



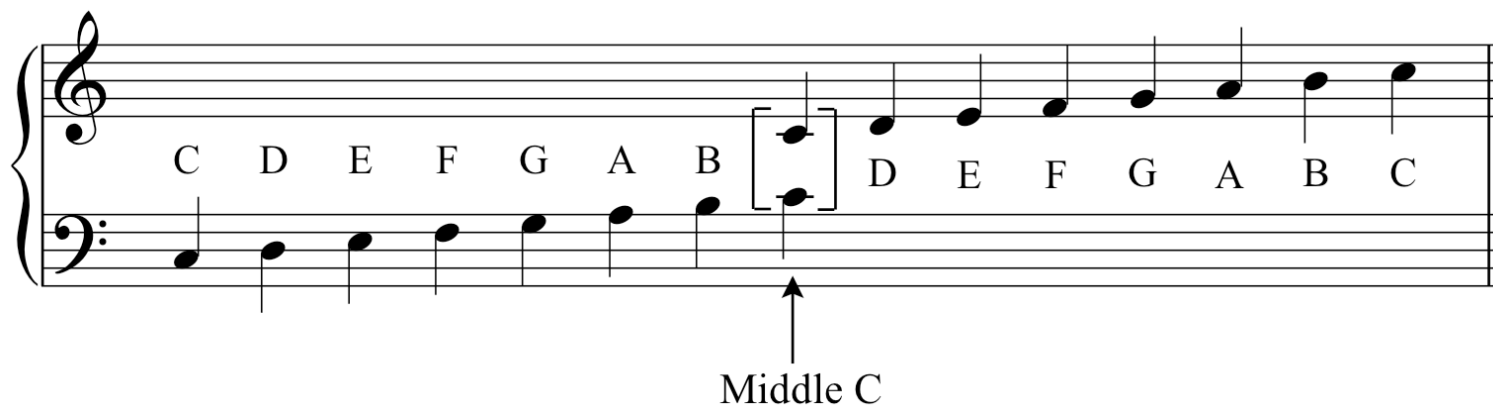
錄音作曲編曲教學

AppleMusicPro.org

GarageBand 作曲 - 編曲 - 錄音軟體培訓課程，針對音樂創作有興趣的初學者。

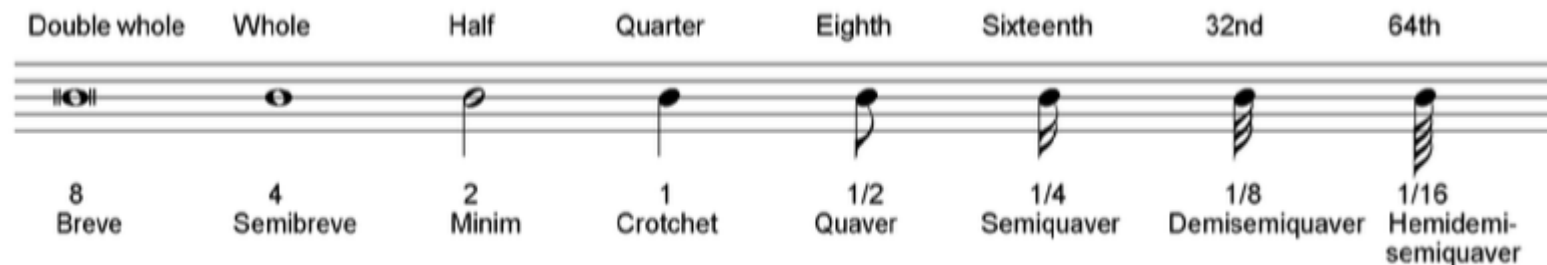
音樂記號 Notation

- 五線譜 (Staff)
- 以五條線或線與線之間的位置畫上音符代表不同音高



音樂記號 Notation Time Value

- 不同時值的音符
- Semibreve = 全音符
- Minim. = 二分音符
- Crotchet = 四分音符
- Quaver = 8 分音符
- Semiquaver = 16 分音符
- Demisemiquaver = 32 分音符
- Hemidemisemiquaver = 64 分音符



音樂記號 Notation

- 踏板 Padel
- 力度記號 pp p mf f ff
- 演奏法 (Articulations)
- 拍子記號 TIME SIGNATURES



Press the damper (right) pedal.



