

Game Music in Logic Wk3

Goals For Today

1. Understand what synthesis is and start learning how to synthesise sounds
2. Create our own sounds and begin to shape our pieces
3. Flesh out our songs adding a build up with synthesised drums

A vintage KORG synthesizer keyboard is shown on a stand. The instrument is black with a white and black keyboard. The control panel features numerous knobs, buttons, and a patch panel with various connectors. The brand name 'KORG' and 'SYNTHESIZER' are visible on the front panel. A large, semi-transparent white circle with a thin white outline is overlaid on the right side of the image, partially obscuring the synthesizer's controls.

Synthesis

Sound Waves – Sine Wave

The **sine** is the most basic of sound synthesis waveforms.







E

Reverb



ANALOG

SYNC

TABLE

FM

Shape 1



Shape 2



Shape

Modulation

Vibrato

Mix

Osc 1



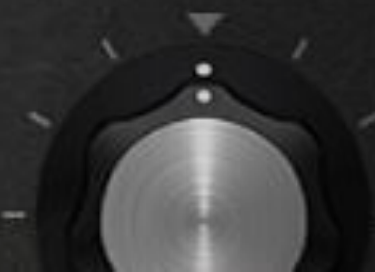
LFO

Filter Env

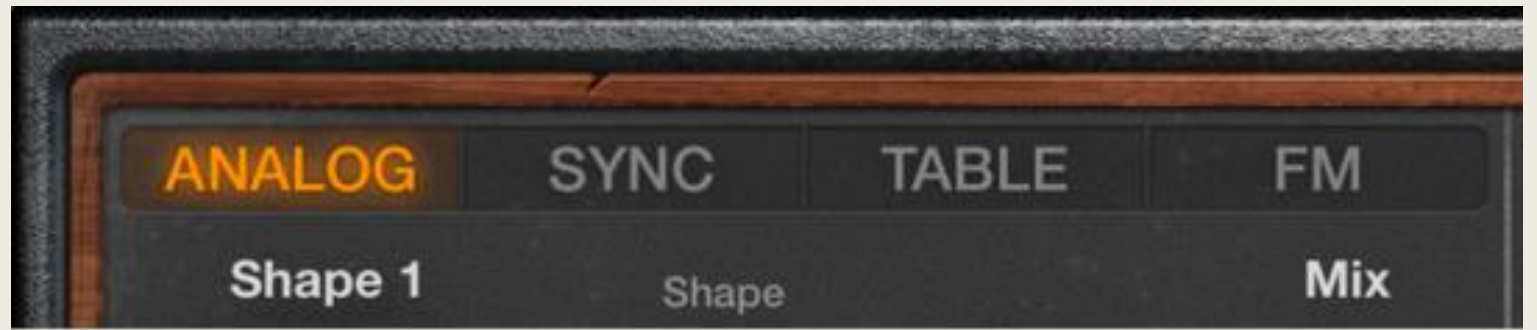
Using Retrosynth

Semitones

Cents



Settings



-
- **Analog:** Use for classic synthesizer sounds, such as leads, pads, and basses.
 - **Sync:** Use for aggressive synthesizer sounds, particularly leads and basses.
 - **Table:** Use for clean digital synthesizer sounds, such as pads and basses, and evolving effect sounds.
 - **FM:** Use for classic digital synthesizer sounds. Of note are bells, electric piano, clavinet, and spiky bass sounds.

Shape 1 and 2 knobs: Choose the type of waveform that each oscillator generates. The waveform is responsible for the basic tonal color. The oscillators output a number of standard waveforms—noise, rectangular, sawtooth, and triangular.



Shape Modulation knob: Choose a waveform shape modulation source, and set the modulation intensity. The centered (off) position disables all waveform shape modulation with the LFO or filter envelope.



Vibrato knob: Set the amount of vibrato (pitch modulation).



Semitones knob: Set the pitch of oscillator 2 in semitone steps, over a range of ± 2 octaves.



