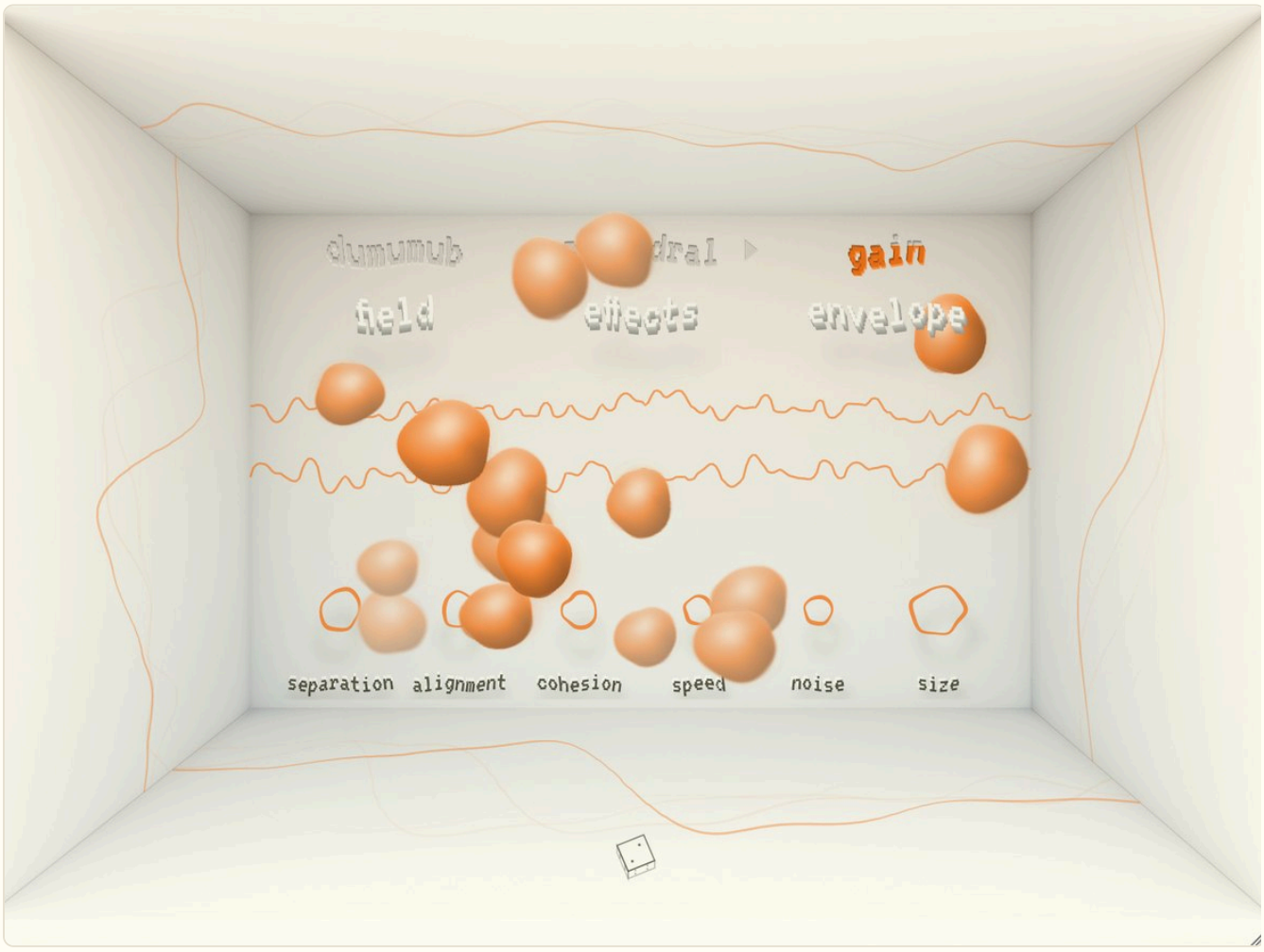
b o i d

a wavetable synthesizer played by a flock of birds

user guide · version 1.0.0



dumumub

welcome

b o i d is a wavetable synthesizer played by a flock of birds. up to 32 boids fly around a small room, and every one of them plays every note you hold. where each boid is in the room decides how it sounds, so one note becomes a moving swarm of slightly different voices that never quite settles.

this guide walks through the room and every page in it. you don't need to read it to start: load a preset, hold a chord, and change the knobs along the bottom.

