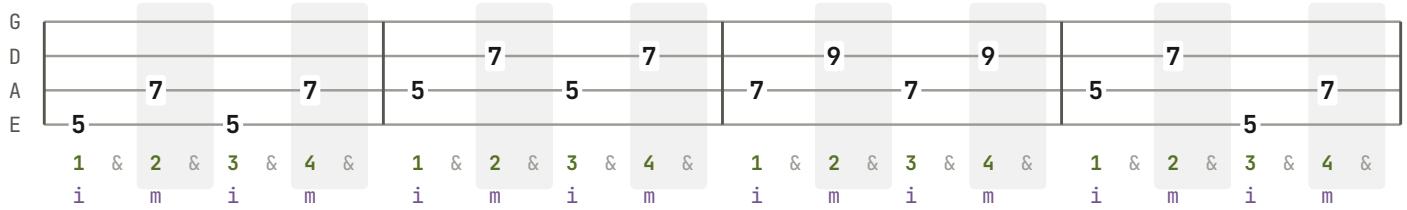
4/4 · standard tuning · 60 to 100 bpm



As you move to a higher string, let the thumb slide down to rest on the string below the one you are playing. It mutes everything you are not using.

Ex 1.14 Root and fifth through three chords

4/4 · standard tuning · 70 to 120 bpm



A, D, E, then back. Root on the beat, fifth after it. This pattern alone will get you through a surprising number of songs.

SKITTER SAYS

Still strangling the neck like it owes you money? Loosen up. Save the death grip for jar lids.

Chapter 1 check

- [ ] Open-string alternation at 100 bpm, even volume, for one minute
- [ ] The spider at 80 bpm with no buzzing
- [ ] Root drive at 140 bpm for two minutes without stopping
- [ ] Downstrokes at 120 bpm with a relaxed forearm

CHAPTER 2

THE MAP OF THE NECK THEORY

Theory is a set of names for sounds you already like. Names let you find those sounds again on purpose. That is all it is. Anyone who makes it sound harder is selling a course.

Twelve notes, then they repeat

FRET ON THE E STRING	0	1	2	3	4	5	6	7	8	9	10	11	12
Note	E	F	F#/Gb	G	G#/Ab	A	A#/Bb	B	C	C#/Db	D	D#/Eb	E

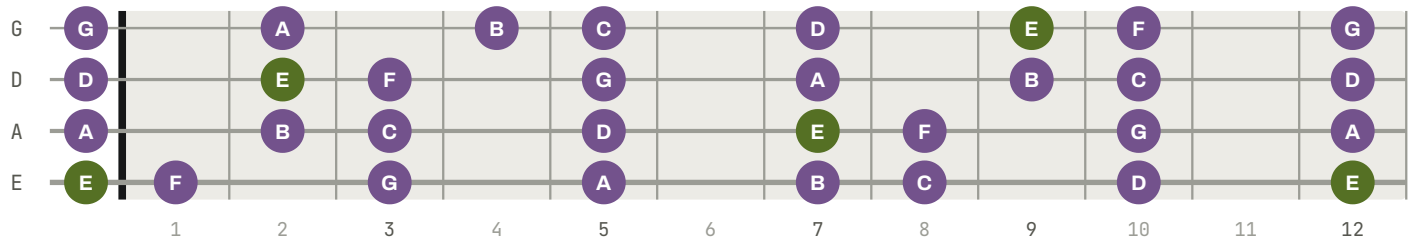
One fret is a **half step**. Two frets is a **whole step**. There is no sharp between E and F or between B and C. That is the whole alphabet. Nobody knows why those two pairs are different. Do not ask. People have lost weekends to it.

> THE DRIFT SAYS
>
> *Twelve notes. That is all there are. Every song that ever made you cry or punch a wall is the same twelve little bastards in a different order.*

Learn two strings first

Every root in this book sits on the E or A string. Learn those two cold and the other two come for free through the octave shape below.

Natural notes, open to fret 12 standard tuning · labels are note names

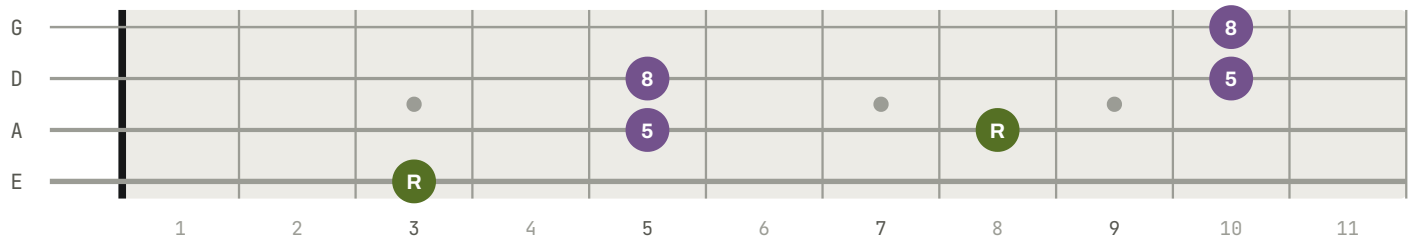


Sharps and flats are the empty frets between. Frets 3, 5 and 7 on the E string are G, A and B. Learn those three first.

Two shapes that never change

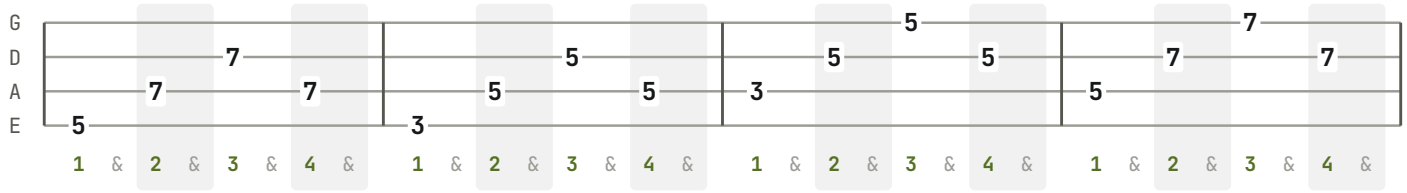
The **octave** is the same note, higher: two strings up, two frets up. The **fifth** is the power-chord note: one string up, two frets up. These shapes work from any root on the E or A string.

Root, fifth and octave from G and from F `labels are scale degrees`



From G on the E string: fifth on the A string, octave on the D string. From F on the A string: the same shape, moved up one string.

Ex 2.1 Root, fifth, octave around the neck `4/4 · standard tuning · 70 to 110 bpm`

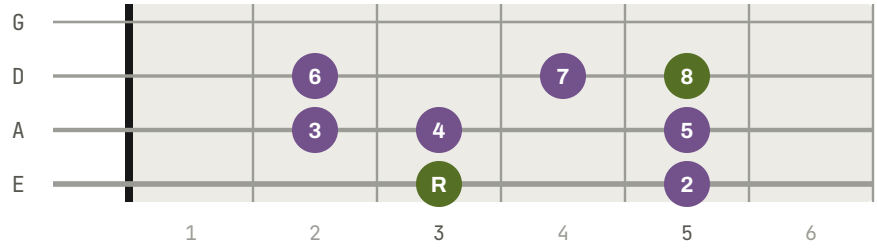


Roots are A, G, C and D. Say the root name as you land on it.

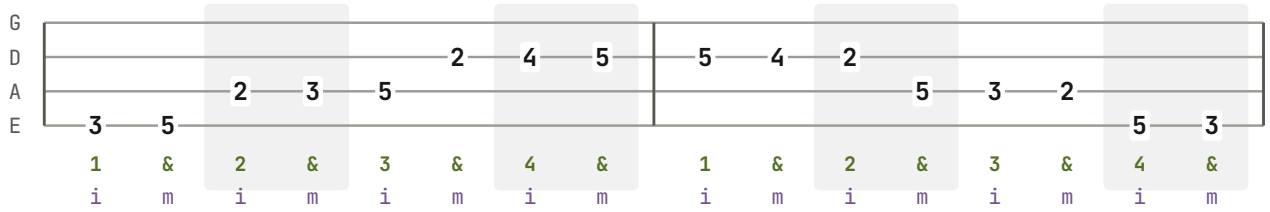
The major scale

Seven notes, built from this pattern of steps: **whole, whole, half, whole, whole, whole, half**. Number the notes 1 to 7. Those numbers are how musicians talk about every other scale. It is also how they avoid admitting they have forgotten the note names.

G major, one octave `labels are scale degrees`



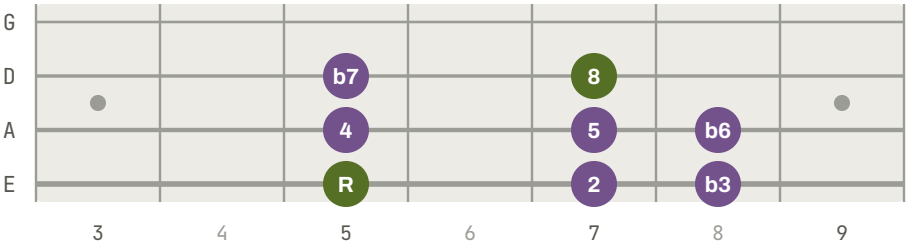
Ex 2.2 **G major up and down** `4/4 · standard tuning · 60 to 100 bpm`



The natural minor scale

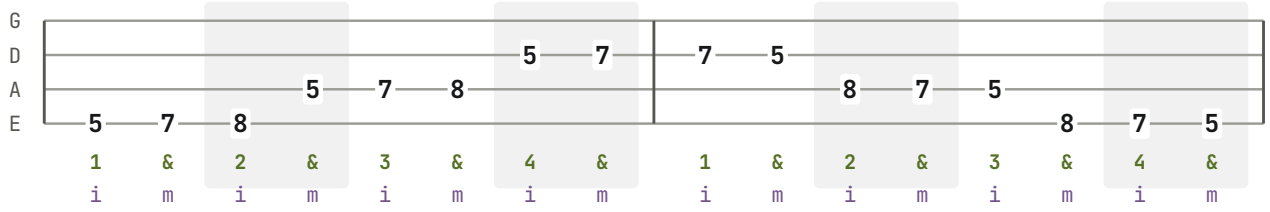
Lower the 3rd, 6th and 7th of the major scale and you get natural minor: **whole, half, whole, whole, half, whole, whole**. This is home base for nearly everything heavy. Happy people use the major scale. You are not here for them.

A natural minor, one octave `labels are scale degrees`



Compare with major: the b3, b6 and b7 are what make it dark.

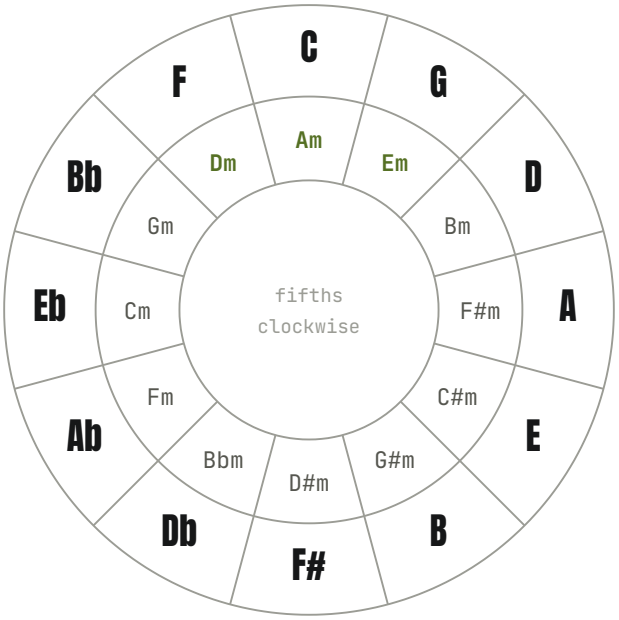
Ex 2.3 **A natural minor up and down** `4/4 · standard tuning · 60 to 100 bpm`



The circle of fifths, the easy way

The circle is the twelve notes laid out like a clock, where every neighbour is a fifth away. You already know that distance: it is the power-chord shape from a few pages back. Here is everything a bassist needs from it.

The circle of fifths



OUTER RING
major keys

INNER RING
relative minors (same notes)

ONE STEP CLOCKWISE
up a fifth, adds one sharp

ONE STEP BACK
up a fourth, adds one flat

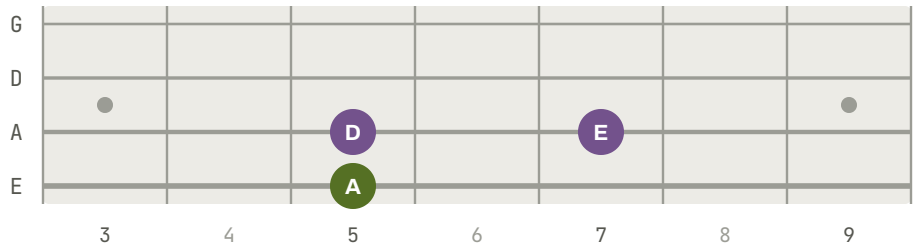
HIGHLIGHTED
Em, Am, Dm: where open strings live

STRAIGHT ACROSS
the tritone, six frets away

Clockwise from the top: C, G, D, A, E, B. "Charlie Goes Down And Ends Battle" will get you halfway round.

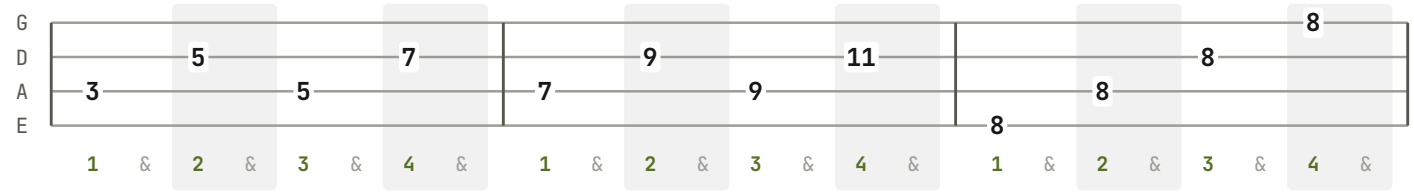
1. **Clockwise is up a fifth.** On the neck that is one string up and two frets up.
2. **Anticlockwise is up a fourth.** On the neck that is the same fret on the next string up. Your open strings, E, A, D, G, are four neighbours on the circle read anticlockwise. The bass is tuned in a slice of it.
3. **Neighbours belong together.** Pick any note. The note on each side of it gives you the three roots most songs are built from. Around E that is A and B. Around A it is D and E.
4. **The inner ring is the minor twin.** Each minor key uses exactly the same notes as the major key outside it. E minor shares its notes with G major, A minor with C major.
5. **Far apart means strange.** Notes next to each other sound related. The note straight across the circle is six frets away, and it is the most tense jump there is. Heavy music loves it. More on that in Chapter 5.

One step either way from A `labels are note names`



From A: the same fret on the next string is D, one step anticlockwise. Two frets higher is E, one step clockwise. This works from any note on the E, A or D string.

Ex 2.4 **Walk the circle** `4/4 · standard tuning · 60 to 90 bpm`



Bars 1 and 2 go clockwise: C, G, D, A, E, B, F#, C#. Say each name as you play it. Bar 3 goes anticlockwise straight across one fret: C, F, Bb, Eb.

> **What to remember.** Same fret, next string up is a fourth. Add two frets and it is a fifth. The three roots of most songs sit side by side on the circle. That is enough for now. The rest of the circle is for jazz players, who need something to do with their evenings.

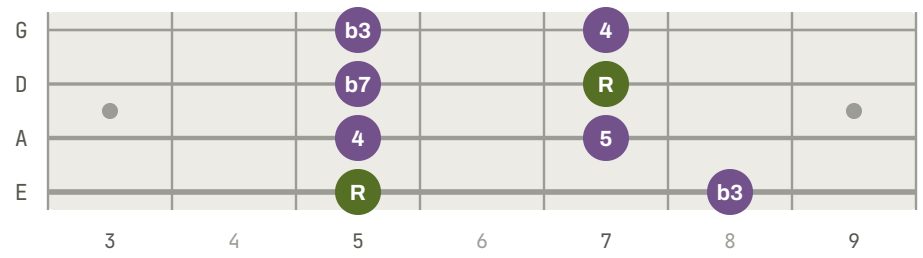
`GHAST SAYS`

The minor pentatonic is the cargo shorts of scales. Ugly, comfortable, pockets everywhere, and you will be wearing it for the rest of your life.

The minor pentatonic

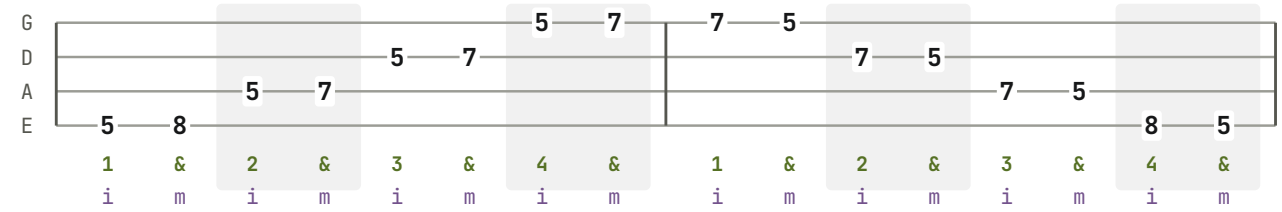
Drop the 2nd and 6th from natural minor and five notes remain: **R, b3, 4, 5, b7**. No note in it sounds wrong over a minor riff, which is why half of rock is written with it. The other half is written with it by accident.

A minor pentatonic box `labels are scale degrees`

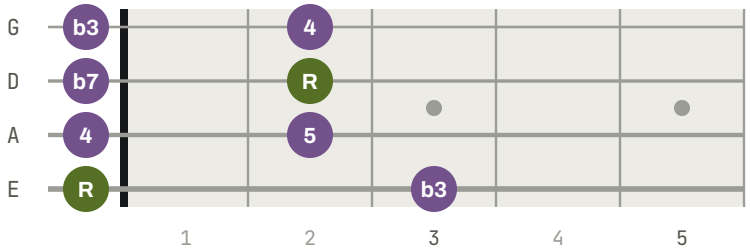


Two notes per string. Index finger on fret 5, ring or pinky on 7 and 8.

Ex 2.5 **A minor pentatonic up and down** `4/4 · standard tuning · 60 to 110 bpm`



E minor pentatonic, open position `labels are scale degrees`



Same scale moved to the open strings. Most of the riffs in Chapter 3 come from these eight notes.

THE CLATTER SAYS

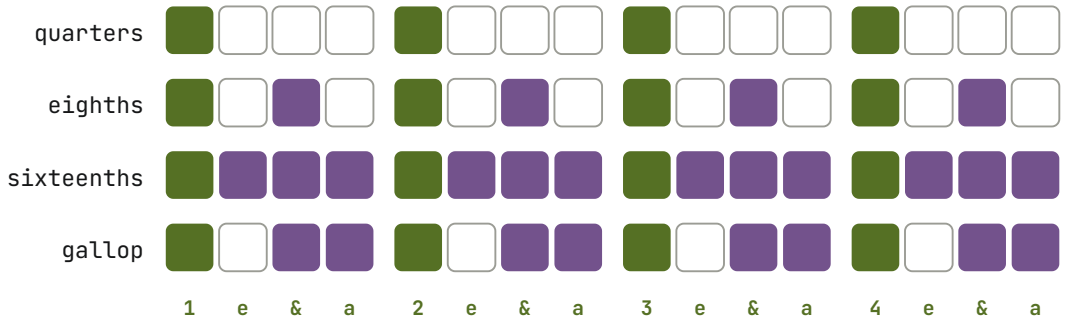
Count out loud. Yes, out loud. Yes, you will sound like an idiot. You sounded like an idiot before too. You just could not hear it over the amp.

Counting

A bar of 4/4 has four beats. Split each beat in two for eighth notes, in four for sixteenths. Say the count out loud while you play. It feels silly for a week and then you stop getting lost. Getting lost is fine in a forest. In bar three it

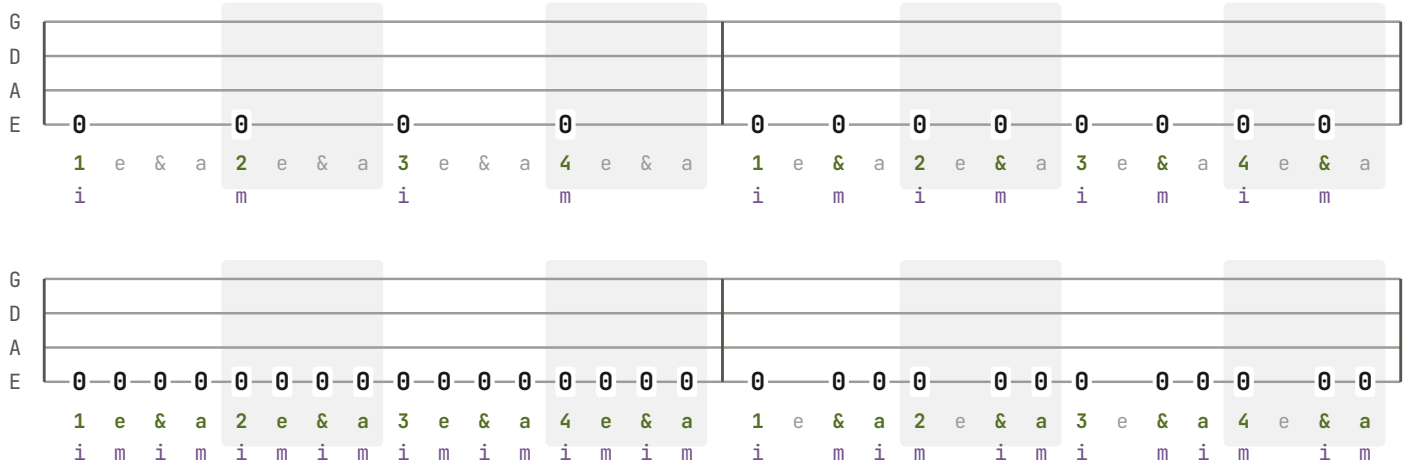
makes everyone hate you.

One bar of 4/4, three ways to slice it



Green is the beat. The gallop row is one eighth plus two sixteenths per beat. You will meet it properly in Chapter 4.

Ex 2.6 **Count it out loud** `4/4 · standard tuning · 60 to 90 bpm`



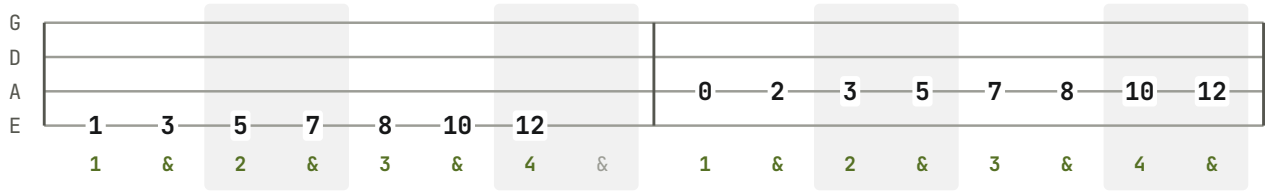
Quarters, eighths, sixteenths, gallop. The click stays the same. Only your slicing changes.

More drills: the neck

Say every note name out loud in these. Speaking it is what moves it from the page into memory.

Ex 2.7 Natural notes on two strings

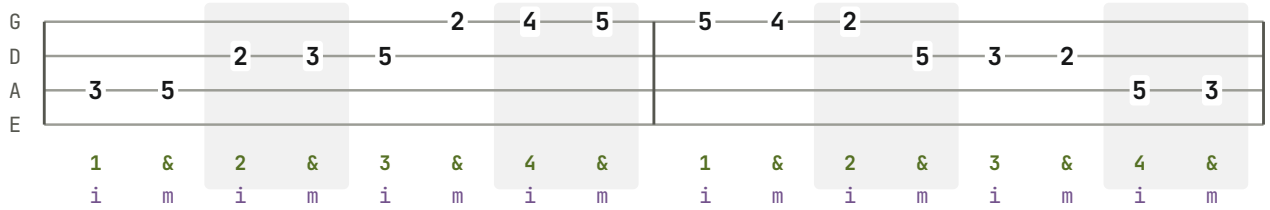
4/4 · standard tuning · 50 to 80 bpm



E string: F, G, A, B, C, D, E. A string: A, B, C, D, E, F, G, A. One finger, sliding. Names out loud.

Ex 2.8 C major from the A string

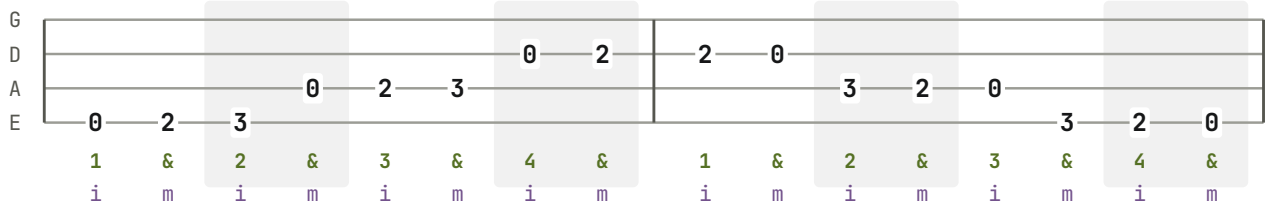
4/4 · standard tuning · 60 to 100 bpm



The same shape as G major, moved up a string. One shape gives you every major key.

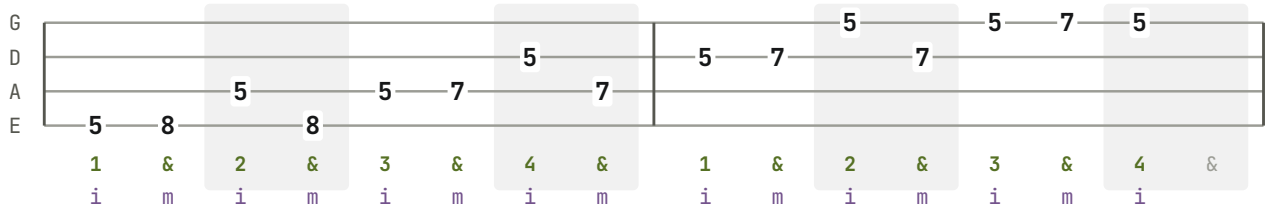
Ex 2.9 E natural minor, open position

4/4 · standard tuning · 60 to 100 bpm



E, F#, G, A, B, C, D, E. This is the home scale of more heavy riffs than any other.

Ex 2.10 **Pentatonic in steps** `4/4 · standard tuning · 60 to 100 bpm`

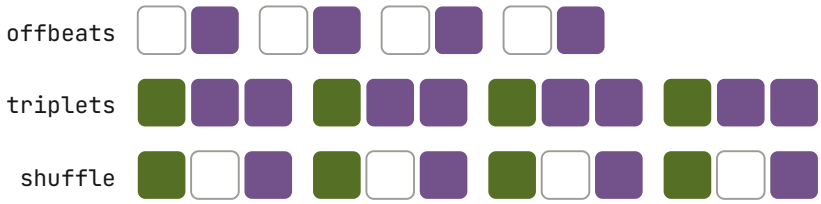


Two notes forward, one back. Sequences like this turn a scale into something that sounds like music.

More counting

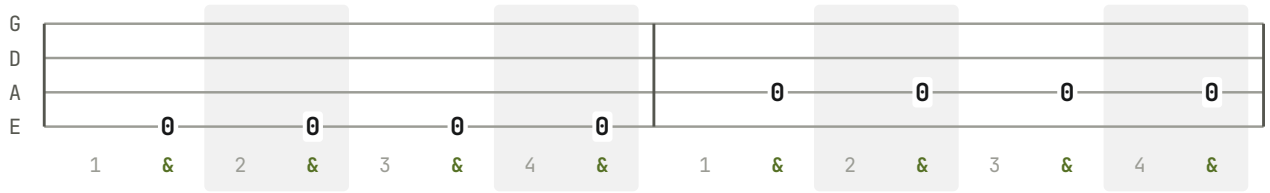
Two more feels you need before Chapter 3: the offbeat and the triplet.

Offbeats and triplets



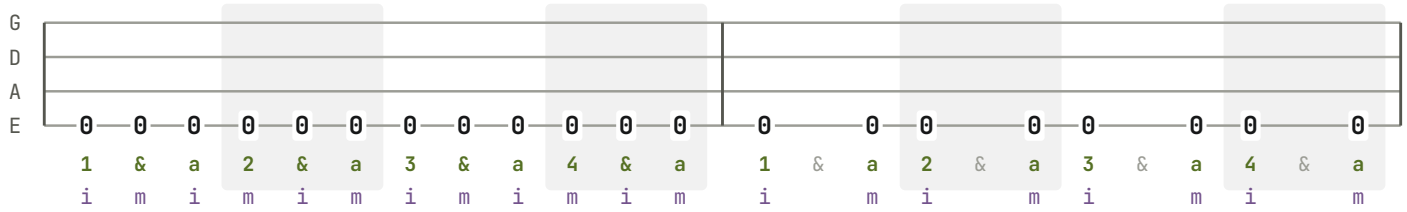
Row 1 is eighth notes with the beat left out. Row 2 splits each beat in three. Row 3 skips the middle triplet: the shuffle.

Ex 2.11 **Offbeats** `4/4 · standard tuning · 70 to 110 bpm`



Tap your foot on the beat and play only on the "and". Harder than it looks.

Ex 2.12 **Triplets, then shuffle** 4/4 · standard tuning · 60 to 100 bpm



Count "one-and-a". Bar 2 leaves out every "and": long, short, long, short.

Chapter 2 check

- [ ] Name any natural note on the E and A strings within three seconds
- [ ] Find the fifth and the octave from any root without looking
- [ ] Name the notes one step either way on the circle of fifths from E, A and D
- [ ] Play A natural minor and A minor pentatonic from memory
- [ ] Count sixteenths out loud while playing eighths

CHAPTER 3

YOUR FIRST RIFFS

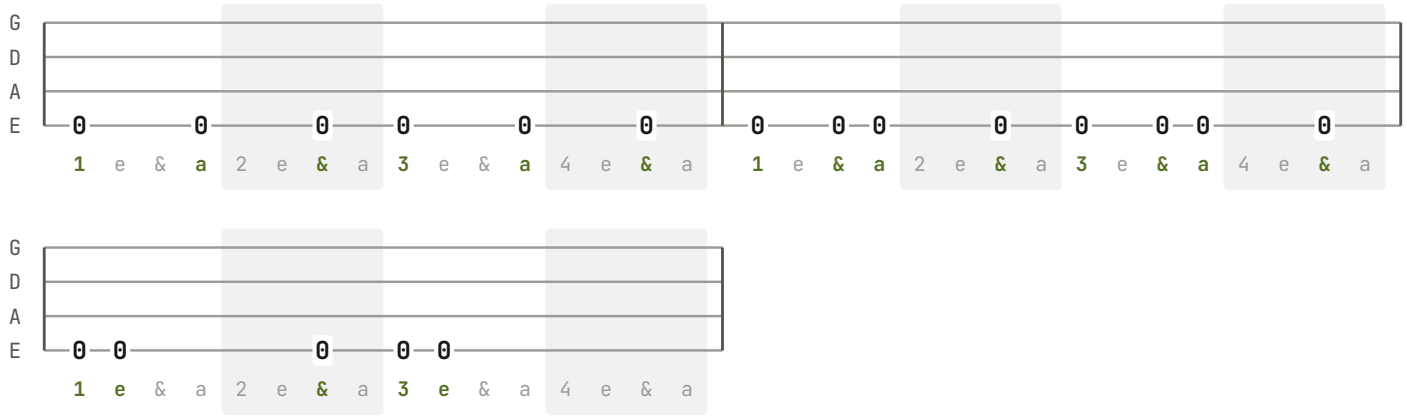
RIFF WRITING

A riff is a short idea worth repeating. You have enough notes already. What turns notes into a riff is rhythm, repetition and one small surprise. Same recipe as a good joke, or a bad date.