Release the damper pedal.



Press the damper pedal at 'P', hold, release at the end.



Press the sostenuto pedal, hold, release.

Una corda (u.c.)

Press the una corda (left) pedal.

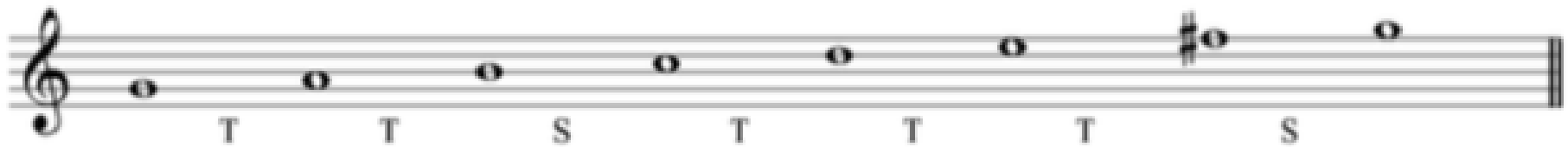
Tre corde (t.c.)

Release the una corda pedal (literally, this means "three strings").

音階 Scales

- 大調 Major
- 和聲小調音階 Harmonic Minor Scale
- 旋律小調音階 Melodic Minor Scale
- W W S W W W S Whole one Semi Tone

G Major



G to A is a tone, A to B is a tone, B to C is a semitone, and so on.