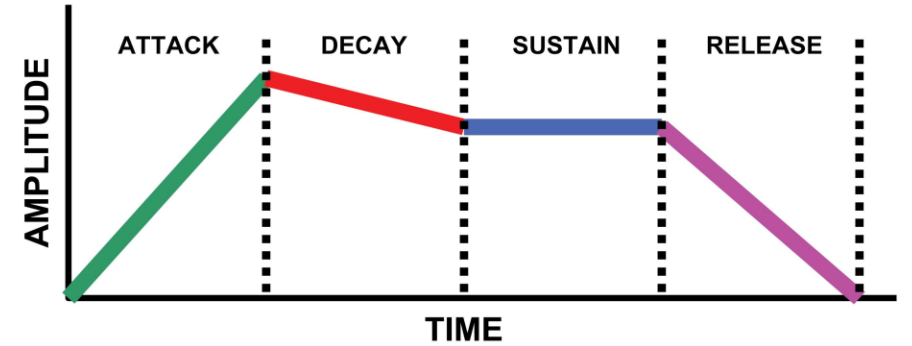
Cents knob: Precisely adjust the frequency of oscillator 2 in cents (1 cent = 1/100th semitone)



Mix slider: Crossfade (set the level relationships) between the oscillators (Shape 1 and 2).



Envelopes



This is the final element the sound will pass through before leaving the synth, usually there is a number of these on a synth so you can route the sound a number of different ways. They will always have the same parameters which are described below.