Rhythm first

Write the rhythm on one note before you choose any pitches. If it does not groove on an open E, more notes will not save it.

Ex 3.1 **Three one-note riffs** `4/4 · standard tuning · 80 to 110 bpm`

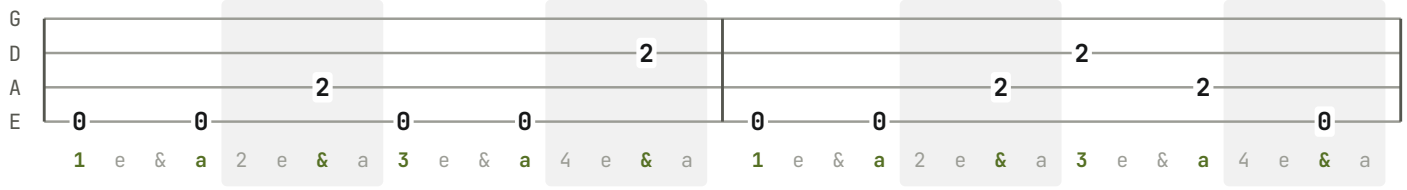


Bar 1 groups the sixteenths 3+3+2. Bar 2 is a broken gallop. Bar 3 is mostly silence. Loop each bar on its own, then pick your favourite.

Now add three notes

Take the rhythm from bar 1 and move a few hits to the fifth and the octave. The rhythm stays. The riff appears.

Ex 3.2 **Same rhythm, three pitches** `4/4 · standard tuning · 80 to 110 bpm`



E, its fifth B, and the octave E. Bar 2 answers bar 1 by coming back down.

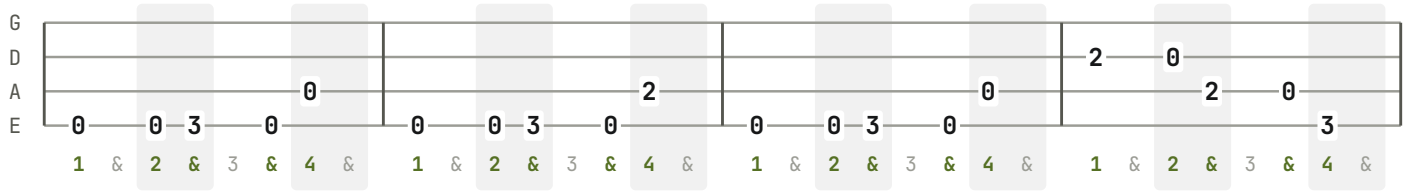
THE HOLLOW SAYS

If the riff does not work on one note, adding more notes is putting a hat on a turd.

Motif and variation: A, A, A, B

Play an idea. Play it again with one change. Play the original. Then play something different that leads back to the start. Listeners need the repeat to learn the riff and the change to stay awake. Listeners are simple animals. So are you. That is why this works.

Ex 3.3 **A four-bar riff in E minor pentatonic** `4/4 · standard tuning · 90 to 130 bpm`

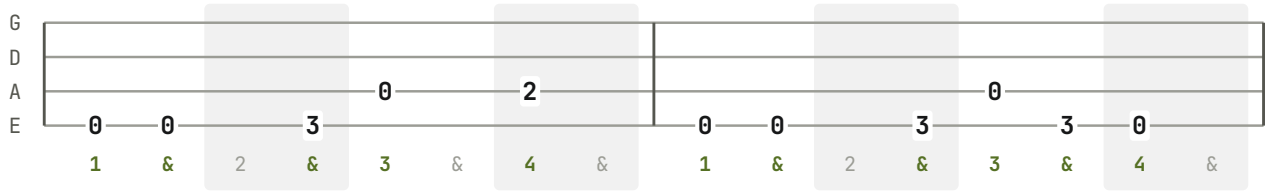


Bar 2 changes only the last note. Bar 4 walks down from the octave and hands you back to bar 1.

Question and answer

End the first bar on a note that feels unfinished: the fifth or the b7. End the second bar on the root. That is a question and an answer, and it works at every level of difficulty.

Ex 3.4 **Question, then answer** `4/4 · standard tuning · 90 to 130 bpm`

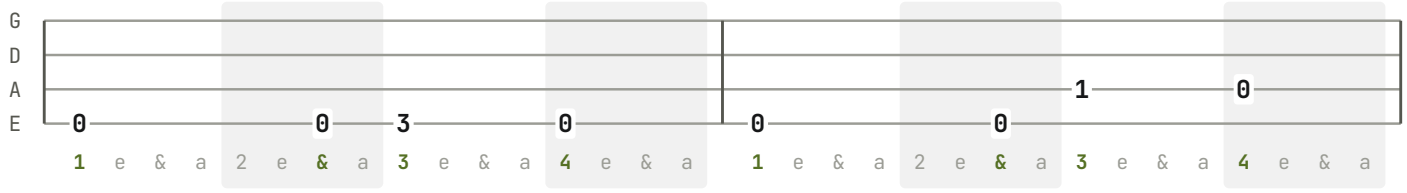


Bar 1 stops on B, the fifth. Bar 2 comes home to E.

Weight and space

Slow riffs are harder than fast ones because there is nowhere to hide. Every fluffed note just stands there, naked, making eye contact. Long notes, big gaps, and one ugly note for flavour. The ugly note here is Bb, the flat fifth of E.

Ex 3.5 **Slow and heavy** `4/4 · standard tuning · 60 to 80 bpm`



Use a pick, all downstrokes. Let the first note of each bar ring for its full length, then cut it dead.

> STEAL FROM MIKE STARR
>
> This is the grunge lesson. Fewer notes than you want, held longer than feels comfortable, hit harder than seems polite. Tune down a half step and it gets heavier without changing a single fret.

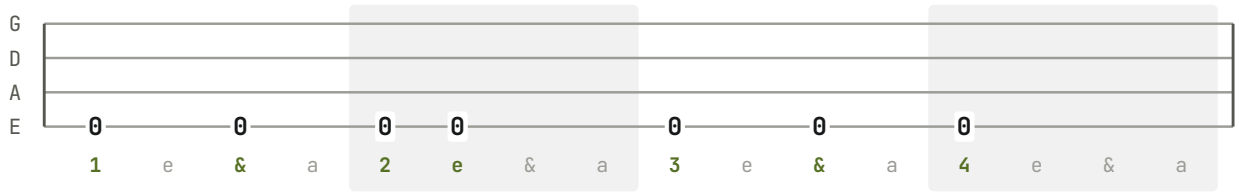
More ways to start a riff

Four more methods. When one stops working, use another.

FROM A SPOKEN PHRASE

Say a sentence with attitude. Its rhythm is a riff. Tap the syllables, then play them on one note.

Ex 3.6 **"Feed the monster twice a day"** 4/4 · standard tuning · 80 to 110 bpm

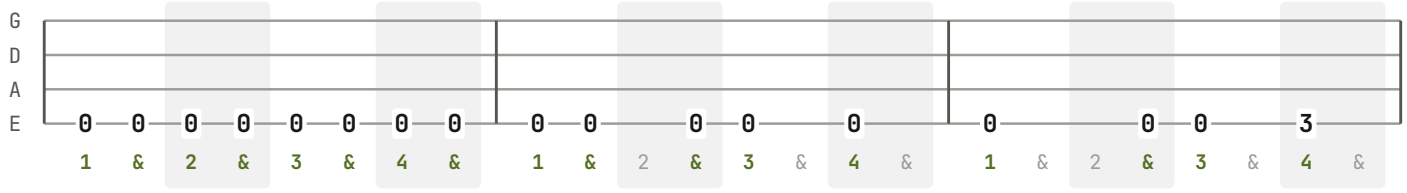


Seven syllables, seven hits. Invent your own sentence and do the same.

BY SUBTRACTION

Start with a full bar of eighth notes and delete hits until it grooves.

Ex 3.7 **Take notes away** 4/4 · standard tuning · 90 to 130 bpm

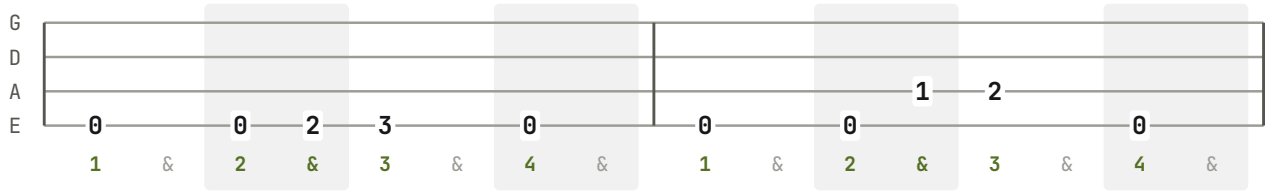


Bar 1 is everything. Bar 2 removes three hits. Bar 3 removes one more and changes one pitch. That is a riff.

WITH AN APPROACH NOTE

Slide into an important note from one fret below. It adds grease without leaving the key for long.

Ex 3.8 **Approach from below** 4/4 · standard tuning · 90 to 130 bpm

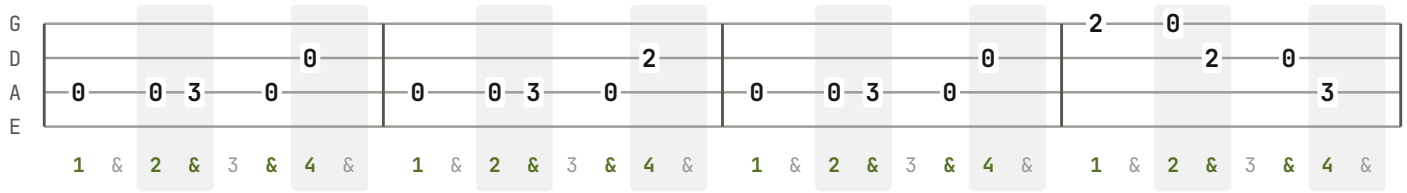


F# pushes into G in bar 1. Bb pushes into B in bar 2. The approach note is short and the target is long.

BY MOVING A RIFF YOU ALREADY HAVE

Strings are tuned in fourths, so a riff moved up one string is the same riff in a new key. This is the four-bar riff from earlier, now in A.

Ex 3.9 **The four-bar riff, moved to A** 4/4 · standard tuning · 90 to 130 bpm



Same frets, one string higher. Play the E version for a verse and the A version for a chorus and you have two sections from one idea.

TEN RIFF PROMPTS

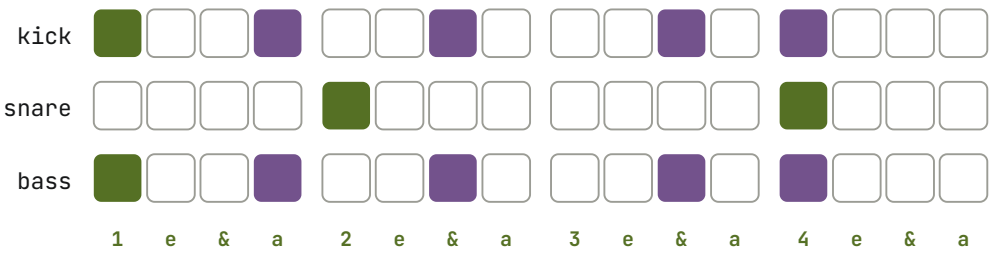
Stuck? Pick a number.

#	PROMPT
1	Only two different notes, any rhythm
2	A riff that starts on the "and" of beat 4
3	One bar of chaos, one bar of a single held note
4	Root, b2 and nothing else
5	The same three notes played forwards, then backwards
6	A riff with a full beat of silence in the middle
7	Steal the rhythm of a drum fill you like
8	Eighth notes, but accent every third one
9	Start high, end on the lowest open string
10	Write the answer first, then the question
11	Write the riff you would be embarrassed to play for anyone. Then play it for someone

Lock with the kick drum

A bass riff is half of a two-piece machine. Put your notes where the kick drum is and the riff sounds twice as heavy with no extra effort. Free heaviness. The only free thing left in music.

Bass and kick together



The bass plays every kick and nothing else. The snare gets the gaps to itself.

Ex 3.10 **Kick-drum riff** 4/4 · standard tuning · 80 to 110 bpm



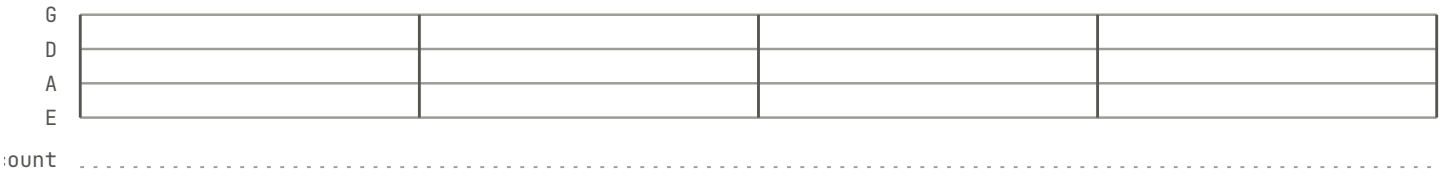
Program this kick pattern into a drum machine or the practice builder and play exactly with it. Then add one note in a gap and hear what it costs.

Recipe for your first riff

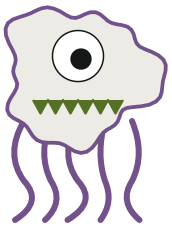
1. Set a drum loop between 80 and 110 bpm.
2. Tap a one-bar rhythm on the open E string until you like it.
3. Move two or three of the hits to notes from E minor pentatonic.
4. Play it three times, then write a different fourth bar that leads back.
5. Record it on your phone. Name it something stupid, like Wet Sock or Dad Bod Apocalypse. Keep it.

Write it **My first riff**

RIFF NAME _____ TEMPO (BPM) _____ SCALE _____



Print this page and pencil it in, or open Tab Lab on the site and save the riff there.



BOSS FIGHT

THE HOLLOW

It eats notes that ring too long and tempos that wander. Beat it by passing every check below in one sitting. It will wait. Waiting is most of what it does. It also smells like the inside of a gig bag left in a hot car, and you will get used to that.

- [ ] Root drive (Ex 1.5) at 140 bpm for two minutes, no stops
- [ ] The spider (Ex 1.3) at 80 bpm, clean
- [ ] A minor pentatonic up and down at 100 bpm from memory
- [ ] The four-bar riff (Ex 3.3) at 120 bpm, four times through
- [ ] One original four-bar riff, written down and recorded

PART II

INTERMEDIATE

Speed, legato, the pick as a weapon, the dark modes, and riffs with a job to do.
The Behemoth guards the exit and it is not small.

CHAPTER 4

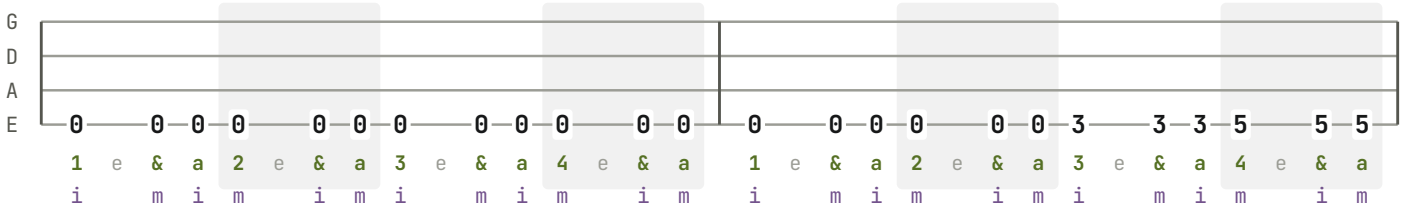
SPEED AND ATTACK TECHNIQUE

Part I gave you even notes. This chapter makes them fast, then gives them shape: gallops, slurs, mutes, ghosts and your first drop D chords.

The gallop

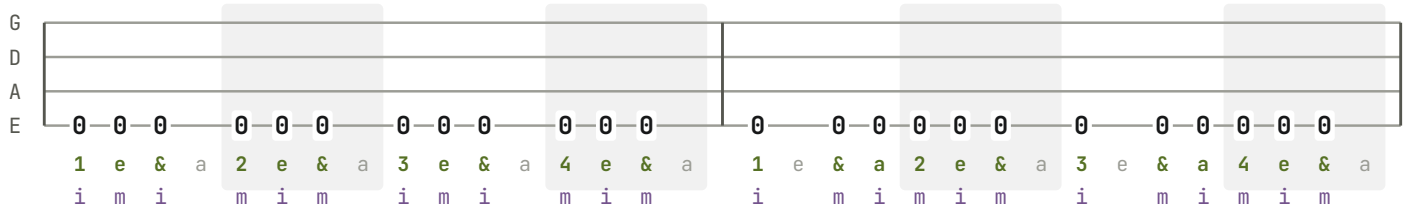
One eighth note and two sixteenths, over and over. It is the heartbeat of thrash. Keep the fingers alternating straight through, so the pattern starts on a different finger each beat. That feels wrong for about three days. So did your first beer, and look at you now.

Ex 4.1 **The gallop** 4/4 · standard tuning · 80 to 150 bpm



Say "one, and-a, two, and-a". The eighth note must be full length. Rushing it is the classic mistake.

Ex 4.2 **The reverse gallop** 4/4 · standard tuning · 80 to 140 bpm



Two sixteenths then an eighth. Bar 2 swaps between both gallops every beat, which is where real riffs live.

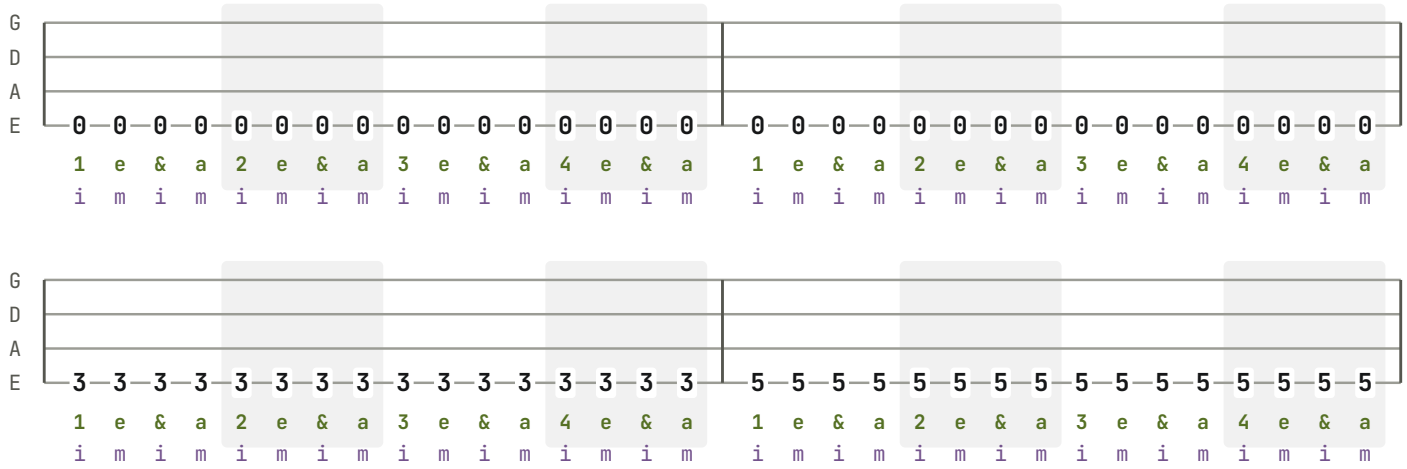
> **STEAL FROM FRANK BELLO**
>
> Fingerstyle gallops at speed need a light touch and a short stroke. Play near the bridge pickup, where the string is stiffer and bounces back faster. If the notes smear together, back the tempo down by ten.

> **SKITTER SAYS**
>
> *Your forearm is on fire. Good. That is either weakness leaving the body or a tendon filing for divorce. Learn the difference.*

Sixteenth-note stamina

Speed is built in bursts. Play one beat of sixteenths cleanly, rest three beats, repeat. Then two beats on, two off. Then the full bar. Stamina follows speed, not the other way round. Much like everything else after forty.

Ex 4.3 **Straight sixteenths** 4/4 · standard tuning · 70 to 130 bpm



Burst plan: one beat on and three off for a minute, two on and two off for a minute, then full bars.

WEEK	BURST LENGTH	TARGET TEMPO	DAILY TIME
1	One beat	90 bpm	3 minutes
2	Two beats	100 bpm	3 minutes
3	One bar	100 bpm	4 minutes
4	Four bars	110 bpm	4 minutes
5 and on	Four bars	Add 4 bpm a week	4 minutes

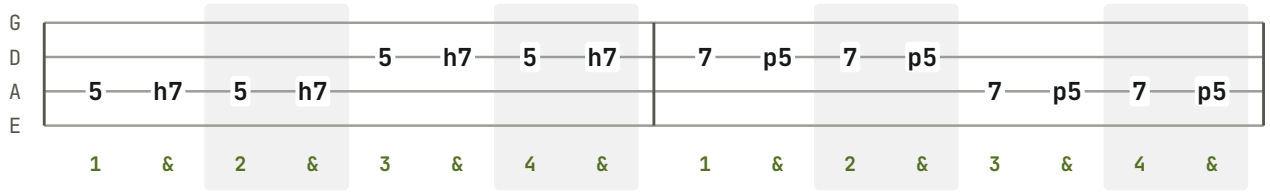
SNAPJAW SAYS

Hammer-ons: getting a note without plucking it. Finally, something in your life that responds to a firm finger.

Hammer-ons, pull-offs and slides

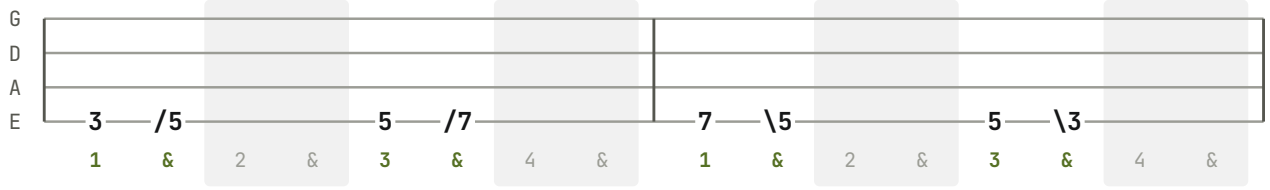
Slurs let the fretting hand make notes without the plucking hand. They smooth a line out and they are half of the Chancellor vocabulary.

Ex 4.4 **Hammer-ons and pull-offs** `4/4 · standard tuning · 70 to 110 bpm`



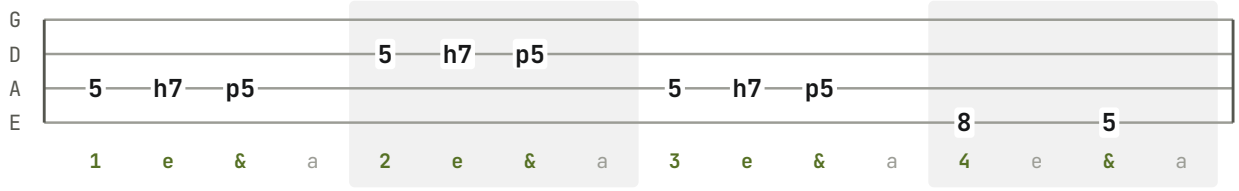
The hammered note should be as loud as the plucked one. For pull-offs, flick the finger slightly downward as it leaves, like a tiny pluck.

Ex 4.5 **Slides** `4/4 · standard tuning · 70 to 100 bpm`



Pluck the first note of each pair only. Keep pressure on the string for the whole slide.

Ex 4.6 **Legato figure** `4/4 · standard tuning · 70 to 100 bpm`



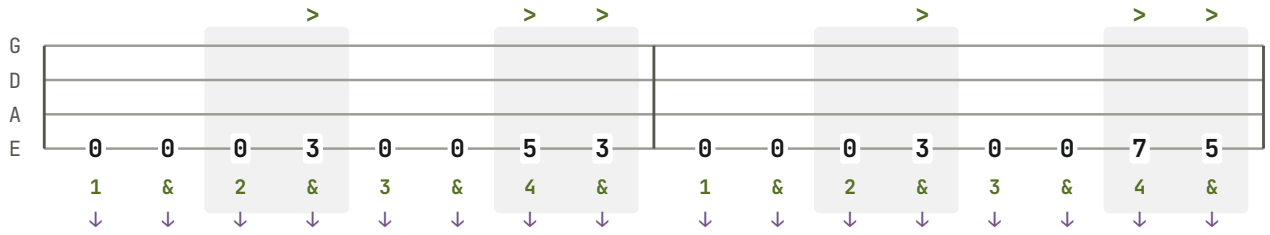
One pluck, two free notes. This three-note cell shows up again in Chapter 7 with an open string under it.

Pick work: palm mute and accents

Rest the edge of your picking hand on the bridge saddles so the strings sound short and thick. Lift the hand for the notes you want to jump out. Muted against open is the whole dynamic range of a heavy riff. Two settings: choked and screaming. Like a good haunted house.

Ex 4.7 Muted chug with open accents

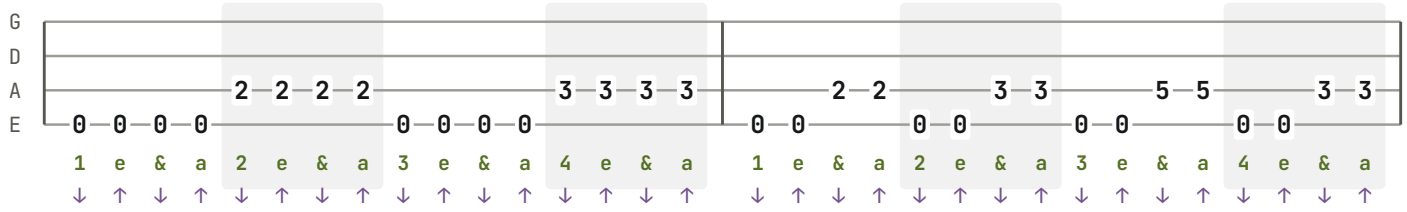
4/4 · standard tuning · 90 to 150 bpm · palm mute the open E



All downstrokes. Mute the open E notes, release for the accented notes.

Ex 4.8 Alternate picking across strings

4/4 · standard tuning · 70 to 120 bpm



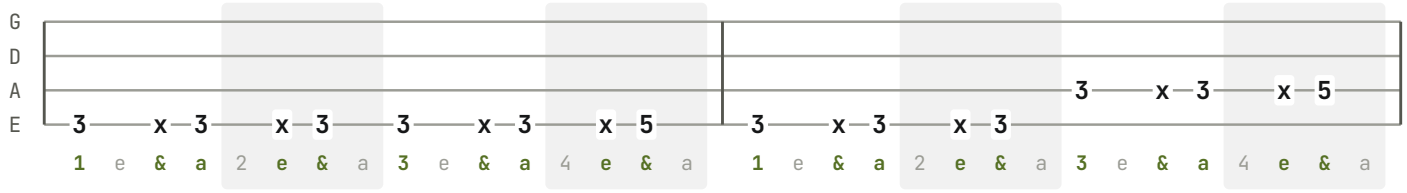
Strict down-up. The pick direction never changes to suit the string change.

Ghost notes

A dead note is rhythm with no pitch. Rest the fretting fingers on the string without pressing and pluck. Sprinkled between real notes, ghosts make a simple line groove. They are the MSG of riff playing. Nobody can tell you what they taste like, and everything is worse without them.

Ex 4.9 Ghosts between the notes

4/4 · standard tuning · 70 to 100 bpm

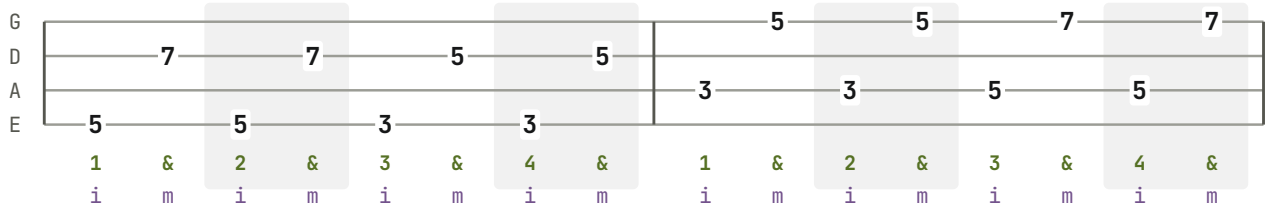


The x notes should be quieter than the pitched ones. If you hear a harmonic ring out, mute with two fingers instead of one.

Octave jumps

The fastest way to change the energy of a line without changing the harmony is to jump the octave. Pluck the low note with the index, the high note with the middle.

Ex 4.10 **Octaves** `4/4 · standard tuning · 80 to 130 bpm`

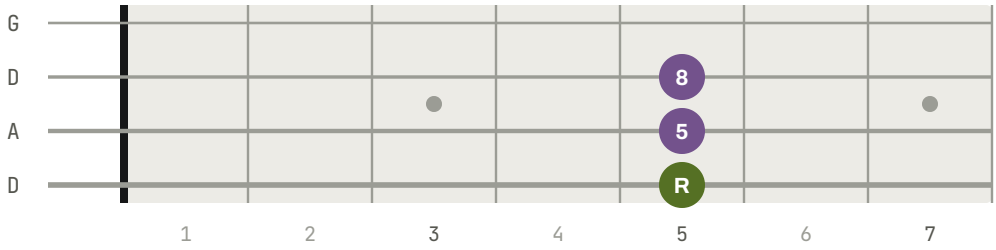


Mute the string in between with the underside of your fretting index finger.

Drop D: one finger, one power chord

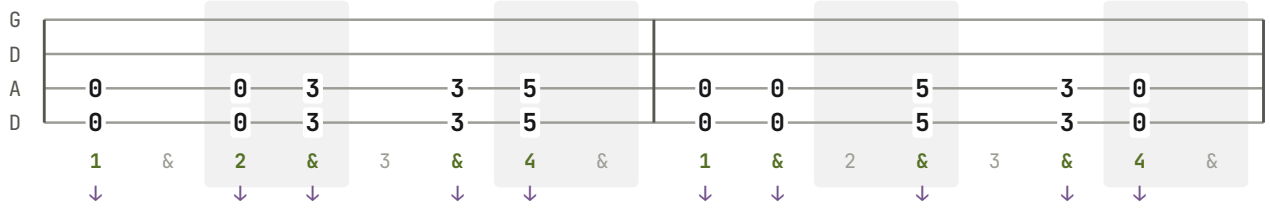
Tune the low string down to D. Now the two lowest strings are a fifth apart, so one finger laid flat across both plays a root and its fifth. Riffs that needed two fingers now need one, and the other three are free.