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1. getting started

formats. b o i d comes as a vst3 and an audio unit (mac only) for your daw, and as a standalone app. it runs on mac (apple silicon and intel) and windows.

installing. install and update b o i d from the musehub app. musehub puts the plugins in the right folders for you. the first time you open b o i d, make sure you are signed in to musehub on that computer, because that is how b o i d knows the licence is yours.

in your daw. rescan your plugins if b o i d doesn't appear, then load it on an instrument (midi) track. it's listed under dumumub.

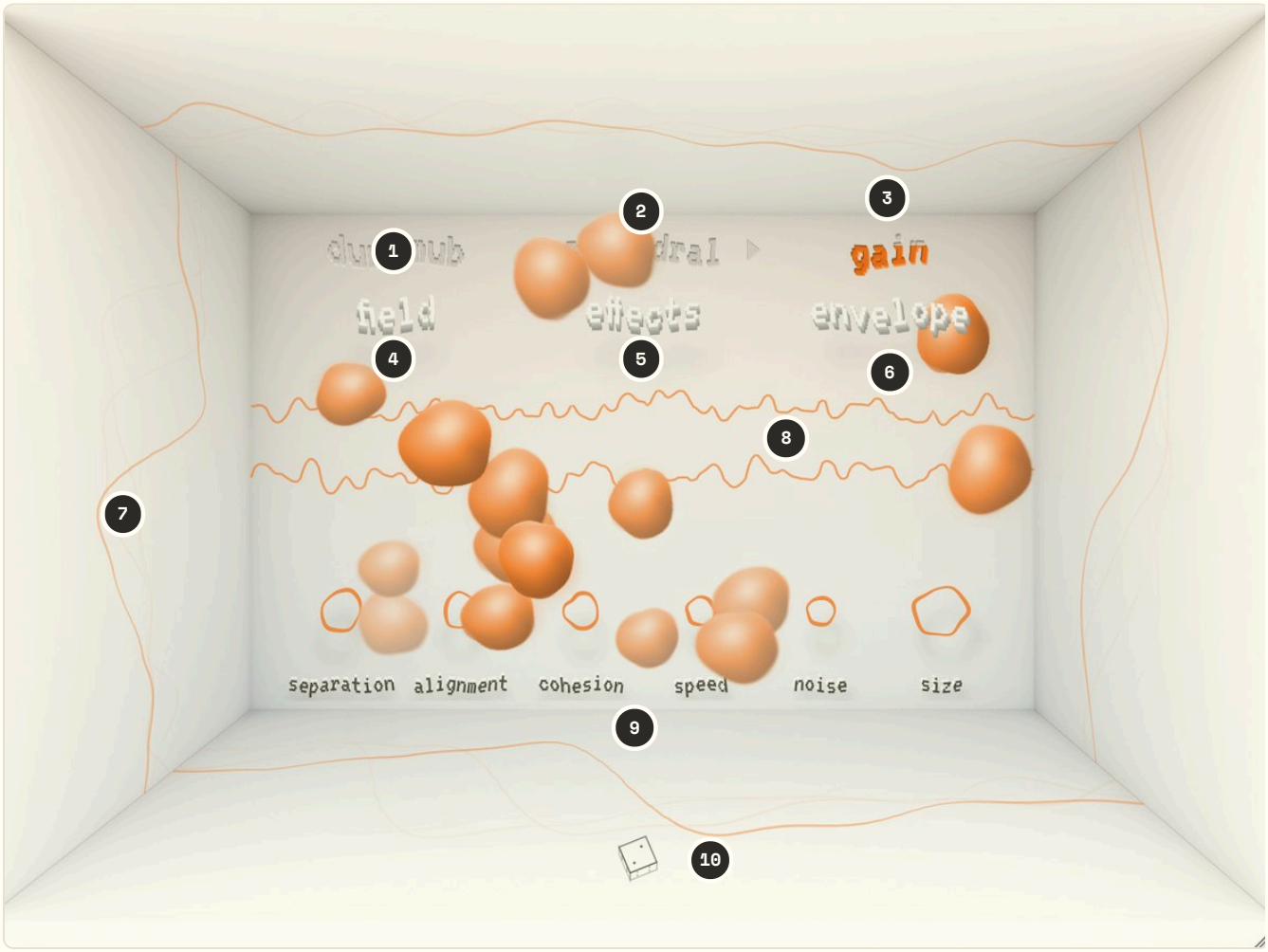
standalone. open the b o i d app, then choose your audio output and midi keyboard in its options / settings menu.

first sound. play some notes. the boids light up as they sing. try a few presets by clicking the arrows either side of the preset name, then change the flock knobs along the bottom while you hold a chord.

