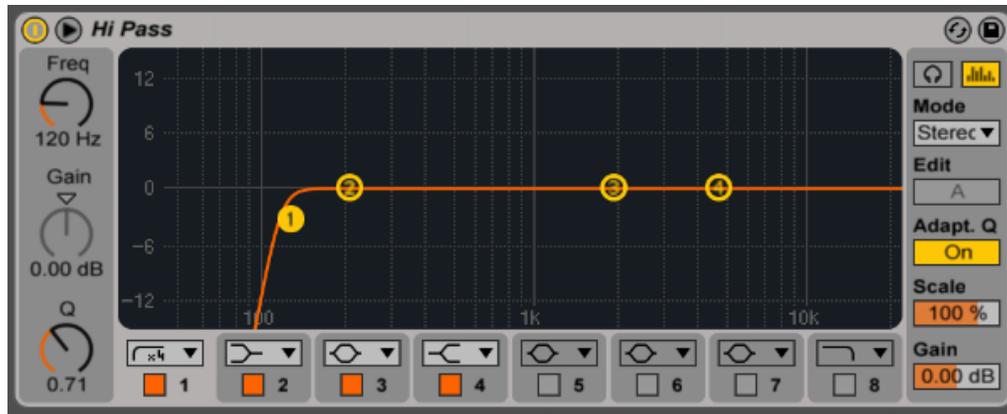# Make an EP in 30 Days
Ableton Course

Day 6

Learn the 4 essential effects
Compression, EQ, Reverb & Delay

EQ

We all know that EQ is simply the
raising & lowering the volume
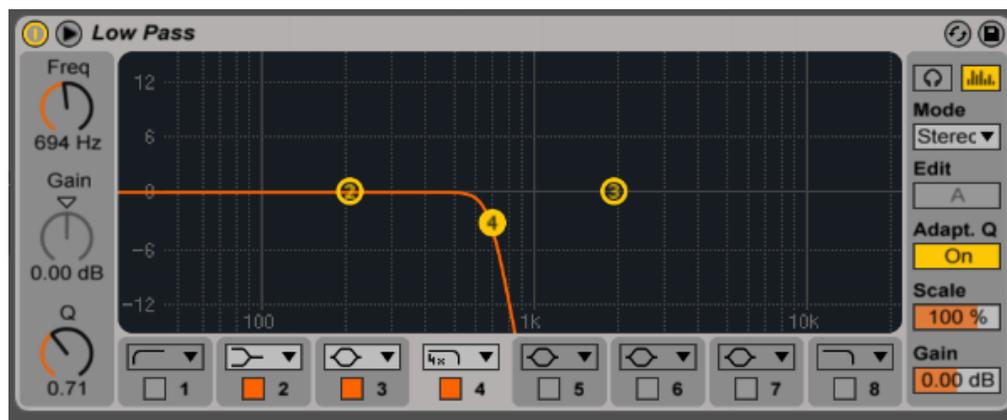of specific frequencies.

The challenge is learning which frequencies
to raise & lower...and when.
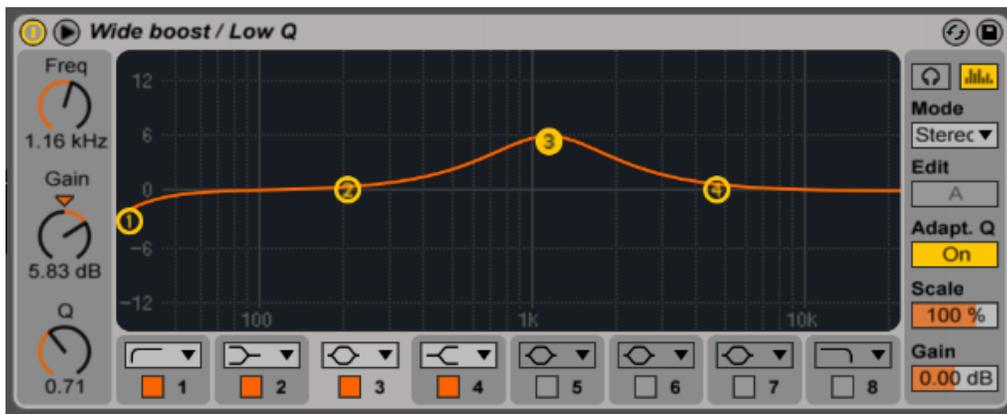
Hi Pass EQ

