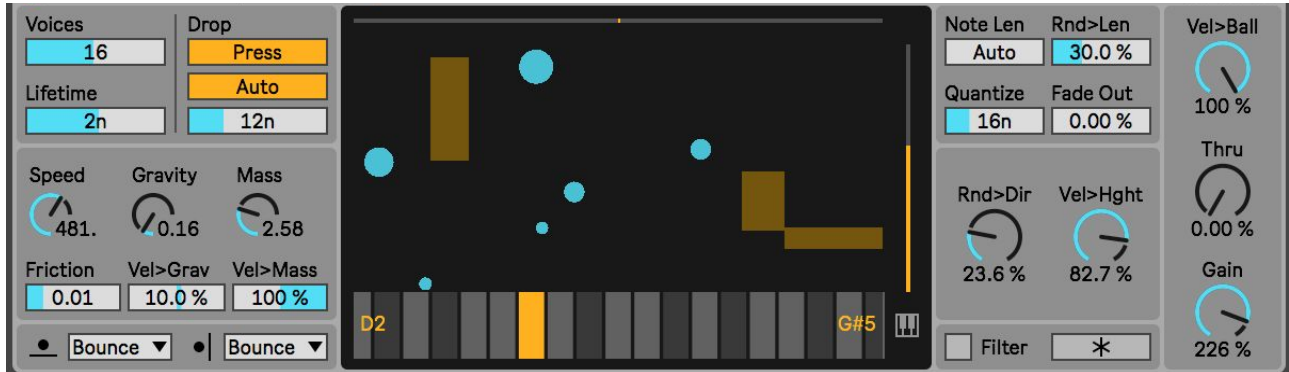


Bouncy Notes User Manual



Bouncy Notes is a Max for Live MIDI effect that generates MIDI notes. It can function as an unconventional arpeggiator, sequencer, note delay, note generator, or other MIDI note applications. In the center of the device is a display of balls (represented by circles) that bounce up and down on a piano roll via a gravity simulation. When a ball hits the piano roll, a MIDI note is output that corresponds to the note on the piano roll. Balls are created by sending MIDI notes to the device. When a MIDI note is received, a ball is created above the pitch on the piano roll that corresponds to the MIDI note received. If the pitch of the MIDI note is not on the piano roll, the ball appears over the closest matching pitch on the piano roll.

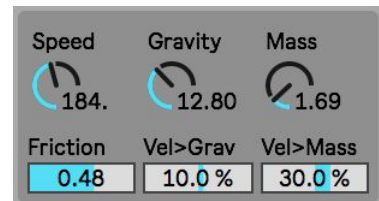


To the top left of the device are parameters for creating and destroying balls. **Voices** sets the maximum number of balls that can exist at a time. **Drop** sets if a ball is created and dropped when a MIDI note on is received (**Press**) or a MIDI note off is received (**Release**). **Lifetime** sets the note length that balls will exist for. Note: if a ball stops bouncing before the **Lifetime** ends, it will be destroyed. If **Lifetime** is turned all the way down, the word “**Auto**” will appear. In **Auto Lifetime** mode, balls remain active until the MIDI note is released that created the balls. However, if **Drop** mode is in **Release**, then balls remain active after the release of the MIDI note and until the next MIDI note on is received. When **Auto Drop** is enabled, balls will drop automatically at the set note length interval once the Live’s transport is running. This allows for more generative approaches of the device.

Below this are parameters for the gravity simulation. **Speed** affects the speed of the entire simulation without affecting the dynamics.

Friction reduces the force of the gravity over the time of a ball’s life. **Gravity** controls the force of the gravity while **Vel>Grav** allows the velocity of the MIDI note to affect the amount of **Gravity** for its corresponding ball. **Mass** sets the size or mass of the ball. Both

Gravity and **Mass** affect the overall dynamics of the simulation. **Vel>Mass** also allows MIDI



note velocity to affect the **Mass** of the balls for more variety. **Gravity** and **Mass** also affect the physical velocity of the ball (this is a different velocity than MIDI note velocity) and this velocity can affect the output MIDI note velocities (more about that later!).



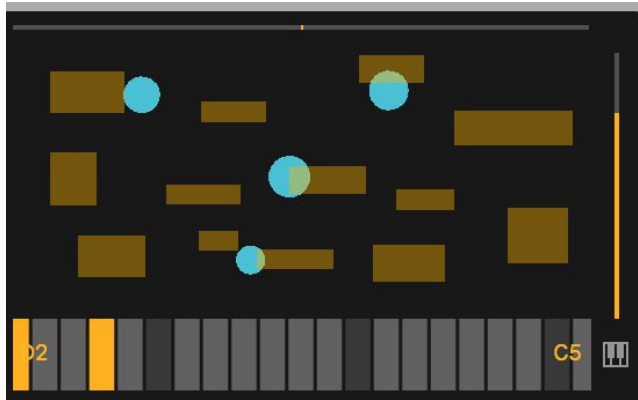
At the bottom of this side of the device are dropdown menus for setting the behaviors if a ball hits the floor (piano roll) or the side walls.