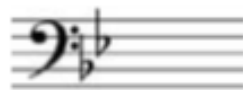
調號 Key Signature

- 線上的 C、D、E、F、G、A、B、C 各音的音高一對應，所以以 C 為主音的大音階是不需要升降號的，亦即與鋼琴上白鍵的排列完全吻合。



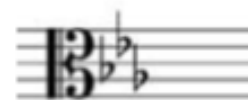
G Major

E Minor



Bb Major

G Minor



Eb Major

C Minor



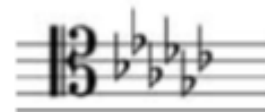
E Major

C# Minor



B major

G# Minor

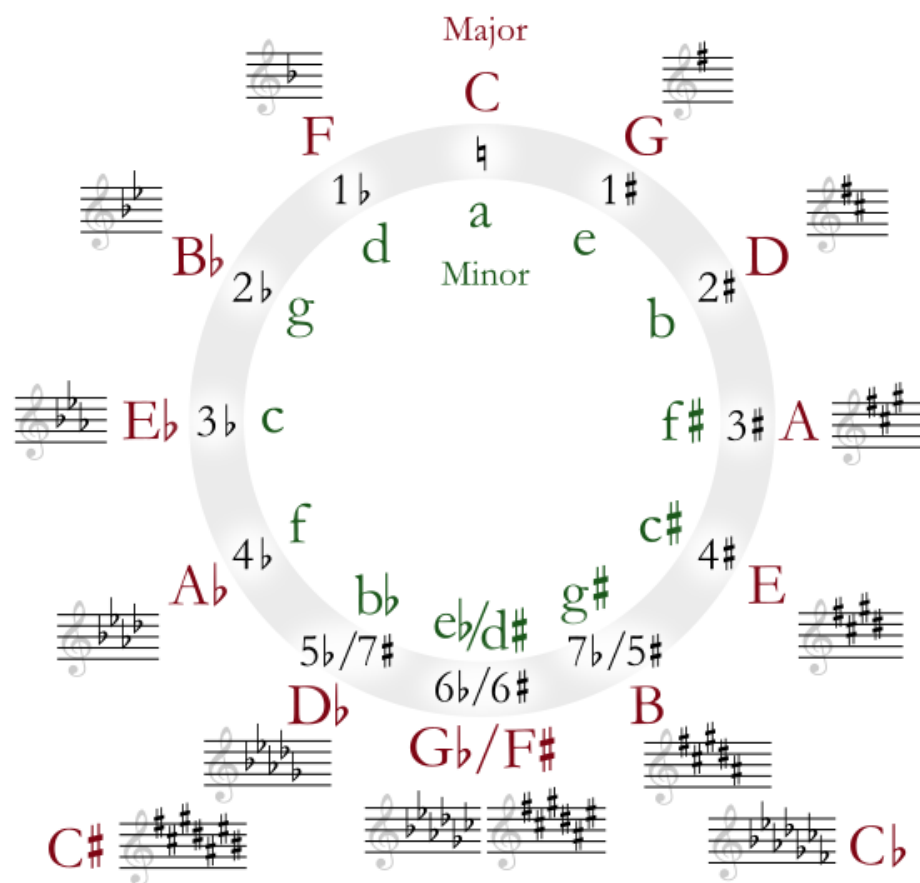


Gb Major

Eb minor

Circle of Fifths

- 可用來記住各個調的順序和大小調的關係



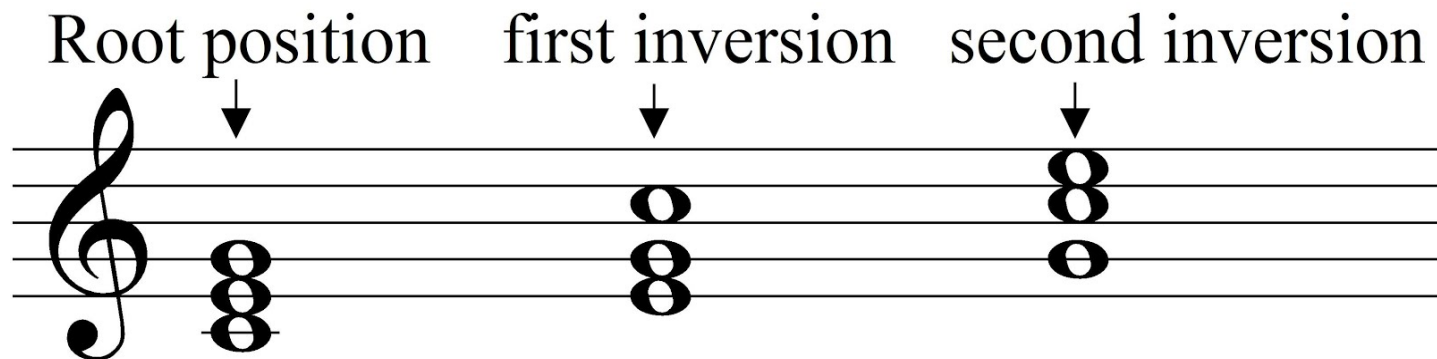
和弦 Chords

- 和弦是一組同時發聲的音。和弦通常由三個基本音符組成
- 三和弦 (triads)
- 七和弦 (sevenths)
- 九和弦 (ninths)
- 大和弦 (major chord)
- 小和弦 (minor chord)
- 增和弦 (augmented chord)
- 減和弦 (diminished chord)







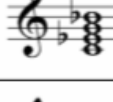

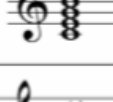
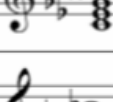
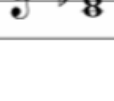
和弦轉位 Chord Inversion

- 轉位是指音在音程中的互換，音程中的兩個音如果低音向上提高八度，或高音向下移動八度
- C E G Root Position
- E G C First Position
- G C E Second Position



Chords

- Chord

<i>Chord Type</i>	<i>Symbols Used</i>	<i>Notes Included</i>
Major Triad	C	
Minor Triad	Cm, C-, Cmi, Cmin	
Diminished Triad	C ^o , Cdim	
Augmented Triad	C ⁺ , C ^{aug} , C ^(#5)	
Minor Seventh	Cm ⁷ , C- ⁷ , Cmi ⁷ , Cmin ⁷	
Dominant Seventh	C ⁷	
Major Seventh	Cmaj ⁷ , CΔ ⁷ , Cma ⁷ , CM ⁷	
Fully Diminished Seventh	C ^{o7} , Cdim ⁷	
Half Diminished Seventh	Cm ^{7(b5)} , C ^{o7} , C- ^{7(b5)}	