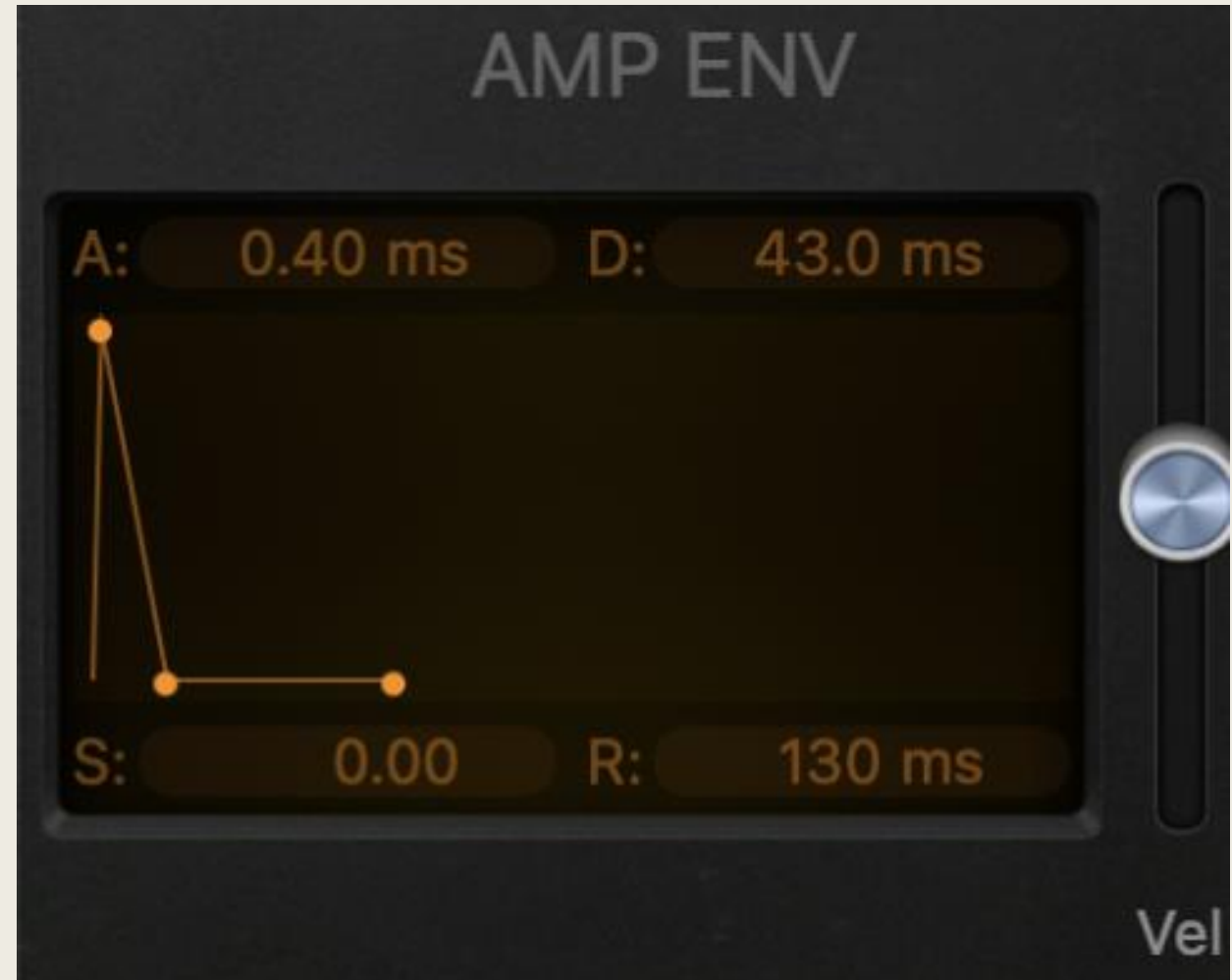
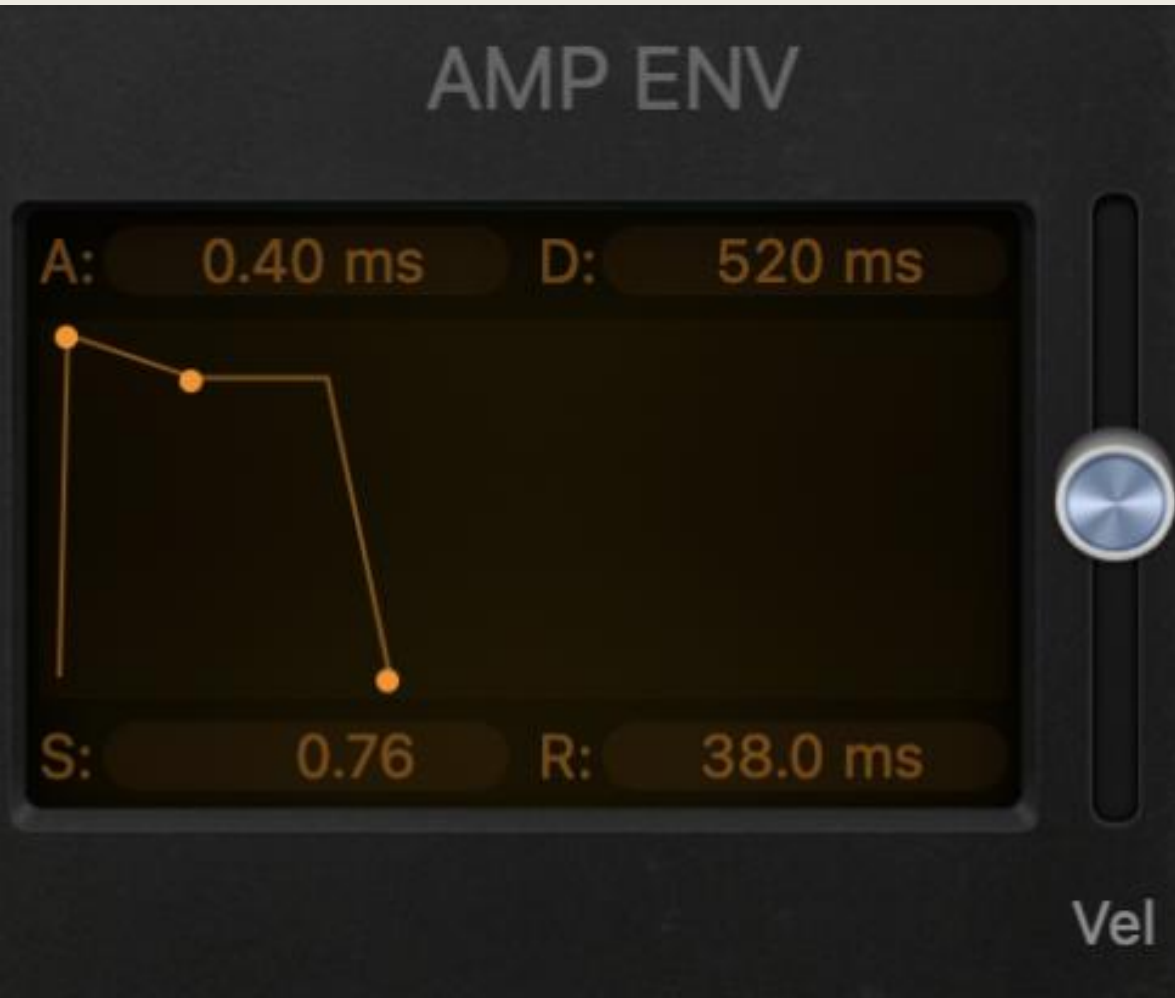
Attack – The attack of the sound is the initial slope the sound follows when it is first produced.

Decay – This refers to the time it takes the note to go from it's maximum level to its sustain level.

Sustain – The sustain or sustain level relates to the level that the note is at while it is being held.

Release – The release means the time it takes the note to get from the sustained level to silence.