> **tips that work everywhere**
> · rest the pointer on anything for a moment and a short explanation types itself onto the floor of the room.
> · hover a knob to see its value. drag up or down to change it. double click to reset it.
> · a die on a page rolls new random settings for that page.
> · close a page with the × in its corner, by clicking its word again, or with escape.
> · drag the bottom right corner of the window to make b o i d bigger or smaller.

2. the room

everything in b o i d happens inside one room. the flock flies in the middle, the walls hold the sounds, and the words on the back wall open the pages.



1. **dumumub**: about b o i d, the version you have, and how to reach me.
2. **preset name**: the sound you're on. the arrows step through presets, and clicking the name opens the preset page.
3. **gain**: the output level. drag the word up or down, double click for 0 db.
4. **field**: how the room shapes the sound: filter, stereo, morph and depth.
5. **effects**: everything from sub and air through to reverb and compression.
6. **envelope**: the shape of every note, from start to fade.
7. **the walls**: the wavy line around the edge of the room is four wavetables, one each on the left wall, right wall, ceiling and floor. click one to edit it, or drop an audio file on it.
8. **the scope**: the two lines across the back wall show what b o i d is playing right now, left and right.
9. **the flock knobs**: how the boids fly. these are always on screen.
10. **the floor die**: rolls four new wavetables at once, one for each wall.

3. the flock

every boid is a voice, and every boid plays every note you hold. so with 16 boids, one key gives you 16 voices, each one sounding a little different because each one is somewhere else in the room. as they fly, the sound moves with them.

the six knobs along the bottom of the room decide how the flock flies. change them while you play.

separation	how hard boids push away from each other, keeping the flock loose and the sound spread out.
alignment	how closely boids match each other's direction, so the flock moves as one.
cohesion	how hard boids pull together into a tight ball. a tight flock sounds more like one voice.
speed	how fast boids fly, and so how quickly the sound moves.
noise	random wander for every boid, from restless to scattered.
size	how many boids fly, from 1 to 32. each one is another voice in every note.

where a boid is decides how it sounds

- **left and right**: morphs between the left wall's and right wall's wavetables, and pans the boid across the stereo field.
- **up and down**: morphs between the ceiling's and floor's wavetables, and moves the boid's filter: high boids are brighter, low boids darker.
- **near and far**: boids further back sound duller and look smaller.

how strongly each of these happens is set on the **field** page. on the **effects** page, **vib** adds vibrato as boids speed up, **warp** lets fast boids bend their own wave, and **motion** lets the flock's movement push the texture and effects around.

4. the walls

each of the four walls holds one wavetable: a single cycle of a wave, drawn along that wall. a boid flying toward a wall takes on that wall's sound. in the middle of the room, boids hear a blend of all four.

- **click a wall's wave** to open it in the wall editor (next page).
- **drop an audio file on a wall** to turn the sound into wavetables (see importing sound).
- **the floor die** rolls four new random wavetables at once. they are random but musical, so it's a quick way to find something new.

how sharply a boid switches from one wall's sound to another is set by **focus** on the field page.

5. editing a wall



the wall editor, with the left wall open.

the top display is the **wave**, and the one under it shows its **harmonics**. you can draw on either. the solid orange line is what you hear, and the faint line behind it is the wave you are editing, before the shapers. cmd/ctrl+z undoes and shift+cmd/ctrl+z redoes.

the tools down the right

wave — start again from a sine, triangle, square or saw.

shape — normalise (fill the frame), smooth (round off sharp corners), invert (flip upside down), and shift the wave earlier or later in its cycle.

spectrum — brighten or darken (press again for more), odd (thin out even harmonics for a hollow sound), even (fill them in for a fuller sound), and phase (shuffle the phases: same sound, new shape for the shapers).

die — roll a new random wave and shaping for this wall only.

test — hold to hear this wall's wave on its own. double press to keep it playing.

the shapers

four knobs that bend the wave without destroying it: turn them back to zero and the wave you drew comes back. under three of them is a small strip showing the curve it uses. click the strip for the next curve.

warp — bends the wave along its length. curves: bend, sync, pwm, mirror, step, asym.