和弦進行和終止式 Chord Progression & Cadence

- “Chord Progression” (和弦進行), 和弦進行是一首音樂的橫向變化。簡單講「和弦進行」就是組成一段樂曲的進行。
- 以下是最常使用在流行曲的 chord progression。
- I - V- VI - III - IV - I - IV/II - V
- Pachelbel 著名的古典樂曲” Canon in D”



和弦進行和終止式 Chord Progression & Cadence

- F - G - Em - Am - F - G - C - C7

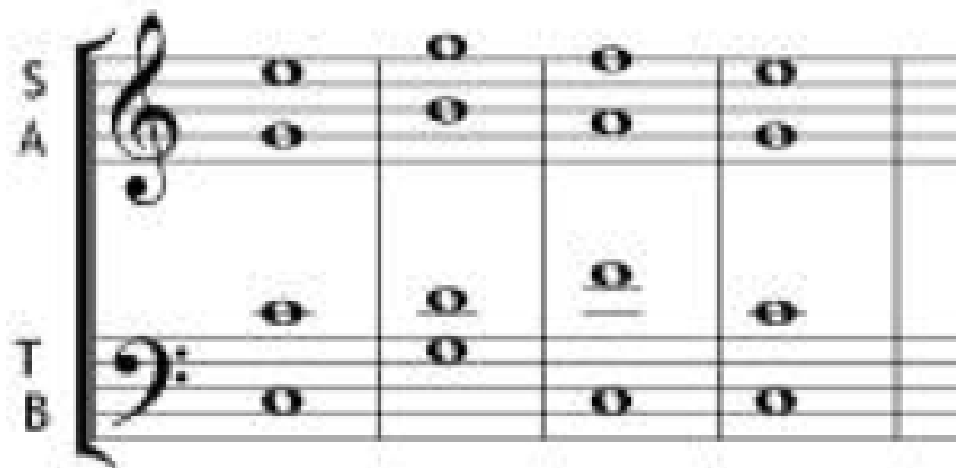
The image shows a musical score for a chord progression. It consists of two staves. The top staff is a grand staff with two treble clefs, showing chord voicings for F, G, Em, Am, F, G, C, and C7. The bottom staff is a single treble clef staff showing a bass line with eighth notes and a final quarter note with a fermata. The progression is: F (F2, A2, C3), G (B1, D2, F2), Em (G2, B1, D2), Am (C2, E2, G2), F (F2, A2, C3), G (B1, D2, F2), C (C2, E2, G2), and C7 (C2, E2, G2, Bb2).

和弦進行和終止式 Cadence

- 終止式是指以旋律或和聲上的配置作為樂曲終止
- Perfect Cadence: V - I
- Plagal Cadence IV - I
- Imperfect Cadence: Any Chord - V

4 Part Writing - SATB

- Part Writing 弦樂四種奏和樂團弦樂的配置皆是分為
- Soprano - Alto - Tenor - Bass
- 第一小提琴、第二小提琴、中提琴和大提琴四組聲部

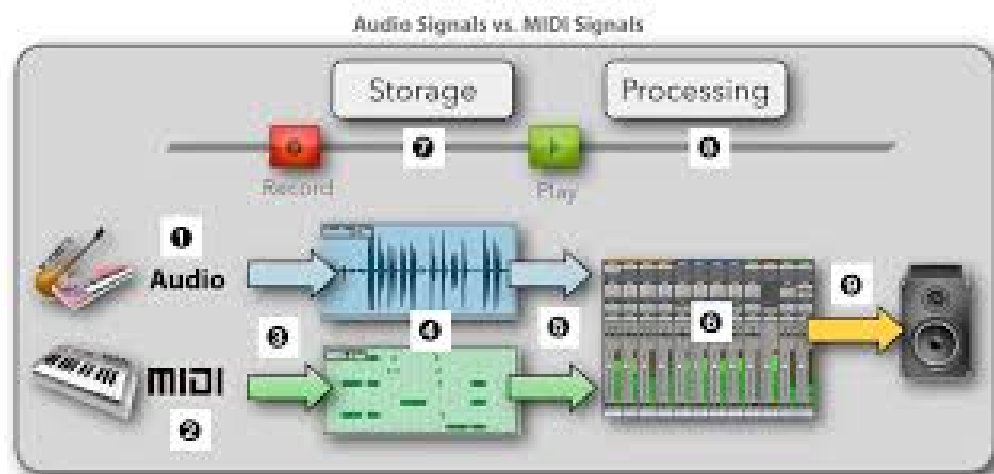


一般作曲技巧 General Composition Tips (Melody)

