

Arithmophone ToneHive Web App - quickstart guide



INTRODUCTION

The Arithmophone ToneHive Web App is a browser-based musical instrument that you can play from any tablet or computer (preferably one with a touch screen). It has a keyboard with a 41-note just intonation scale and a three octave range, and direct access to many sound-shaping parameters. Read on below for a description of all the functions of the Arithmophone ToneHive Web App.

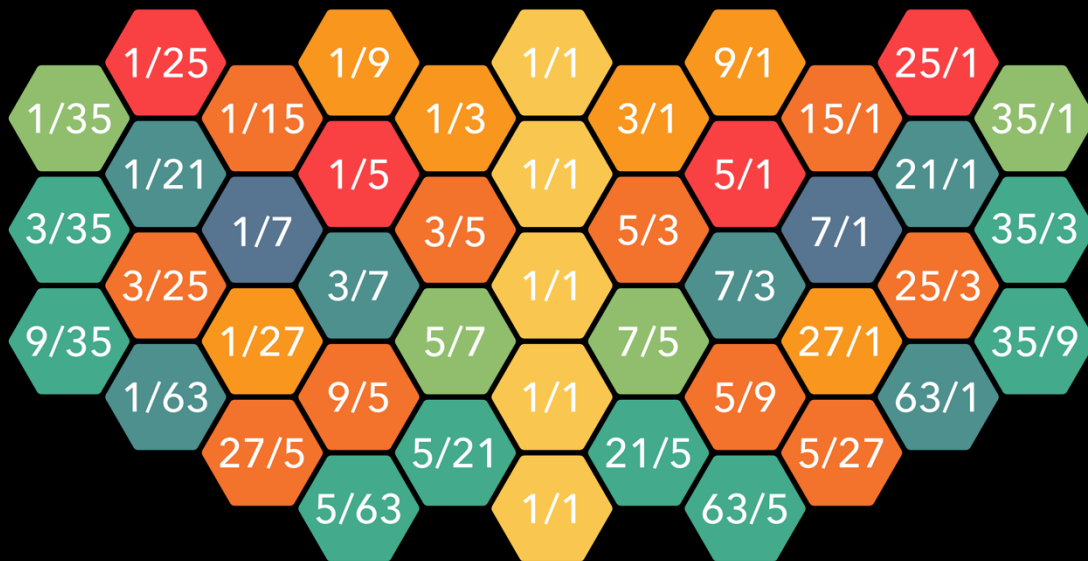
KEYBOARD

On the ArithmophoneToneHive, the colours of the keys reflect their ratios with respect to the central note (1/1 ratio), like this:

COLOURS ON THE ARITHMOPHONE TONEHIVE

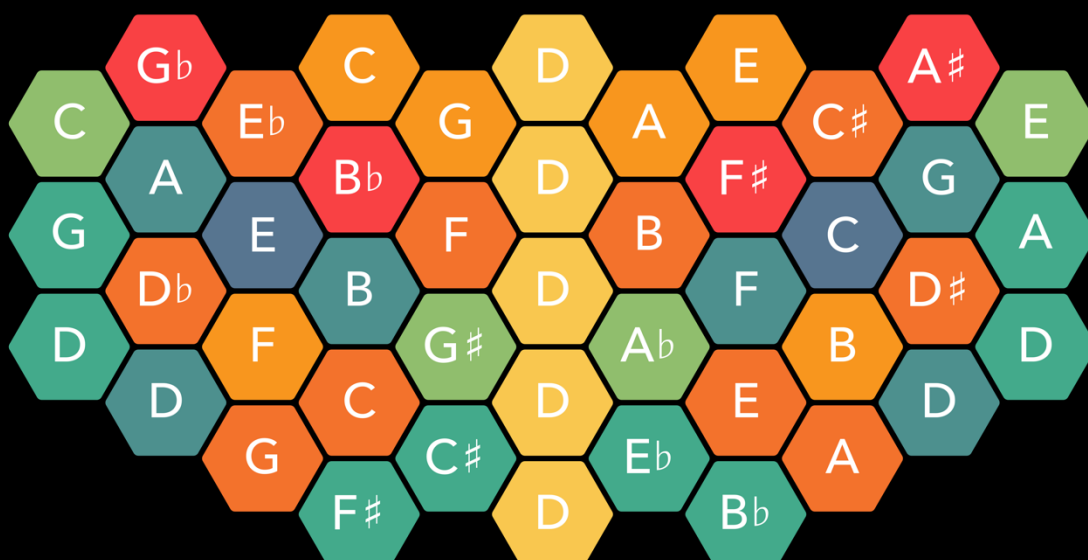
	Ratios of 1 and 2
	Ratios of 3 and 2
	Ratios combining 5, 3 and 2
	Ratios of 5 and 2
	Ratios combining 7, 5 and 2
	Ratios combining 7, 5, 3 and 2
	Ratios combining 7, 3 and 2
	Ratios of 7 and 2

