droplets version 1.0

user guide

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setup

When you first run Droplets, you will be asked to enter your licence key. If you purchased Droplets on Gumroad, you can find it on the download page, or in your confirmation email.

NOTE: You will need to be connected to the internet to authorise Droplets.

MIDI output

Optionally, Droplets can be used as a MIDI generator, allowing you to trigger notes on your favourite virtual instrument or external synthesizer.

STANDALONE

If running Droplets in standalone mode, you can set the MIDI output in the 'Settings' menu, under 'Audio/MIDI settings'. You can also change the MIDI output channel in the 'MIDI' menu.

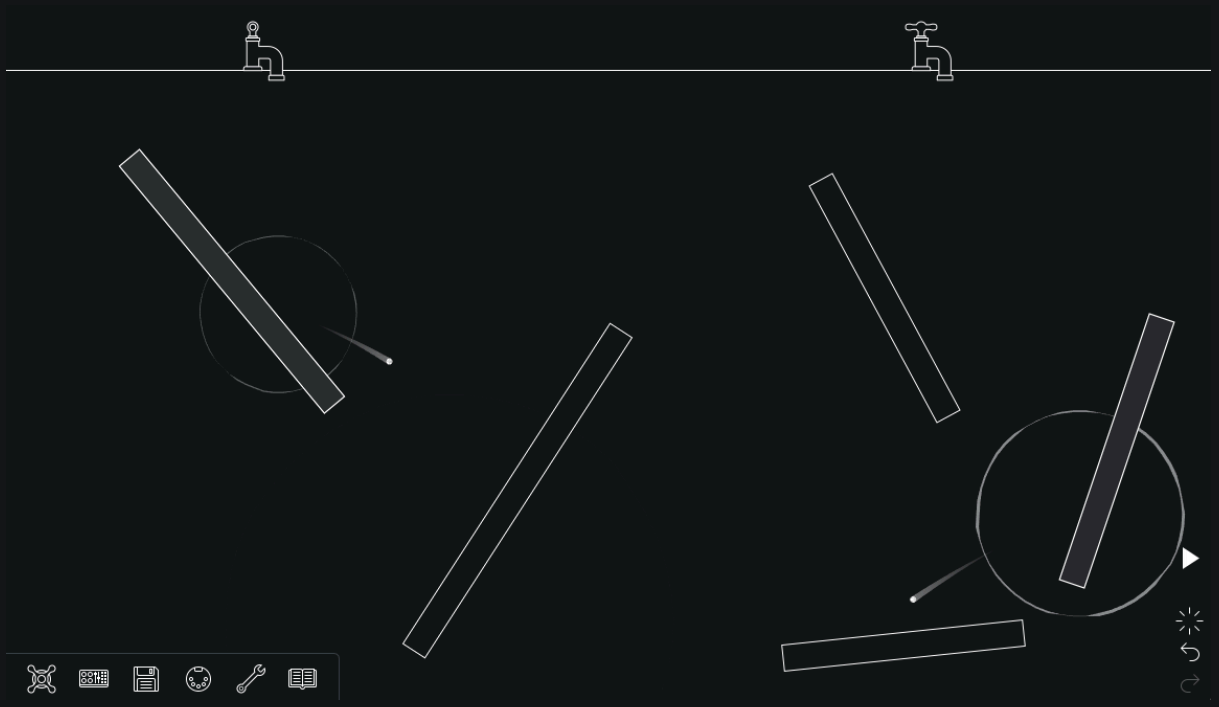
PLUGIN

If running Droplets as a plugin, the way to setup MIDI output will depend on your DAW. Check your DAW's manual/website for how to access the MIDI output of a plugin.

Here's a guide on setting up MIDI out in Ableton Live:
https://help.ableton.com/hc/en-us/articles/209070189-Accessing-the-MIDI-output-of-a-VST-plug-in

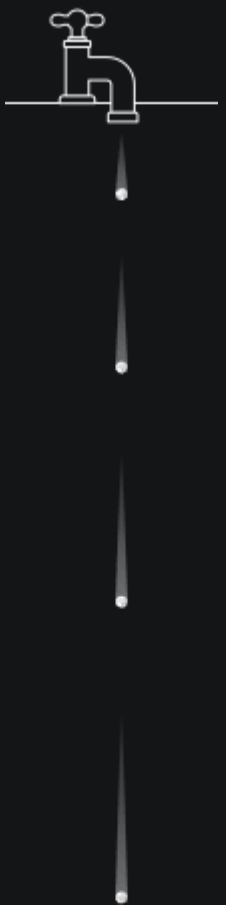
NOTE: If running Droplets as an Audio Unit (AU) plugin, only the MIDI-only version of the plugin can output MIDI.

basics



Drippers produce droplets at regular musical intervals. As the droplets fall down the screen, they hit and bounce off of bars, causing a note to play.

