



RECORDING & RELEASING

RESOURCES

How To Mix Your Music (DIY Mixing Guide)

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This resource explains how to mix music, offering a step-by-step guide and practical techniques to help artists create a clear, balanced, and professional sound.

Why mixing matters

If you are a producer, songwriter, engineer or whatever and you have ever thought, “I feel like I can't hear the vocal over this other element but I reeeeeeally like both elements”, mixing is the tool that will hopefully help demystify how to fix that. However, mixing is not magic, the choices that are made in production, songwriting, engineering, editing and mix preparation are way more important (most of the time) than any trick you can use to force parts together that don't want to fit. Mixing is like doing a puzzle but the person who made it forgot to cut a couple of the pieces perfectly and you have to figure out which ones need a bit of work to make it fit.

Mixing step-by-step

1. Session preparation & file types
2. Critical listening
3. Low-end control
4. Building the mix (a step-by-step)
5. Translation testing (speaker to phone)
6. Feedback
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8. Quality control & pre-master prep
9. Stem printing

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1. Session preparation / file types / edits

Honestly most of the things that make a mix really come together happen at this stage for me. Below is a list of things I make sure are finalised before starting the mix part of the process, or before sending your session/files off for mixing.

If you are mixing someone else's work, make sure they send you the correct files for how you like to work. Some of the specifics you might like to request are:

- What sample rate they used (44.1kHz, 48kHz, 88.2kHz, etc.) I currently use 88.2 as I heard it can be better for edits, but I haven't noticed a significant improvement yet, most people use 44.1 or 48 and they work just fine.
- If the person doesn't use the same DAW (Digital Audio Workstation e.g. Pro Tools, Ableton, Logic, Cubase, Garage Band) that you use, get them to send you all of the audio files/tracks consolidated to the same start and finish time, clearly labelled and separated into groups of instruments and song by song. As well as a blank midi track exported so you can import the tempo/bpm information from it for each track.
- Any effects that are key to the production should be committed/included as "wet" versions of the tracks for reference, ask for screenshots if you are struggling to emulate these effects but want to modify them a bit in mixing.
- Most of the time you should be able to use the "import" function of your DAW instead of just drag and dropping files, and it will automatically convert the files to your session's preferred file type (WAV, AIFF, etc.), bit depth (16/24/32 etc.) and sample rate.
- Ask for a rough mix of each song to be included so you have a starting point to build from. Have it in the session so you can reference it.
- If there is any element you feel is missing from the rough mix, make sure you reach out and ask about it. Sometimes people don't realise they haven't included something by accident, sometimes it's a plugin they didn't think was part of the production.

From this point regardless of whether you have produced/engineered the song, or are mixing for someone else - the below are some things you should prepare before mixing:

- Commit all software synths, amp sims, and triggered instruments so you are working with mostly committed audio outside of your time-based effects.
- Name all tracks clearly, and colour code everything so you can easily see what you are working on at a glance.
- If the vocals are out of tune, and singing them again is not possible, I like to tune them. From a technical perspective, it will affect what type of time-based effects you can use, how it clashes frequency wise in your mix, and how harsh the vocal is on the ear. Melodyne is a great tool for vocal tuning and time-based manipulation, however there are free versions of this type of software in most of the DAWs.
- If instruments are noticeably out of time or out of tune, and replaying them is not possible, I always edit them. Again all of these things will affect your mix and how well it gels together.
- Make sure all of your edits are finalised. You shouldn't be going back through vocal/instrument edits while you are trying to get the mix right.

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- After edits are completed, check every track in solo for any issues you've created or missed. Start with instruments first and then work through vocals. Common issues include bad fades between files, clicks and pops in vocals, mouth noise in vocals, artifacts from something that's been stretched/tuned too much, unwanted/obnoxious noise from software or hardware synths/amps. Fix those things.
- Consolidate all of your files to the same start and finish points.
- Create busses/folders/aux tracks for each group of instruments (drums, guitars, synths, bass, vocals, fx, etc.) so you can apply global processing to groups of instruments and make broad brush stroke adjustments. This will save a lot of time later.
- Check for phase relationships between microphones, kick/snare samples and bass instruments. Do this by flipping a phase button on any plugin that has one while soloing the tracks you are checking against each other.
- Create a mix bus/master bus so you can process your whole mix with some broad processing and so you can monitor your overall level.
- Make sure that your mix bus has a bit of headroom as a start point. A lot of people say -6db is a good place to start. To achieve this, group all of your tracks together and pull them all back until the mix bus is reading the target number. If you didn't realise your overall output was actually digitally clipping and it loses a bit of vibe after making this adjustment, I would suggest using a clipper plugin on your mix bus and pulling the output down to minus 6 after this stage so any potential processing you use after this has headroom.
- Similarly, check your individual tracks are not clipping, unless purposefully clipped.
- Set up any effects/returns you might use/like to use and have them ready to go so you can move quickly.