The notes on the Arithmophone ToneHive are arranged like this:



Please note: in this illustration, all ratios are shown in their 'pure' form, without octave reduction. In actuality these ratios may be multiplied or divided by 2 any number of times, depending on the octave.

With note names instead of ratios, taking a D as the center, the map looks like this:



Except for the 5 central keys, each note is split up into three keys, each offering the same note in a different octave. The large keys in the middle offer the central note across 5 octaves (1/4, 1/2, 1/1, 2/1, 4/1). This gives the ToneHive a full range of 3 octaves with an extra 'pedal' note one octave below.

For more detailed information about just intonation tuning, the layout of the ToneHive keyboard and the rationale behind this design, please visit these pages: chielzwinkels.net/arithmophone/background/

CONTROLS & OPTIONS

On Android and Windows devices, you can click the button labeled **F** at the bottom left of the screen to enter full screen mode. This makes the keyboard as large as possible for the best playing experience. On Apple iOS/iPad OS devices, full screen mode is blocked for web apps, but you can get a similar result by hiding the toolbar. To do this, you can click on the **AA** icon in the Safari address bar, then select 'Hide Toolbar' in the menu.

The button at the bottom right labeled **O** brings up the options screen, where you can adjust different sound parameters. Once you are finished adjusting sound parameters, you can press the **options** button to close the options screen, this will return you to the keyboard so you can resume playing.

The three buttons in the middle let you switch between different waveforms:

- = Sine wave (dark, round sound)
- △** = Triangle wave (warm, mellow sound)
- = Square wave (bright, sparkly sound)

The **mono mode** button engages monophonic mode. In standard mode (the button is blue), the Arithmophone ToneHive can sound up to 4 notes at a time, so you can play chords as well as melodies. In monophonic mode (the button is yellow), the Arithmophone Korale will sound only one note at a time. This gives a different kind of sound, less like a piano or a guitar and more like a saxophone or a vintage synthesizer.

SLIDERS

The sliders give you more options to change the sound of the Arithmophone ToneHive. From top to bottom, these sliders have the following functions:

Slider 1: Delay mix

There is a stereo delay on the Arithmophone, that produces echoes to make the sound more wide and spacious. The blue slider determines the amount of delay that is mixed in with the original sound. Low values (slider to the left) give less delay, high values (slider to the right) give more delay. When the slider is completely to the left, there is no delay at all mixed in.

Slider 2: Delay feedback

This slider determines how many echoes are produced by the delay. Low values give only a few echos, while at high values the echoes go on for a long time.

Slider 3: Delay time

This slider determines the time between echoes. At low values, the echoes follow each other very quickly, like in a small room. At high values, there is a lot of time between echoes, like in a large cave or a canyon.

Slider 4: Vibrato

This slider determines the vibrato added to the notes. Vibrato is a slight 'wobble' in pitch that can make notes sound more lively and expressive. At the lowest value there is no effect at all, at the highest value there is a very fast and pronounced effect.

Slider 5: Attack

This slider determines how quickly the notes rise to full volume. Low values give a snappy sound (like a piano or a guitar), high values give a softer start of the sound (like a violin or a cello).

Slider 6: Decay

This slider determines how long the notes ring out. Low values make for short notes, high values make for longer notes.

Slider 7: Transpose

By default, the Arithmophone ToneHive is tuned to D. With the red slider, you can adjust the pitch up or down in semitone steps, from G (7 semitones below D) up to A (7 semitones above D).