- Inspiration
- Improvisation
- 旋律 Melody
- Chord
- 試著以喜歡的樂團與歌曲當作參考範例
- 用 Motif 方式組合樂句

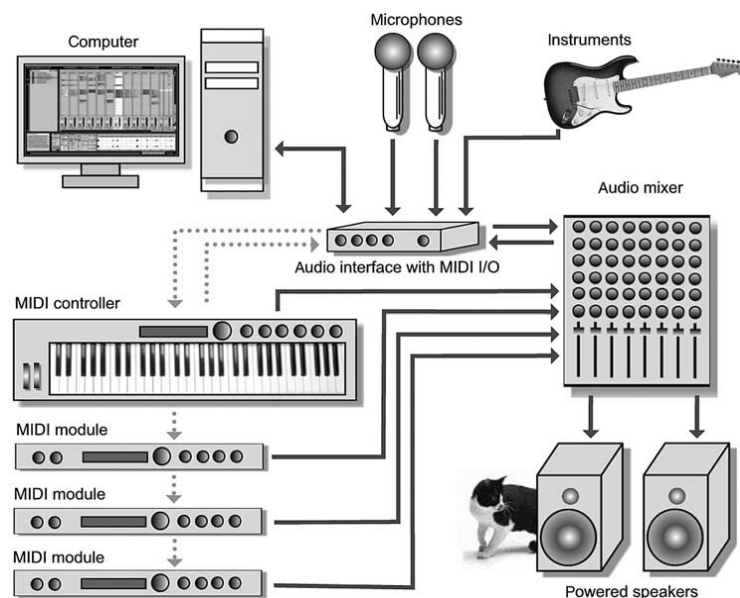
數碼 MIDI

- 樂器數字接又（MIDI）是一種數字通信語言和兼容規範，允許多個硬件和軟件
- 電子儀器，性能控制器，計算機和其他相關設備通過連接網絡相互通信
- 彈奏鍵盤，選擇音色編號，改變調製輪，觸發舞台視覺效果等



音樂製作時常見硬件 Music Production Hardware

- Microphone | 麥克風
- Audio Interface | 錄音介面
- Speaker & Headphone | 監聽耳機 & 監聽喇叭
- MIDI keyboard | MIDI 控制鍵盤