Drop D power chord at fret 5 `drop D · labels are scale degrees`



One finger across three strings gives G, D and G. Slide the same shape anywhere.

Ex 4.11 **One-finger fifths** `4/4 · drop D · 80 to 120 bpm`



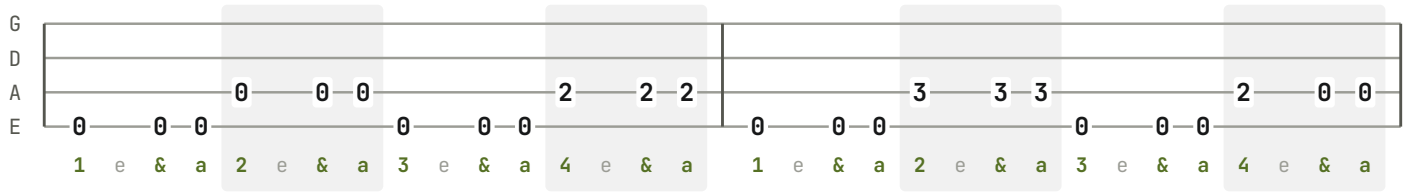
Strum both strings with one downstroke. Roots are D, F and G.

> **STEAL FROM JUSTIN CHANCELLOR**
>
> Drop D is home for most Tool songs. The open low D becomes a drone you can leave ringing while the other fingers play figures on the higher strings. Chapter 7 goes deep on that.

More drills: speed and control

Ex 4.12 Gallop with string changes

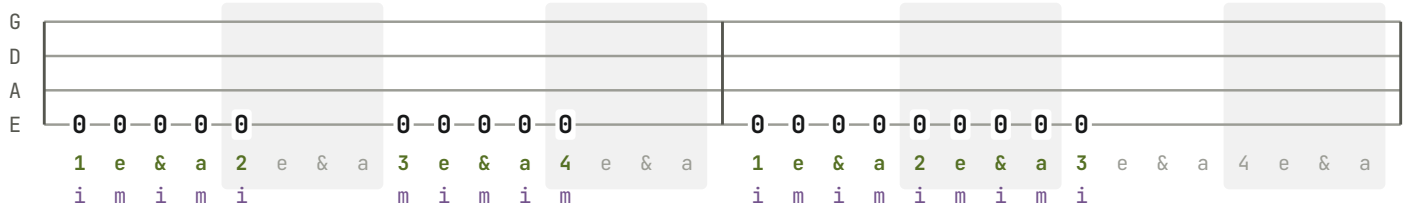
4/4 · standard tuning · 80 to 140 bpm



The gallop has to survive the move to the next string. Keep the hand motion identical on both.

Ex 4.13 Written-out bursts

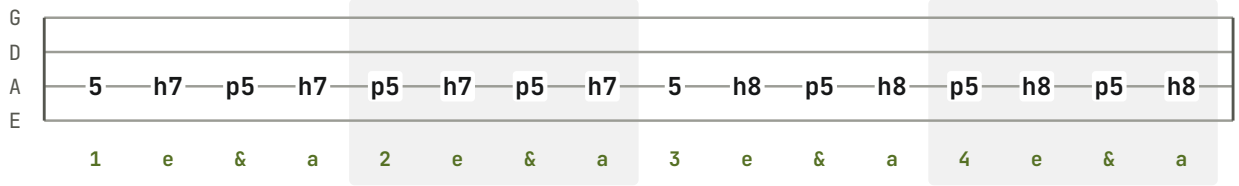
4/4 · standard tuning · 90 to 150 bpm



Five notes and stop. Then nine notes and stop. Always end on a beat. Bursts teach your hands a tempo they cannot yet hold for long.

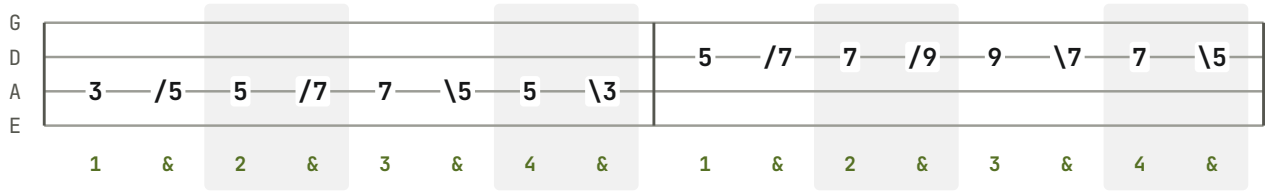
Ex 4.14 Trill endurance

4/4 · standard tuning · 60 to 100 bpm



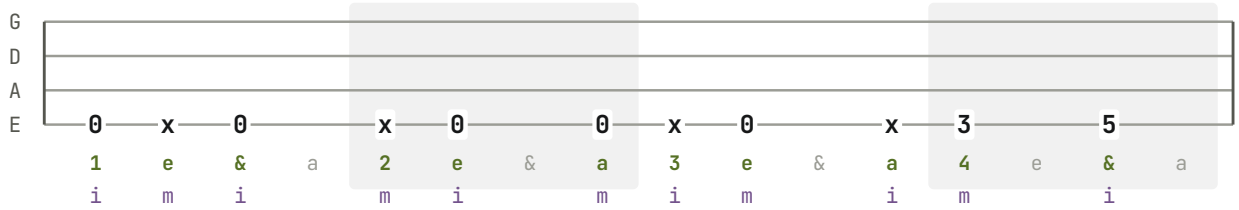
Pluck once per half bar. Fingers 1 and 3, then 1 and 4. Stop when it gets uneven, not when it hurts.

Ex 4.15 **Sliding melody** 4/4 · standard tuning · 60 to 100 bpm



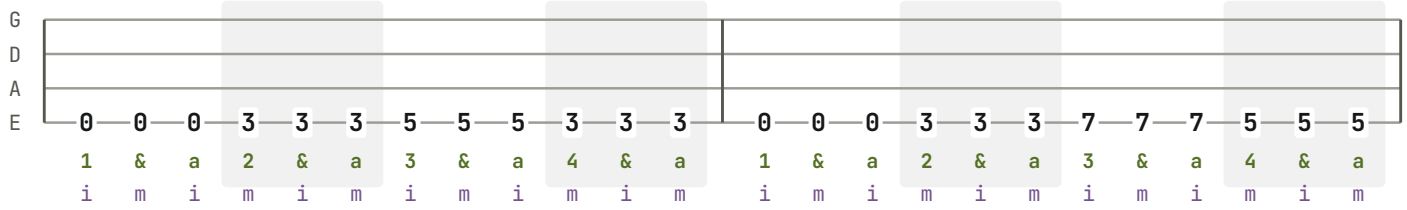
One finger does the whole bar. Arrive exactly on the beat, not somewhere near it.

Ex 4.16 **Sixteenths with holes** 4/4 · standard tuning · 70 to 110 bpm



Keep the plucking hand moving in constant sixteenths and miss the string on the dots. The dead notes keep you in time.

Ex 4.17 **Heavy triplets** 4/4 · standard tuning · 70 to 120 bpm



Three even notes per beat. It should roll, not gallop. Accent the first of each three.

Descending string crossings

Runs that walk down one string and carry on down the next one trip up almost everyone. The notes are easy. The string change in the middle of a fast group is the problem, because both hands have to switch at the same instant. Three things fix it.

1. **Plucking hand: rake.** When a line crosses to a lower-pitched string, let the finger that just plucked fall through and play the first note on the new string as well. Strict alternation makes the other finger reach back

over, which is where the stumble comes from. Go back to alternating once you are on the new string.

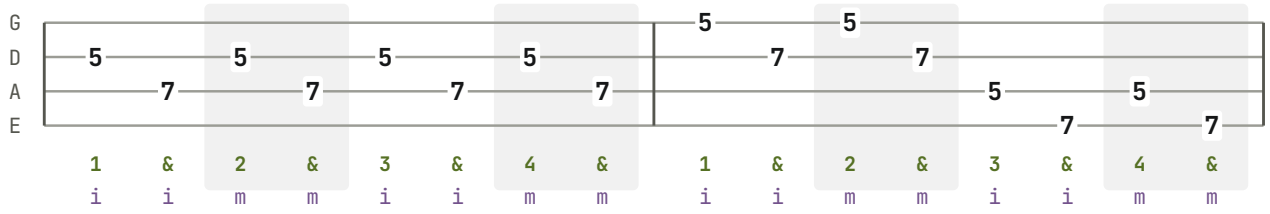
2. **Fretting hand: arrive early.** The finger for the first note on the new string should already be hovering there while the last note on the old string sounds.
3. **Mute what you leave.** Let your thumb or the underside of a fretting finger touch the string you just left, or it rings over the next notes.

> **Drill the crossing, not the run.** Loop only the two notes either side of the string change. Then add one note on each side. Then play the whole run. Most of the run was never the problem.

THE WALKER SAYS

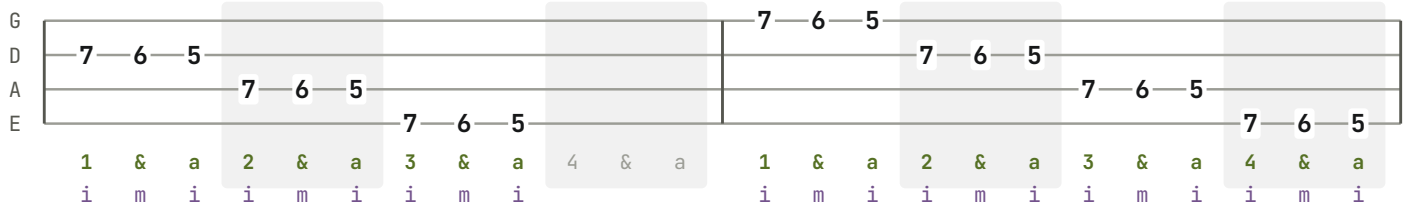
You fall apart at the string change because your hands panic like two drunks trying to get through one door. Send one through first.

Ex 4.18 **Just the crossing** 4/4 · standard tuning · 50 to 100 bpm



Two notes, back and forth. The doubled finger is the rake: one finger falls through both strings. Both notes should be equally loud.

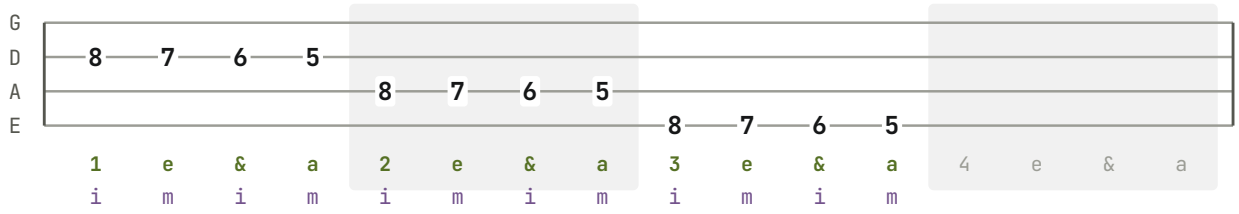
Ex 4.19 **Three down and across** 4/4 · standard tuning · 50 to 100 bpm



Index, middle, index, then the index rakes into the next string. Fretting fingers 3, 2, 1 on every string.

Ex 4.20 Four down and across

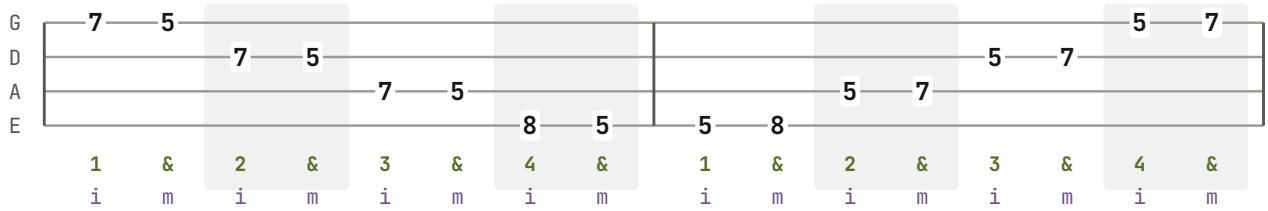
4/4 · standard tuning · 50 to 100 bpm



One finger per fret: 4, 3, 2, 1 on each string. Shown with strict alternation. Then try raking each crossing and restarting the alternation, and keep whichever is cleaner. Lift the pinky toward the next string while the index is still playing.

Ex 4.21 Two down and across

4/4 · standard tuning · 60 to 120 bpm



A minor pentatonic falling, then climbing back. A string change every two notes, so there is nowhere to hide.

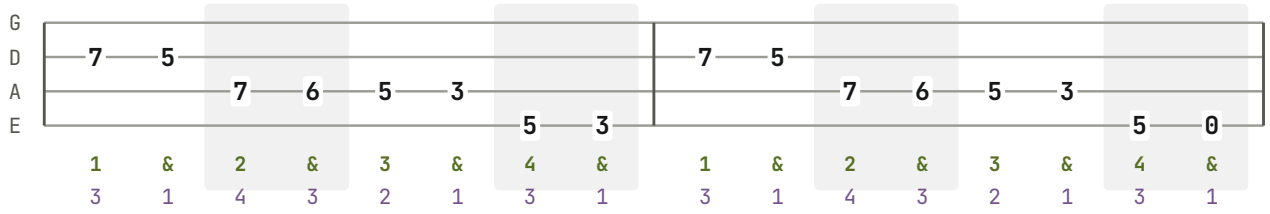
WHEN THE RUN IS WIDER THAN YOUR HAND

A four-fret run such as 7, 6, 5, 3 does not fit under four fingers. Pick one of these and always use it for that lick.

OPTION	FINGERING FOR 7, 6, 5, 3	GOOD WHEN
Stretch	4, 3, 2, 1 with the index reaching back	Higher up the neck, where frets are close
Shift	4, 3, 2, then slide the whole hand so the index lands on 3	Low on the neck, or for smaller hands
Early shift	3, 2, 1, 1 with the index sliding from 5 to 3	The next string starts at fret 3 or lower

Ex 4.22 A run with a shift in it

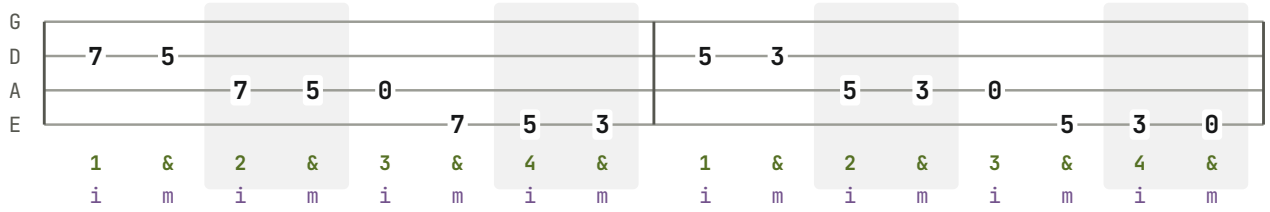
4/4 · standard tuning · 50 to 100 bpm



Numbers under the count are fretting fingers. The index stretches or shifts for fret 3 on the A string. Decide which before you start.

Ex 4.23 The open string buys you time

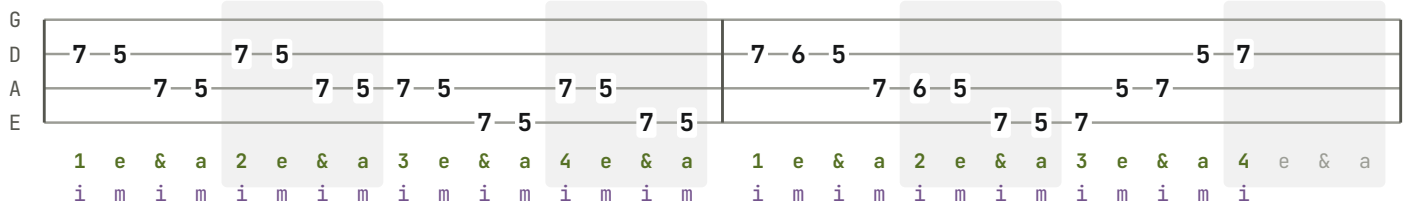
4/4 · standard tuning · 50 to 100 bpm



Whenever an open string appears in a run, nothing is being held down. That is the moment to move the fretting hand to its next position.

Ex 4.24 Crossing etude

4/4 · standard tuning · 50 to 100 bpm



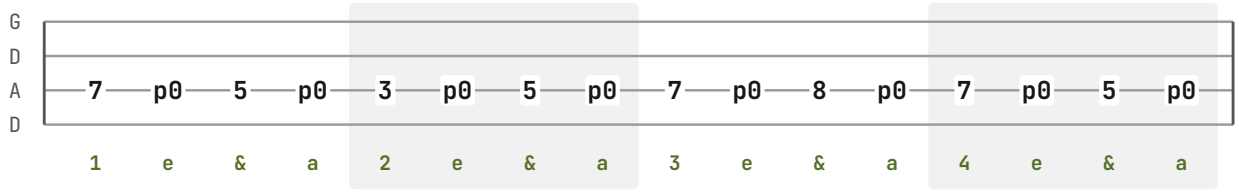
Everything above in two bars: two-note crossings, a three-note fall, and a climb back out. Start at 50. Move up only when the crossings sound the same as the notes around them.

- [ ] Just the crossing at 100 bpm, both notes equally loud
- [ ] Three down and across at 90 bpm with no gap at the string change
- [ ] The shift run at 90 bpm, same fingering every time
- [ ] Crossing etude at 80 bpm, clean, three times in a row

Bass-only drills

Ex 4.25 Pull-offs to the open string

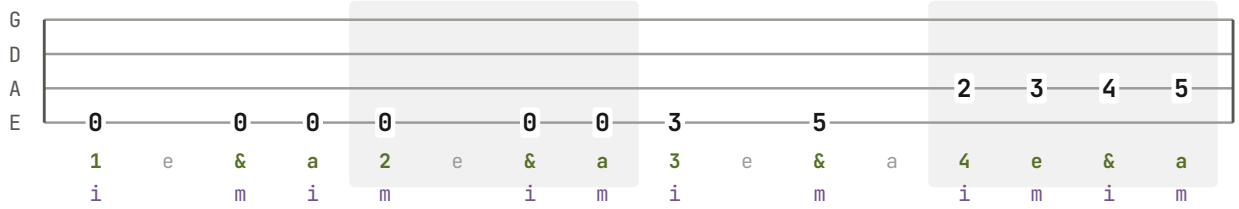
4/4 · drop D · 70 to 110 bpm



Pluck or pick the fretted note and flick off to the open A. The open string becomes a drone between the melody notes E, D, C, D, E, F, E, D.

Ex 4.26 Walk-up fill

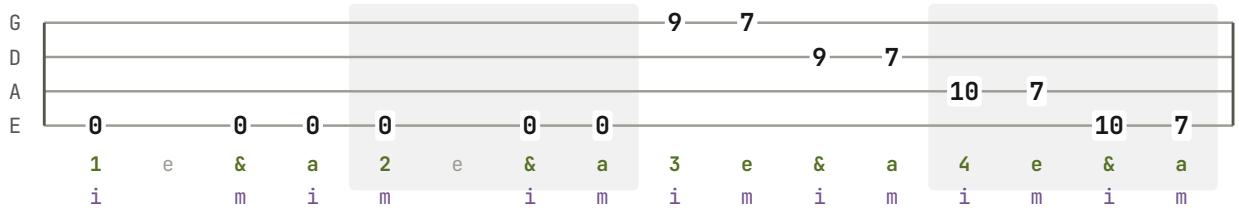
4/4 · standard tuning · 100 to 150 bpm



G, A, then a chromatic climb B, C, C#, D that wants to land on E in the next bar.

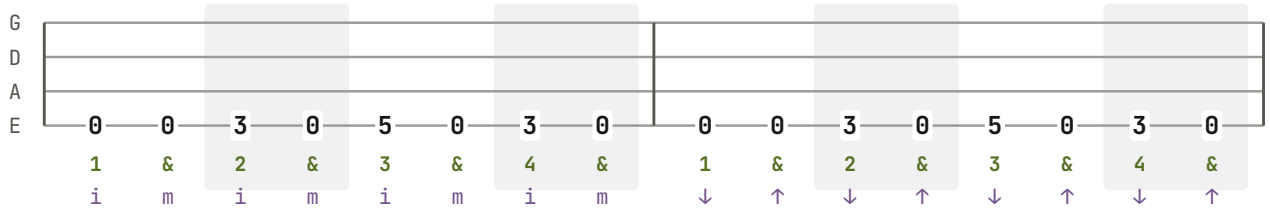
Ex 4.27 Descending fill

4/4 · standard tuning · 100 to 150 bpm



E minor pentatonic falling from the high E: E, D, B, A, G, E, D, B. Rake where two notes fall on neighbouring strings.

Ex 4.28 **Same riff, fingers then pick** `4/4 · standard tuning · 100 to 160 bpm`



Bar 1 with fingers, bar 2 with a pick. Record both. Know which sound you want for which song.

GHAST SAYS

Drop D: one finger doing the work of two. Insert your own joke. Everyone else has.

Chapter 4 check

- [ ] Gallop at 130 bpm for one minute, fingers alternating
- [ ] Straight sixteenths at 110 bpm for four bars, relaxed
- [ ] Legato figure at 90 bpm with all three notes equally loud
- [ ] Muted chug at 130 bpm with clear accents
- [ ] One-finger fifths in drop D, both strings sounding together

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CHAPTER 5

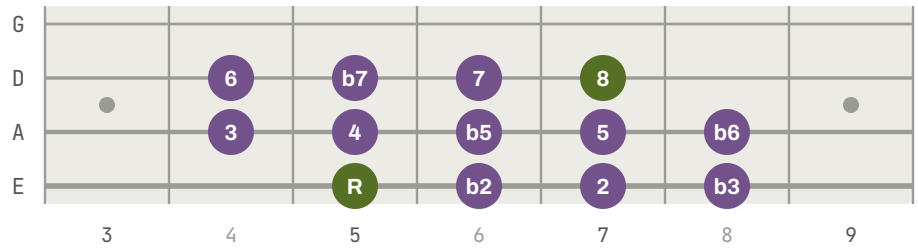
WHY IT SOUNDS DARK THEORY

Heavy music has a small number of favourite sounds. This chapter names them so you can reach for them on purpose. Think of it as a spice rack where every jar is labelled some variety of misery.

Intervals

An interval is the distance between two notes. Each one has a mood. Learn the shape and the mood together.

Every interval from A labels are scale degrees from the root



FRETS FROM ROOT	NAME	LABEL	WHAT IT DOES IN A RIFF
1	Minor second	b2	Menace. The sound of Phrygian and of most thrash
2	Major second	2	Motion, a passing step
3	Minor third	b3	Sad or heavy. Defines minor
4	Major third	3	Bright. Defines major
5	Perfect fourth	4	Open, hollow, strong
6	Tritone	b5	Unstable and ugly in the best way
7	Perfect fifth	5	Power. Neutral, fits anything
8	Minor sixth	b6	Doom, drama
9	Major sixth	6	Lift. The Dorian colour
10	Minor seventh	b7	Bluesy, rock
11	Major seventh	7	Tense, wants to resolve up
12	Octave	8	Same note, new energy

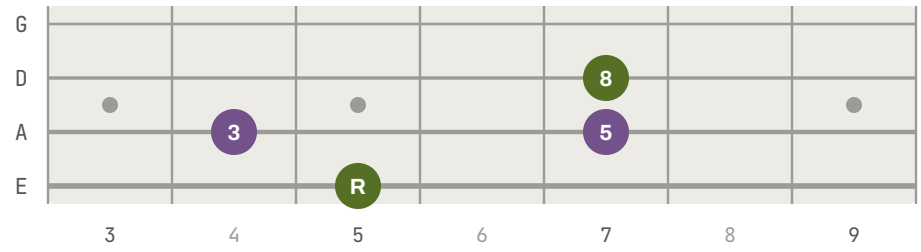
THE DRIFT SAYS

People will tell you the medieval church banned the tritone. It did not, but repeat it anyway, it is a great story. Six frets of pure who-farted-in-the-cathedral.

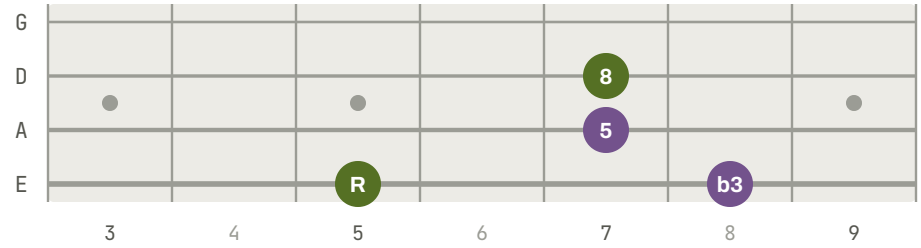
Triads

A triad is root, third and fifth. The third decides the mood. Guitar players strum these. You play them one note at a time and that outlines the chord better than a strum does.

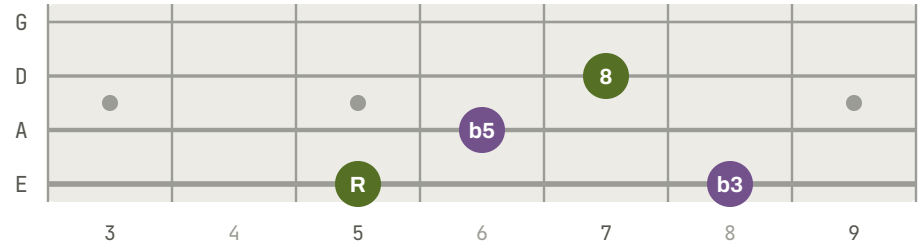
A major triad `R, 3, 5, octave`



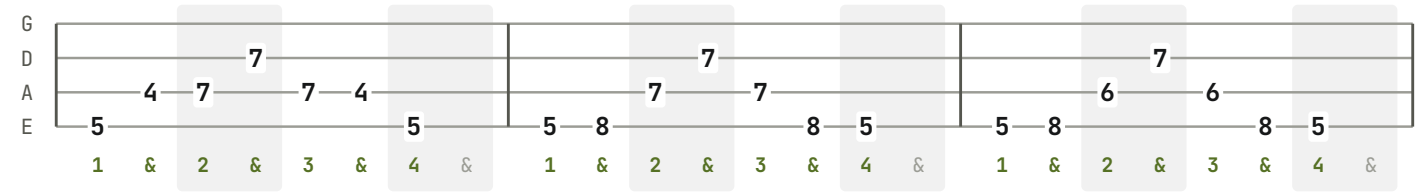
A minor triad `R, b3, 5, octave`



A diminished triad `R, b3, b5, octave`



Ex 5.1 Triad arpeggios `4/4 · standard tuning · 70 to 110 bpm`



Major, minor, diminished. One note changes each time. Sing the changed note.

Keys and their chords

Build a triad on each note of a minor scale and you get seven chords that sound right together. These three keys cover most of this book because their roots are open strings.

DEGREE	I	II DIM	III	IV	V	VI	VII
E minor	Em	F# dim	G	Am	Bm	C	D
A minor	Am	B dim	C	Dm	Em	F	G
D minor	Dm	E dim	F	Gm	Am	Bb	C

Small numerals are minor chords, capitals are major. The progression i, VI, VII (Em, C, D) is behind a huge share of rock and metal choruses. The move i to bII (Em to F) is outside the key, and it is the thrash sound. One fret. That is the entire distance between 'campfire singalong' and 'the neighbours have called someone'.

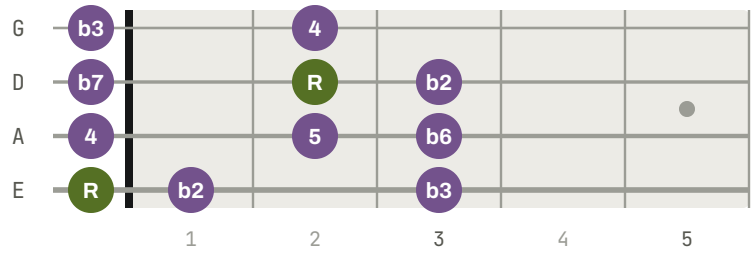
Look back at the circle of fifths in Chapter 2. Each of these keys sits next to the others on it, which is why moving a riff from E minor to A minor sounds natural. A riff whose root jumps straight across the circle, E to Bb, feels like a trapdoor.

Three dark modes and a blue note

A mode is a scale with a different note treated as home. You only need three to start, and each differs from natural minor by one note.

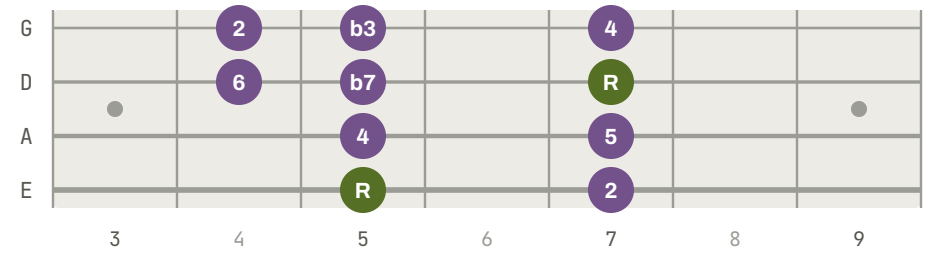
SCALE	FORMULA	THE ONE NOTE THAT MATTERS	SOUND
Natural minor (Aeolian)	R 2 b3 4 5 b6 b7	b6	Sad, serious, the default
Phrygian	R b2 b3 4 5 b6 b7	b2	Threat. Spanish, Middle Eastern, thrash
Dorian	R 2 b3 4 5 6 b7	natural 6	Minor with some light. Grunge and prog use it constantly
Blues scale	R b3 4 b5 5 b7	b5	Pentatonic plus one dirty note

E Phrygian, open position `labels are scale degrees`



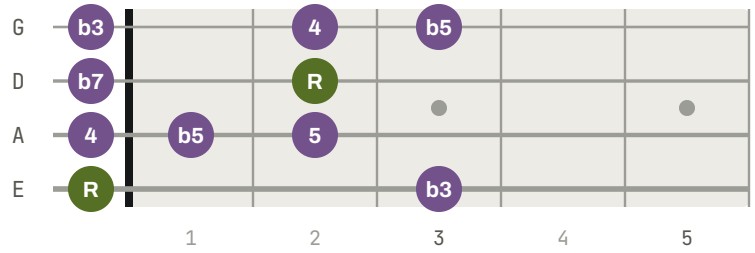
The b2 is F, one fret above the open E. That one fret is the whole flavour.

A Dorian `labels are scale degrees`



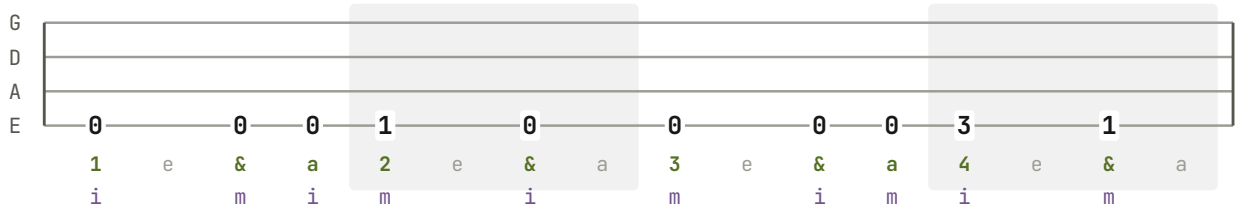
The natural 6 is F#. Over an A minor riff it sounds hopeful and slightly strange.