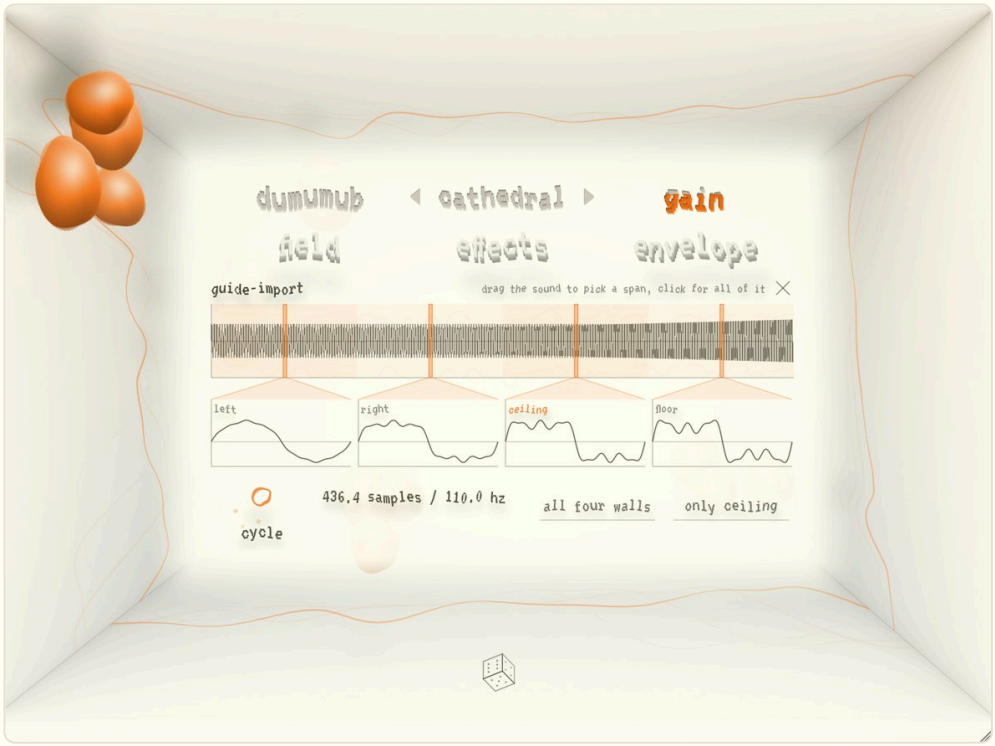
skew — makes the wave lopsided, so its top and bottom halves differ. this adds even harmonics for a reedier sound.

fold — pushes the wave past the frame and folds the peaks back. curves: reflect, sine, wrap, clip.

drive — saturates the wave and rounds off its peaks. curves: tanh, cubic, rectify, crush.

6. importing sound

drag a **.wav, .aif, .aiff or .flac** file from your computer onto any wall. the import page opens, showing the sound across the top and, underneath, the four waves that will be made from it.



a file dropped on the ceiling.

- **pick a span**: drag across the sound to choose which part to use. click it to use all of it.
- **cycle**: b o i d guesses the length of one cycle of the sound and shows it in samples and hz. if a preview has two humps in it instead of one, the guess is off; turn the knob to fix it.
- **all four walls**: the span is cut into four parts and one cycle from each lands on a wall. the flock then flies through the sound's own changes over time.
- **only (wall)**: one cycle goes onto the wall you dropped it on and the other three stay as they were.

7. field



each × is a boid's filter: left to right is its pan, and up and down is the frequency its filter is centred on.

every boid has its own band-pass filter and its own place in the stereo field. this page sets how the room turns position into sound.

center	the middle of every boid's filter. low is dark, high is bright.
width	how wide each boid's filter is, from narrow and vocal to nearly open.
y range	how much height changes tone: with more range, high boids get brighter and low boids darker.
pan depth	how far a boid's left or right position pans its voice. up to 2× for an extra wide flock.
focus	how close a boid must get to a wall to play only that wall's wave. low focus blends the walls smoothly, high focus makes each wall more distinct.
z depth	how much boids further back sound duller and look smaller.