By changing the arrangement of bars and drippers, new musical patterns will arise.



drippers

To create a dripper, click anywhere above the horizontal line near the top of the window. The dripper will emit droplets at regular musical intervals.

RATE

The interval of a dripper can be adjusted by turning the handle using the right mouse button or scroll wheel.

To see the dripper's current rate, hover the mouse over it. An arc shape is revealed, showing the drip interval as a fraction of one bar's length, and the time remaining until the next drip.

NOTE: The simulation will only run while it (or the DAW it is running inside of) is in Play mode.

CHANCE

Additionally, you can set the chance that a droplet will be emitted each cycle, to introduce some random variation. To adjust the drip chance, hold shift while dragging on the dripper.

The current drip chance is visible when hovering over the dripper, represented as a dice icon. The icon is only shown if the chance is less than 100%.

ENABLE / DISABLE

Drippers can be disabled via alt+left-click or middle-click. While disabled, the dripper will continue to emit droplets, but the droplets will not trigger any notes to play.

CONTROLS

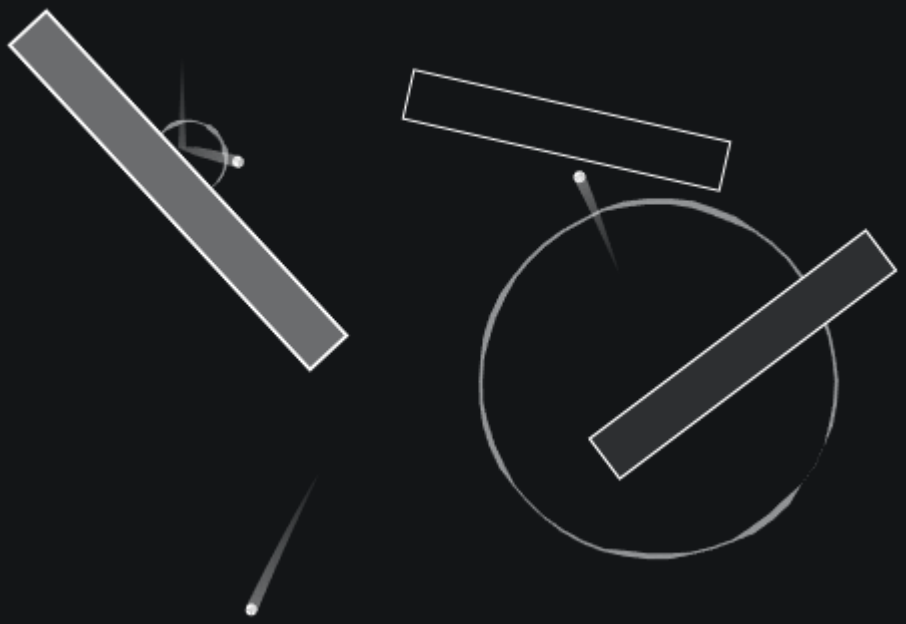
NOTE: On Mac, right-click is equivalent to ctrl + click

ACTION	METHODS
Move	Left-drag
Adjust drip rate	Right-drag Scroll wheel
Adjust drip chance	Shift + left-drag
Enable/disable	Alt + left-click Middle-click
Delete	Alt + right-click Drag offscreen
Open menu	Right-click

bars

To create a bar, click anywhere inside the main area of the window.

When a droplet collides with a bar, a note will play.



PITCH

The pitch of the note is related to the length of the bar, which can be adjusted by dragging with the right mouse button. To view what note the bar is currently tuned to, hover the mouse over it.

ENABLE / DISABLE

Bars can be disabled via alt+left-click or middle-click. A disabled bar will not produce a tone when struck by a droplet.

CONTROLS

NOTE: On Mac, right-click is equivalent to ctrl + click

ACTION	**METHODS**
Move	Left-drag
Adjust length + angle	Right-drag
Adjust length only	Shift + left-drag Scroll wheel
Adjust angle only	Shift + right-drag

Enable/disable	Alt + left-click Middle-click
Delete	Alt + right-click Drag offscreen
Open menu	Right-click

action bar

Located in the bottom-right corner of the screen.

PLAY / PAUSE (standalone only)

Toggles between pause and play mode. Nothing will happen while Droplets is paused. If running as a plugin, this is controlled by the DAW.
Shortcut: Spacebar

CLEAR

Deletes all bars and drippers, without affecting any parameter values.

UNDO

Undoes the last action
Shortcut: Ctrl+Z

REDO

Redoes the last action
Shortcut: Ctrl+Shift+Z

menu bar

Located in the bottom-left corner of the screen, these buttons open the different menus inside Droplets.

PARAMETERS

General parameters relating to the current preset.