E blues scale, open position `labels are scale degrees`



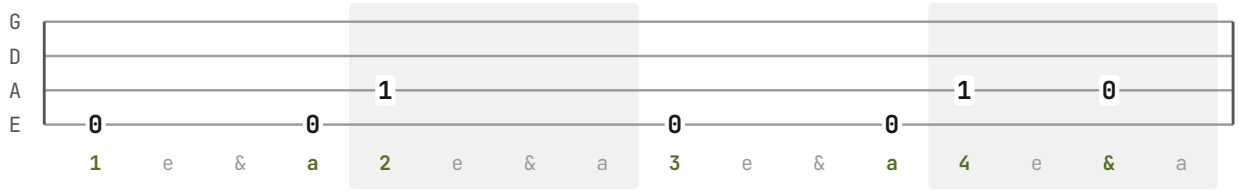
The b5 is Bb, fret 1 on the A string. You used it in Ex 3.5.

Ex 5.2 **Phrygian riff** `4/4 · standard tuning · 90 to 140 bpm`



E, F and G. The F on the "two" is the b2 doing its job.

Ex 5.3 **Tritone riff** `4/4 · standard tuning · 70 to 110 bpm`



E to Bb is six frets, the most unstable interval there is. Resolve it down to A at the end.

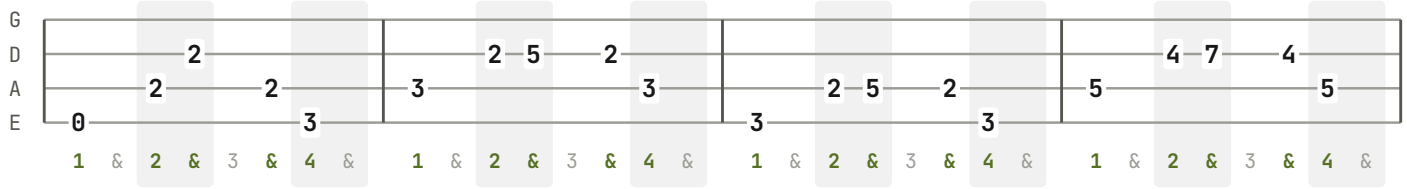
SNAPJAW SAYS

Phrygian is natural minor that has seen some shit.

Chord tones on strong beats

When the band plays chords, put a chord tone (root, third or fifth) on beats 1 and 3. Everything between can be passing notes. This is how a bass line sounds like it knows the song.

Ex 5.4 **Chord-tone line over Em, C, G, D** `4/4 · standard tuning · 80 to 120 bpm`



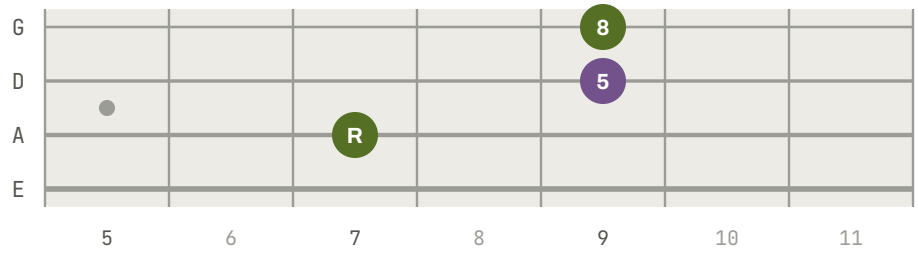
Every note is a root, third or fifth of the chord in that bar. Work out which is which.

Double stops

Two notes at once. On bass, keep them high enough to stay clear: root and fifth, or root and octave, from the A string upward.

Root with fifth, root with octave

`labels are scale degrees`



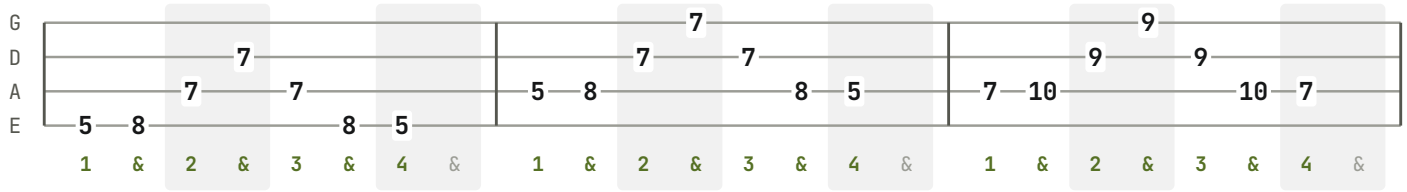
E on the A string with B above it is a power chord. E with the high E is an octave. Pluck with thumb and index, or strum with a pick.

Chord formulas

Every chord is a recipe of scale degrees. Learn the recipe and you can build any chord from any root, or outline it one note at a time.

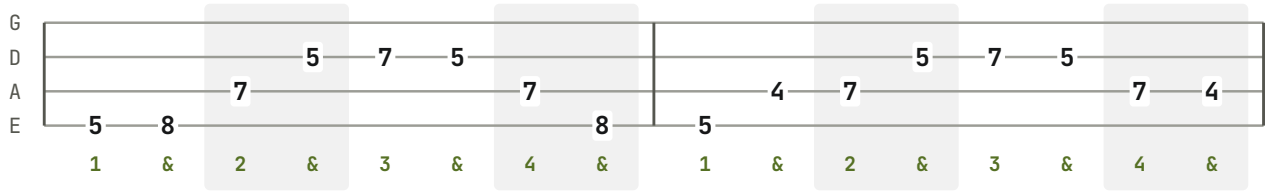
CHORD	FORMULA	SOUND
Major	R 3 5	Bright, settled
Minor	R b3 5	Dark, settled
Power (5)	R 5	Neutral, strong
Diminished	R b3 b5	Tense, unstable
Augmented	R 3 #5	Dreamlike, uneasy
Sus2	R 2 5	Open, unresolved
Sus4	R 4 5	Hanging, wants to fall to the 3
Dominant 7	R 3 5 b7	Bluesy, pushes forward
Minor 7	R b3 5 b7	Smooth minor
Major 7	R 3 5 7	Soft, wistful
Minor 7 flat 5	R b3 b5 b7	Dark and jazzy
Diminished 7	R b3 b5 6	Horror film

Ex 5.5 **Triads through A minor** 4/4 · standard tuning · 70 to 110 bpm



A minor, D minor, E minor: the i, iv and v chords of the key, each outlined root, third, fifth, octave.

Ex 5.6 **Seventh arpeggios** 4/4 · standard tuning · 70 to 110 bpm



Bar 1 is A minor 7: A, C, E, G. Bar 2 is A dominant 7: A, C#, E, G. One note changes and the mood flips from sad to bluesy.

Keys at a glance

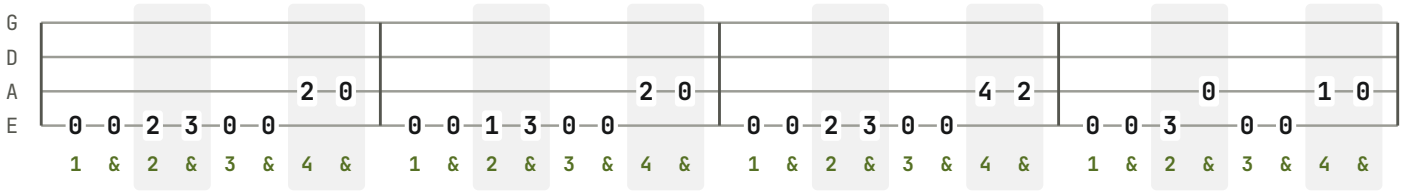
Each step clockwise on the circle of fifths adds one sharp. Each step anticlockwise adds one flat. These are the keys you will meet most.

MAJOR KEY	RELATIVE MINOR	SHARPS OR FLATS	NOTES
C	A minor	none	C D E F G A B
G	E minor	1 sharp	G A B C D E F#
D	B minor	2 sharps	D E F# G A B C#
A	F# minor	3 sharps	A B C# D E F# G#
E	C# minor	4 sharps	E F# G# A B C# D#
F	D minor	1 flat	F G A Bb C D E
Bb	G minor	2 flats	Bb C D Eb F G A

One riff, four scales

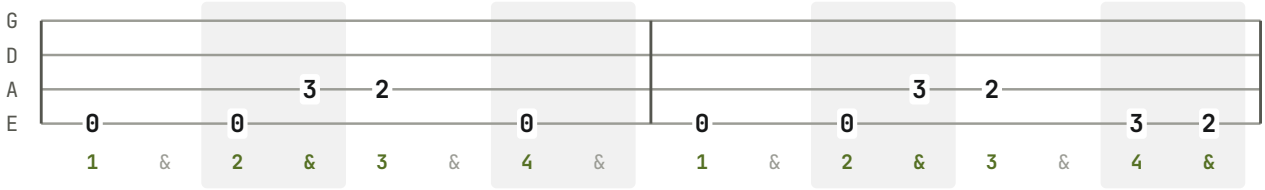
The fastest way to hear what a mode does is to play the same riff with one note changed.

Ex 5.7 **Minor, Phrygian, Dorian, blues** 4/4 · standard tuning · 90 to 140 bpm



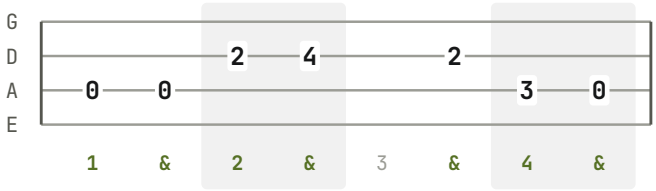
Bar 1 is natural minor. Bar 2 lowers F# to F: Phrygian. Bar 3 adds C#, the natural 6: Dorian. Bar 4 uses the blues scale with Bb.

Ex 5.8 **The flat six pulling down** 4/4 · standard tuning · 80 to 120 bpm



C falling to B, the b6 to the 5. It is the saddest half step in the minor scale.

Ex 5.9 **Dorian riff in A** 4/4 · standard tuning · 90 to 130 bpm



A, A, E, F#, E, C, A. The F# is the natural 6. It makes a minor riff sound tough instead of gloomy.

Progressions heavy music keeps using

Numerals are scale degrees. Lower case is minor. Try each from E, A and D.

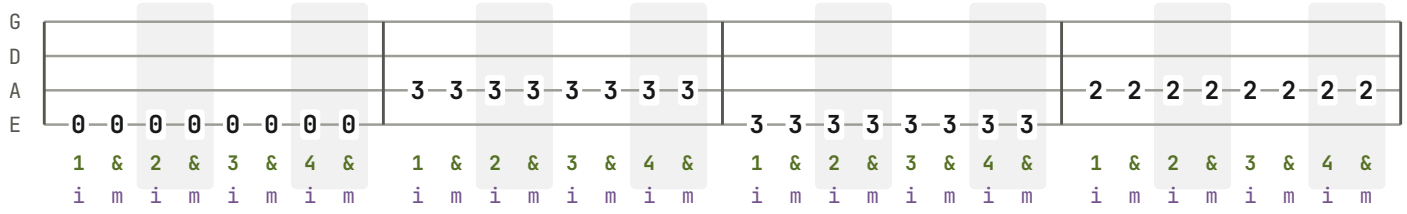
PROGRESSION	IN E MINOR	WHERE YOU HEAR IT
i, bVI, bVII	E, C, D	The default metal and hard rock chorus
i, bVII, bVI, V	E, D, C, B	The descending minor cadence. Dramatic, classical
i, bII	E, F	Thrash verse riffs
i, bV	E, Bb	Doom
i, iv, v	E, A, B	Minor blues, groove riffs
I, bVII, IV	E, D, A	Major-key hard rock anthem
i, bIII, bVII, IV	E, G, D, A	Dorian lift. Big, open, slightly hopeful

What the bass does to a chord

The guitar holds a chord. The note you put under it decides what the listener hears. This is the most powerful thing a bassist does.

GUITAR PLAYS	BASS PLAYS	IT SOUNDS LIKE
E5	E	E5. Solid, expected
E5	C	C major 7 with no fifth. Suddenly wide and sad
E5	G	E minor with the third in the bass. Unsettled, moving
E5	B	E5 with the fifth in the bass. Suspended, waiting
E5	A	A sus2. Open and ambiguous

Ex 5.10 **Four roots under one held chord** 4/4 · standard tuning · 90 to 130 bpm



Imagine or record a guitar holding E5 for all four bars. You play E, C, G, B underneath. The guitar never moves and the harmony changes every bar.

Chapter 5 check

- [ ] Play any interval from A when someone names it
- [ ] Play major, minor and diminished triads from any E-string root
- [ ] Name the seven chords in E minor
- [ ] Play E Phrygian and say which note makes it Phrygian
- [ ] Improvise four bars over Em, C, G, D landing on a chord tone each bar

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CHAPTER 6

RIFFS WITH A JOB

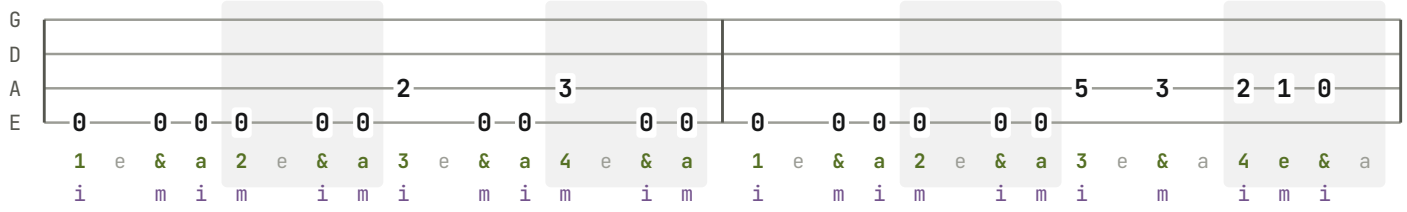
RIFF WRITING

A riff in a song has a job: drive the verse, lift the chorus, set up a breakdown, or open the song alone. Write for the job. An unemployed riff just hangs around the rehearsal room eating your snacks.

The thrash riff

Ingredients: a pedal note on the open string, a gallop, and short stabs to notes a half step or a tritone away. Then leave room at the end of the phrase for a fill.

Ex 6.1 **Pedal and stabs** 4/4 · standard tuning · 100 to 160 bpm

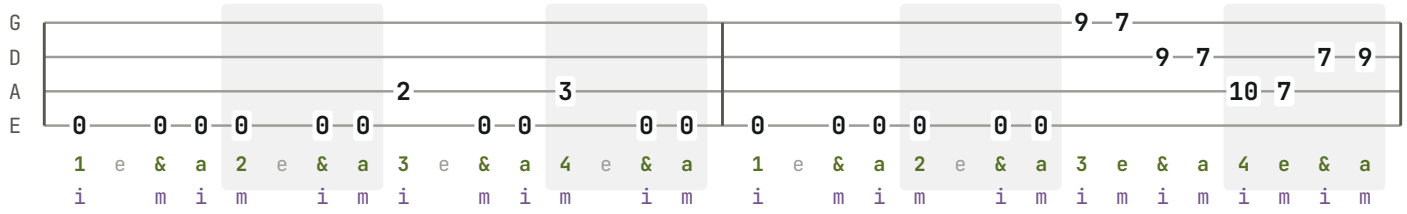


The open E is the pedal. The stabs are B and C. Bar 2 ends with a walk down from D to A, chromatic for the last three notes.

The fill

Guitars usually hold a chord or stop at the end of a four-bar phrase. That gap belongs to you. Take it before the guitarist notices and fills it with a squeal. Go up the neck, stay in the scale, land on the root on beat 1.

Ex 6.2 **Fill into the next bar** 4/4 · standard tuning · 100 to 150 bpm



Beats 3 and 4 of bar 2 jump to seventh position: E, D, B, A, G, E, A, B. All E minor pentatonic. Then crash back onto the open E.

STEAL FROM FRANK BELLO

This is the move. Lock with the guitars for three and a half bars, then say something melodic in the gap, an octave or two up. One fill every four or eight bars is plenty. A fill in every bar stops being a fill.

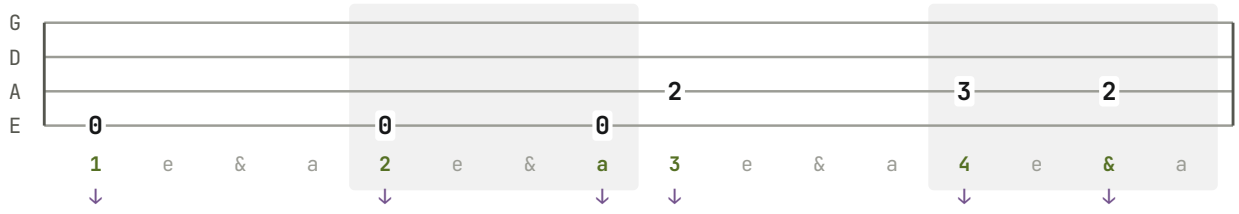
THE BEHEMOTH SAYS

A good thrash riff sounds like a filing cabinet falling down a fire escape, in time.

The half-time breakdown

Take the same notes and halve the feel. Snare moves to beat 3. You play fewer notes and each one lands like furniture.

Ex 6.3 **Same riff, half time** 4/4 · standard tuning · 100 to 150 bpm

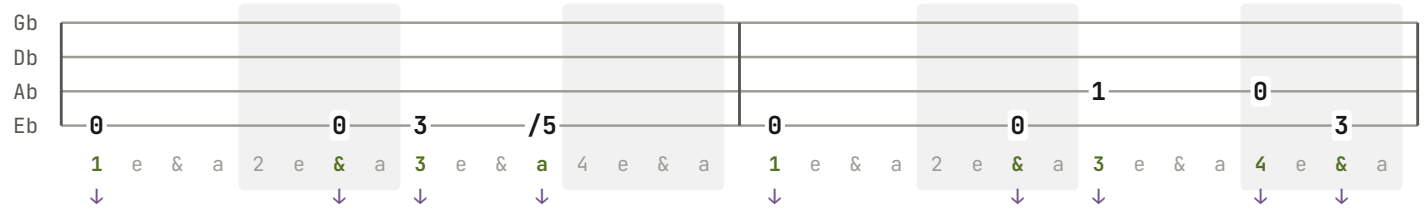


Compare with Ex 6.1. Same pitches, a third of the notes. Use a pick or dig in hard with fingers.

The sludge riff

Slow tempo, half step down, pick. Use the blues scale, slide into notes, and let silence do some of the work.

Ex 6.4 **Sludge** 4/4 · half step down · 55 to 75 bpm



Written a half step down: the frets are the same as standard, the sound is lower. Slide from fret 3 into fret 5 and hold it.

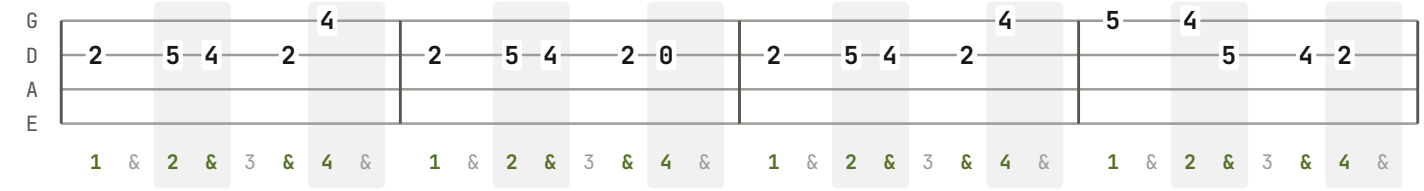
GHAST SAYS

Sludge tempo check: if it does not feel like wading through a septic tank in work boots, slow down.

The bass-led intro

The bass states the hook alone, in a singable register, before the band arrives. Write it like a vocal line: stepwise, a clear shape, a repeat.

Ex 6.5 **Melodic intro in E minor** 4/4 · standard tuning · 80 to 110 bpm



Bars 1 to 3 are A, A, A with one changed ending. Bar 4 answers by stepping down the scale to the root.

> STEAL FROM MIKE STARR
>
> When the bass opens a song alone, people remember the bass line as the song. Keep it simple enough to hum and play it with total conviction. Then when the band enters, drop to the low octave and hold the floor.

Follow or counter

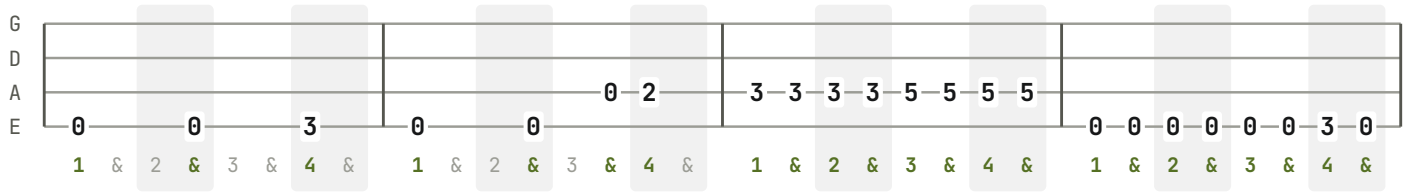
You have three choices against a guitar riff. Pick one per section and commit.

CHOICE	WHAT YOU PLAY	WHEN IT WORKS
Unison	The guitar riff, an octave down	Fast riffs, breakdowns, anywhere you want maximum weight
Foundation	Roots in a simpler rhythm than the guitar	Busy guitar parts, verses under vocals
Counter	A different line that fits the chords	Held guitar chords, clean sections, phrase endings

Verse against chorus

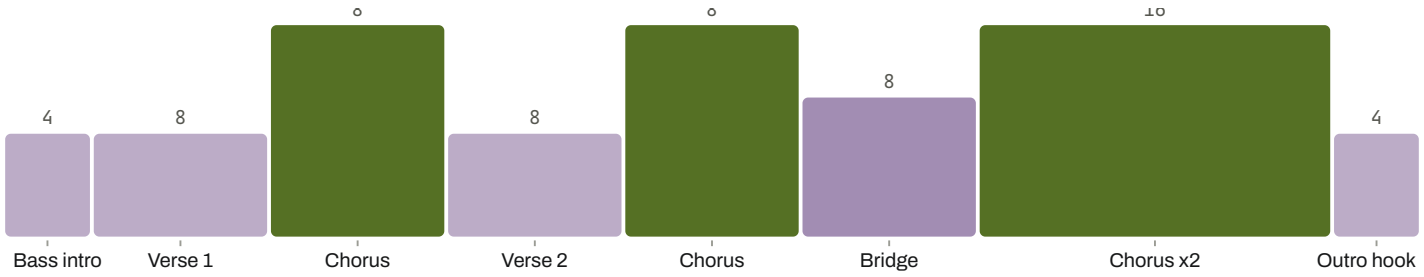
A song needs contrast between sections. Change at least two of these when you move from verse to chorus: note length, register, rhythm density, dynamics.

Ex 6.6 **Sparse verse, driving chorus** `4/4 · standard tuning · 100 to 140 bpm`



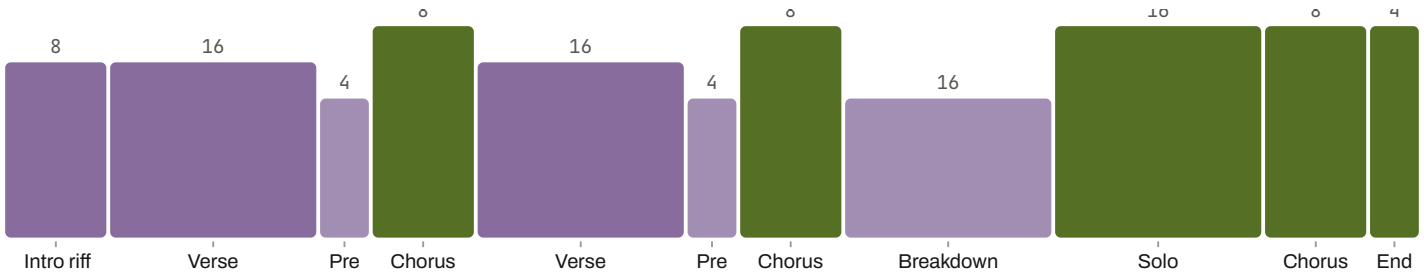
Bars 1 and 2 are the verse: space and syncopation. Bars 3 and 4 are the chorus: straight eighths on C, D and E.

A grunge song: quiet verse, loud chorus `block width = bars · height = intensity`



The dynamics are the arrangement. Your job in the verse is to leave room. Your job in the chorus is to fill it.

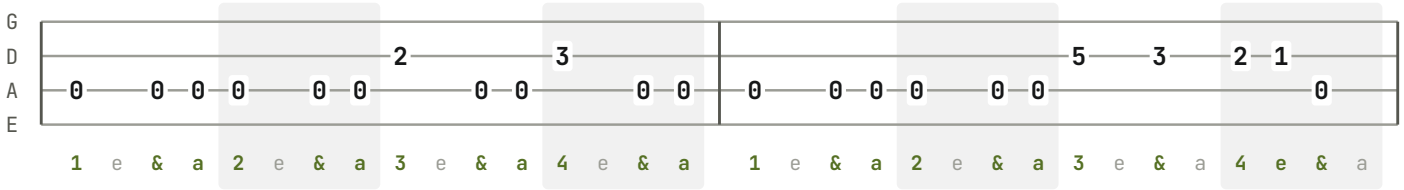
A thrash song: mostly on, with one drop `block width = bars · height = intensity`



The half-time breakdown is the only rest the listener gets. It makes the solo section hit twice as hard.

More riff jobs

Ex 6.7 **The thrash riff, moved to A** `4/4 · standard tuning · 100 to 160 bpm`

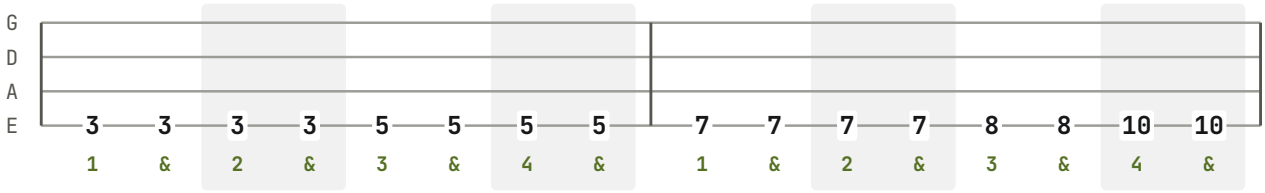


The riff from Ex 6.1 one string higher. Use E for the verse and A for the second half of the verse and the song already has movement.

THE PRE-CHORUS

Its job is to make the chorus feel inevitable. Like a sneeze. Climb, get louder, and simplify the rhythm.

Ex 6.8 **Pre-chorus climb** `4/4 · standard tuning · 100 to 160 bpm`

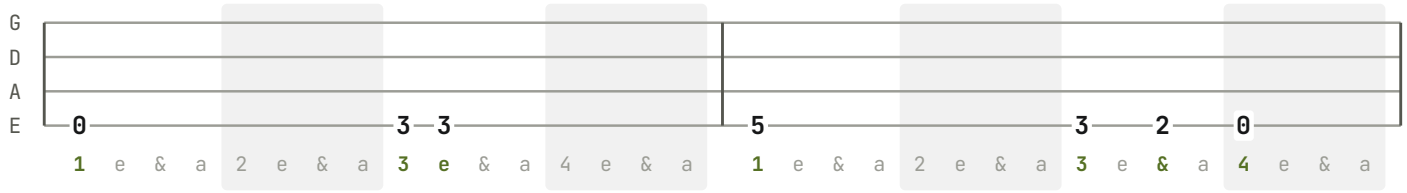


Roots rise G, A, B, C, D in straight eighths. Open up the muting as you go.

THE STOP-TIME RIFF

Everyone hits together, then everyone stops. The silence is the hook. It is also the bit where one person always comes in early. Do not be that person. You will be that person.

Ex 6.9 **Hits and holes** `4/4 · standard tuning · 90 to 140 bpm`

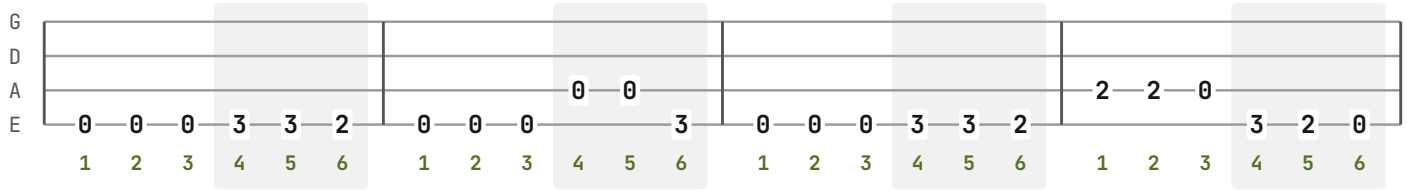


Short, loud, together. Count the rests out loud until the whole band can feel them.

THE RIFF IN THREE

Six eighth notes to the bar, felt as two big beats. It sways where 4/4 marches.

Ex 6.10 **Heavy 6/8** `6/8 · standard tuning · 150 to 220 (eighths) bpm`



Accent the first and fourth eighth of every bar. A, A, A, B form again.

More song forms

FORM	LAYOUT	GOOD FOR
Verse, chorus	V C V C bridge C	Almost everything with a vocal
AABA	A A B A	Short songs with one strong idea and one contrast
Riff chain	A B C D E, little repetition	Long thrash and prog pieces. Needs strong transitions
Build	One riff, layers added every 8 bars	Intros, instrumentals, slow burners
Bookend	Intro riff returns as the outro	Makes any song feel finished

Arranging checklist

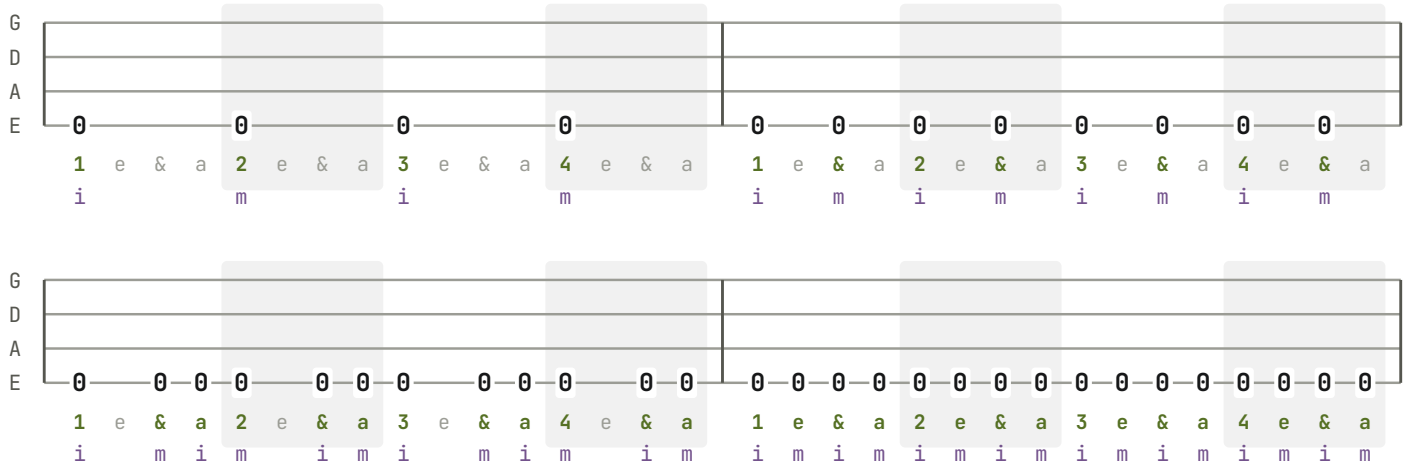
- [ ] Each section differs from the one before in at least two ways
- [ ] The first chorus arrives within about a minute
- [ ] Something drops out before every big entrance

- [ ] The heaviest or fastest moment happens once
- [ ] You can hum the main riff after one listen

Under a solo

When the guitar solos, the bass is the whole harmony. Start simple and build with the solo.