8. envelope



attack	how long a note takes to reach full level.
decay	how long it then takes to fall to the sustain level.
sustain	the level a note holds at while the key is down.
release	how long a note takes to fade after you let go.
roll	strums each note's voices across the room, left to right, instead of starting them all at once. up to 3 seconds.

9. effects

one page holds twelve modules. the first four shape each voice, and the other eight are a chain over the whole mix, in the order the sound passes through them.



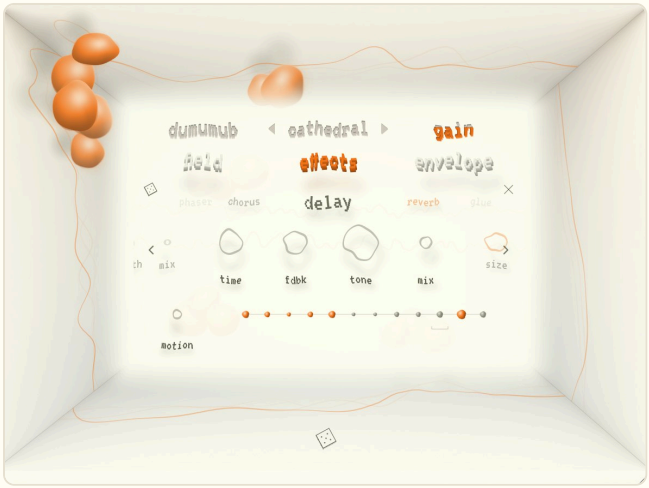
move between modules with the arrows, by clicking a dot or a module's name, or by dragging sideways. orange dots and names are the modules you can hear.

the voice

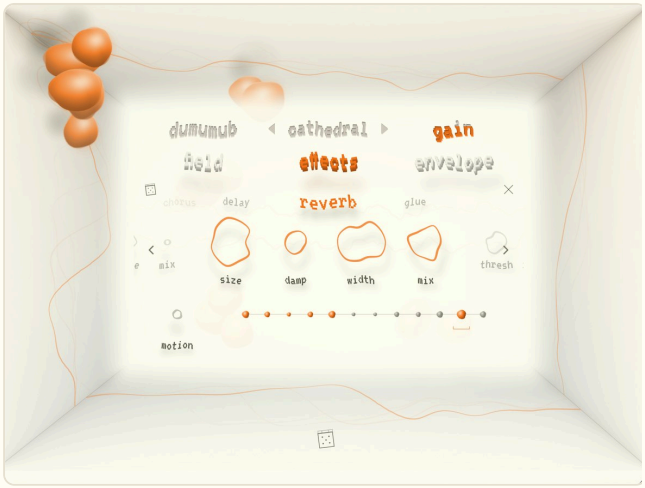
body	**sub**: a layer an octave below, for weight. **detune**: three copies of each voice detuned against each other. **spread**: how wide those copies sit in stereo.
air	**air**: breathy noise mixed into every voice. **tone**: how bright the air is.
character	**drive**: saturation inside each voice, warm to gritty. **drift**: slow tuning wander, so held notes never sit still.
flock	**vib**: how much a boid's speed adds vibrato. **warp**: how much a boid bends its own wave as it speeds up.

the chain

drive	**amount**, **char** (soft and round to hard) and **mix** for saturation over the whole mix.
crush	**bits** (lower is grittier, fully up is clean) and **down** (lower sample rate for aliased, digital grit).
tone	**tilt** tips the mix darker or brighter. **width** goes from mono to extra wide.
phaser	**rate**, **depth** and **mix**.
chorus	**rate**, **depth** and **mix**.
delay	**time** synced to your daw's tempo (1/1 to 1/16, with dotted and triplet options), **fdbk** (how many repeats), **tone** (how bright the echoes stay) and **mix**.
reverb	**size**, **damp** (how quickly it loses its highs), **width** and **mix**.
glue	a compressor: **thresh**, **ratio** and **makeup**.



delay



reverb

motion

the **motion** knob on the left lets the flock's movement push seven things around as it flies: air, voice drive, detune, drift, phaser rate, delay feedback and reverb mix. at zero, nothing moves them. turn it up and the texture changes with the flock. the mod wheel on your keyboard pushes motion up too.

the die at the top left of this page rolls a whole new effects chain.