Shortcut key: 1

SYNTHESIZER

For designing sounds using the in-built synth engine.

Shortcut key: 2

PRESETS

For saving and loading presets.

Shortcut key: 3

MIDI

For viewing MIDI CC mappings and setting MIDI input and output channels.

Shortcut key: 4

SETTINGS

Global preferences relating to visuals and audio.

Shortcut key: 5

INFO

Current version number and basic info about Droplets.

Shortcut key: 6

parameters

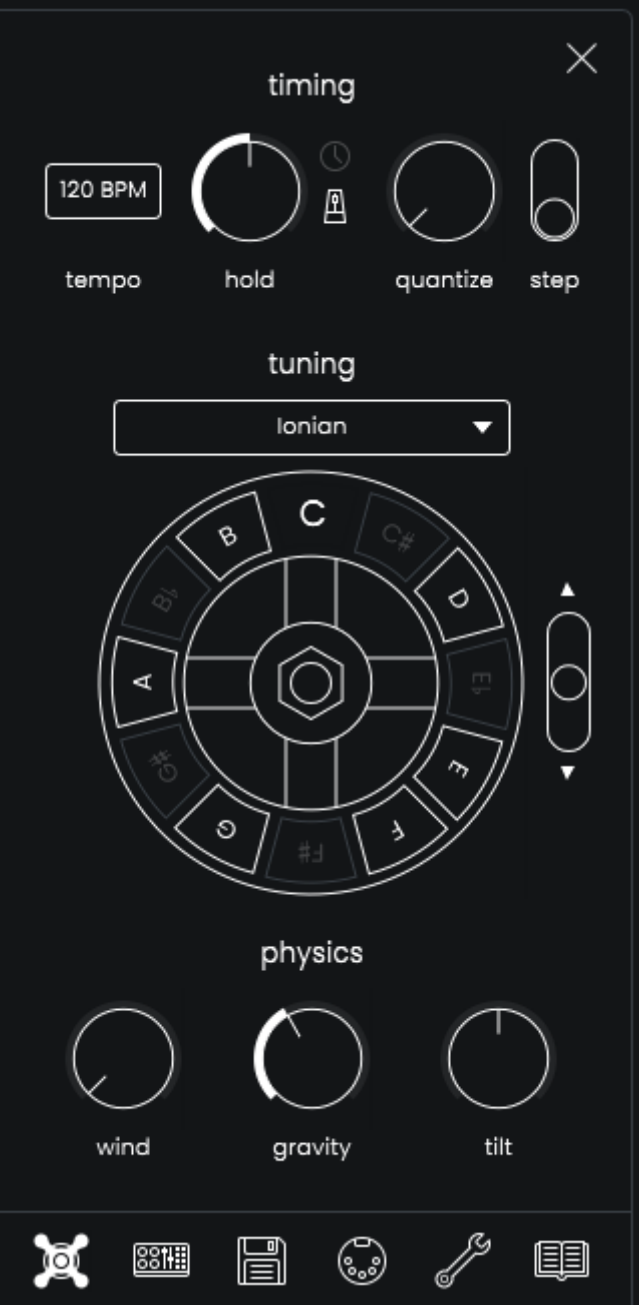
The Parameters menu contains a variety of controls affecting the timing and tuning of notes, as well as the physics simulation itself.

timing

TEMPO

Tempo affects not only the rate at which drippers emit droplets, but also the speed of the entire physics simulation. This means that changing the tempo will not affect the sequence of notes, other than the speed of the sequence.

NOTE: When running Droplets as a plugin, the tempo is controlled by the DAW.



HOLD

Sets the length that each note is held for.

When using Droplets as a MIDI generator, a note-off message will be sent for each note-on message, after the length of the hold duration.

When using the built-in synth engine, the hold parameter will only have an effect if **RELEASE** is enabled on the amplitude envelope.
More info about envelopes.

The hold duration can be set either in milliseconds or in fractions of a beat, relative to the tempo. Change modes using the clock and metronome buttons.

QUANTIZE

Controls how tightly the start of each note should be shifted into the musical grid.

At 0%, notes will be triggered as soon as a droplet collides with a bar. At 100%, notes will be delayed from triggering until the next step. In-between values can be used to achieve subtle imperfection.