Shortening The Envelope will make the sound more percussive



Kick Drum

The interface is divided into several functional sections:

- ANALOG**: Includes **Shape 1** and **Shape 2** knobs, **Shape Modulation** knob, **Vibrato** knob, **LFO** knob, **Filter Env** knob, and a **-24 s** display.
- Mix**: A vertical slider for **Osc 1** and **Osc 2**.
- OSCILLATOR**: A section with **Drive** knob, **LFO** knob, and **Env** knob.
- FILTER**: Features a **LP 12dB Sharp** filter type, a **Cutoff** knob (0.132), a **Res** knob (0.38), and a **Key** slider. Includes **Static** and **Env** sub-sections.
- AMP**: Contains **Volume** knob, **Sine Level** knob, and **Rate** knob.
- EFFECT**: Includes a **Flanger** effect with **Mix** knob.
- Glide**: A section with **Mode** (All Osc), **Time** knob, and **Sync** knob (On/Off).
- LFO**: A section with a waveform display, **Rate** knob (6.40 Hz), and **Wheel** control.
- VIBRATO**: A section with a waveform display, **S** (0.76), **R** (270 ms), and **Vel** control.
- FILTER ENV**: A section with a waveform display, **A** (0.40 ms), **D** (520 ms), **S** (0.00), and **R** (130 ms) parameters, and **Vel** control.
- AMP ENV**: A section with a waveform display, **A** (0.40 ms), **D** (43.0 ms), **S** (0.00), and **R** (130 ms) parameters, and **Vel** control.

SETTINGS button is located in the bottom right corner.

LOGIC PRO-X : RETRO SYNTH

Making a
Kick Drum



<https://youtu.be/VzBEIMPEL0Ia>

Snare Drum

ANALOG SYNC TABLE FM

Shape 1 Shape Modulation Vibrato

Shape 2 Semitones Cents

Mix Osc 1 Osc 2

OSCILLATOR

LP 24dB Lush

Cutoff: 0.484 Res: 0.00

Filter FM LFO Env

Static Env

FILTER

Volume Mix

Sine Level Rate

AMP **EFFECT**

Glide Mode All Osc Time

LFO **VIBRATO**

Rate: 6.40 Hz

Sync On Off Wheel

A: 0.40 ms D: 520 ms S: 0.76 R: 270 ms

A: 0.40 ms D: 43.0 ms S: 0.00 R: 130 ms

FILTER ENV **AMP ENV**

Vel Vel

SETTINGS

Retro Synth

LOGIC PRO-X : RETRO SYNTH

Making a
Snare Drum



<https://youtu.be/SkCyv046Q7c>

Hi Hat

The image shows a digital synthesizer interface for a Hi Hat sound, organized into several sections:

- ANALOG** (selected):
 - Shape 1** and **Shape 2**: Waveform selectors.
 - OSCILLATOR**: Includes **Shape Modulation**, **Vibrato**, **LFO**, **Filter Env**, **Semitones** (set to 0 c), and **Mix** (Osc 1/Osc 2).
- BP 6dB Sharp** (selected):
 - FILTER**: Includes **Drive**, **LFO**, **Env**, **Static**, and **Env**. A graph shows **Cutoff: 0.606** and **Res: 0.22**.
 - AMP**: Includes **Volume**, **Sine Level**, and **Mix**.
 - EFFECT**: Includes **Rate** and **Flanger**.
- GLIDE**: Includes **Mode** (All Osc), **Time**, and **Sync** (Off/On).
- LFO**: Includes a graph, **Rate: 6.40 Hz**, and **Wheel**.
- VIBRATO**: Includes a graph, **S: 0.76**, **R: 270 ms**, and **Vel**.
- FILTER ENV**: Includes a graph, **A: 0.40 ms**, **D: 520 ms**, **S: 0.01**, **R: 130 ms**, and **Vel**.
- AMP ENV**: Includes a graph, **A: 0.40 ms**, **D: 43.0 ms**, **S: 0.01**, **R: 130 ms**, and **Vel**.
- SETTINGS**: A button in the bottom right corner.

LOGIC PRO-X : RETRO SYNTH

Making a
Hi-Hat



<https://youtu.be/sgP4PMME20A>

Further Reading

How To Make A Bass - <https://youtu.be/gvTlgNw4idk>

How to make 8 Bit Synths - <https://youtu.be/D3L7UNmEPao>

Further Exploring Retrosynth - <https://youtu.be/ktXARX-qDnI>

Logic Pros Explanation of Retrosynth -

<https://support.apple.com/en-gb/guide/logicpro/lgsi213c4dec/10.7.5/mac/12.3>

Writing Your Boss Theme (Things to think about)

- Melody Is Important
- Boiling Point or Buildup
- Instrumentation – Electric Guitars/Bass
- Start Aggressive and go into a soft emotional section