Filtering out the lows on instruments that are not kick or bass will make for a much cleaner low end. Also important to use on Send/Returns (more of those in a later lesson).
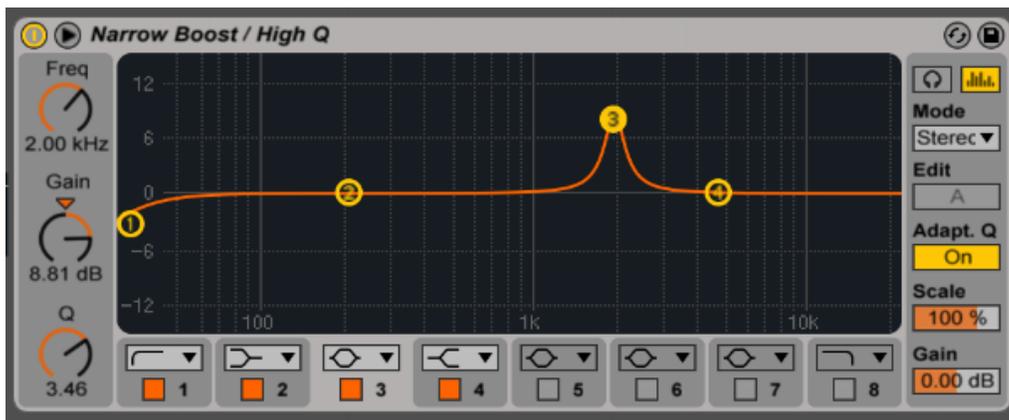
Low Pass EQ

The low pass does the opposite of the high pass. It removes high frequencies. This is good for giving room to the hi hats or for darkening a sound (like a bass or a kick)

Wide boost

Narrow boost

Boosting is one way to enhance a certain frequency & the Q adjusts the width of the frequency. Keep in mind that boosting adds a type of distortion which can be pleasant but can quickly become harsh.

Attenuating
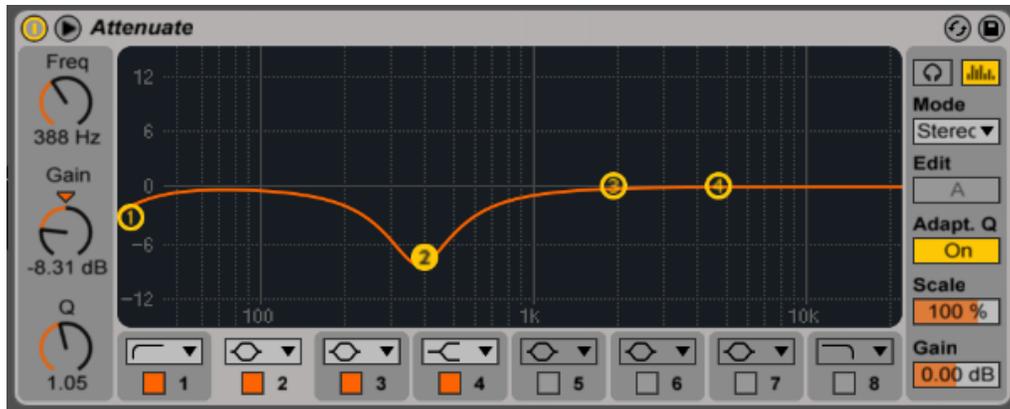
Attenuating (or lowering) a frequency is the best way to clean up your instruments & mix. It generally sounds better to lower the frequencies that aren't needed than to boost the frequency you think needs to be enhanced. This will give a more natural sound