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Neumann U87



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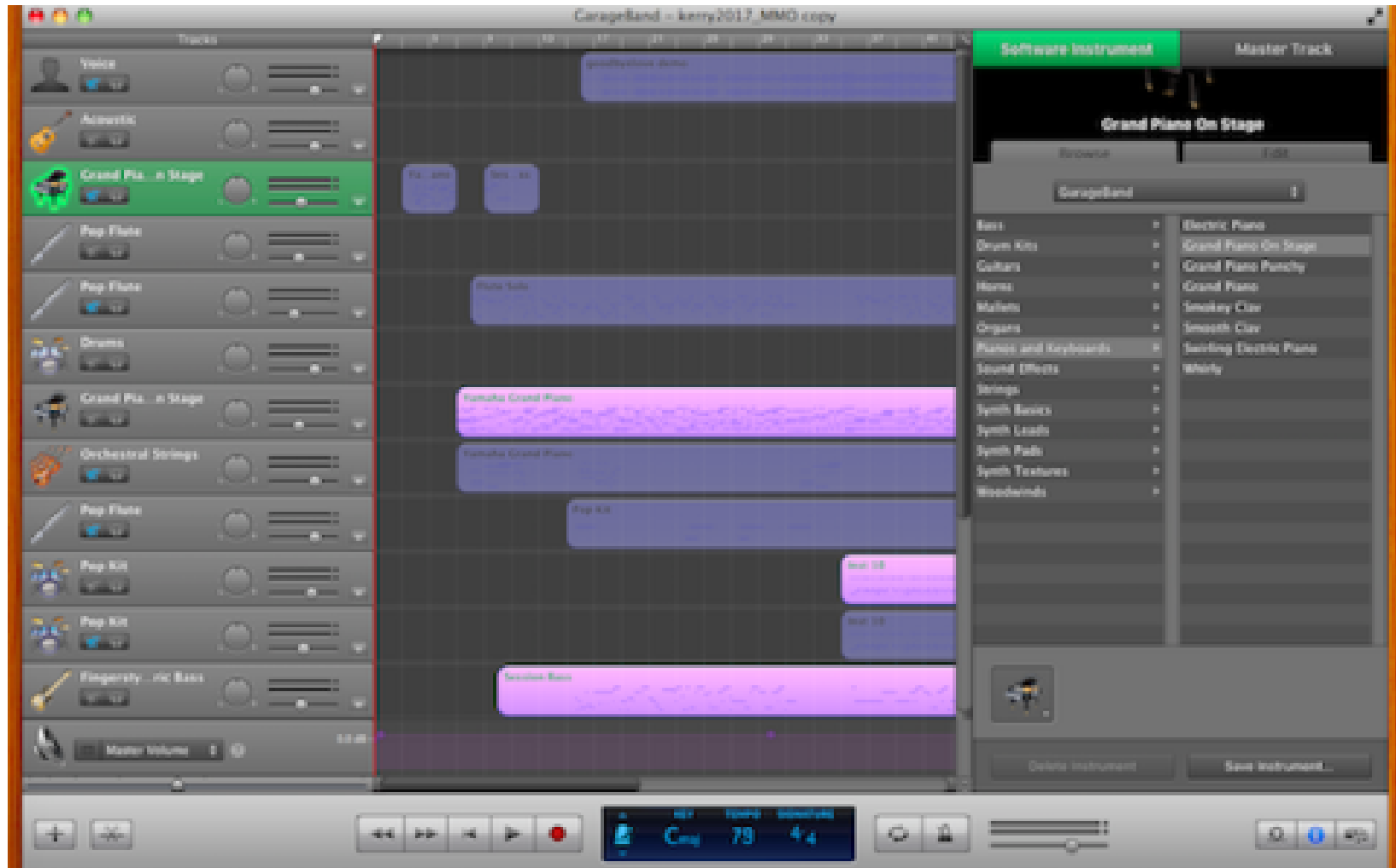


DAW Digital Audio Workstation

Studio One 4.5
Ableton Live 10
Audacity
Pro Tools 2019
Garage Band
Logic Pro X
Steinberg Cubase
FL Studio 20
Reason
Cakewalk