Ex 6.11 **A solo bed that builds** 4/4 · standard tuning · 100 to 150 bpm



Quarters, eighths, gallop, sixteenths. One bar each here; in a real solo give each stage four bars. The solo sounds like it is taking off and you did it.

Recipe for a riff with a job

1. Pick the job: verse, chorus, breakdown or intro.
2. Pick the key and one colour note from Chapter 5 (b2, b5 or natural 6).
3. Write the rhythm on one note first.
4. Add pitches. Use the colour note once per bar at most.
5. Write the partner section by changing two things from the list above.

Write it **Verse riff and chorus riff**

SONG WORKING TITLE _____ KEY AND COLOUR NOTE _____ TEMPO (BPM) _____

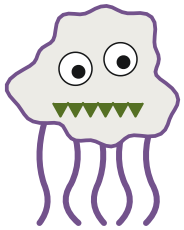
G
D
A
E

:ount . . . . . .

G
D
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E

:ount . . . . . .

Print this page and pencil it in, or open Tab Lab on the site and save the riff there.



BOSS FIGHT

THE BEHEMOTH

Large, patient, unimpressed by sloppy gallops. It respects honesty, so tick only what you can actually play. It will know. It has eaten better players than you and shat out their pedalboards.

- [ ] Gallop riff (Ex 6.1) at 150 bpm, twice through
- [ ] The fill (Ex 6.2) at 130 bpm, landing on beat 1 every time
- [ ] Sludge (Ex 6.4) at 65 bpm with a pick, every rest silent
- [ ] Melodic intro (Ex 6.5) from memory
- [ ] An original verse and chorus pair, recorded back to back

PART III

ADVANCED

Odd meters, chords, harmonics, effects as composition, and pieces that take eight minutes to say what they mean. Then The Haze.

CHAPTER 7

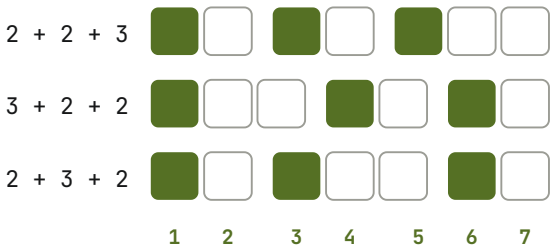
THE WHOLE INSTRUMENT TECHNIQUE

From here on, most examples are in **drop D** with a pick, because that is where this style lives. Fingerstyle players: everything still works. Use index and middle for single notes and thumb plus index for double stops.

Picking in seven

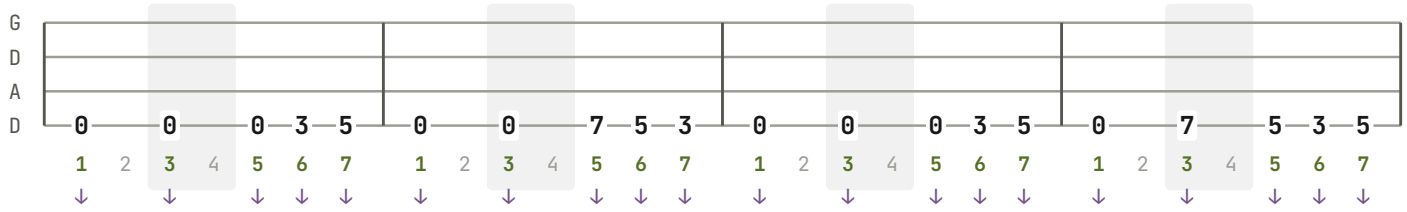
Odd meters are groups of two and three eighth notes. Seven is usually 2+2+3 or 3+2+2. Accent the first note of each group and the meter plays itself.

Three ways to feel 7/8



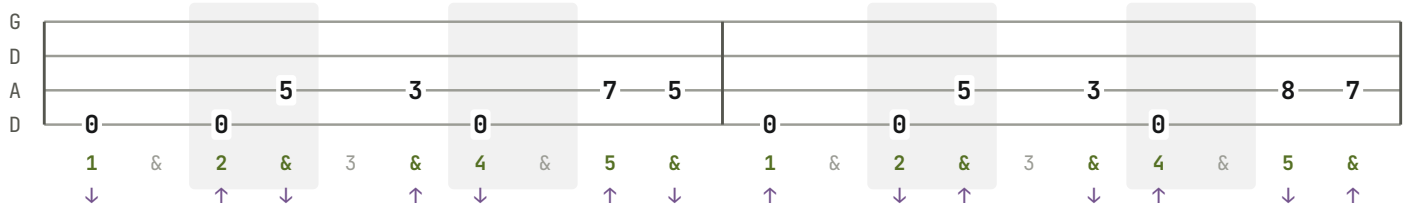
Clap the green cells while counting to seven. Each grouping is a different groove built from the same seven eighths.

Ex 7.1 **Seven, grouped 2 + 2 + 3** 7/8 · drop D · 140 to 220 (eighths) bpm



The shaded block is the group of three. Tempo counts eighth notes. Notes are D, F, G and A.

Ex 7.2 **Five beats to the bar** 5/4 · drop D · 80 to 120 bpm

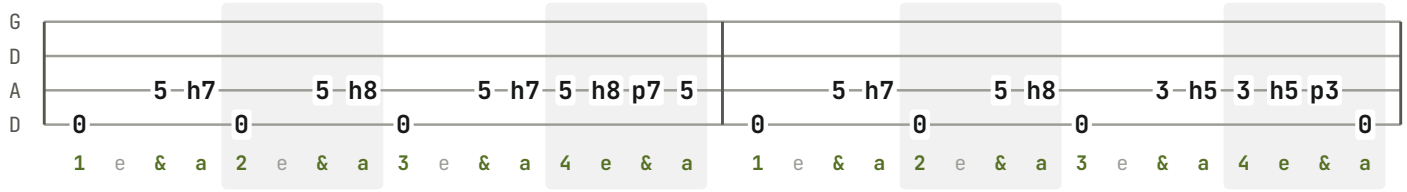


Count five quarter notes. Do not try to feel it as four plus one: let the fifth beat be part of the phrase.

The hammer-on ostinato

An open low string as a drone, with a hammered figure on the next string. The plucking hand only plays half the notes, so it sounds faster and smoother than it is.

Ex 7.3 **Drone and hammer** 4/4 · drop D · 70 to 110 bpm



Let the open D ring under everything. The figure is D, E and F on the A string, dropping to C at the end of bar 2.

> **STEAL FROM JUSTIN CHANCELLOR**
>
> Hammer-ons over an open string, played with a pick, with a little delay or flange on top. That texture is instantly recognisable. Practise it dry first. If it does not groove without effects, pedals will only make it louder.

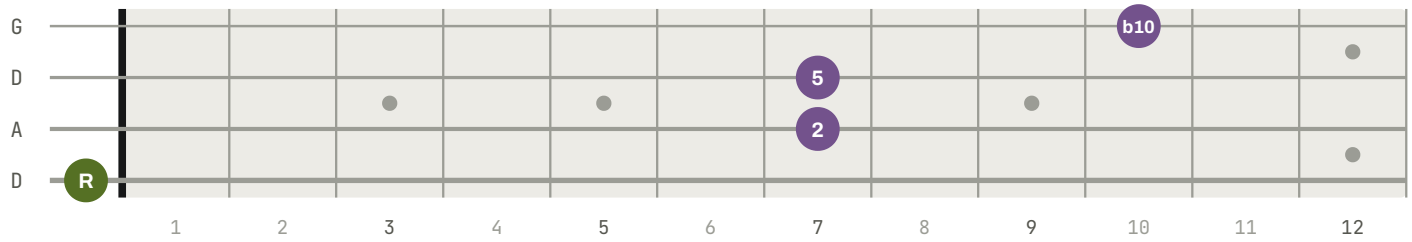
> **THE WALKER SAYS**
>
> *An odd meter is a bar with a limp. Everybody loves a limp. Ask any pirate.*

Chords on bass

Chords work on bass when they are thin and high enough. In drop D you get three useful families.

Open D colours

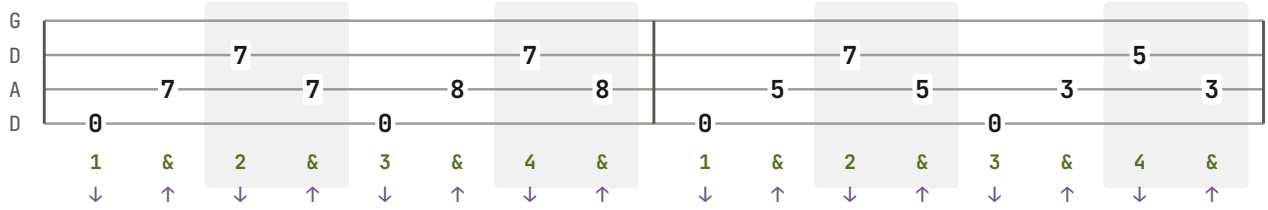
drop D · labels are scale degrees



Open D with E and A above it is a suspended sound with no third. Add F high on the G string for the minor third, two octaves up. Move that F to fret 11 for major.

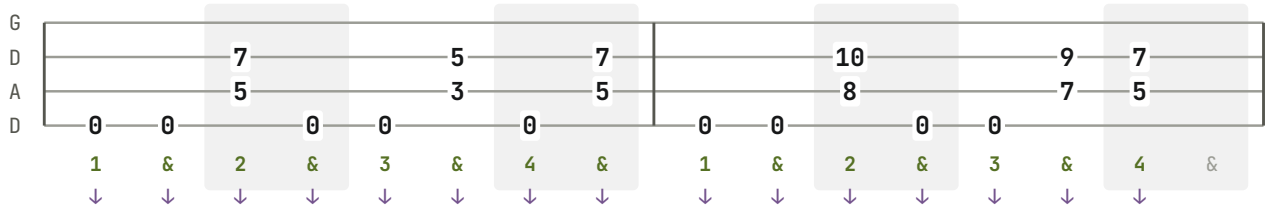
Ex 7.4 Arpeggiated chords

4/4 · drop D · 80 to 120 bpm · let ring



Hold the shapes and let every note ring into the next. Bar 1 moves one finger: E to F over the D drone.

Ex 7.5 **Power chords against the drone** 4/4 · drop D · 90 to 130 bpm

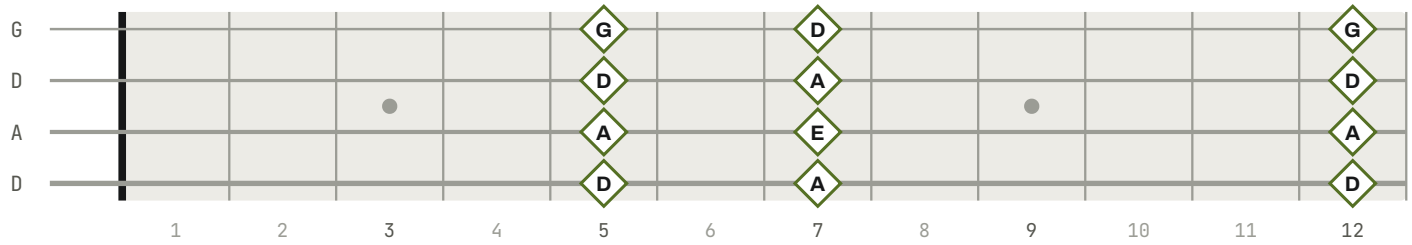


The double stops are fifths on the A and D strings: D5, C5, then F5, E5, D5. Palm mute the open D and let the chords ring.

Harmonics

Touch a string lightly, directly above the fret wire, pluck, and lift. You get a bell tone. If you get a dull thud, you are pressing. Stop pressing. It is a caress, not CPR. The strongest ones are at frets 12, 7 and 5.

Natural harmonics in drop D drop D · labels are the notes you hear



Fret 12 gives the open note one octave up. Fret 7 gives a fifth above that. Fret 5 gives the open note two octaves up. Pick near the bridge and use the bridge pickup.

Ex 7.6 **Harmonic melody** 4/4 · drop D · 70 to 100 bpm · let ring

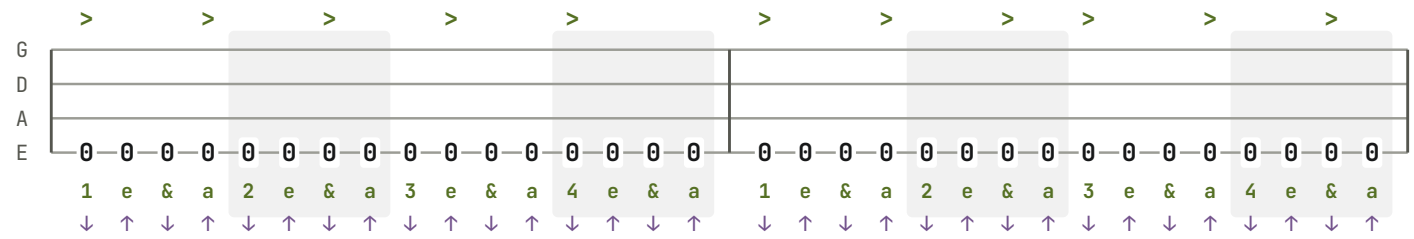


D, D, G, A, then E, A, D, G. Let them overlap. Add delay and this is an intro.

Accent control

Fast playing gets musical when you can put the accent anywhere. Play constant sixteenths and move the loud note.

Ex 7.7 **Shifting accents** 4/4 · standard tuning · 80 to 130 bpm

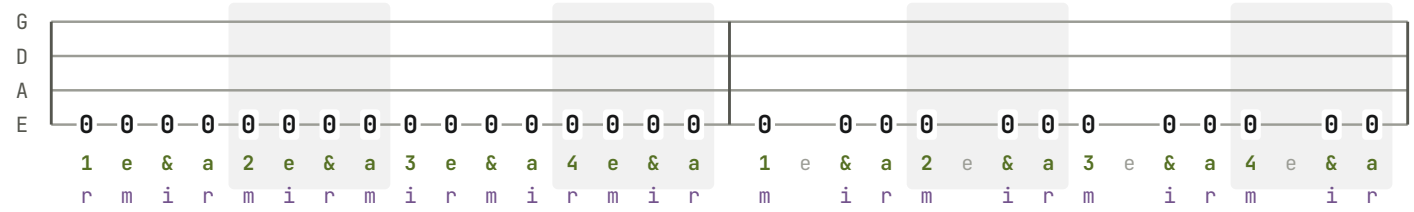


Bar 1 accents every third note: 3+3+3+3+4. Bar 2 is 3+3+2 twice. The hand never stops. Only the volume changes.

Three-finger gallops

For fingerstyle above about 170 bpm, add the ring finger: ring, middle, index, rolling like drumming your fingers on a table. Three fingers over groups of four means the accent lands on a different finger each beat, so start slowly.

Ex 7.8 **Three-finger roll** 4/4 · standard tuning · 80 to 140 bpm



Bar 1 is straight sixteenths. Bar 2 is the gallop, one roll per beat, which is the natural home of this technique.

Speed protocol

STEP	WHAT TO DO	TIME
1	Find the tempo where it is clean and relaxed. Write it down	1 minute
2	Play at that tempo minus 10 bpm, exaggerating small movements	2 minutes
3	Bursts at that tempo plus 15 bpm: one beat on, three off	2 minutes
4	Back to the clean tempo. It will feel slow	1 minute
5	Add 4 bpm to tomorrow's clean tempo only if today was relaxed	Daily

Effects are part of the hand

Pedals change what you should play. A delay wants space. A fuzz wants long notes. A wah wants a steady rhythm to sweep against. Order matters too.

A typical bass signal chain



Many players split the signal and keep one clean channel under the effects so the low end never disappears.

THE HAZE SAYS

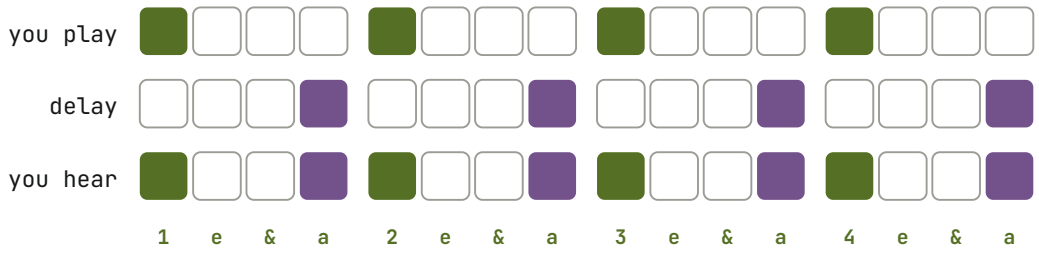
A pedalboard is a very expensive way to avoid practising. Buy the pedal anyway. I am not your accountant.

DELAY TIMES

Set the delay to a dotted eighth and play quarter notes. Each repeat lands on the last sixteenth of the beat and you get a gallop without playing one.

TEMPO (BPM)	QUARTER NOTE	DOTTED EIGHTH	EIGHTH
70	857 ms	643 ms	429 ms
80	750 ms	562 ms	375 ms
90	667 ms	500 ms	333 ms
100	600 ms	450 ms	300 ms
110	545 ms	409 ms	273 ms
120	500 ms	375 ms	250 ms
130	462 ms	346 ms	231 ms
140	429 ms	321 ms	214 ms
150	400 ms	300 ms	200 ms

Quarter notes into a dotted-eighth delay



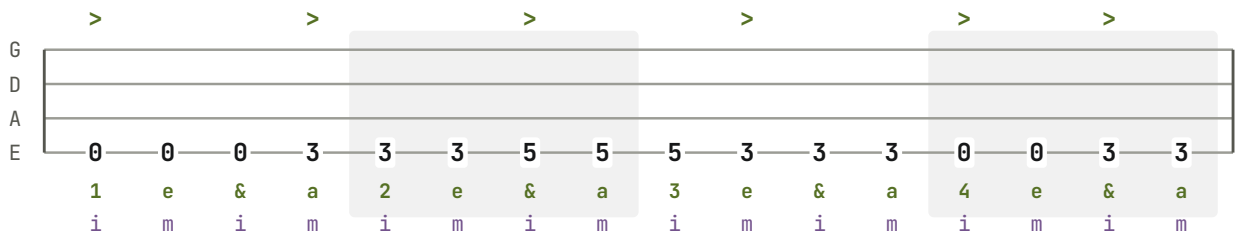
One repeat, mixed a little quieter than the dry note. More repeats fill in more of the grid.

- **Wah.** Rock the pedal in time: heel on the beat, toe on the "and". Or park it half open as a fixed midrange filter.
- **Pitch shifter.** An octave up turns a bass riff into a lead line. Use it for one section, not the whole song.
- **Fuzz.** Roll your tone knob back a little and play fewer notes. Fuzz plus fast gallops is mud.
- **Flanger or chorus.** Slow rate, low depth, on clean arpeggios and harmonics.

More drills: control at speed

Ex 7.9 Odd groupings inside 4/4

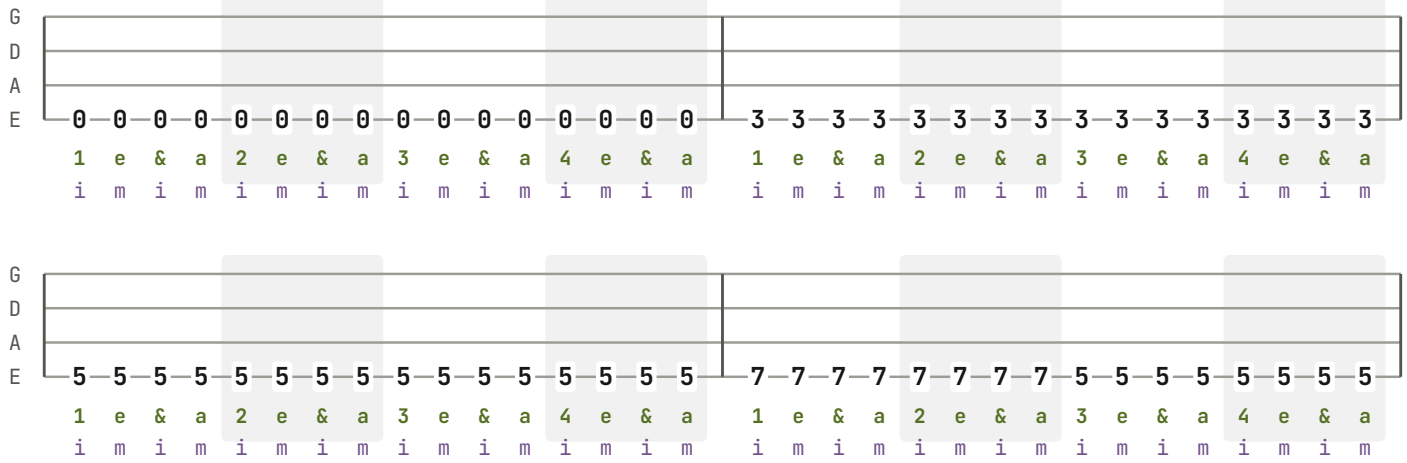
4/4 · standard tuning · 80 to 130 bpm



Sixteen sixteenths grouped 3+3+3+3+2+2. The drummer stays in four. You sound like you left and came back.

Ex 7.10 Four-bar endurance etude

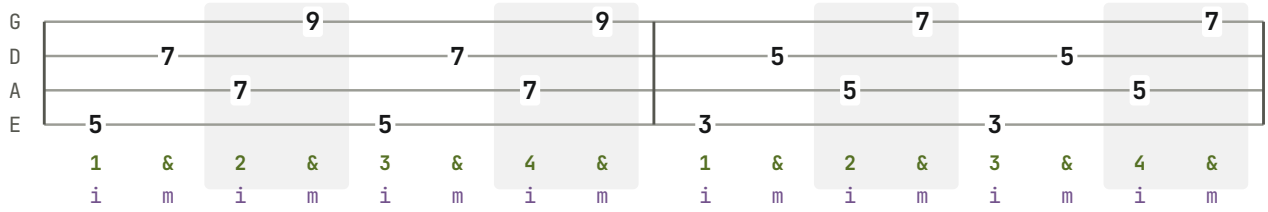
4/4 · standard tuning · 90 to 150 bpm



No rests for four bars. If the last bar is sloppier than the first, the tempo is too high.

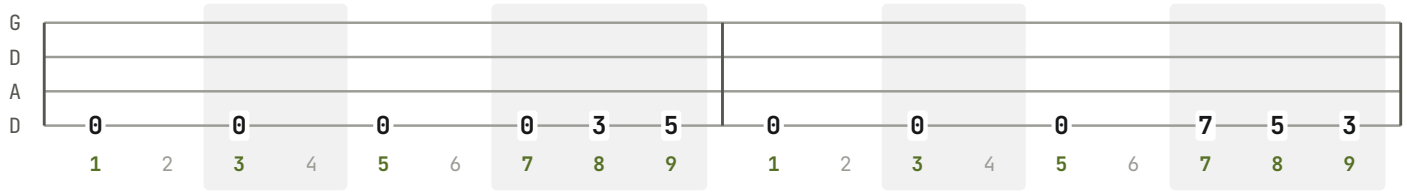
Ex 7.11 Octave pairs across the neck

4/4 · standard tuning · 80 to 140 bpm



Every jump skips a string. Mute the skipped string with the underside of the fretting finger.

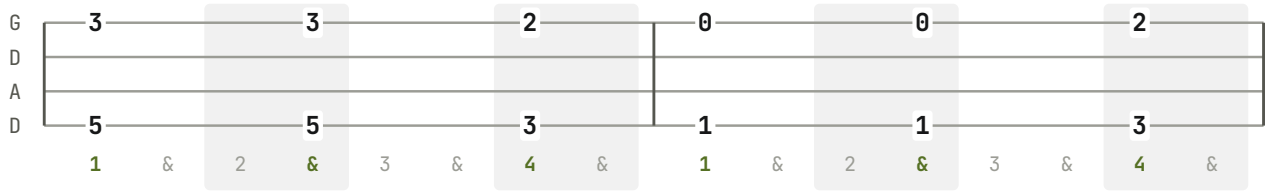
Ex 7.12 **Nine, grouped 2 + 2 + 2 + 3** 9/8 · drop D · 160 to 240 (eighths) bpm



A bar of four with one extra eighth note on the end. Count 1 2, 1 2, 1 2, 1 2 3.

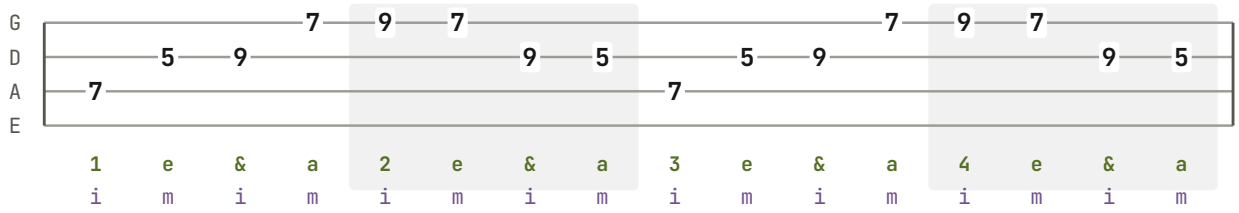
Bass-only drills

Ex 7.13 **Tenths** 4/4 · drop D · 70 to 110 bpm



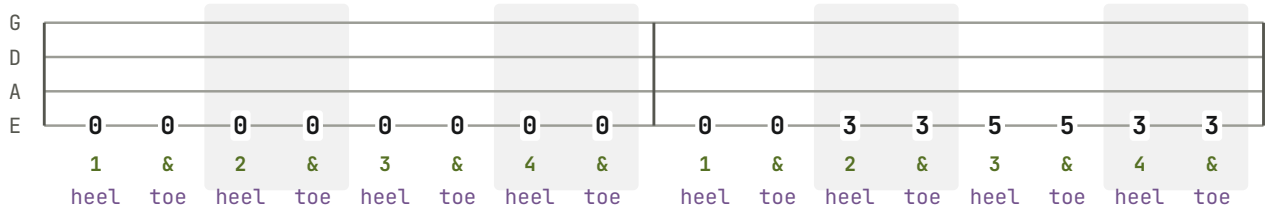
A root and the third an octave and a bit above it: G minor, F major, Eb major, F major. Pluck with thumb and index. Chords on bass, with no mud.

Ex 7.14 **Arpeggio run** 4/4 · standard tuning · 70 to 120 bpm



E minor 7: E, G, B, D, E and back. A melodic fill shape for the end of a phrase.

Ex 7.15 **Wah in time** 4/4 · standard tuning · 80 to 120 bpm



With a wah or envelope pedal: heel down on the beat, toe down on the "and". Without one, play the "toe" notes nearer the bridge for a similar brightening.

Chapter 7 check

- [ ] The 7/8 exercise at 200 eighths per minute, accents clear
- [ ] Drone and hammer at 100 bpm, hammered notes as loud as picked ones
- [ ] Power chords against the drone with the open D muted and the chords ringing
- [ ] All twelve natural harmonics ringing clearly
- [ ] Shifting accents at 120 bpm without changing the picking motion

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CHAPTER 8

TIME AND COLOUR THEORY

Odd meters are twos and threes

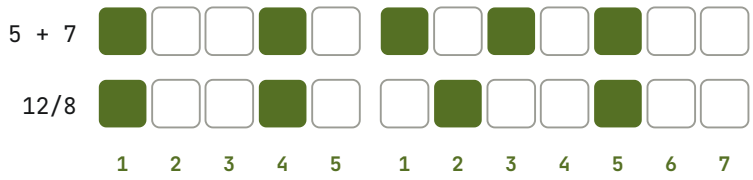
Every odd meter breaks into groups of two and three. Learn to hear the groups and the top number stops mattering. The top number is mostly there to frighten guitarists.

METER	COMMON GROUPINGS	FEELS LIKE
5/8	3+2, 2+3	A waltz that trips
5/4	3+2, 2+3 (in quarters)	A long, loping bar
6/8	3+3	Two big beats, each split in three
7/8	2+2+3, 3+2+2, 2+3+2	4/4 with the last eighth cut off
9/8	3+3+3, or 2+2+2+3	Either a jig or 4/4 with an extra eighth
11/8	3+3+3+2	12/8 that leaves early
7/4	4+3, 3+4 (in quarters)	A bar of four and a bar of three joined

Alternating meters

Two different bars can make one phrase. A bar of five followed by a bar of seven adds up to twelve eighths, the same length as a bar of 12/8, and it will not sit still the way 12/8 does.

5/8 then 7/8: twelve eighths that limp

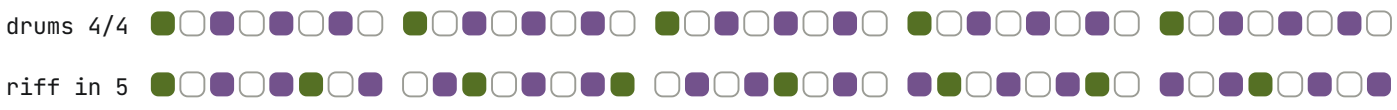


Top row: accents for 3+2 then 2+2+3. Bottom row: where a normal 12/8 would put them. The difference is the hook.

Polymeter

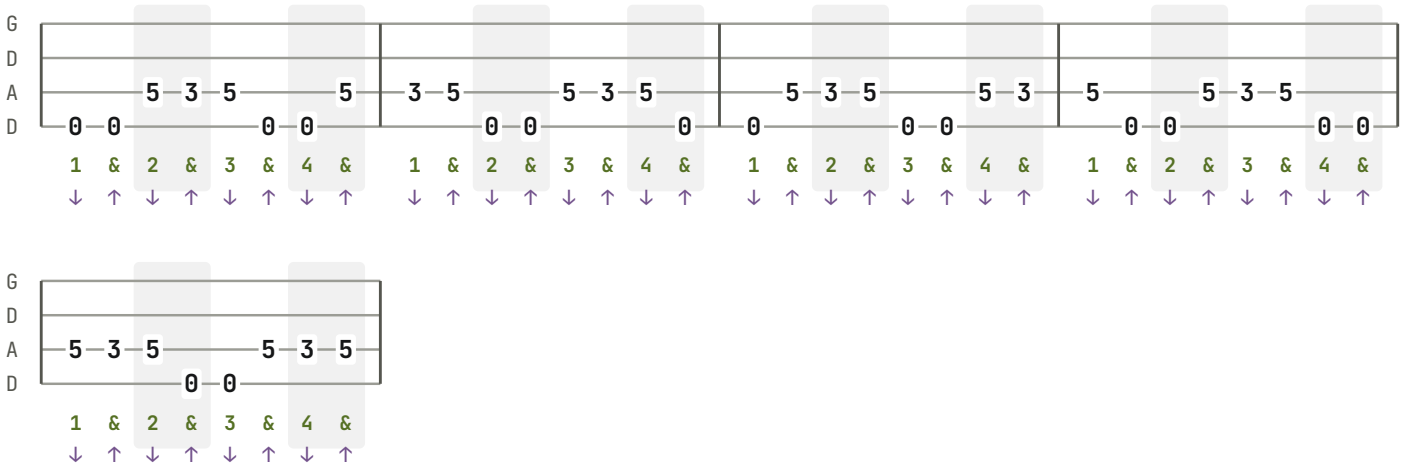
Two parts in different meters at the same time, sharing the same pulse. The bass plays a five-eighth riff while the drums stay in 4/4. The riff drifts against the beat and lines up again after five bars.