DIVISION

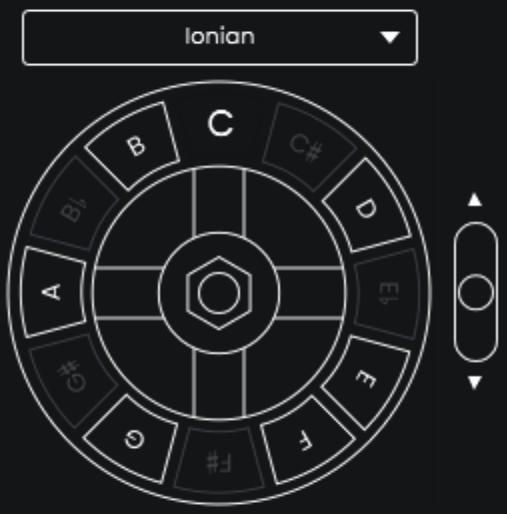
Toggle between a standard (16th note) grid and a triplet (12th note) grid.
This affects how notes are quantized, but also the rates at which drippers can emit droplets.

tuning

The scale wheel allows you to define the musical scale. All bars will be tuned to the nearest note in the scale.

SET THE SCALE DEGREES

You can enable and disable different pitches by simply clicking on them.



SET THE ROOT NOTE

To change the root note of the scale, you can turn the wheel by dragging with the mouse. Alternatively, just right-click on the note you wish to set as the new scale root.

SCALE PRESETS

You can select from a range of premade scales by clicking on the dropdown above the scale wheel.

OCTAVE SELECTOR

Next to the scale wheel, the octave selector allows you to shift all notes up or down between -2 and +2 octaves.

MIDI INPUT

You can change scales on the fly by inputting a MIDI chord into Droplets, either in your DAW or with an external MIDI controller. The lowest note of the chord will determine the root note, and all other notes will be included as scale degrees.

physics

WIND

Wind causes droplets to be pushed in random directions, adding natural variation to the musical pattern.

GRAVITY

The strength of gravity.

TILT

Controls the direction that droplets will fall.

synthesizer

Droplets features an in-built synth engine, allowing you to make music entirely inside the application.

NOTE: If you are using Droplets purely as a MIDI generator, you will likely want to switch the synth engine off to save CPU. To do so, click the power button in the top-left corner of the synth panel.

preset selector

Synth presets can be saved separately to global presets, allowing you to easily reuse synth patches.

SAVE PRESET

To save a synth preset, click on the floppy disk button. You will be prompted to enter a name for the preset. Click the tick button to confirm.

SELECT A PRESET

You can cycle through presets using the left and right arrow buttons, or click on the bar to open a list of all available synth presets.

OTHER SYNTH PRESET OPTIONS

Accessible by clicking on the menu button.

- **Reset:** Sets all the synth parameters to their default value.
- **Delete preset**: Deletes the currently loaded synth preset.
- **Rename preset:** Allows you to rename the currently loaded synth preset.
- **Load external preset:** Opens a file chooser for loading synth preset (.dripsynth) from files outside of the synth preset folder.
- **Open preset folder:** Opens the folder in which synth presets are saved, using the operating system's file browser.
- **Randomize:** Generates a random preset by setting all the synth parameters to a random value.

additional controls

INTONATION

Controls how tightly each note is tuned to the closest pitch in the current scale. At 0% the frequency of each note will be completely untuned and based purely on the length of the bar.

SPREAD

Controls how much the panning of each voice is affected by the horizontal position of the bar. At 0%, every voice will be panned to the centre, regardless of position.

VOLUME

The master volume of the synth engine.

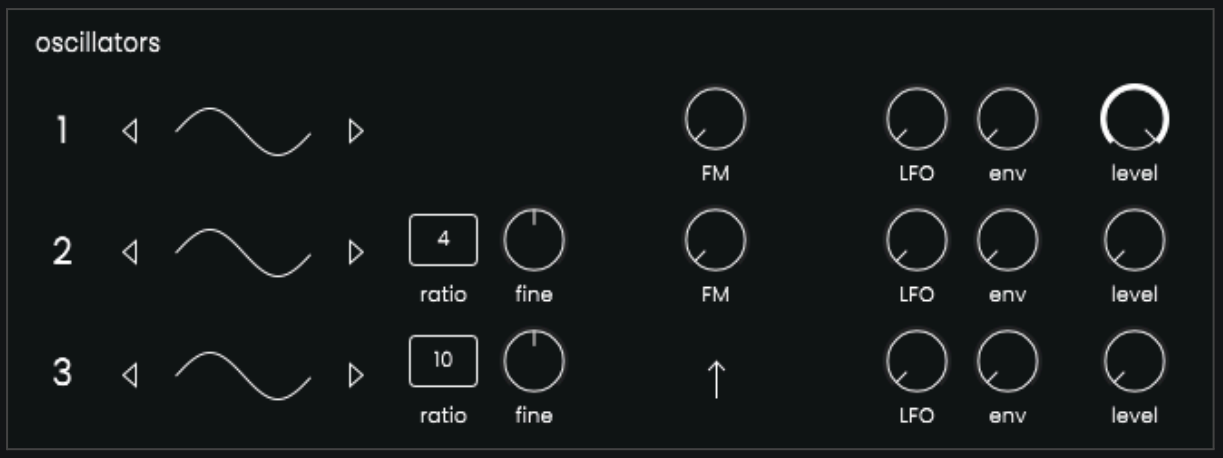
ENABLE / DISABLE

Disabling the synthesizer will bypass all audio generation, reducing CPU usage. You might want to disable the synthesizer when using Droplets as a MIDI generator.

generators

oscillators

The synth engine features 3 oscillators.