Bounce: The ball bounces off

Wrap: The ball wraps around to the other side. In the case of floor this is to the height it dropped from

Random: The ball appears at a random location. In the case of side walls it could change directions randomly as well.

Delete: (Side wall only) the ball is destroyed.

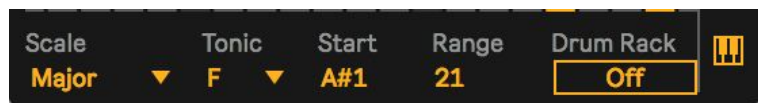


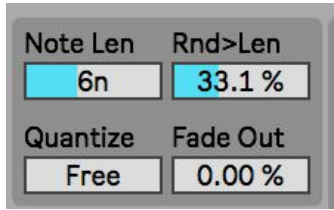
This is the central display of the device. In the middle, it shows the simulation of the balls dropping and bouncing (the blue circles). The yellow/orange rectangles are walls. These walls block the balls from moving. They can be used in all sorts of ways you may find useful or creative. For example: blocking certain notes or making them harder to play, or causing different rates of bouncing at different sections of the piano roll, or adding some random

dynamics, or reversing the direction of a moving ball, etc. At the bottom we see the piano roll with the possible notes that can be output. Output notes are lit up in the yellow/orange color. To the top and right side of the display are two sliders. The top slider controls the directional force applied to a ball when it is created and dropped. In the center, no directional force is applied and the ball drops and bounces only on the note pitch it corresponds to. However, if directional force is applied then the ball will fall and bounce to the left or right. The further the slider is to the left or right, the more force is applied. The right side slider sets the height that a ball is initially dropped from.

Pressing the **Piano Keys** button at the right side of the piano roll reveals options for setting the note pitches on the piano roll. There are

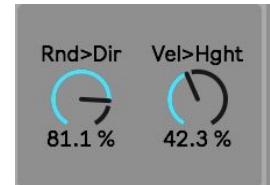
options for different **Scales**, **Tonics**, **Starting Notes**, and **Range** (which sets how many note pitches appear on the piano roll). If **Drum Rack** is enabled, all of these parameters are ignored and instead the piano roll pitches correspond to a Drum Rack that sits next to Bouncy Notes.





The right side of the device deals with output MIDI notes from when a ball hits a note on the piano roll. **Note Len** sets the length of the output MIDI notes. If **Note Len** is set to zero, **Auto** mode will appear. In **Auto Note Len** mode, the length of the output MIDI note matches the length of the MIDI note played that created the corresponding ball. If a length is not determined yet (in the case of a MIDI note still being held) then a random note length is chosen. **Rnd>Len** adds random variety when selecting a **Note Len**, unless **Auto Note Len** is on. When **Quantize** is set to **Free**, then whenever a ball hits the piano roll a note is immediately output. However, **Quantize** can be set to synced note lengths, in which case output MIDI notes are only sent based on the set quantization. **Fade Out** lowers the output MIDI note velocity by the set percentage everytime a ball hits the piano roll. This way you can have balls get quieter each time they hit the piano roll.

Rnd>Dir adds randomness to the directional force applied to newly created and dropped balls. This will create a variety trajectories of the balls. **Vel>Hght** allows velocity from the received MIDI notes to affect the dropping height of the corresponding ball.



As mentioned, if a MIDI note is received that doesn't match the pitches on the piano roll, then a ball is dropped on the closest matching pitch. However, if **Filter** is enabled, then such balls won't be created. The * button causes the gravity simulation to freeze.



Lastly is the far right parameters. **Vel>Ball** sets how much the velocity or force of the balls when they hit the piano roll determine the velocity of the output MIDI note (These are 2 different types of velocities). For example, if **Vel>Ball** is set to 0%, then when a MIDI note is output after hitting the piano roll, its velocity matches the MIDI velocity of the MIDI note that created the ball. If **Vel>Ball** is set to 100%, then the output MIDI note velocity is completely determined by the force of the ball when it hits the piano roll. **Thru** functions similar to a Dry gain parameter in an audio device but instead applies it to receive MIDI in notes. At 0%, received MIDI notes are not sent out at all. At 100%, received MIDI notes are sent through the device unaffected. At other percentages, the velocity of the received MIDI note is lowered accordingly before it is sent out. **Gain** attenuates the velocity of the output MIDI notes when a ball hits the piano roll.