A five-eighth riff over 4/4 drums



Five bars of 4/4 is 40 eighths. Eight repeats of a five-eighth riff is also 40. The green cells line up at the start and not again until bar 6.

Ex 8.1 **Five over four** `4/4 · drop D · 90 to 130 bpm`



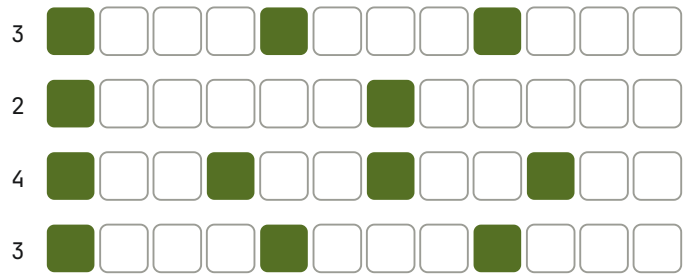
The cell is D, D, D (octave), C, D. Play it against a plain 4/4 drum loop and count the bars, not the riff. You are home on beat 1 of bar 6.

> **STEAL FROM JUSTIN CHANCELLOR**
>
> He has described writing riffs in odd lengths and then putting four beats behind them, or overlapping two time signatures at once. That is this exercise. The drummer holds a simple grid and the riff slides across it.

Polyrhythm

Different from polymeter: here two even pulses divide the same span. Three against two and four against three are the ones you will use.

Three against two, and four against three



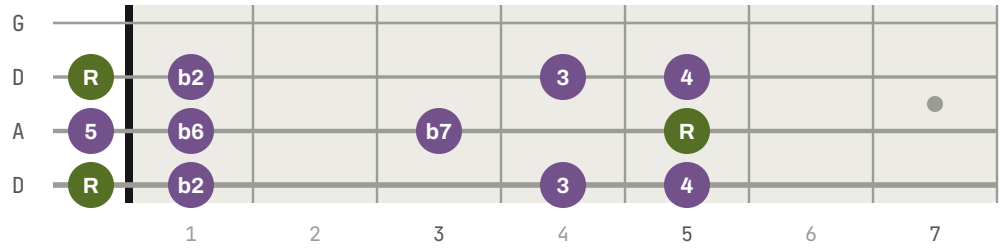
Twelve cells is the smallest grid that holds both. Tap one row with each hand. For 3 against 2 say "nice cup of tea".

Scales with teeth

SCALE	FORMULA	WHERE IT BITES
Harmonic minor	R 2 b3 4 5 b6 7	The gap between b6 and 7: three frets, very dramatic
Phrygian dominant	R b2 3 4 5 b6 b7	b2 next to a major 3. The snake-charmer sound
Locrian	R b2 b3 4 b5 b6 b7	No stable fifth. Nothing resolves
Half-whole diminished	R b2 b3 3 b5 5 6 b7	Eight notes, symmetrical, repeats every three frets
Whole tone	R 2 3 b5 b6 b7	Six notes, no half steps, floating and seasick

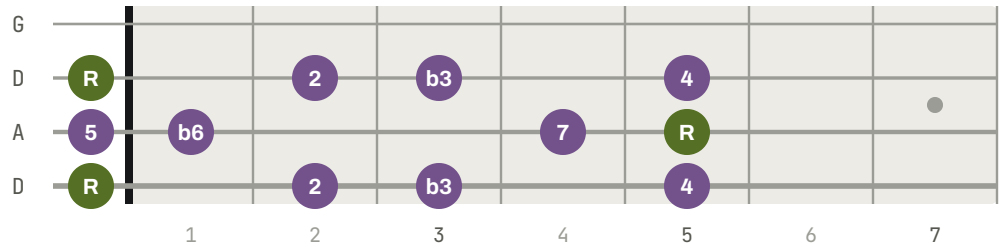
D Phrygian dominant on the low strings

`drop D · labels are scale degrees`

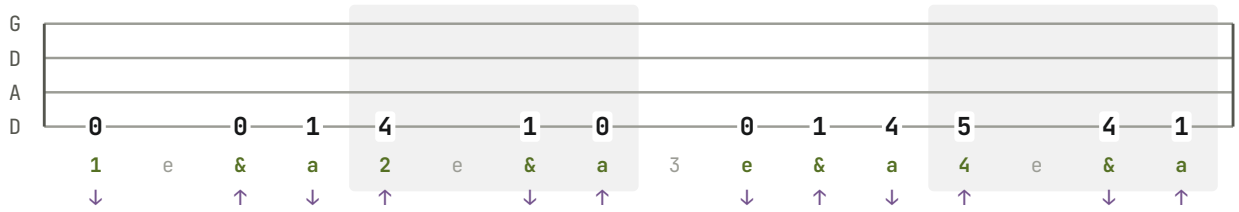


Frets 0, 1, 4, 5 on the low string. The jump from fret 1 to fret 4 is the sound.

D harmonic minor on the low strings drop D · labels are scale degrees



Ex 8.2 **Phrygian dominant riff** 4/4 · drop D · 80 to 120 bpm



D, Eb, F# and G on one string. Palm mute everything except the F#.

THE DRIFT SAYS

Diminished chords are how old films told you the villain had tied someone to the train tracks. Still works. Still filthy.

Root motion has a mood

Where the root goes next matters more than which scale you are in.

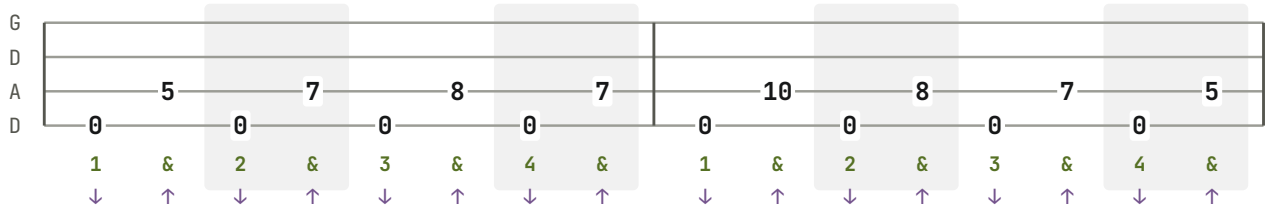
ROOT MOVES	EXAMPLE FROM D	MOOD
Up a half step (bII)	D to Eb	Threat, tension
Up a minor third (bIII)	D to F	Heavy, classic rock and metal
Tritone (bV)	D to Ab	Evil, unstable
Up a minor sixth (bVI)	D to Bb	Epic, doom
Down a whole step (bVII)	D to C	Rock, open road
Chromatic descent	D, Db, C, B	Sinking, dread
Up a fourth (IV as a major chord)	D minor to G major	Dorian lift, sudden light

Colours against a drone

When the low D rings under everything, every other note is heard as an interval against it. This table is your palette.

NOTE OVER D	DEGREE	COLOUR
Eb	b2	Dark, claustrophobic
E	2	Open, suspended, unresolved
F	b3	Minor, sad
F#	3	Major, bright, sometimes too bright
G	4	Hollow, wants to fall back to F or F#
Ab	b5	Sour, tense
A	5	Solid, neutral
Bb	b6	Aching
B	6	Dorian, hopeful
C	b7	Bluesy, relaxed

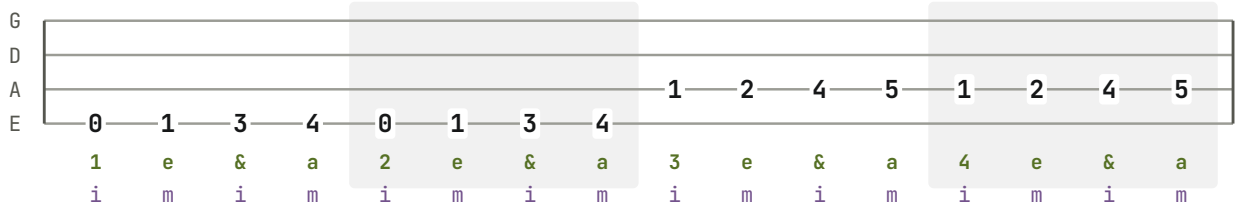
Ex 8.3 **A moving voice over the drone** `4/4 · drop D · 90 to 140 bpm`



The upper voice walks D, E, F, E, then G, F, E, D. Listen to how each note changes colour against the open string.

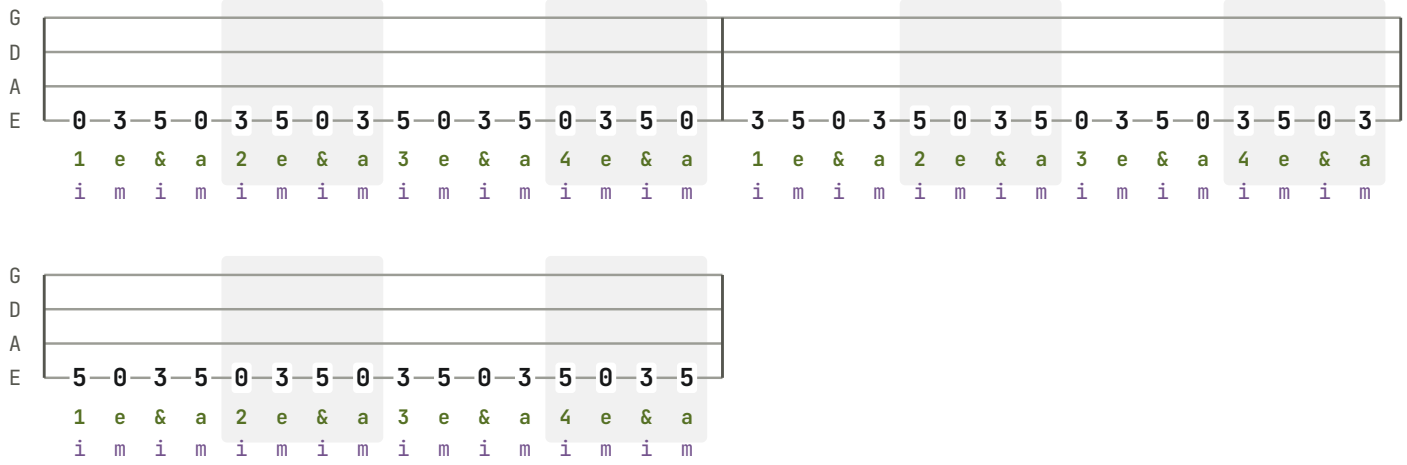
More colour, more time

Ex 8.4 **Half-whole diminished riff** `4/4 · standard tuning · 70 to 120 bpm`



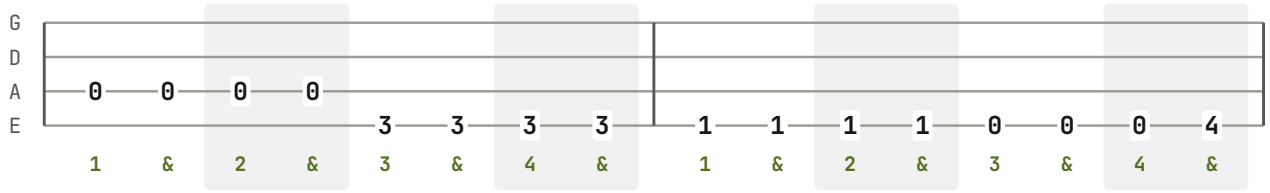
The pattern is one fret, two frets, one fret, two frets, all the way up. Unsettling, and it never resolves.

Ex 8.5 **Three against four** `4/4 · standard tuning · 70 to 110 bpm`



A three-note cell in constant sixteenths. It lines up with the beat again after three bars. Tap your foot on the beat and do not follow the riff.

Ex 8.6 **Descending minor cadence** 4/4 · standard tuning · 90 to 140 bpm



Roots A, G, F, E. The last note, G#, is borrowed from harmonic minor and pulls hard back to A.

Borrowing chords

A riff in a minor key can borrow one chord from a neighbouring scale for a single bar. Each loan has a reliable effect.

BORROWED CHORD	BORROWED FROM	IN E MINOR	EFFECT
bII	Phrygian	F	Threat
IV (major)	Dorian	A major	Lift, daylight
V (major)	Harmonic minor	B major	Strong pull back to the root
bV	Locrian, blues	Bb	Sour, heavy
I (major)	Parallel major	E major	Triumphant ending

Analyse a song you love

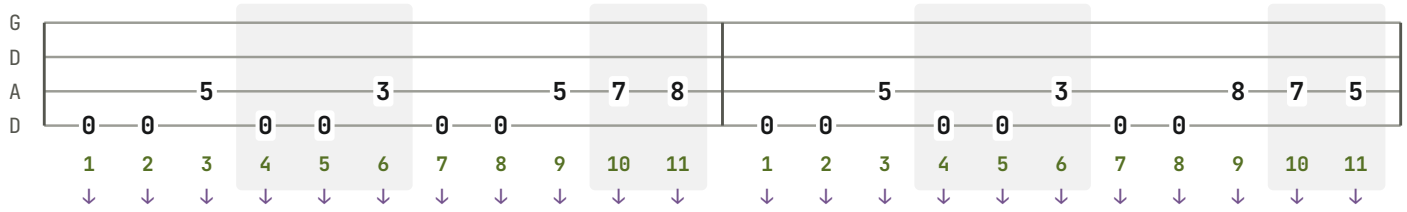
Pick one song and answer these on paper. Twenty minutes of this teaches more than a week of scales.

QUESTION	WHY IT MATTERS
What is the key and the home note?	Everything else is measured from it
How many riffs are there, and how long is each?	Shows how little material a song needs
Which riff notes are outside the scale?	Those are the colour notes. Steal the idea, not the notes
Where does the feel change, and how is it set up?	Transitions are a skill of their own
What does the rhythm section do under the solo?	Usually less than you think
Where is the loudest moment, and what came before it?	Contrast, every time

Eleven

The longest odd bar in the book: 3+3+3+2. It feels like 12/8 with the last eighth removed.

Ex 8.7 **Eleven, grouped 3 + 3 + 3 + 2** 11/8 · drop D · 160 to 240 (eighths) bpm



Three groups of three, then a group of two. Count 1 2 3, 1 2 3, 1 2 3, 1 2.

STEP	LOOP	GOAL
1	Clap the grouping with a metronome on eighths	No hesitation at the bar line
2	Play the first note of each group only	Hear the skeleton
3	Add the remaining notes	Keep the accents
4	Remove the metronome, keep your foot on the groups	The meter is now yours

Chapter 8 check

- [ ] Clap 7/8 in all three groupings while counting out loud

- [ ] Play Five over four against a 4/4 loop and land on bar 6
- [ ] Tap three against two with two hands
- [ ] Play D Phrygian dominant and D harmonic minor on the low string
- [ ] Name the colour of any note against an open D drone

CHAPTER 9

LONG-FORM WRITING

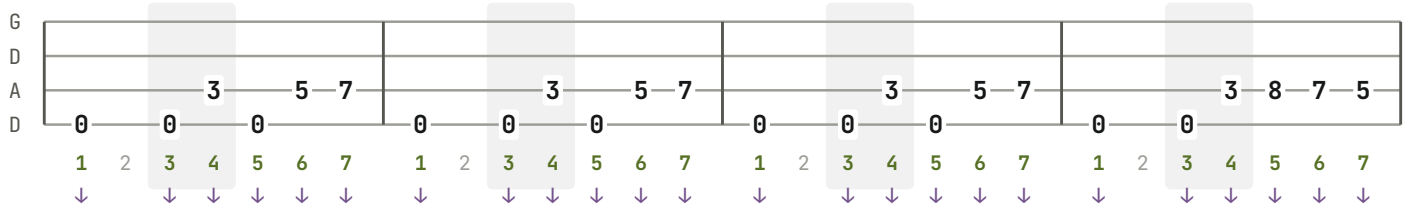
RIFF WRITING

Write by feel, count afterwards

Do not sit down to write in seven. Hum a riff, play it until it loops comfortably, then count the eighth notes. If it comes out as 7 or 11 or 13, leave it alone. Forced odd meter sounds like maths homework. Nobody ever started a mosh pit to maths homework.

1. Loop the riff until your body knows where it restarts.
2. Tap the smallest steady pulse and count how many fit in one loop.
3. Find the accents. They mark the groups of two and three.
4. Write the grouping down, for you and for your drummer.

Ex 9.1 **A riff that came out in seven** 7/8 · drop D · 150 to 220 (eighths) bpm

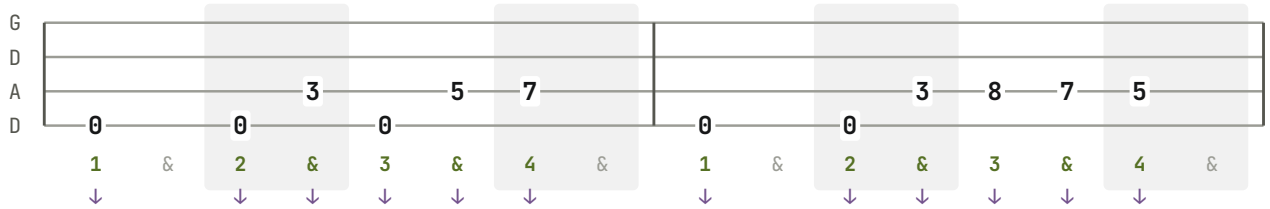


A, A, A, B, same as Chapter 3. The form you learned on day one still applies when the bar is an odd length.

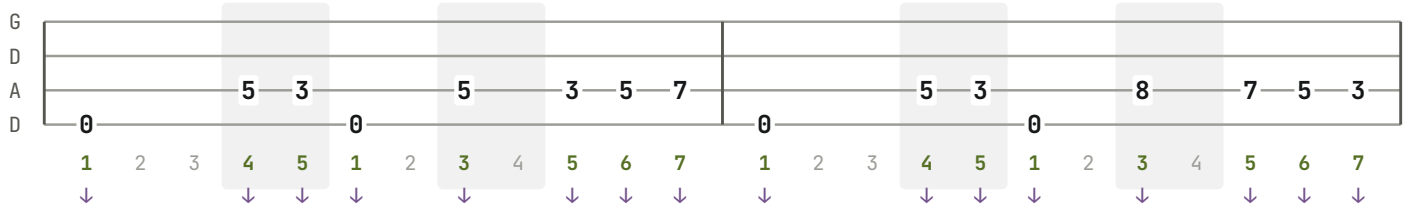
Straighten it out

Any odd riff can be made to sit in four by adding or removing a little. Here is the same riff with one eighth rest added. Use the odd version for the verse and the straight version for the chorus, and the chorus will feel like the floor arriving.

Ex 9.2 **The same riff in 4/4** `4/4 · drop D · 90 to 130 bpm`



Ex 9.3 **Five then seven** `5/8 + 7/8 · drop D · 150 to 220 (eighths) bpm`



Each bar on the page is a bar of five followed by a bar of seven. Count to five, then count to seven.

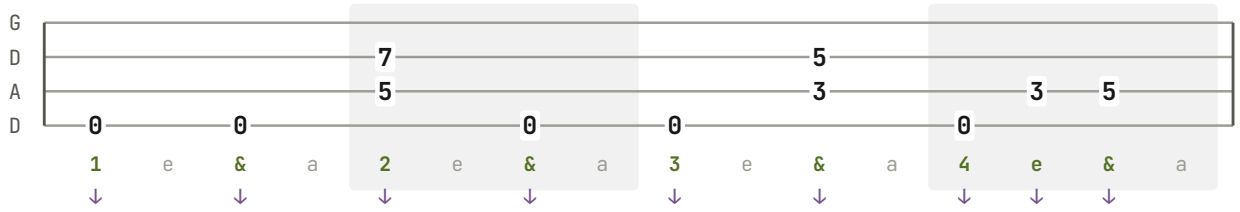
The role swap

In most rock the guitar plays the riff and the bass supports it. Swap that. The bass carries the riff, the guitar plays texture, and later they trade.

SECTION	BASS	GUITAR	EFFECT
A	Main riff, alone, mid register	Silent, or feedback and swells	The listener learns the riff from you
A again	Main riff	Sustained notes, harmonics, a drone	Tension builds without getting louder
B	Drops to low roots	Takes over the riff	Sudden weight
C	Counter-line, high register	Riff continues	Two melodies at once
Peak	Riff in unison, low	Riff in unison	Maximum impact, use once

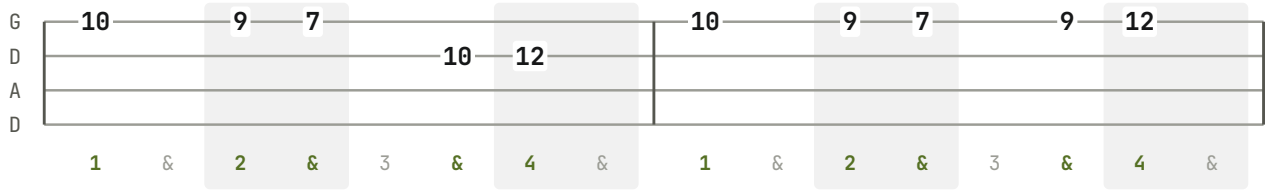
For this to work the bass riff has to imply the harmony on its own. Use roots on strong beats and a double stop or two.

Ex 9.4 **A riff that needs no guitar** `4/4 · drop D · 80 to 110 bpm`



Low D for the floor, D5 and C5 double stops for the harmony, a three-note tail to turn it around.

Ex 9.5 **Counter-line in the upper register** `4/4 · drop D · 80 to 110 bpm`



For section C, while the guitar holds the riff. F, E, D, C, D, then F, E, D, E, G. Fingers or pick, played gently.

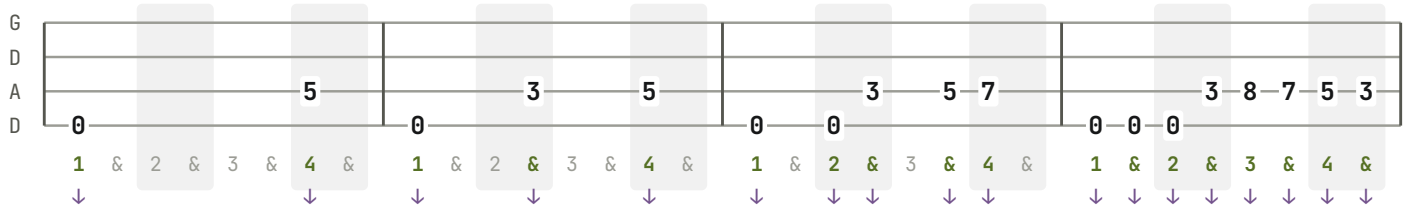
> STEAL FROM JUSTIN CHANCELLOR
>
> He has said a lot of his exploring happens in a higher register because the band leaves room for it, and that dropping back to the low octave afterwards hits harder. Register is an arrangement tool. Use it deliberately.

Ways to develop one riff

You do not need ten riffs for a long song. You need two, and these tools.

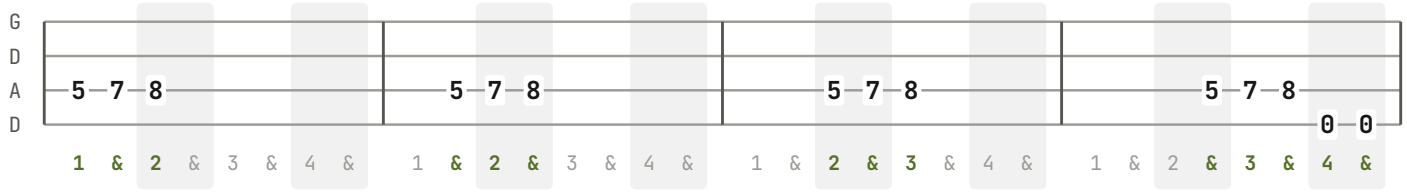
TOOL	WHAT YOU DO	EXAMPLE
Repetition	Play it again, exactly	More useful than you think
Addition	Start with two notes, add one each pass	Ex 9.6
Truncation	Cut the last beat or two off	Turns 4/4 into 7/8
Displacement	Start the same notes one eighth later	Ex 9.7
Augmentation	Same notes, twice as slow	Verse riff becomes the outro
Diminution	Same notes, twice as fast	Riff becomes a fill
Register	Same riff, an octave up or down	Section C above
Timbre	Same riff, different effect or attack	Clean, then fuzz
Reharmonise	Same riff, different root under it	Guitar moves from D to Bb

Ex 9.6 **Addition: a riff assembles itself** 4/4 · drop D · 90 to 130 bpm



Play each bar four times before moving on. By bar 4 the listener already knows the riff, because they watched it being built.

Ex 9.7 **Displacement: same notes, new downbeat** 4/4 · drop D · 90 to 130 bpm



D, E, F starting on beat 1, then the "and" of 1, then beat 2, then the "and" of 2. Count hard.

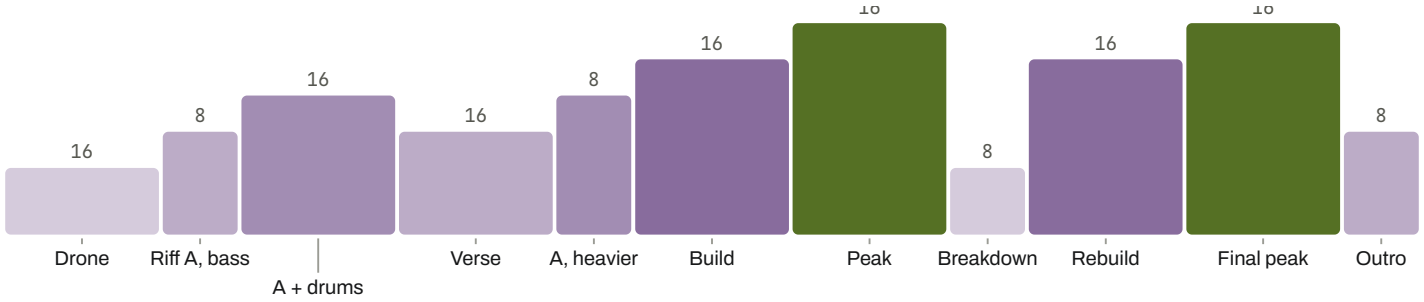
THE HAZE SAYS

Nobody asked for your nine-minute song. Write it anyway. Then cut the two minutes in the middle that are clearly just you having a wank.

Shape over eight minutes

Long pieces work when the intensity has a shape. Plan the peaks and valleys before you write the parts.

A long-form piece `block width = bars · height = intensity`



Two peaks, with the deepest valley right before the second one. The quiet makes the loud.

- **Earn the peak.** Hold back the unison riff, the fuzz and the low octave until the build pays off.
- **One change at a time.** Each section adds or removes one element: drums, a second guitar, an effect, an octave.
- **The breakdown is a reset.** Strip to one instrument. If it is the bass, play the first riff again, quieter.
- **End on purpose.** Stop dead on the riff, or let the drone from the intro come back.

Writing with effects

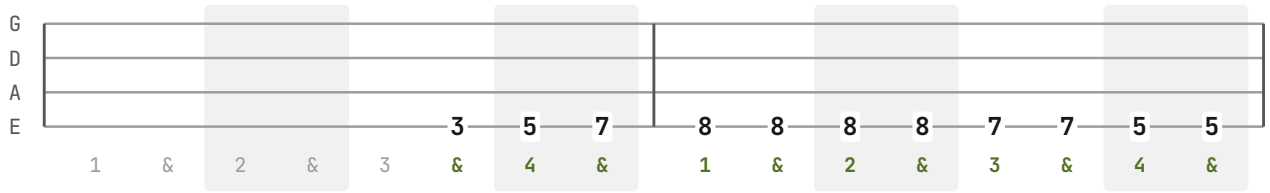
Write the part for the pedal. With delay, write gaps for the repeats to fill. With a pitch shifter, write a simple melody and let the octave do the drama. With wah, hold one note and let the sweep be the rhythm.

Transitions

Two good riffs with a bad join sound like two songs. Or one song having a stroke. Pick a transition on purpose.

TRANSITION	WHAT HAPPENS	BEST BEFORE
Pickup	Three or four notes that lead into the new riff	A faster section
Hard stop	One beat of silence	A breakdown or a chorus
Held chord	Ring out for a bar, maybe with feedback	A tempo change
Drum fill only	Strings drop out for one bar	The solo
Riff preview	The new riff played once, alone, quietly	A big full-band entrance
Shared note	End the old riff on the first note of the new one	Key changes

Ex 9.8 **Pickup into a new riff** 4/4 · standard tuning · 100 to 160 bpm

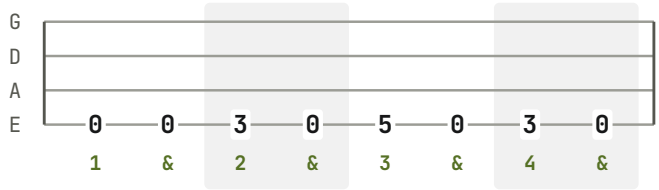


Rest, then three rising notes land you on the new root. The pickup belongs to the new section, not the old one.

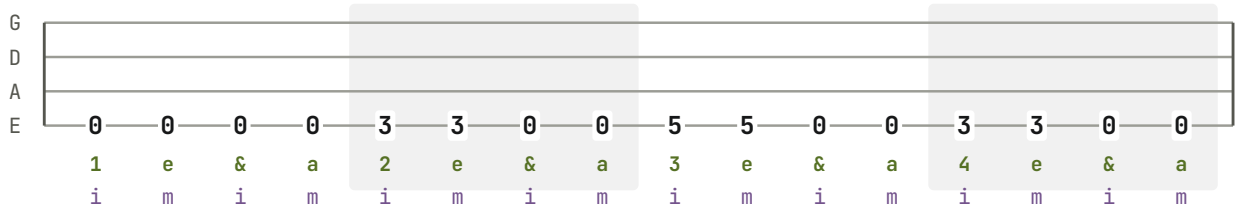
One riff, three feels

Before writing a new riff for the next section, try the current one at a different density.