2. Critical listening

After all the prep work is done and before touching any processing:

- Identify the focus of each section, most of the time it's a vocal but sometimes a lead instrument will need to be the star in a section.
- Listen to the rough balance and write down any glaring issues, such as:
 - Frequency masking (instruments that share similar frequency ranges fighting for space)
 - Vocal getting buried by other instruments
 - Drums not having enough/too much power
 - Effects muddying up sections
 - Top end/hi frequency clarity issues
 - Low end clarity issues
 - Kick drum and bass instrument separation issues
 - Harsh resonances, overly sibilant "S" sounds etc.
- If there are any references, familiarise yourself with them and what the focus of those mixes are.

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3. Low-end control

Some good ways to control low end include:

- Filter sub out of instruments that don't need it. What do you need sub 50Hz in a vocal for? Probably nothing, let's be honest. You are gonna gain so much headroom if you filter those types of frequencies out of everything you don't need them in. Don't overdo it though.
- Control the low end of your bass instruments with some sort of multiband compressor/limiter/processor to create a more consistent low end. You can use YouTube to find settings other people use and copy those, then adjust until it sounds right. There's a thousand ways to do this type of thing, and it can change song to song.
- Check phase between bass instruments if you are stacking bass tracks (808 and sub synth or kick and kick sample etc.). If you get this wrong sometimes your bass can sound hollow.
- My favourite way to create a nice relationship between the bass and kick is by using pro Q4/track spacer/soothe to duck the dominant low end frequencies in the bass whenever the kick drum hits using the side chain in any of those plugins. It's a relatively new process to me but gets you way more headroom than other ways of doing it with way less audible impact on the sound of the bass.
- Some older ways of achieving this include:
 - a. Side chaining the bass to a compressor. Very audible and sometimes desirable, especially in dance music.
 - b. Using EQ to separate the bass and kick by boosting and cutting opposite frequencies on graphic EQ plugins on each group of instruments. Also not ideal but sometimes cool if you are going for a more classic aesthetic with your mix.

4. Building the mix step-by-step

- In my opinion, you should start with the rough mix, or if you don't have the original session at least as close to as possible and then move from there. You may completely miss the point of the production if you start from scratch/with the faders all the way down.
- Next, make any group/bus-based volume adjustments (overall the guitars are too quiet, overall the backing vocals are too quiet, overall the drums are too loud etc).
- Next, make individual channel volume adjustments (left guitar too quiet, tambourine too loud etc.)
- Next, make sure the panning is right. Kick, snare, vocal, bass and sometimes lead instruments are usually the only instruments you want to stay mostly at the centre of your mix, everything else should be somewhere else in the stereo image. Try not to stack too many instruments on top of each other in general. Don't overdo this though, you don't want panning to be distracting.

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- Next, I add my standard mix bus plugins that are appropriate for whatever genre I'm working in, usually that consists of the following:
 - a. Some sort of console emulation for a bit of saturation/colour, I usually push into this using the drive/gain function of the plugin. Don't go too wild, just a little bit, it all adds up.
 - b. Some sort of bus compressor. I like the Waves SSL one but I'm sure there are good free ones out there. Usually I do about 4db at the loudest point of the song. But if you aren't super confident with compression, start way lower, 1-2db at the loudest point. It helps with glue and consistent dynamics.
 - c. Some sort of pulltec/analogue emulation EQ plugin for broad brush strokes EQ. Usually I do a bit of 60 Hz boost and 8kHz boost 2-3 db
 - d. At this point, if you aren't super confident with mixing I would leave the next couple of plugins out of my rotation until you are more confident in using the tools.
 - e. Some sort of clipping plugin, everything's clipped these days. Make sure the amount you use is barely audible, just enough to make it feel louder and give you more overall headroom to hopefully push your overall mix louder by shaving off some transients.
 - f. Some sort of multiband limiter, mostly focusing on 1-2db of low end control
 - g. Some sort of limiter/maximiser for loudness for glue and loudness
- Next, I address any issues I can't fix by just turning a fader up or down, like the lead guitar fighting with the lead vocal in the chorus etc. These are usually created by frequency masking or poor stereo image choices. Fix those by spacing your panning out more for supportive instruments, using opposite EQ moves on tracks in similar frequency regions or using sidechain multiband processors like Pro Q4, Soothe or Track Spacer to do that momentarily.
- Next, I add any parallel compression I might want to try. Usually it's just parallel drum compression. This gives a lot of attack and movement to instruments like drums while still maintaining some of the original character of the drums. Usually this adds a bit of volume so I adjust accordingly.
- Next, I add plugins to control the vocal with some basic processing, compression (1176), EQ (neve 1073), and de-essing (whatever) to control the sibilance of the vocal and then a multiband to control inconsistent tonal issues.