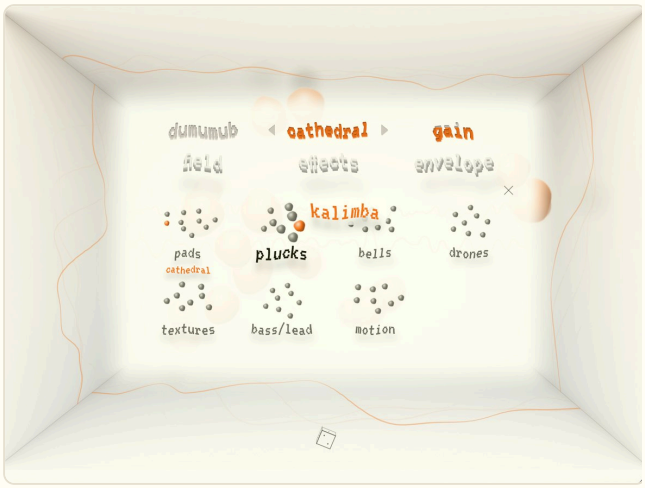
10. presets

b o i d comes with 58 presets in seven families: pads, plucks, bells, drones, textures, motion and bass/lead. every preset holds everything: all the knobs and all four walls.

- **step through** them with the arrows either side of the preset name.
- **click the name** to open the preset page. each family is a flock, and each preset is a boid in it.



the preset page. the orange boid is the sound you're on.

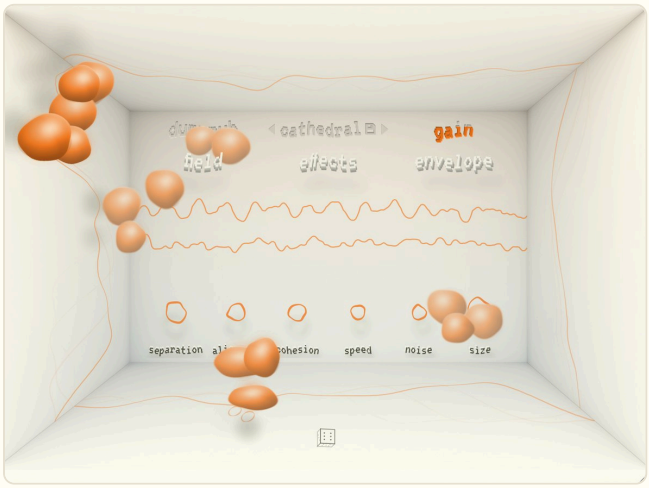


rest on a boid to see its name, click to load it.

- click a family to zoom in on it, and click the empty wall to zoom back out.
- scroll anywhere on the page to step through every sound in order.

saving your own

when you change a sound, a small save icon appears next to its name. click it, type a name and press **save** (or enter). your presets are listed as a family called **yours**.



the save icon after an edit.



naming the new sound.

- the factory presets can't be overwritten. save under a new name instead. using one of your own names replaces that preset.
- to delete one of yours, right click it on the preset page and click **delete?**.
- you can keep up to 500 of your own presets.
- they're saved as .boidpreset files in `~/Library/Application Support/dumumub/boid/presets` on mac and `%APPDATA%\dumumub\boid\presets` on windows, so you can back them up or share them.

11. playing b o i d

velocity	how hard you play sets how loud each note is.
pitch bend	bends every voice up or down by up to 2 semitones.
mod wheel	pushes motion up, so the flock moves the texture and effects more.
sustain pedal	holds notes after you let go of the keys.
voices	every held note is played by every boid, up to 256 voices in all. with a large flock and big chords, older voices make room for new ones.

b o i d listens on every midi channel. your daw saves b o i d's whole state, walls included, with your project.

ideas to try

- turn **cohesion** up and **separation** down to pull the flock into one voice, then do the opposite while holding a chord.
- roll the floor die a few times on a slow pad and keep the one you like.
- drop a vocal or field recording on a wall with **all four walls** and let the flock fly through it.
- set a long **roll** for strummed, harp-like chords.
- turn up **motion** and **speed** together for textures that keep changing.

12. help and contact



click **dumumub** on the back wall to see the version you have and how to reach me.

email	support@dumumub.com
instagram	@dumumub
website	dumumub.com

if something isn't working, email me with your version (from the dumumub page), your computer and your daw, and i'll get back to you.

enjoy the flock.