Full View
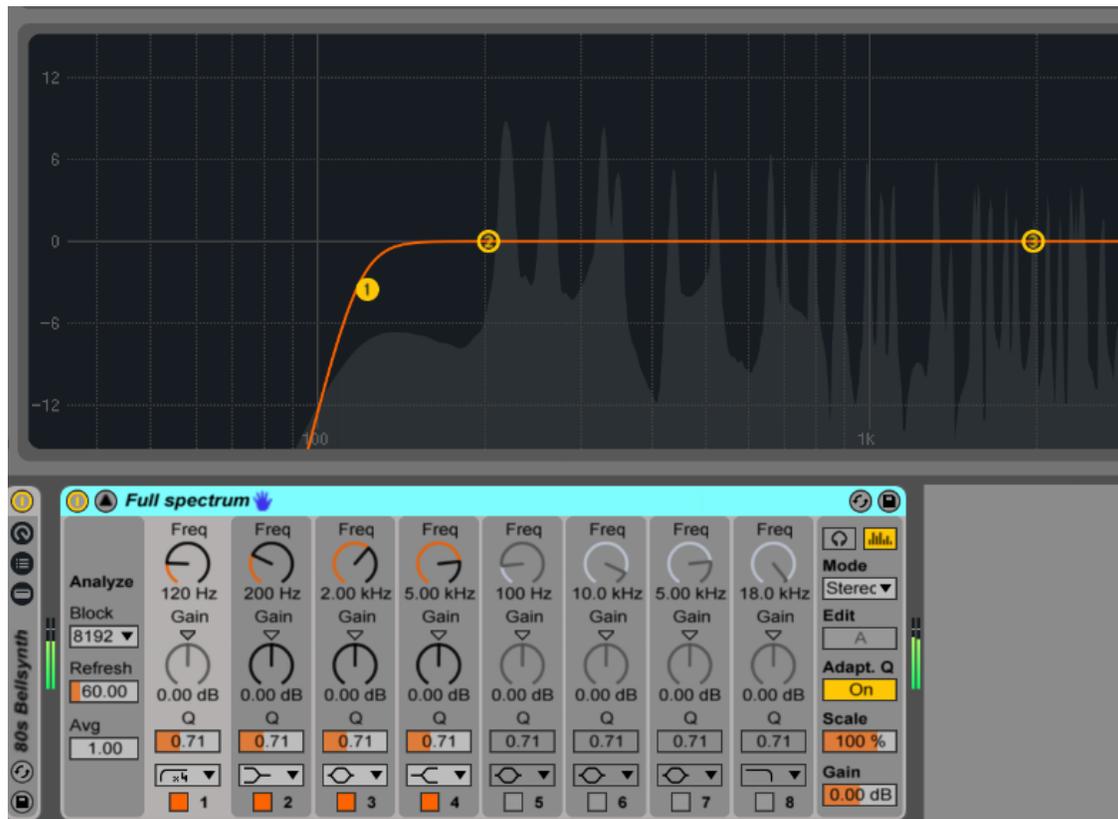
By Clicking the arrow at the top of the EQ device, you get a bigger screen to see the frequency spectrum & dial in your EQs.

Left/Right EQing
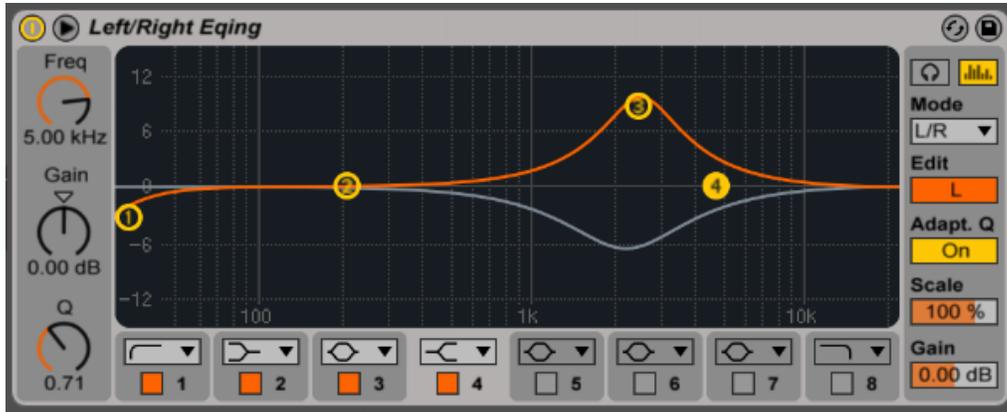
This feature allows you to mix the left and right sides independently

Mid/Side EQing
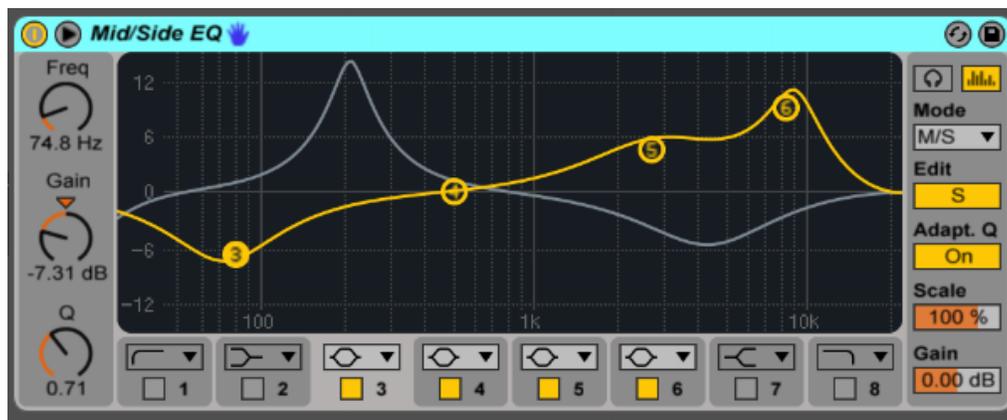
This feature allows you to EQ what is in the middle independently of what is on the sides.