SHAPE

Each oscillator can be set to one of six different shapes — sine, triangle, square, pulse, and noise.

RATIO + FINE

Used together to set the frequency of oscillators 2 and 3 relative to the base frequency. The frequency of the oscillator is equal to the base frequency multiplied by ratio + fine.

Oscillator 1 doesn't have these controls and is always tuned to the base frequency.

FM

Sets the amount of frequency modulation from oscillator 3. Available on oscillators 1 and 2 only.

LFO

Sets the amount of amplitude modulation from the LFO.

ENV

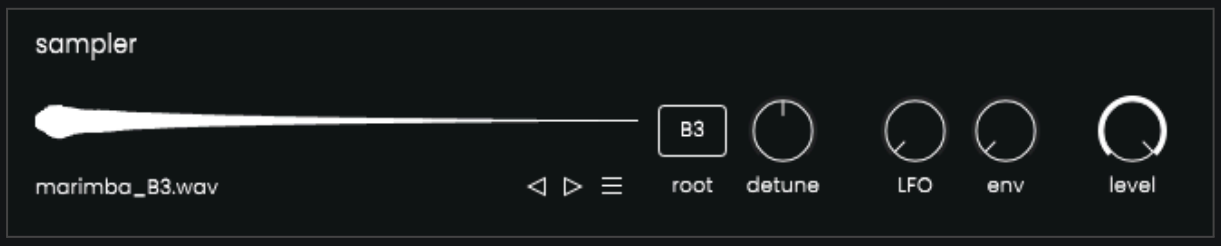
Sets the amount of amplitude modulation from the modulation envelope.

LEVEL

The output volume of the oscillator.
TIP: You can use oscillator 3 as a frequency modulator without the oscillator itself being heard. You can also apply LFO and envelope modulation to oscillator 3

sampler

The sampler can load audio files from your device. When a note is triggered, the sample will be stretched to match the note's pitch.



LOAD A SAMPLE

Load a sample by clicking on the menu button. You can then either select a sample from the current sample library, or from anywhere on your computer.

Use the arrow buttons to cycle through samples.

ADD FOLDER

You can also add a whole folder of samples to the library by selecting 'Add folder' from the menu. The folder will then be accessible from the menu.

START POSITION

Adjust the sample start position by clicking on the waveform when a sample is loaded.

ROOT

Set the root parameter to tell the sampler the original pitch of the sample. When you load a sample, Droplets will try to guess the root note based on the file's name (for example, kalimba_c3.wav).

DETUNE

Used to shift the pitch of the sample up or down between -1 and +1 semitones.

LEVEL

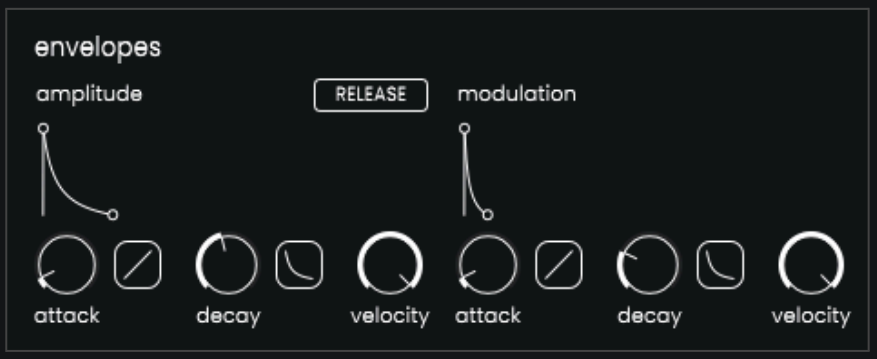
The output volume of the sampler.

modulators

envelopes

The synth engine features two envelopes: an amplitude envelope and a modulation envelope.

Amplitude: Controls the overall volume of a note over time.
Modulation: Can be set up to modulate the volume of individual sources, or the filter's cutoff frequency.



ATTACK

The length of the attack phase — the time it will take for the envelope to reach its maximum value.

DECAY

The length of the decay phase — the time, after the attack phase, that it will take the envelope to return to zero.

CURVE

The attack and decay settings have an additional 'curve' setting, which can be used to control the shape of the curve.

VELOCITY

Sets how much the envelope is affected by the velocity of each note (velocity in Droplets is determined by how fast a droplet is moving when it collides with a bar).