Ex 9.9 **Straight** 4/4 · standard tuning · 100 to 150 bpm

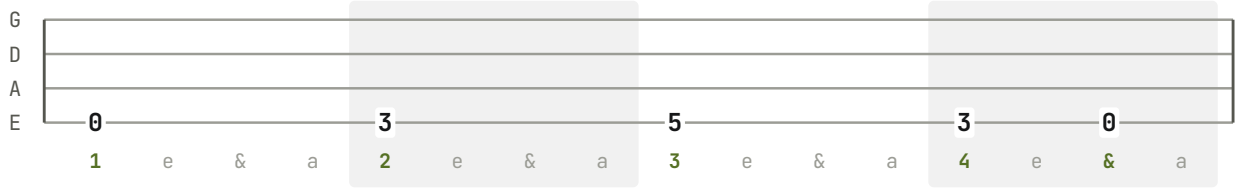


Ex 9.10 **Double time** `4/4 · standard tuning · 100 to 150 bpm`



Every note twice. Same harmony, twice the urgency.

Ex 9.11 **Half time** `4/4 · standard tuning · 100 to 150 bpm`



A quarter of the notes. Same harmony, four times the weight.

Finishing

Most riffs die in a phone recording called New Recording 47, between a grocery list and a voice memo of somebody's kid screaming. Finishing is a separate skill, and it has steps.

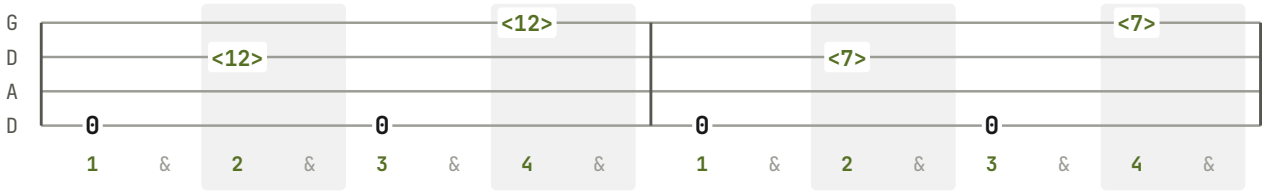
1. Choose your best riff and decide its job.
2. Make two more sections from it with the development tools.
3. Draw the form map. Mark one peak.
4. Record a rough version of the whole thing in one sitting.
5. Listen the next day. Cut the section you skip in your head.
6. Fix the transitions. Record it again. Call it done. It is not perfect. Neither are you. Ship it.

A density plan

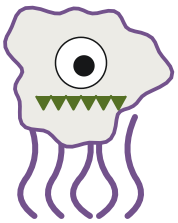
Decide how busy the bass is in each section before you write a note. Most players are too busy in the verse and not busy enough at the peak. It is the musical version of talking through the film and then falling asleep at the ending.

SECTION	DENSITY	REGISTER	NOTES
Intro	Riff alone, or silent	Mid	If you open the song, play it exactly the same every time
Verse	Low	Low	Leave room for the vocal
Pre-chorus	Rising	Climbing	Eighth notes, getting louder
Chorus	Medium, simple	Low	Roots. Let the chorus be big
Solo	Builds	Low to mid	You are the harmony
Breakdown	Very low	Lowest	Long notes, big gaps
Final section	High	Low, then a fill up	Everything you held back

Ex 9.12 **Drone and harmonics intro** `4/4 · drop D · 60 to 90 bpm · let ring`



Low D with bell tones above: D and G, then A and D. With delay, this is a complete intro for a long piece.



BOSS FIGHT

THE HAZE

The last one. It has heard every riff you have written and it wants one more. Bring a piece with a shape. Bring a towel as well.

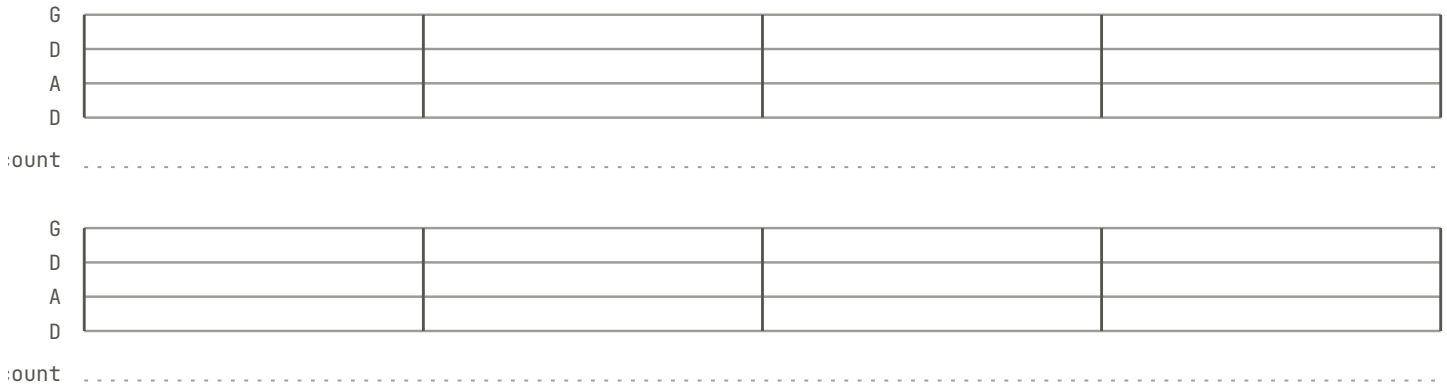
THE CAPSTONE: WRITE A THREE-PART PIECE

- [ ] **Part 1.** A bass-alone intro riff in drop D, in an odd meter you found by counting afterwards
- [ ] **Part 2.** The same riff straightened into 4/4 for a heavier section

- [ ] **Part 3.** A peak where the riff returns an octave lower or in unison
- [ ] Use at least two development tools from the table
- [ ] Draw the form map before recording
- [ ] Record all of it, even badly, start to finish

Write it **Capstone, part 1**

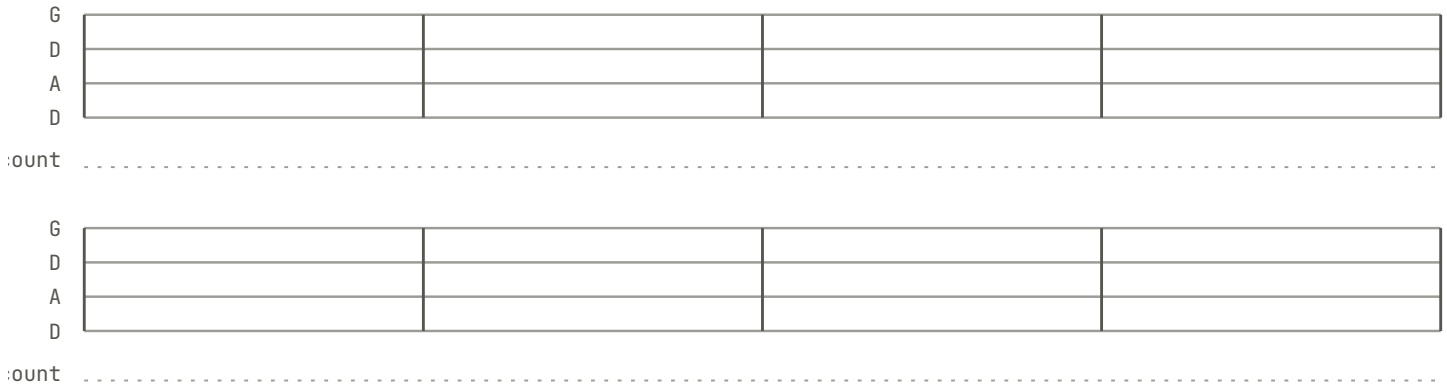
TITLE _____ METER AND GROUPING _____ TEMPO _____



Print this page and pencil it in, or open Tab Lab on the site and save the riff there.

Write it **Capstone, parts 2 and 3**

DEVELOPMENT TOOLS USED _____ EFFECT OR REGISTER CHANGE _____ LENGTH (BARS) _____



Print this page and pencil it in, or open Tab Lab on the site and save the riff there.

PART IV

WORKSHOPS

Six side quests. None is required to beat a boss. All of them make you better at the main game. Think of them as the side rooms with the good loot and the weird smell.

TONE AND GEAR

Good tone is mostly your hands, then the amp settings, then everything you can buy. Start with what costs nothing.

Where and how you pluck

CHANGE	RESULT
Pluck near the bridge	Tight, bright, more attack. Best for fast lines
Pluck over the end of the neck	Big, warm, slightly loose. Good for slow heavy parts
Dig in harder	Growl and fret clank. The sound of aggressive fingerstyle
Pick, near the bridge	Grind and definition. Cuts through distorted guitars
Bridge pickup or both	Midrange and clarity
Neck pickup	Depth and thump
New roundwound strings	Bright and piano-like. Dead strings are dull and warm

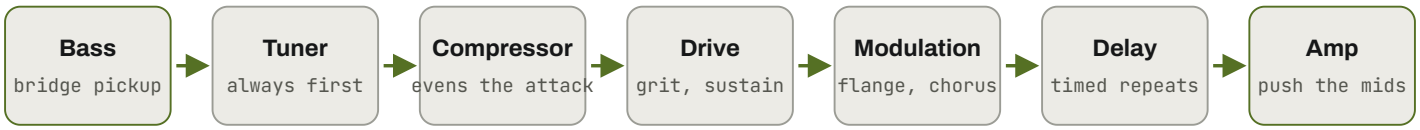
Starting amp settings

Knobs run 0 to 10. These are places to start, not rules.

SOUND	GAIN	BASS	LOW MID	HIGH MID	TREBLE	NOTES
Thrash, fingers	4	5	5	7	6	High mids let fast notes be heard
Grunge, pick	6	6	6	6	5	A little overdrive. Hit hard
Prog, pick	5	5	7	7	6	Lots of midrange. The bass is a lead voice here
Doom	6	7	6	4	4	Dark and thick
Clean	2	5	5	5	6	For harmonics and chords

> **The low-end trap.** Turning the bass knob up makes you louder alone and muddier in a band. Guitars leave room in the low mids. That is where your notes are heard. Crank the bass knob and you become a fart in a sleeping bag: felt by everyone, located by no one.

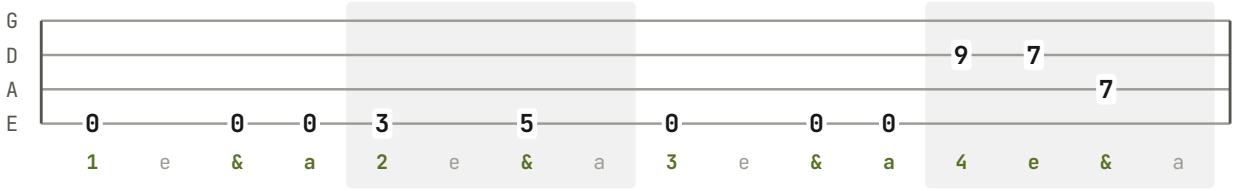
A typical bass signal chain



A compressor early in the chain evens out fast fingerstyle. Keep a clean signal blended under any distortion so the lows stay solid.

Ex T.1 Tone test riff

4/4 · standard tuning · 90 to 130 bpm



Play this while you change one knob at a time. Listen for three things: is the open E clear, do the gallop notes separate, can you hear the high notes.

FRETROT SAYS

Change your strings. I can smell them from here. That grey crust is dead skin, sweat and bar nachos, and it is eating your tone. Delicious, though.

Setup checks that change everything

- [ ] Strings less than a few months old, stretched and in tune
- [ ] Intonation: the note at fret 12 matches the harmonic at fret 12
- [ ] Action low enough to play easily, high enough not to buzz when you dig in
- [ ] Pickups not so close to the strings that notes warble

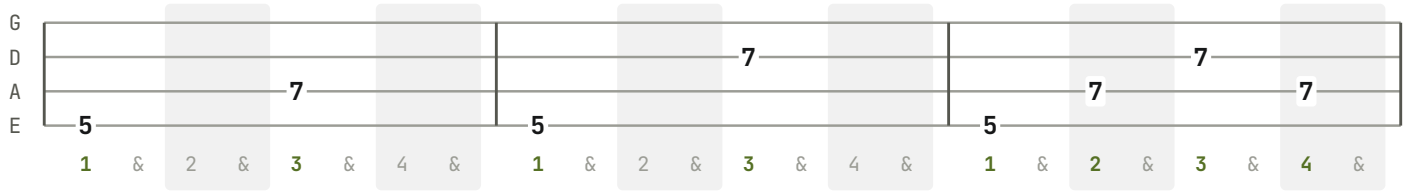
EAR TRAINING

Your ear is the part of you that writes riffs. Train it the same way as your hands: a few minutes, often.

Sing it, then play it

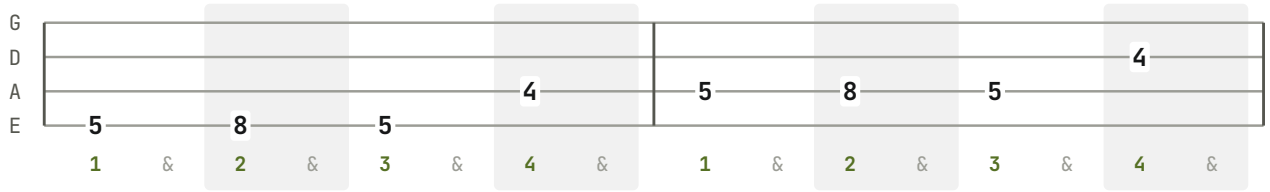
You do not need a good voice. You need to prove you can hear the note before your fingers find it.

Ex E.1 **Root, fifth, octave: sing first** `4/4 · standard tuning · 60 to 80 bpm`



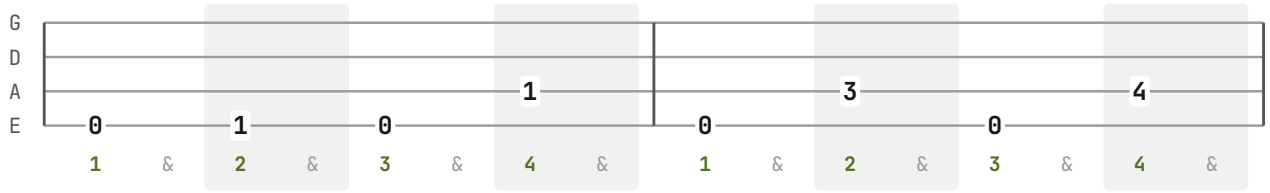
Play the root. Sing the next note before you play it. Then check. Do this from three different roots.

Ex E.2 **Minor third or major third** `4/4 · standard tuning · 60 to 80 bpm`



Root to minor third, root to major third. Close your eyes, have someone play one, and name it. This is the single most useful distinction in music.

Ex E.3 **The colour notes** 4/4 · standard tuning · 60 to 80 bpm



Against the open E: the b2 (F), the b5 (Bb), the b6 (C) and the natural 6 (C#). Learn each as a feeling, not a name.

INTERVAL	HOW TO RECOGNISE IT
Half step (b2)	Two notes grinding against each other
Minor third (b3)	Sad, the start of most minor riffs
Major third (3)	Bright, like the start of a fanfare
Fourth (4)	Hollow and strong, like a call to attention
Tritone (b5)	Wrong on purpose. A siren
Fifth (5)	A power chord played one note at a time
Octave (8)	The same note, higher

THE CLATTER SAYS

Sing it. Nobody is listening. And if they are, they have already heard you practise, so the damage is done.

Working out a riff by ear

1. Hum the riff until you can hum it without the recording.
2. Find the lowest, most repeated note. That is usually the home note.
3. Find the home note on your lowest two strings.
4. Work out the rhythm on that one note first.
5. Add the other notes one at a time. Most will be within three frets of home.
6. Check against the recording at half speed if you can.

Daily ear habits

- [ ] Sing the root of a song while it plays
- [ ] Name one interval a day from the table
- [ ] Work out one short riff by ear each week before looking it up

RHYTHM READING

You can play heavy music for life without reading notes. Reading rhythm is different: it lets you learn riffs faster, write them down, and talk to drummers.

Note lengths

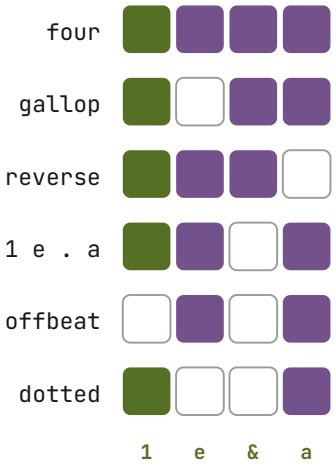
NAME	LENGTH IN 4/4	STEPS ON A SIXTEENTH GRID	COUNT
Whole note	4 beats	16	1 (2 3 4)
Half note	2 beats	8	1 (2)
Quarter note	1 beat	4	1
Eighth note	Half a beat	2	1 &
Sixteenth note	Quarter of a beat	1	1 e & a
Dotted quarter	1 and a half beats	6	1 (& 2)
Dotted eighth	Three quarters of a beat	3	1 (e &)
Eighth-note triplet	A third of a beat	grid of 12	1 & a

A **dot** adds half the note's length again. A **tie** joins two notes into one longer note. A **rest** is silence of the same length.

The six sixteenth-note cells

Almost every rhythm in this book is built from these one-beat cells. Learn to recognise each by sight and by sound.

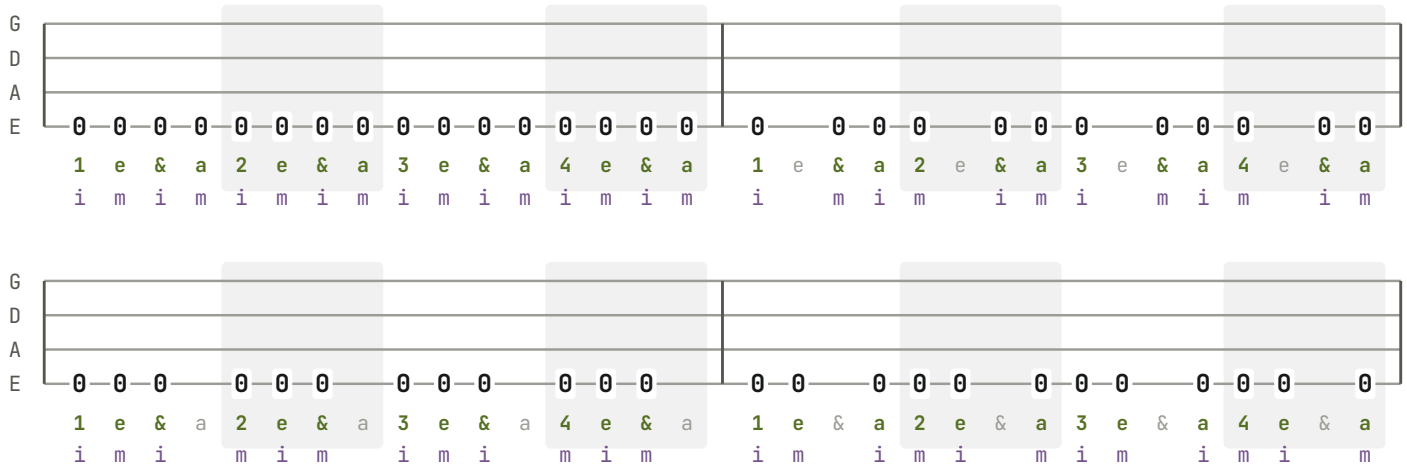
Six one-beat cells



Clap each row four times in a row with a metronome. Then clap two different rows back to back.

Ex R.1 One cell per bar

4/4 · standard tuning · 60 to 100 bpm



Four, gallop, reverse gallop, and the 1-e-a cell. Say the count out loud the first few times.

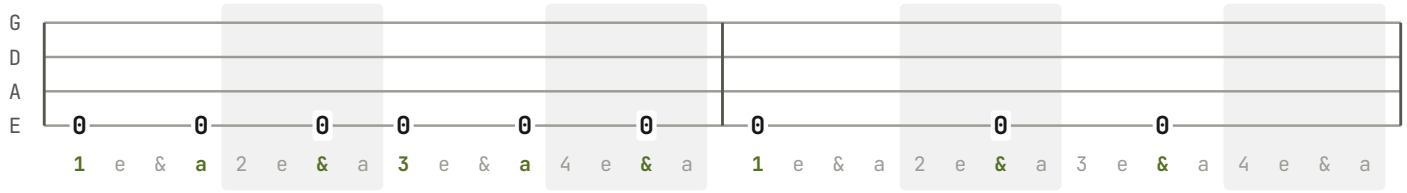
Ex R.2 Mixed cells

4/4 · standard tuning · 60 to 100 bpm



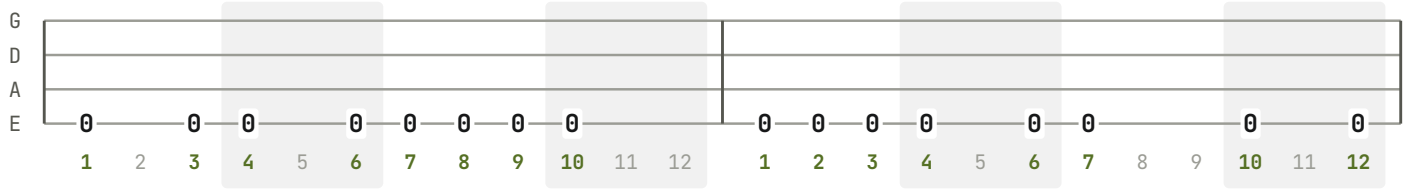
Read ahead one beat at a time. Name each cell before you play it. Bar 2 starts with a rest on the beat.

Ex R.3 **Dotted rhythms** `4/4 · standard tuning · 70 to 110 bpm`



Bar 1 is dotted eighths: three steps each, the 3+3+2 feel. Bar 2 is a dotted quarter, a quarter, and another dotted quarter: six steps, four steps, six steps.

Ex R.4 **Twelve-eight** `12/8 · standard tuning · 150 to 220 (eighths) bpm`



Four big beats, each split in three. Slow blues and a lot of doom live here.

Writing your riffs down

Use the blank staves in the riff journal. Write the count row first, mark which steps have a hit, then add fret numbers. If you can write it, you can remember it and share it.

SLAP AND POP

Not the centre of this style, but ten minutes of slap improves your timing and your muting, and it turns up in heavy music more than you would expect.

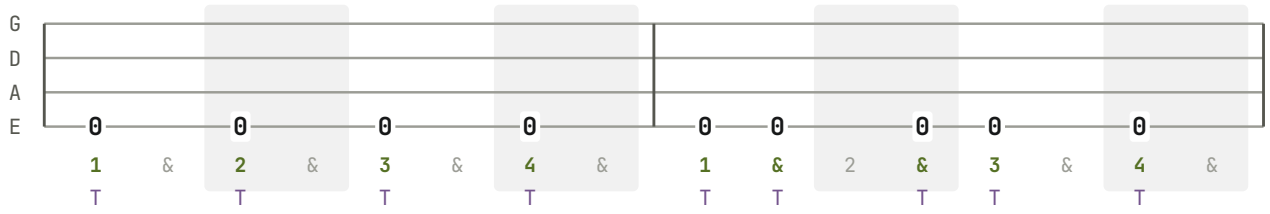
> SNAPJAW SAYS
> *Slapping at a metal rehearsal is like bringing a salad to a barbecue. Do it anyway, do it well, and watch them shut up.*

- **Thumb (T).** Bounce the side of your thumb knuckle off the string where the neck meets the body, like a drumstick. Do not push through.

- **Pop (P).** Hook the index finger under a higher string, pull it away from the neck and let it snap back.
- **Mute everything else.** The fretting hand lies flat across the strings you are not playing.

Ex S.1 Thumb only

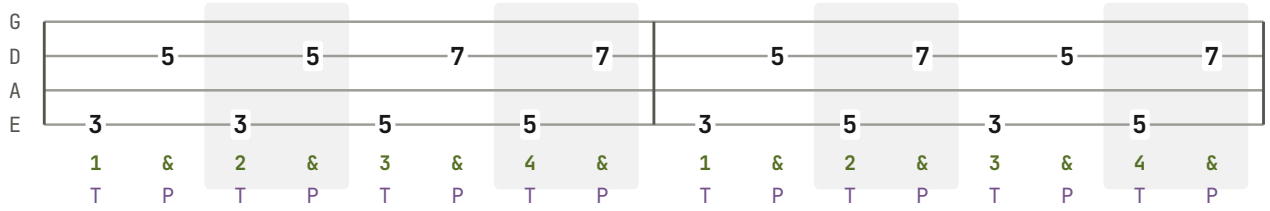
4/4 · standard tuning · 60 to 100 bpm



A clean, ringing thump every time. If it thuds, you are pressing instead of bouncing.

Ex S.2 Slap and pop octaves

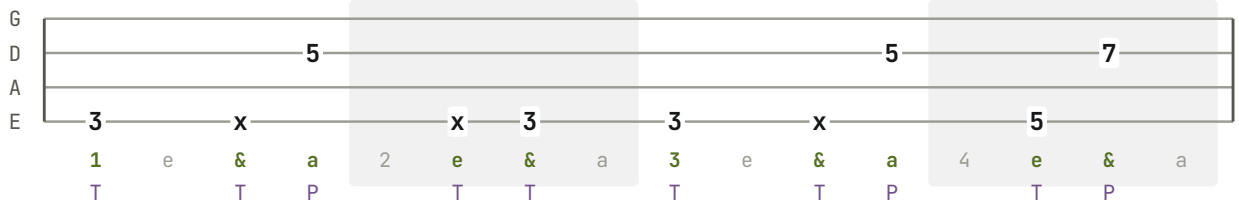
4/4 · standard tuning · 60 to 100 bpm



Thumb the low note, pop the octave. Keep the hand in one place and rotate the forearm like turning a key.

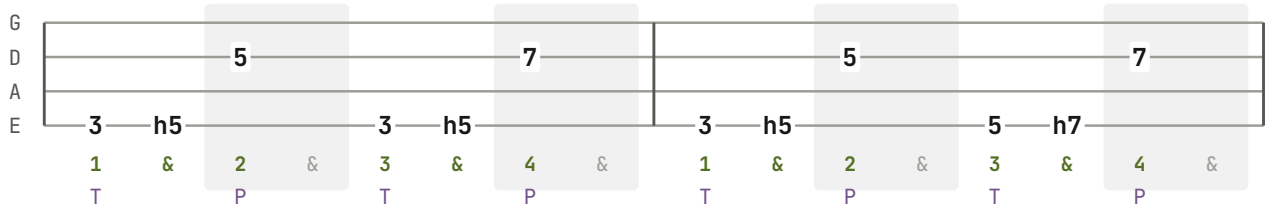
Ex S.3 With dead notes

4/4 · standard tuning · 60 to 90 bpm



The dead notes are thumbed on the muted string. They make the groove.

Ex S.4 **Hammer and pop** 4/4 · standard tuning · 60 to 100 bpm



Thumb, hammer-on, pop. Three notes from two hand movements.

WALKING LINES

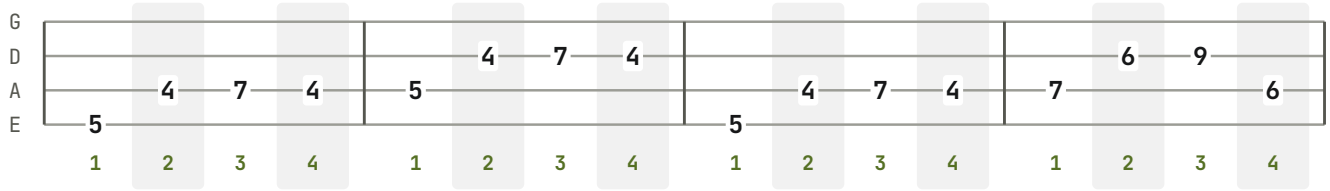
A walking line plays one note on every beat and connects the chords with a moving melody. It is the best chord-tone training there is, and it makes your metal lines smarter.

THE WALKER SAYS

Finally. My chapter. One note per beat, always moving, never stopping. Like a shark, or a toddler holding a permanent marker.

The recipe for each bar: **root** on beat 1, **chord tones** on beats 2 and 3, and on beat 4 an **approach note** one fret above or below the next root.

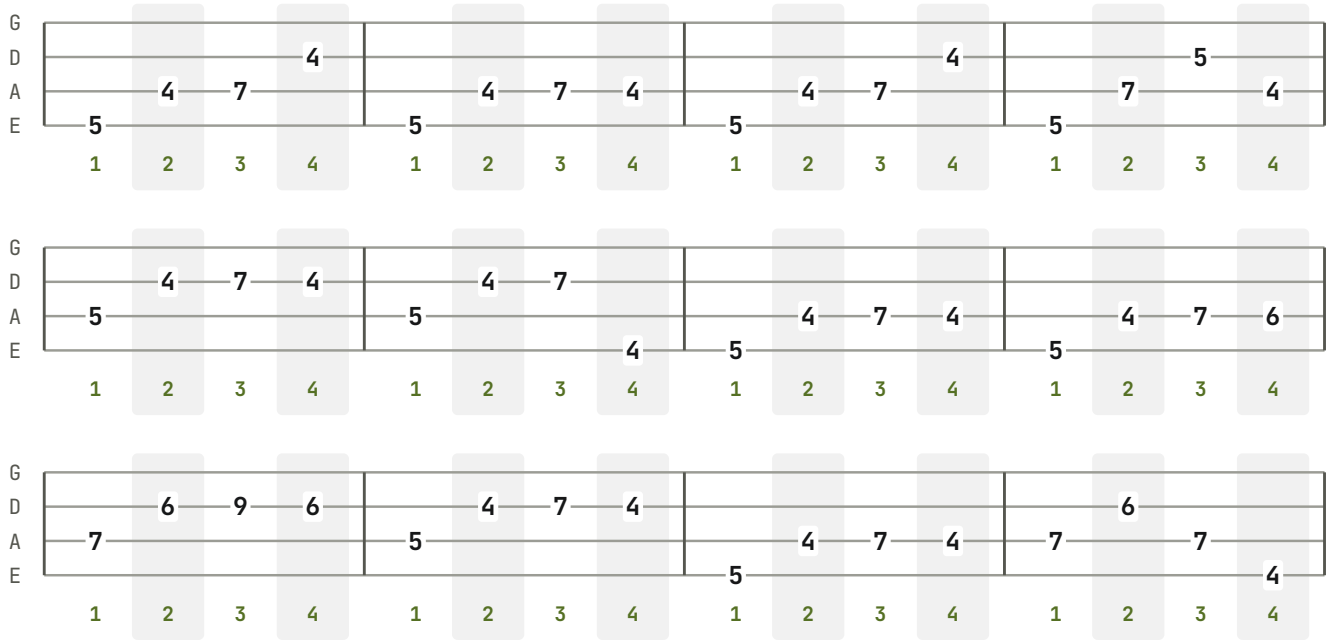
Ex W.1 **Chord tones in quarters** 4/4 · standard tuning · 80 to 120 bpm



A, D, A, E. Each bar goes root, third, fifth, third. The very last note, D#, sits one fret below E: your first approach note.

Ex W.2 Twelve-bar blues in A

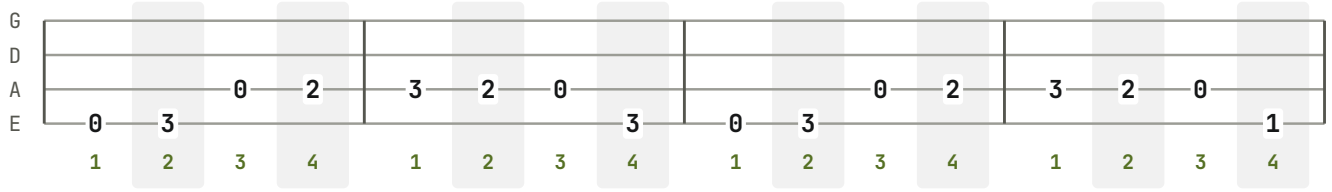
4/4 · standard tuning · 80 to 140 bpm



Four bars of A, two of D, two of A, then E, D, A, E. Watch beat 4 of bars 6, 8 and 12: each is one fret away from the next root.