I don't use these very often, but can come in handy when a sound on the left or right side is too loud or quiet.

Compression

Compression is an extremely important effect & highly misunderstood. Even those who understand it tend to misuse it.

Compression is used for the following reasons:

To even out volume levels
Raise levels that are too low
Lower levels that are too high
To "harden" a soft sound
To enhance the transient of a sound

The Compression Technique

This trick works for almost any sound when trying to get the right compression settings.

1. Bring the Threshold all the way down
2. Turn the Ratio all the way up
3. Put the release at about 250-350
4. Set Attack to low

The Compressor should look like this

5. Now raise the Attack until you hear the "snap" at the beginning of the sound. More attack means a thicker transient. Ignore how crappy the sound is for right now.

6.   Adjust the Release time until the snap sounds right to you. This is still an extreme setting, but we will get there.

7.   Slowly raise the Threshold until the effect starts sounding more reasonable.

8.   Finally lower the Ratio until your sound is where you want it. Turn the effect off and on to hear the difference you are making.

When it sounds right, it usually is right.

Sidechain Compression

Sidechain Compression was originally popularized on the radio. It allowed a DJ to talk over the music in a way where the music would come down in volume automatically when the DJ spoke & then return to normal volume when he stopped.

In music production, Sidechain compression can be used in the following ways:

1.   To create a rhythmic groove in a long sound like pads or reverb/delay effected sounds while giving space for a kick drum or other important sound. This is created by more extreme settings.

2.   To create a very noticeable pumping sound the same process is applied to several sounds like loops, percussion, hi hats, leads etc.

3.   To keep the lower kick and bass frequencies from fighting with each other when they play at the same time.

4.   As a mixing tool to help an important sound come in more clearly by pushing the volume down on less important sounds. Great way to make vocals come through a mix or get certain drums sounding sharper & cleaner. This can be subtle or more extreme.

Parallel Compression

Also known as "New York" Compression, this is a secret weapon to getting bigger & fuller sound in your mix.

It's a simple process of mixing the compressed version of a sound with the original signal. Giving you a beefier sound without sacrificing the transients.

Creating Parallel Compression is easy to do & can be done is 2 ways:

1. By creating a return track, dropping in a compressor effect with the following settings

Attack as low as possible
Decay around 500 ms
Ratio 2:1 to 3:1
Threshold deep around -50db
Wet/Dry set to 100%

Now you can turn up the corresponding send on any track in your project to add Parallel Compression