At 0%, velocity will have no effect on the envelope's maximum level. On the amplitude envelope, this would mean that every note is played at the same volume. Higher values create a more natural response to impact velocity, just like how the volume of a drum is different depending on how hard it is struck.

RELEASE

This toggle is only available on the amplitude envelope. If it's enabled, the envelope will be cut short after the length of the 'hold' parameter (found in the Parameters tab).

LFO

The synth engine features one LFO (low frequency oscillator), which can be set up to control pitch, the volume of individual sources, or the filter cutoff.

SHAPE

The LFO can be set to one of four different shapes — sine, triangle, sawtooth, and square.

RATE

Sets the rate of the LFO in Hz.

PITCH

This setting controls how much the overall pitch of a note will be affected by the LFO. Can be used to create a vibrato effect.

effects

All effects can be enabled or disabled by clicking the circular button in the top-left of the module. Disable effects to reduce CPU load.

filter

The synth engine features a per-voice key-tracked low-pass filter.

CUTOFF

Sets the filter's cutoff frequency relative to the root frequency of each note. At a setting of 0 semitones, the cutoff frequency will be equal to the root frequency.

RESONANCE

Turning this parameter up will create resonance at the cutoff frequency.

LFO

Sets the amount of cutoff frequency modulation from the LFO.

ENV

Sets the amount of cutoff frequency modulation from the modulation envelope.

modulation

The modulation effect can be set up to function as a chorus, flanger, or vibrato effect, depending on the settings.

MIX

The dry-wet mix of the modulation effect. At 100%, only the delayed signal will be heard, which can be used to create a vibrato effect.

RATE

How fast the delay time is modulated.

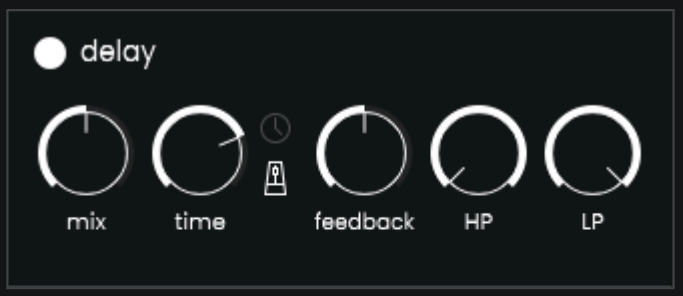
DEPTH

The depth of the delay time modulation. Setting this to lower values can create a flanger effect, while higher values can be used to create a more chorus-like effect.

FEEDBACK

How much of the delayed signal is fed back into the delay line. Turning this all the way up will create some interesting effects.

delay



Delay creates an echo effect by playing back repeats of the original signal at regular intervals.

MIX

The level of the delayed signal. The original signal is always let through at 100% volume.

TIME

The amount of time between the original signal and the delayed signal. Use the clock and metronome buttons to toggle between setting the time in milliseconds, or in fractions of a beat, relative to the tempo.

FEEDBACK

How much of the delayed signal is fed back into the delay line. Turning this up will create a naturally decaying echo.

HP + LP

The high-pass and low-pass frequency applied to the wet signal.

reverb

Reverb creates a sense of space by simulating the effect of sound waves bouncing around a physical room.

MIX

The level of the reverberations. The original signal is always let through at 100% volume.

SIZE

The size of the virtual room simulated by the effect. Higher values will create a longer decay time.

DAMPING

Adds damping to high frequencies so that they decay faster than low frequencies.

HP + LP

The high-pass and low-pass frequency applied to the wet signal.