Ex W.3 Walking under a minor riff

4/4 · standard tuning · 90 to 140 bpm



E minor: up E, G, A, B, then down from C. The final F is one fret above the root it falls to. Use this under a half-time section where the guitars hold chords.

BEAT	CHOICE	WHY
1	Root	Tells everyone which chord it is
2	Third, fifth or a scale step	Sets the direction
3	Another chord tone	Confirms the chord
4	One fret above or below the next root	Pulls the ear forward

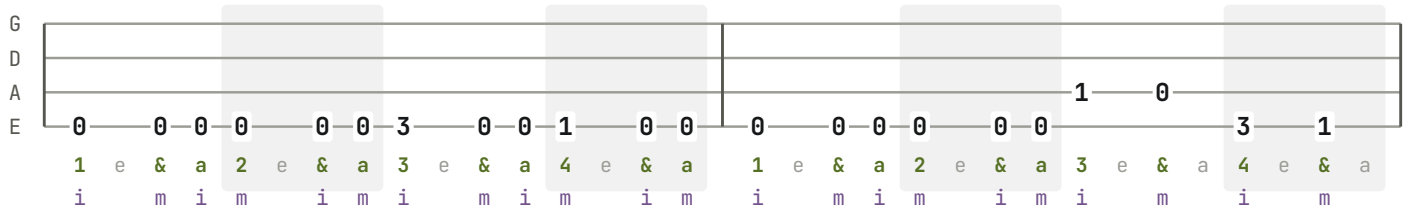
FULL SONGS, WORKED

Two complete original bass parts, taken apart. Each shows how a small number of ideas becomes a whole song.

Song one: a three-minute thrasher in E

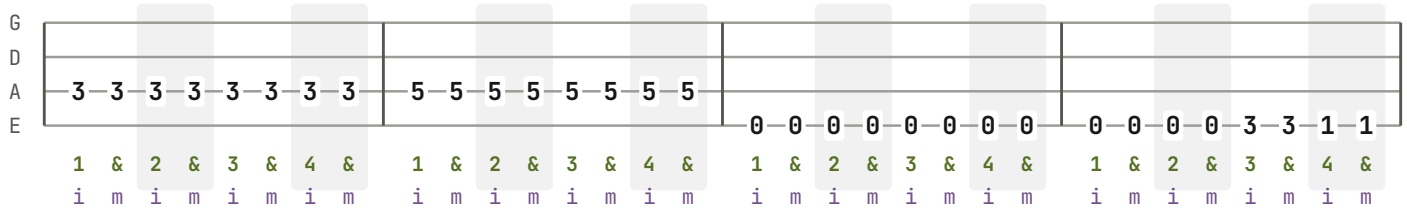
Standard tuning, fingers, 160 bpm. Colour note: F, the b2. Everything is built from the verse riff.

Ex F.1 **Verse riff** `4/4 · standard tuning · 130 to 170 bpm`



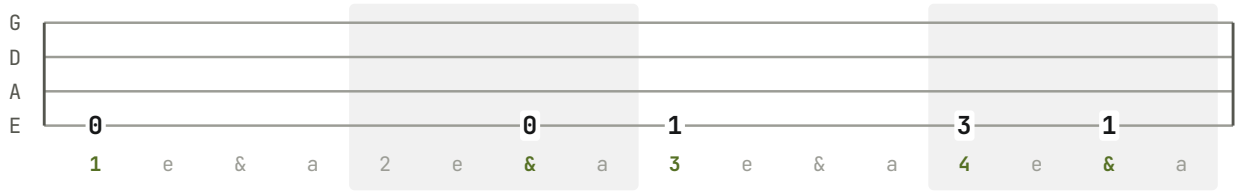
Gallop pedal on E with stabs to G and F. Bar 2 turns around through Bb, A, G, F.

Ex F.2 **Chorus** `4/4 · standard tuning · 130 to 170 bpm`



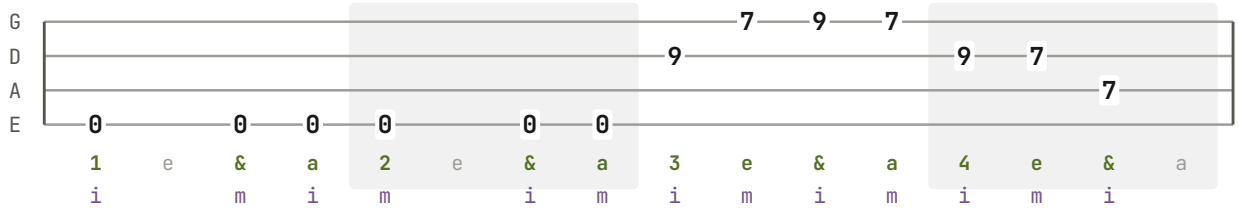
C, D, E in straight eighths. Simpler than the verse on purpose. The last two beats quote the G and F from the verse to tie the sections together.

Ex F.3 **Breakdown** 4/4 · standard tuning · 130 to 170 bpm



The verse notes at a quarter of the density. Half-time drums.

Ex F.4 **Fill into the last chorus** 4/4 · standard tuning · 130 to 170 bpm



B, D, E, D, B, A, E. The only place in the song the bass leaves the low strings, so it counts.

Song one block width = bars · height = intensity



Four ideas, about three minutes.

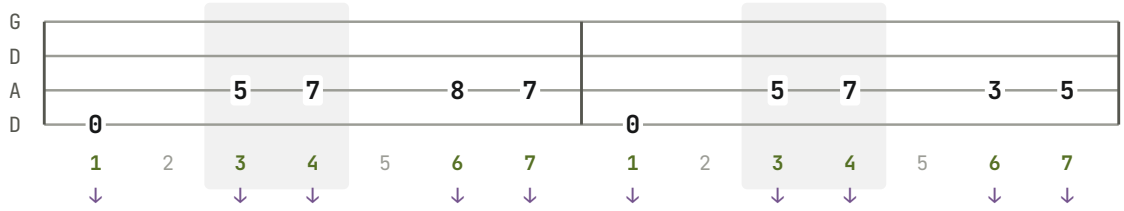
DECISION	REASON
One colour note for the whole song	Makes every section sound related
Chorus simpler than the verse	The vocal needs the space, and it feels bigger
Breakdown reuses verse notes	No new material to learn or remember
One fill, late	It lands because nothing like it came before

Song two: a long drop D piece

Drop D, pick, about 100 bpm. The intro riff came out in seven. It is straightened to four for the heavy section, then thickened with double stops for the peak.

Ex F.5 Intro riff, in seven

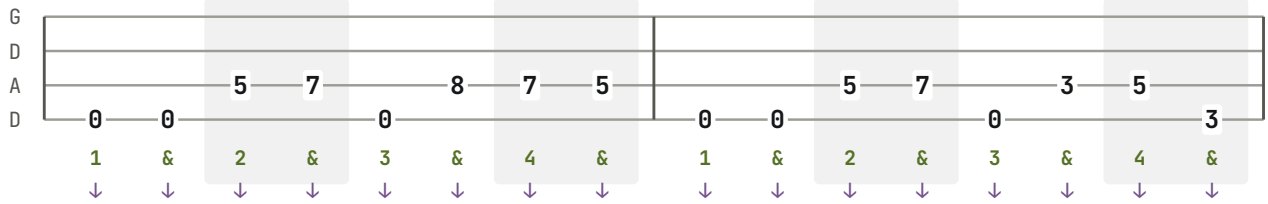
`7/8 · drop D · 170 to 220 (eighths) bpm`



Bass alone. D drone, then D, E, F, E on the A string. The second bar answers with D, E, C, D.

Ex F.6 Heavy section, in four

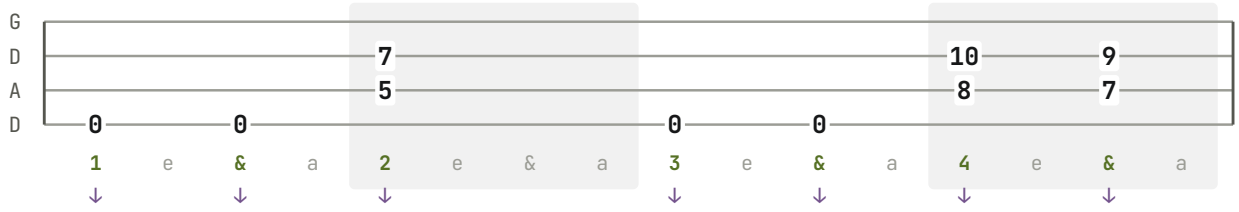
`4/4 · drop D · 90 to 110 bpm`



The same melody filled out to eight eighth notes so it sits in 4/4. The band enters here.

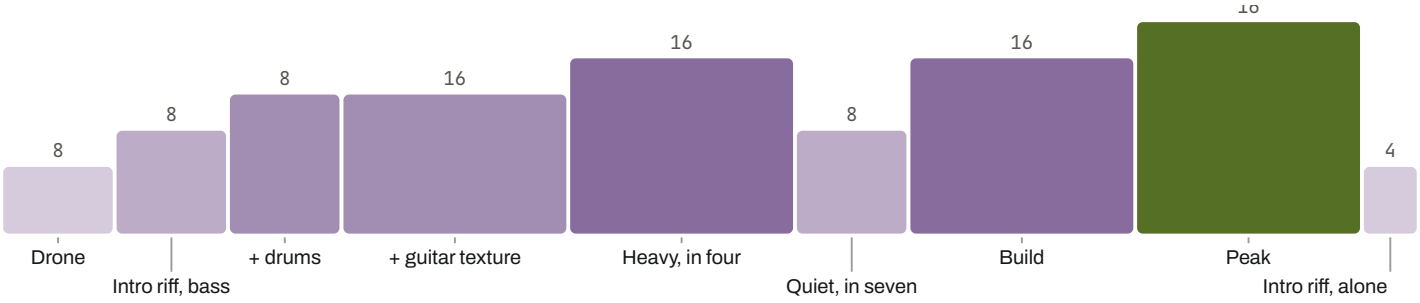
Ex F.7 Peak

`4/4 · drop D · 90 to 110 bpm`



The melody notes D, F and E become power chords over the open D. Same idea, maximum weight.

Song two `block width = bars · height = intensity`



One melody, three treatments, about six minutes. The ending returns to the bass alone.

PRACTICE PLANS

You do not need a plan every day. You need to never spend your ten minutes deciding what to do. Deciding is how ten minutes of practice turns into ten minutes of watching a stranger review a pedal. Pick a row and go. The site's practice builder does the same job with a timer.

Sessions by length

TIME	WARM-UP	TECHNIQUE	THEORY	WRITING	FINISH
10 min	2 min: last finished exercise	6 min: one new exercise			2 min: play anything
20 min	3 min: spider or gallop	7 min: one exercise, with tempo ladder	5 min: one scale or shape, said out loud		5 min: riff journal or jam
30 min	4 min	10 min: two exercises	6 min	7 min: write or develop one riff	3 min: play it for fun
Barely alive	2 min: open strings	5 min: something you already ticked off, slowly			3 min: one riff you love

Weekly rotation

DAY	FOCUS	WHY
1	Technique	Fresh hands
2	Theory	Small, mental, good for a tired day
3	Writing	Uses both
4	Technique	Second pass, add tempo
5	Free play or a song you like	So you still enjoy this

Miss a day and nothing happens. Miss a week and start with the last thing you ticked. Nobody is coming to check. The monsters already assume the worst.

Twelve weeks through the book

WEEKS	PART	GOAL BY THE END
1 to 2	Ch 1	Even eighths at 120, clean spider
3	Ch 2	Notes on E and A strings, pentatonic from memory
4	Ch 3 and The Hollow	One original four-bar riff recorded
5 to 6	Ch 4	Gallop at 120, drop D fifths
7	Ch 5	Triads, E Phrygian, chord tones
8	Ch 6 and The Behemoth	Verse and chorus pair recorded
9 to 10	Ch 7	7/8 picking, drone and hammer, harmonics
11	Ch 8	Five over four against a loop
12	Ch 9 and The Haze	Three-part piece recorded

Twelve weeks is the fast version. Twelve months is also fine. Twelve years is a cry for help. The monsters are not going anywhere.

Tempo log

Write down the tempo where an exercise was clean and relaxed. Saved on this device only.

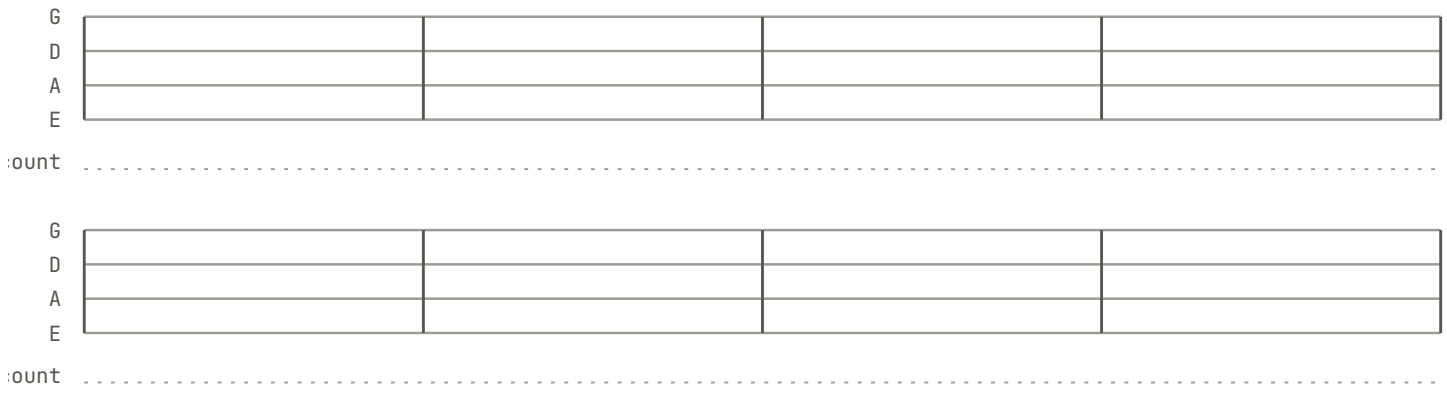
DATE	EXERCISE	CLEAN TEMPO	NOTE TO SELF

Riff journal

Any riff, any time. Date it. Most will be bad. The good ones come from the same place. It is a sewer with the occasional diamond in it. Keep wading.

Write it **Riff journal 1**

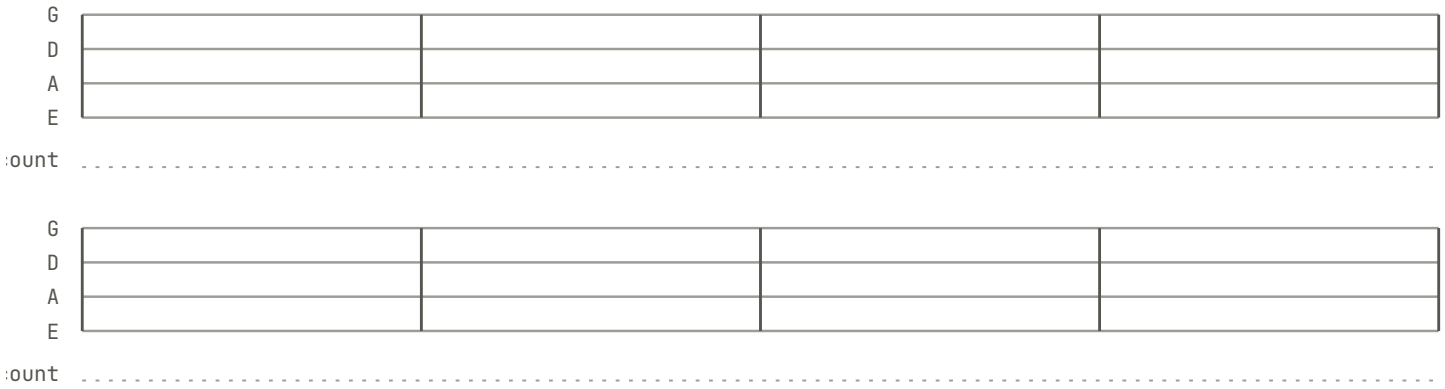
DATE	KEY AND TUNING	TEMPO



Print this page and pencil it in, or open Tab Lab on the site and save the riff there.

Write it Riff journal 2

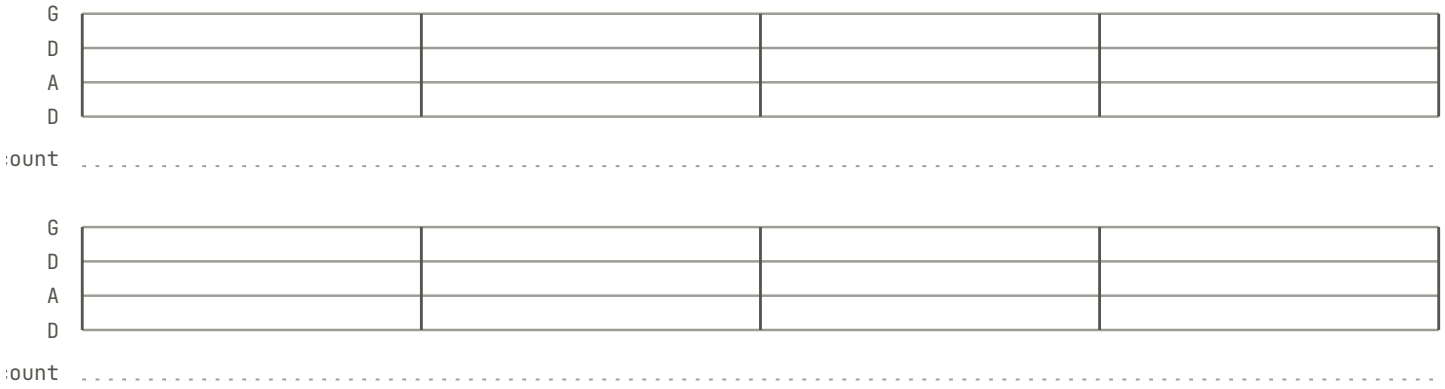
DATE _____ KEY AND TUNING _____ TEMPO _____



Print this page and pencil it in, or open Tab Lab on the site and save the riff there.

Write it Riff journal 3

DATE _____ KEY AND TUNING _____ TEMPO _____

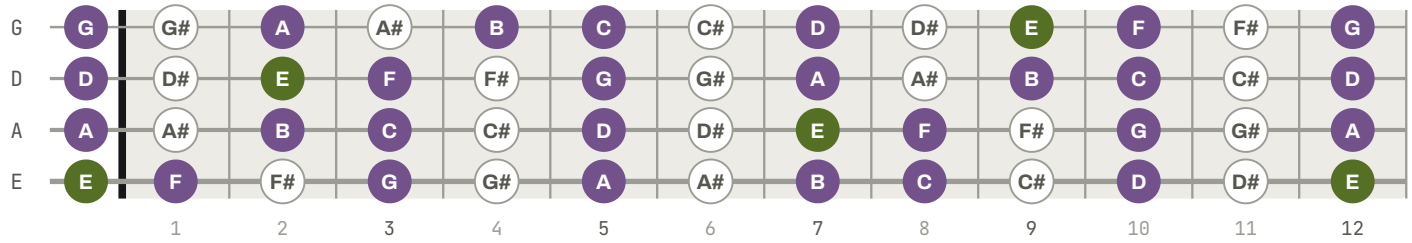


Print this page and pencil it in, or open Tab Lab on the site and save the riff there.

REFERENCE

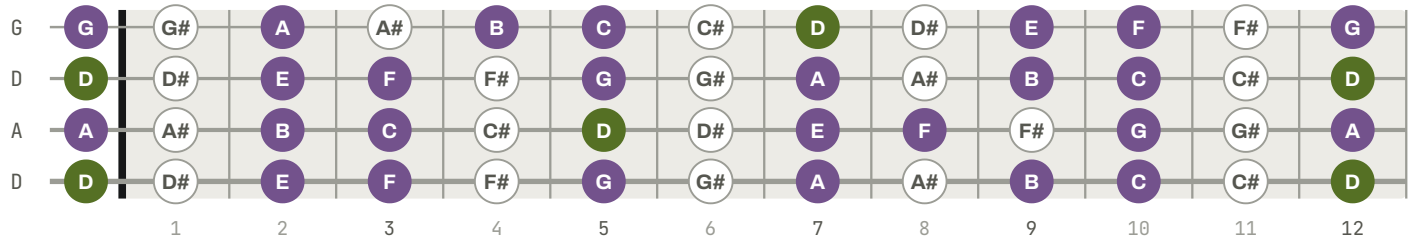
Full fretboard maps

Every note, standard tuning `standard tuning · sharps shown hollow`



Each sharp is also the flat of the note above: F# is Gb, A# is Bb.

Every note, drop D `drop D · sharps shown hollow`



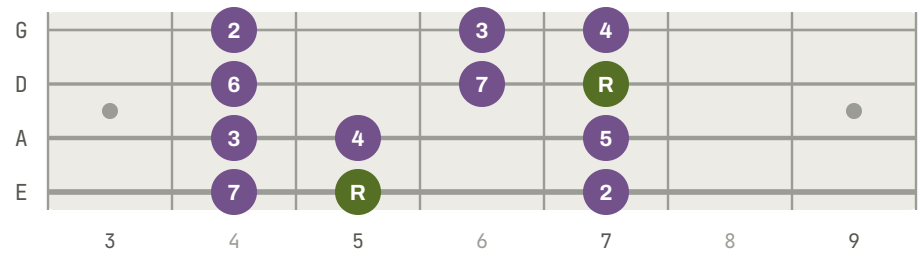
Only the low string moves. Everything on it is two frets higher than you remember.

For half step down tuning, use the standard map. Every shape is identical and every note sounds one fret lower.

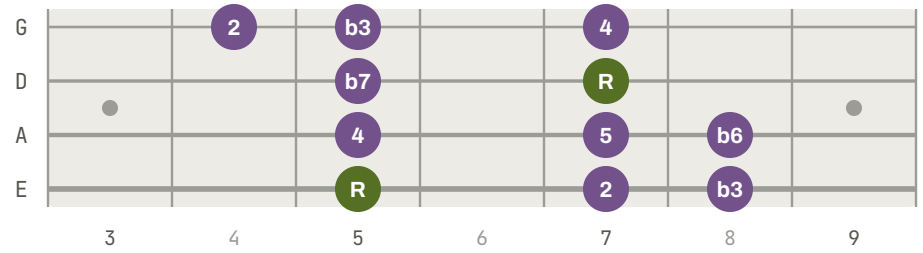
Scale library

All shown from A, around the fifth fret. Slide the whole shape to change key. Labels are scale degrees.

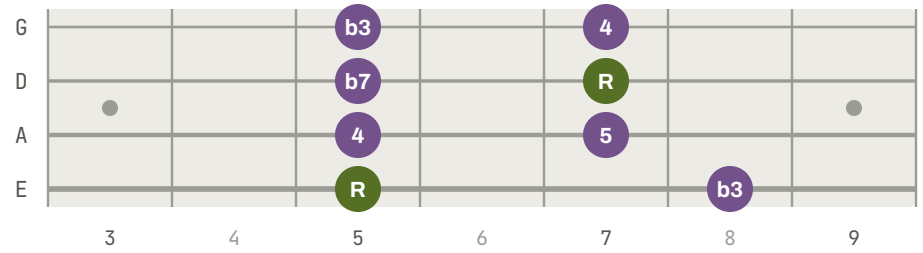
A major R 2 3 4 5 6 7



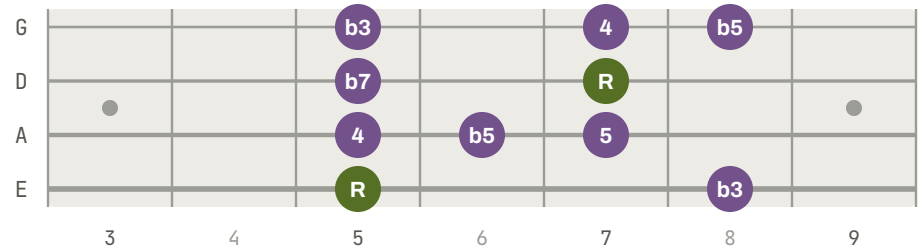
A natural minor R 2 b3 4 5 b6 b7



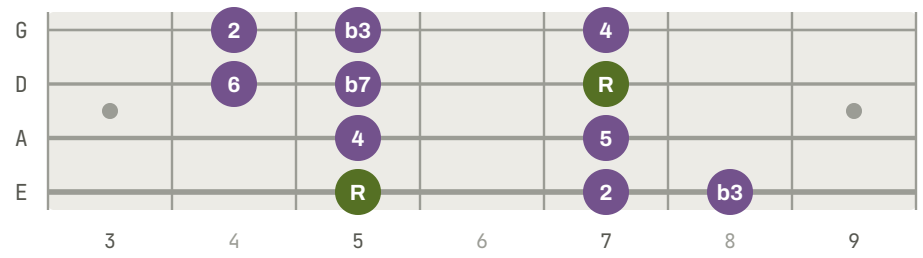
A minor pentatonic R b3 4 5 b7



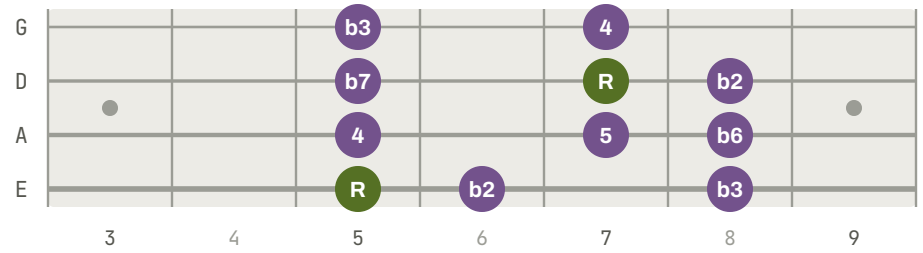
A blues R b3 4 b5 5 b7



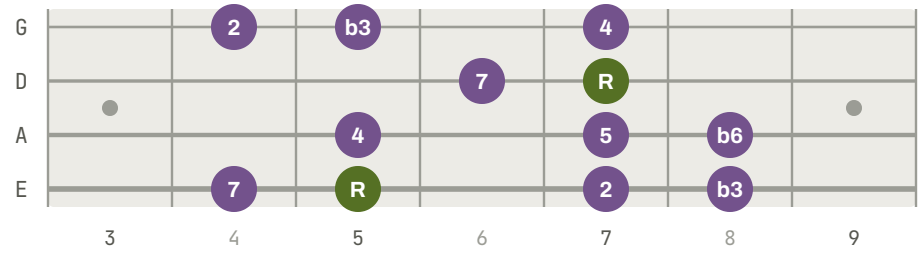
A dorian R 2 b3 4 5 6 b7



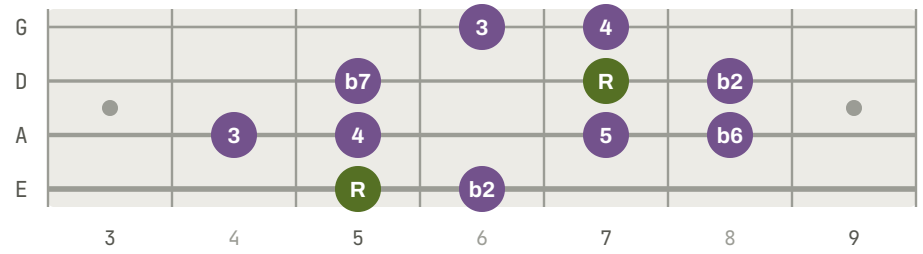
A phrygian R b2 b3 4 5 b6 b7



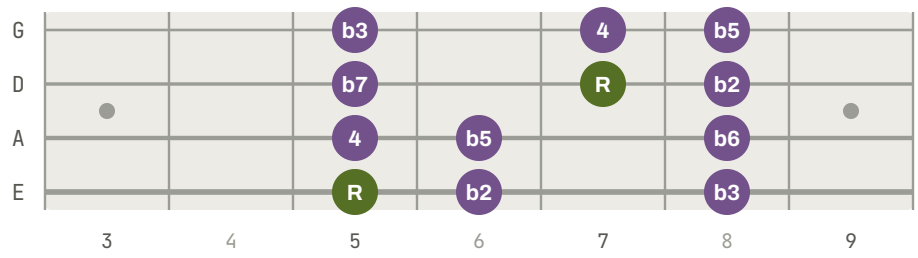
A harmonic minor R 2 b3 4 5 b6 7



A phrygian dominant R b2 3 4 5 b6 b7



A locrian `R b2 b3 4 b5 b6 b7`



Listening homework

Listen to the bass only. One pass per song, with a question in mind. Then go and write something that does the same job with different notes. That is called influence. Using the same notes is called a lawsuit.

PLAYER	SONG	LISTEN FOR
Frank Bello	Anthrax, "Caught in a Mosh"	The bass break, and how hard the fingers hit at that tempo
Frank Bello	Anthrax, "Got the Time"	The bass break. Tone, attack, confidence
Frank Bello	Anthrax, "Indians"	Where the bass leaves the guitar riff and where it comes back
Justin Chancellor	Tool, "Forty Six & 2"	The bass opens the song. Notice how long the riff is allowed to repeat
Justin Chancellor	Tool, "Schism"	The bass carries the main riff while the bar lengths keep shifting
Justin Chancellor	Tool, "Disposition"	Delay as part of the line
Mike Starr	Alice in Chains, "Would?"	The bass states the hook before anything else happens
Mike Starr	Alice in Chains, "Them Bones"	A heavy riff in seven that never sounds clever
Mike Starr	Alice in Chains, "Man in the Box"	How few notes it takes

Glossary

TERM	MEANING
Accent	A note played louder than those around it
Bar	One full cycle of the meter
Chord tone	The root, third or fifth of the current chord
Double stop	Two notes played together
Drone	A note held or repeated under changing notes
Gallop	One eighth and two sixteenths, repeated
Ghost note	A very quiet or pitchless note used for rhythm
Half time	Same tempo, with the backbeat half as often
Meter	How many beats are in a bar and how they group
Mode	A scale with a different note treated as home
Motif	A short idea that gets repeated and changed
Ostinato	A repeating figure
Palm mute	Damping the strings at the bridge with the picking hand
Pedal note	A repeated low note that other notes move against
Polymeter	Two meters at once over a shared pulse
Polyrhythm	Two even pulses dividing the same span
Rest stroke	A pluck that lands on the next string
Root	The note a chord or scale is named after
Tritone	Six frets. The flat fifth

Sources for the player notes

- Guitar World: Frank Bello on the bass players who influenced him
- Wikipedia: Frank Bello
- Bass Player: Justin Chancellor interview
- Premier Guitar: Justin Chancellor rig rundown

- Equipboard: Mike Starr's gear
- Equipboard: Alice in Chains, Facelift gear notes

Every exercise and riff in this workbook is original. None is a transcription.

No basses were harmed in the making of this workbook. Several monsters were.