2. Drop a compressor on the track you want to effect and use the following settings.

Attack as low as possible
Decay around 500 ms
Ratio 2:1 to 3:1
Threshold deep around -50db
Wet/Dry set to 50% (which you can adjust to your taste)
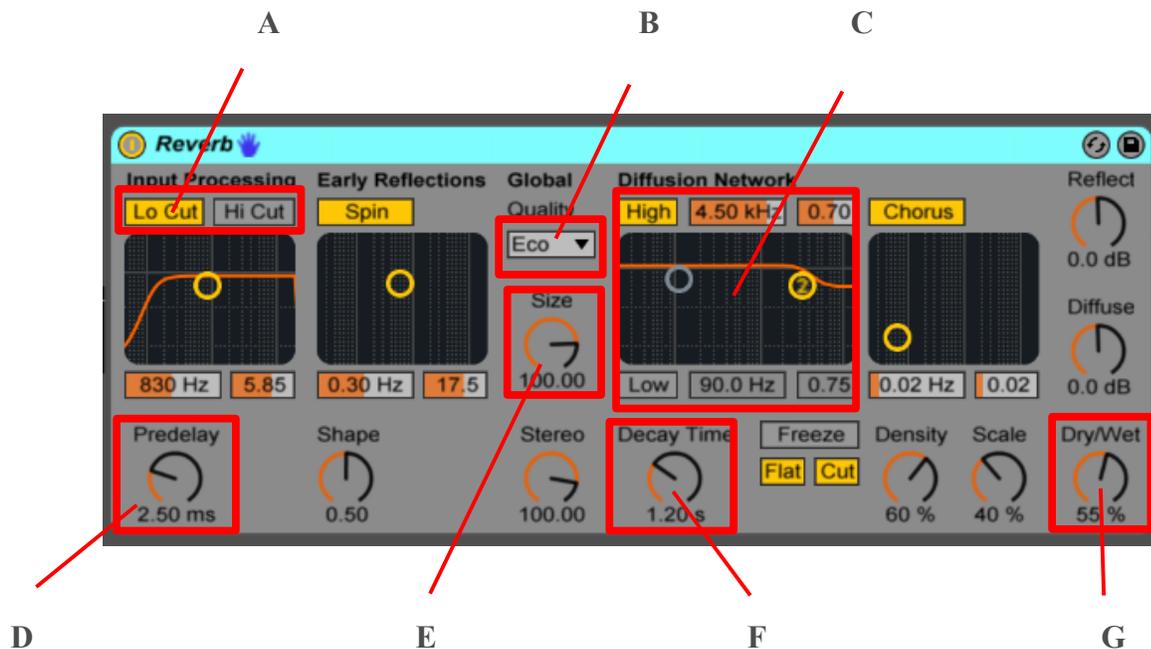
Reverb

Reverb is an essential effect that can really make or break a mix. Improper use can create a muddy washy mix without definition.

Proper use can give each instrument its own space and give your song dimension.

Reverb basics

Although reverb has a lot of options, by learning the basics, you should be just fine for producing your songs. The goal here is not to teach you everything, but to give you enough to make great music.

A. Low Cut/Hi Cut - This feature does exactly what you would think. Cuts the low frequencies or the high frequencies (on the reverb, not the original sound source). I typically use a low cut at 120hz or higher on everything (including kick & bass). High cut I use on sounds that might fight with the clarity of the hi hats & cymbals. Finding what to remove in a song will give you much better results than always looking for what to add.

B. Quality – The Quality dropdown really isn't as much about quality as it is more about how present the reverb effect is. Eco is the most noticeable reverb effect, while High quality is the most transparent. For this reason, it is a good idea to experiment with different settings.

Basics cont..

C. Diffusion – (From the manual) *"High and low shelving filters provide frequency-dependent reverberation decay. The high- frequency decay models the absorption of sound energy due to air, walls and other materials in the room (people, carpeting and so forth). The low shelf provides a thinner decay. Each filter may be turned off to save CPU consumption."*

Basically this gives the reverb tail a high or low cut & is a 2nd option for removing certain reverb frequencies.

D. Pre-Delay – A very useful effect here. This allows the dry signal to play for a certain amount of time before the reverb kicks in. Great for clean transients. A low setting will be pretty transparent & won't sound like a delayed response at all. Higher settings will create a short delay between the original sound and the reverb. Very useful to add more groove to a rhythm, just understand that your original sound (if it's a short sound) won't have any reverb on it. The reverb will be a separate sound.

E. Size – This knob represents the size of the room the reverb is representing. A big room will sound more like a cathedral, where a smaller size may sound like a bathroom. Atmospheric sounds typically sound better in a big room, while drum kits can benefit from a smaller room.

F. Decay – Decay is simply how long the reverb lasts before it returns to silence. By varying this on your sounds, you create a more 3 dimensional space in your mix. The drier sounds will sound closer, while longer decay times will give the illusion that the sound is further away.

G. Wet/Dry – This is simply the amount of reverb effect in relationship to the dry signal. While atmospherics can handle a higher % of wet signal, a small % goes a long way on other sounds.

More on Reverb

Reverb on return tracks

Reverb is an effect that works great as a return track as well. In fact having a few returns for short, medium & long reverbs can give your song cohesion when you send groups of tracks to certain returns.

As with any return track, if the effect has a wet/dry knob, always set it to 100%.

Gated reverb

This was a popular effect on drums in the 80's & still has its uses today. By adding a big reverb to a sound & then adding a gate effect, it gives you big drums without the long reverb tail.

Gates are also good in less extreme levels to clean the effects in your mix up.

Delay

Delay is an essential effect that repeats an input signal which is typically played back multiple times creating a decaying echo.

It is like a shadow of the original sound. It carries over the last idea as a new idea takes its place, creating smooth transitions.