presets

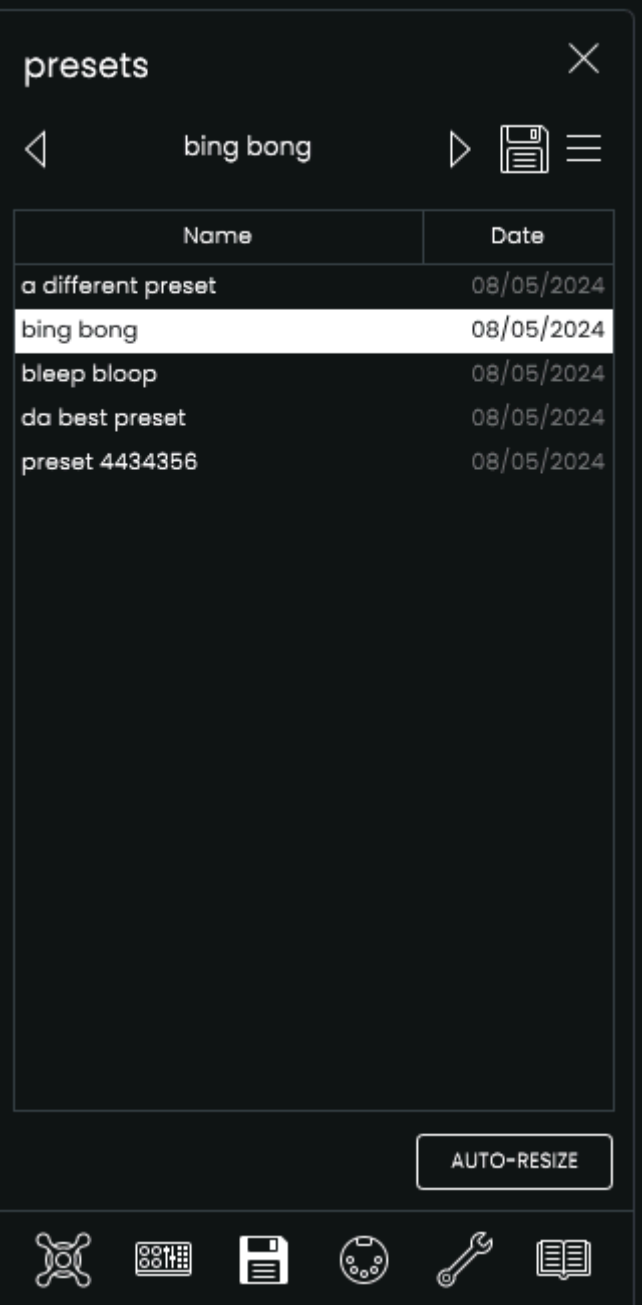
Droplets allows you to save presets, which store the layout of bars and drippers, as well as the setting of each parameter.

SAVE A PRESET

Click on the floppy disk button in the top of the menu to save the current state as a preset. You will be prompted to enter a name for the preset. Click the tick to confirm.

LOAD A PRESET

Simply click on a preset from the list to load it.
You can sort presets, either by name or by date, by clicking on the table headers.



DELETE A PRESET

To delete a preset, right-click on the list item and select ‘Delete’.

AUTO-RESIZE

When a preset is saved, the size of the window is stored inside the preset file. If auto-resize is enabled, Droplets will automatically try to restore the window size to what was stored in the preset upon loading.

NOTE: Leaving auto-resize off means that if a preset is loaded which was saved with a larger window, some elements might be offscreen.

OTHER PRESET OPTIONS

Accessible by clicking on the menu button.

- **Reset:** Clears all drippers and bars, and restores all parameters to their default value.
- **Delete preset:** Deletes the currently loaded preset.
- **Rename preset:** Allows you to rename the currently loaded preset.
- **Load external preset:** Opens a file chooser for loading preset (.drip) files from outside of the preset folder.
- **Open preset folder:** Opens the folder in which presets are saved, using the operating system's file browser.

MIDI

The MIDI menu allows you to view current MIDI CC mappings, as well as set the input and output channels.

For other MIDI-related settings in standalone mode, see the Audio/MIDI settings menu.

For information about setting up MIDI output, see MIDI output.

channels

INPUT

The MIDI input channel used to set the current scale. Does not affect MIDI CC control.

OUTPUT

The MIDI output channel for notes generated by Droplets.

velocity

These settings allow you to determine the velocity range for MIDI notes sent out from Droplets.

Velocity is determined by the force with which a droplet hits a bar, and mapped between the minimum and maximum velocity setting.

mappings

In this list, you can view and edit current MIDI CC mappings.

CREATE A MAPPING

You can map almost any parameter in Droplets to be controllable via MIDI CC. Simply right-click on the control for the parameter you want to control, and select ‘Learn MIDI’. Then move the desired control on your MIDI controller, and a new mapping should be created.

DELETE A MAPPING

To delete a mapping, simply right-click it and select ‘Delete’.

RELEARN A MAPPING

To change the MIDI CC or channel associated with a mapping, right-click it and select ‘Learn’, then move the desired control on your MIDI controller.

SORT MAPPINGS

The list can be sorted by parameter name, MIDI CC value, or MIDI channel, by clicking on the table headers.

settings

The settings menu allows you to set global preferences relating to the visuals and synth engine. Settings are shared between all presets.

visual settings

MODE (standalone mode only)

Select between windowed and fullscreen mode.

WAVES

Toggle the visibility of sound waves. Disabling may improve rendering performance.

TRAILS

Toggle the visibility of droplet trails. Disabling may improve rendering performance.

FLASHES

Toggle the flash that occurs when a bar is struck. Disabling may improve rendering performance.

COLOURS

Monochrome: Black and white minimalist chic
Polychrome: Enables pitch-colour visualisation, where each pitch is represented by a different colour.

TOOLTIPS

Enable or disable tooltips at the bottom of the screen.

synth settings

OVERSAMPLING

Oversampling reduces unpleasant aliasing which can occur with certain synth settings, at the cost of additional CPU usage.