TAKE A 5-10 MINUTE BREAK AT THIS POINT

- At this point your mix should fit together top to bottom (frequency) and side to side (panning) and you should be able to hear every instrument.
- Next, add time/pitch-based effects like reverbs, delays and chorus to anything that feels like it needs more dimension. This step can also spread instruments/vocals out of the centre of the stereo image. It can also help instruments/vocals blend into a mix better without turning them down.

TAKE A 5-10 MINUTE BREAK AT THIS POINT

- Listen to some reference(s) and then come back to your mix and see what is falling short. What could be brighter, what could hit harder, what could have more attack, what could have less attack, what type of effects are on what instruments etc.
- Then, make any adjustments that feel like they could help the overall presentation of your mix. I usually notice my mixes aren't as bright as some other records at this point and I will make some broad EQ moves on either my mix bus or my group busses or both to bring a bit more brightness out of the track. Sometimes this step brings out some harshness I don't like in a particular instrument or vocal so I'll go through and fix that on either the group or the individual track.

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- Next I will do an automation pass on the instruments, making sure the individual instruments stay punchy in the chorus/loudest parts of the song and not too overwhelming in the verse. Usually I'm focusing on things with a lot of attack like kicks and snares for this step.
- Then I do an automation pass on the vocal and any lead instruments that are supposed to be the focus of a particular section. Try not to add too much dynamic variation with automation, the production, arrangement and songwriting should be doing that for you.

TAKE A 5-10 MINUTE BREAK AT THIS POINT

- Make any final adjustments and then bounce it to listen on some different systems.

5. Translation testing

Sure your mix sounds good on your speakers in your room, but does it sound good on a phone speaker, or airpods, or in a Toyota Corolla? That's what actually matters. Mastering should help with this endeavor quite a bit but you should aim to get the mix sounding at least comparable to other music on every system you have access to. Good places to check are:

- Airpods. I heard these are the most sold headphones of all time. If you want people to like your mix it has to be good on Airpods.
- Listen to it out of a phone's speakers. It's the worst possible scenario and if it translates there it'll likely be good everywhere. If the bass instruments don't have enough low mid, they won't be audible on a phone. Good to check for that.
- A car. So many people only listen to music in a car, so it's worth at least checking in whatever is available to you.
- Some sort of portable bluetooth speaker. Most of these are mono so they are also pretty rubbish at representing anything that has a lot of stereo information. If you use too many widening plugins your mix can sound really bad on this type of system, so it's definitely worth checking.

After these listens, jump back into the mix and adjust anything you need to. You will never get it absolutely perfect on every system but your goal is to get all of them as close as possible.

6. Feedback

If you are mixing your own music, ask some friends/family/your team to listen and give you feedback on the mix. If you are working with an artist/producer and are mixing for them, you are going to have to get feedback.

- Make sure your mix has some sort of loudness processing or "faux mastering plugin" on it when getting feedback. A lot of people's first note will otherwise be, "it feels like it doesn't hit as hard as XYZ" or "it's really quiet". Don't push it too hard though as it can easily ruin a mix if you overdo loudness processing.
- Undoubtedly you have missed something. Don't let your ego get in the way of useful feedback. Take it on, synthesise it and fix the things that will help the production shine!

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7. Sequencing (for albums or EPs)

When mixing songs as part of an album or EP make sure you:

- Maintain consistent tonal balance between songs.
- Ensure similar vocal levels.
- Match perceived loudness.
- Consider song transitions.
- The project should feel like one cohesive listening experience.

8. Quality control & pre-Master prep

Before exporting, double check everything!!!! You have probably changed a bunch of stuff since that pre-mix stage and you might have created some issues along the way. So make sure:

- There is no clipping anywhere in the session unless it's part of the sound you are going for (hip hop etc.). In that case, give your mastering engineer a heads up.
- Check start and end of each song for fades.
- Listen for clicks or glitches
- Avoid heavy limiting unless it's part of the sound, also inform the mastering engineer if so.
- Take off any "faux mastering" plugins you used for the feedback process.
- Pull back your mix bus output by 6db to give your mastering engineer headroom to work with.

9. Stem printing

Stems are basically groups of tracks printed down to stereo tracks. Not every artist requires stems, however printing stems as soon as you are done with the mix makes it way easier to provide them for remixes, and live performances.

Typical stem groups are:

- Drums
- Percussion
- Bass
- Sub bass
- Guitar
- Lead guitar
- Synth
- Piano
- Strings
- Lead Vocal
- Background Vocals
- FX / Ambience
- Click

If you are really trying to future proof yourself you can also make additional versions of the mix including:

- Instrumental
- A cappella
- Clean / TV version (if needed)

Looking for more resources?
Find more resources like this
one at musicnsw.com/resources

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