Delay adds rhythmic or melodic content that can add dimension & interesting layers to an otherwise bland sound.

Simple Delay

Simple Delay will likely be your go to delay in most situations. It gives you left & right delays that can be independent of each other or linked.

You are able to sync your delay to tempo or by millisecond for a variety or uses.

Bonus tip:

By right clicking on your delay, you will get more delay options to experiment with.

•*Repitch* causes a pitch variation when changing the delay time, similar to the behavior of old hardware delay units.

•*Jump* immediately jumps to the new delay time. Note that this will cause an audible click if the delay time is changed while delays are sounding.

Simple Delay features
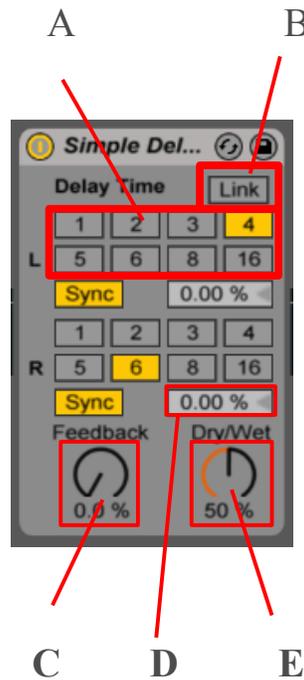
A. These numbered boxes are options for both the left and right delay signal. Each box displays the number of 16th notes before the delay is triggered. The left and right signal can be different timings.

B. The link button disables the right channel's delay settings so that the left channel settings affect both left & right the same.

C. Feedback controls how long the delay repeats before fading back to silence

D. This box with the 0.00% allows you to nudge the delay time ahead of the tempo or behind the tempo, creating a bit of swing to the delay or something deliberately out of sync. The left and right side can be adjusted independently.

E. Wet/Dry controls how loud the delay is in comparison to the original sound. At 50% wet, the original sound & first delay is the same volume. Below 50% makes the delay quieter & above 50% makes a delay that is louder than the original sound.
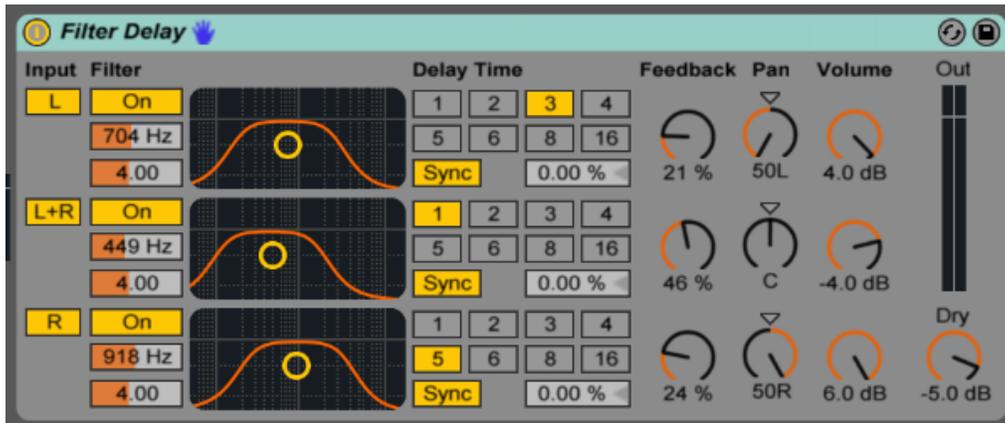
Ping Pong Delay

This delay effect is also very useful. It bounces left to right at your chosen delay speed. You can also set the frequency band you would like delayed from low to high frequencies.

Other features work the same as Simple Delay.

Filter Delay

The Filter Delay gives more experimental results. It is like a hybrid of Simple delay & Ping Pong delay features. It gives you 3 independent delays that can each be panned to different locations with separate eq, delay time, feedback & volume settings.

Delay on return tracks

Like Reverb, Delay works great on a return track, with the wet/dry set to 100%. Unlike having delay on the instrument track, you are able to automate delay on specific sounds without effecting the sound before or after it.

An example would be adding a delay on one word of a vocal without affecting the rest of the phrase.

If you attempt this with delay on the vocal track itself, you might think automating the delay off & on would get the same result, but it doesn't, because the delays stop immediately when it turns off. When you automate a send/return track, the delay continues on just that one word.

Homework

1. Apply effects to 5 sounds any way you like. Group & save these as your personal presets, which you'll name & use in the future.