MAX VOICES

Sets the maximum number of active synth voices. If the max number is exceeded, the oldest note will be silenced. Turn this down to avoid overloading the CPU.

A4 FREQUENCY

The frequency of A4. In most modern music, this is equal to 440 Hz. Turn this up or down to adjust the global pitch.

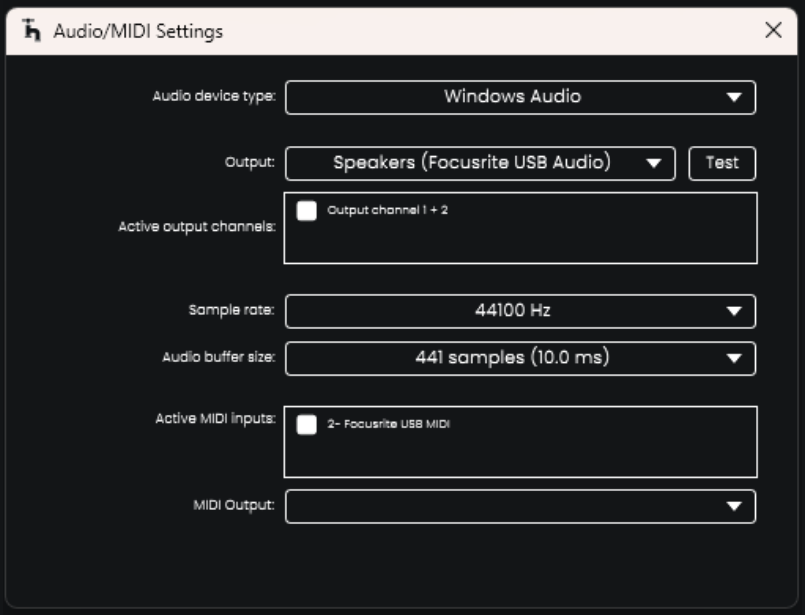
audio/MIDI settings

(Standalone mode only)

In standalone mode, additional settings relating to audio and MIDI are available by clicking on the 'Audio/MIDI settings' button in the bottom left of the menu.

In the window that opens, you can set the audio output device, sample rate, buffer size, and MIDI output and input devices.

If running Droplets as a plugin, these settings should be accessible somewhere inside your DAW.



info

versions

	Platforms	MIDI output	Audio output
Standalone	Mac, Windows	✓	✓
Standalone (MIDI)	Mac, Windows	✓	×
VST3	Mac, Windows	✓	✓
VST3 (MIDI)	Mac, Windows	✓	×
AU	Mac	×	✓
AU (MIDI)	Mac	✓	×

The MIDI versions only output MIDI, and do not feature the built-in synthesis engine. Some DAWs (such as Ableton Live) will not load MIDI plugins.
The standard versions can output both MIDI and audio, except for the standard AU version, which cannot output MIDI.

contact

Any questions about the plugin? Run into a bug? Shoot me an email at finn.mitchellanyon@gmail.com.

links

Website: https://finneganeganegan.xyz/droplets
Gumroad: https://finneganeganegan.gumroad.com/l/Droplets
Discord: https://discord.gg/R32vx8DfBv

Thanks for buying Droplets!
You're pretty cool

attributions

The audio samples included in the sampler module in Droplets were sourced from https://freesound.org/.

pjcohen

- Celesta
  https://freesound.org/people/pjcohen/sounds/410657/
  License: Attribution 4.0

Faranta

- Handbell
  https://freesound.org/people/Faranta/sounds/448504/
  License: Creative Commons 0

hollandm

- Doumbek
  https://freesound.org/people/hollandm/sounds/691748/
  License: Creative Commons 0
- Glockenspiel
  https://freesound.org/people/hollandm/sounds/693344/
  License: Creative Commons 0
- Kalimba
  https://freesound.org/people/hollandm/sounds/691799/
  License: Creative Commons 0
- Tank drum
  https://freesound.org/people/hollandm/sounds/692569/
  License: Creative Commons 0

sgossner

- Claves
  https://freesound.org/people/sgossner/sounds/375641/
  License: Creative Commons 0
- Marimba
  https://freesound.org/people/sgossner/sounds/255679/
  License: Attribution 4.0

- Piano
  https://freesound.org/people/sgossner/sounds/374302/
  License: Creative Commons 0
- Woodclick
  https://freesound.org/people/sgossner/sounds/375737/
  License: Creative Commons 0
- Xylophone
  https://freesound.org/people/sgossner/sounds/374703/
  License: Creative Commons 0
- Harp
  https://freesound.org/people/sgossner/sounds/373568/
  License: Creative Commons 0

Komponist

- Vibraphone
  https://freesound.org/people/Komponist/sounds/33188/
  License: Creative Commons 0

Droplets was made using JUCE. JUCE is cool.
https://juce.com/