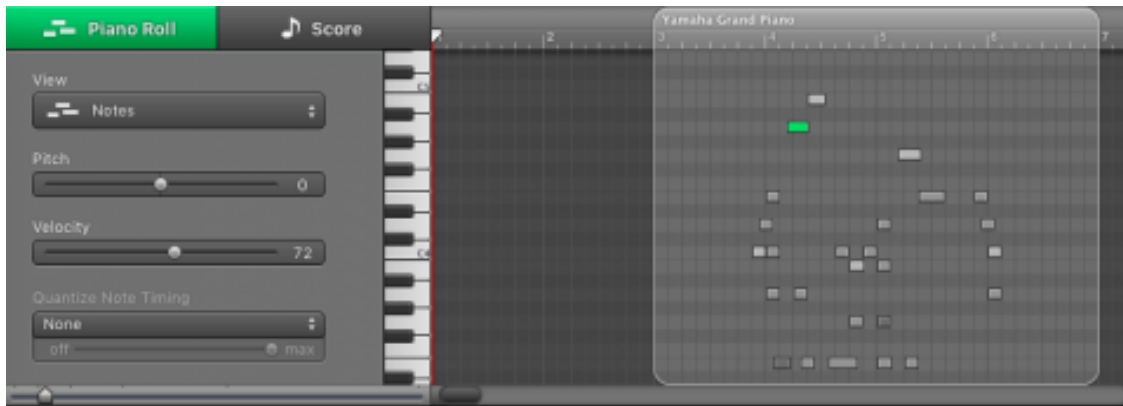


編輯介面 Arrange Windows



編輯視窗 Edit Windows

Piano View



Score View



Event 視窗 Event Windows

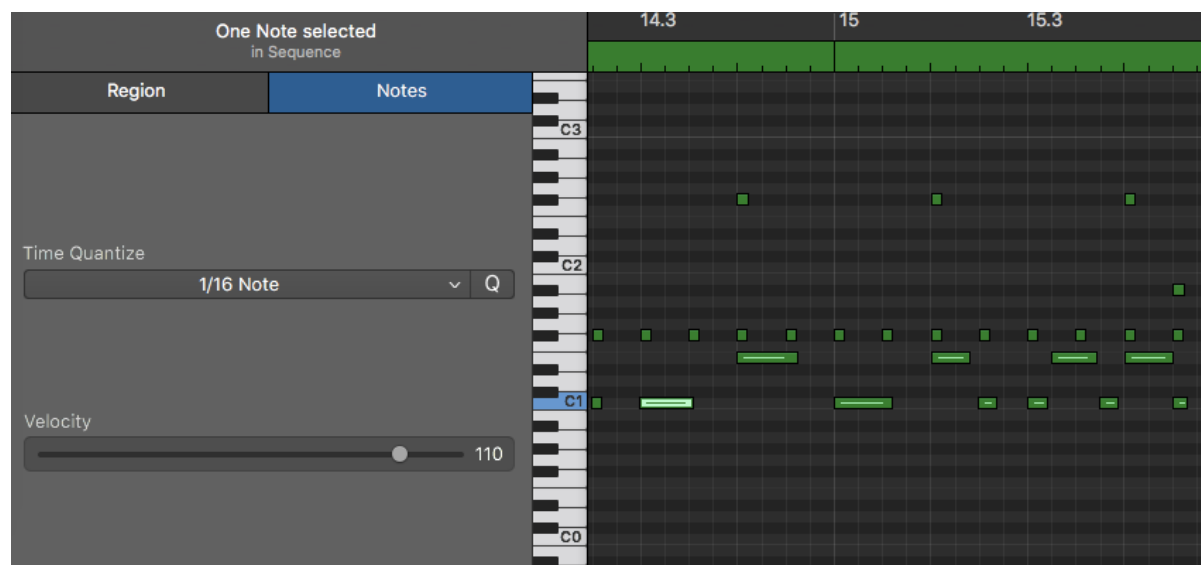
Event View

The screenshot shows the Ableton Live interface. The main window displays a piano roll for the 'Techno Kit' instrument, with two 'Epiano groove' tracks. An 'Event View' window is open, showing a list of MIDI events for the 'Techno Kit' instrument. The window has a table with columns for Position, Status, Val, and Length/Info. The table contains 18 rows of event data. At the bottom of the window, it shows 'Techno Kit' and '118 Events'.

Position	Status	Val	Length/Info
5 1 1	↓ KICK 1	113	0 0 2 169
5 1 1	↓ KICK 1	113	0 0 2 170
5 1 1	↓ Closed...	113	0 0 0 222
5 1 1	↓ Closed...	113	0 0 0 222
5 1 3	↓ Closed...	77	0 0 0 109
5 1 3	↓ Closed...	77	0 0 0 109
5 2 1	↓ KICK 1	121	0 0 2 77
5 2 1	↓ KICK 1	121	0 0 2 76
5 2 1	↓ SD 1	117	0 0 2 55
5 2 1	↓ SD 1	117	0 0 2 56
5 2 1	↓ Closed...	121	0 0 0 237
5 2 1	↓ Closed...	121	0 0 0 236
5 2 3	↓ Closed...	78	0 0 0 126
5 2 3	↓ Closed...	78	0 0 0 126
5 3 1	↓ KICK 1	117	0 0 1 222
5 3 1	↓ KICK 1	117	0 0 1 223
5 3 1	↓ Closed...	121	0 0 0 232
5 3 1	↓ Closed...	121	0 0 0 232
5 3 3	↓ PED HH	107	0 0 0 208
5 3 3	↓ PED HH	107	0 0 0 207
5 3 4	↓ Closed...	86	0 0 1 17
5 3 4	↓ PED HH	107	0 0 0 170

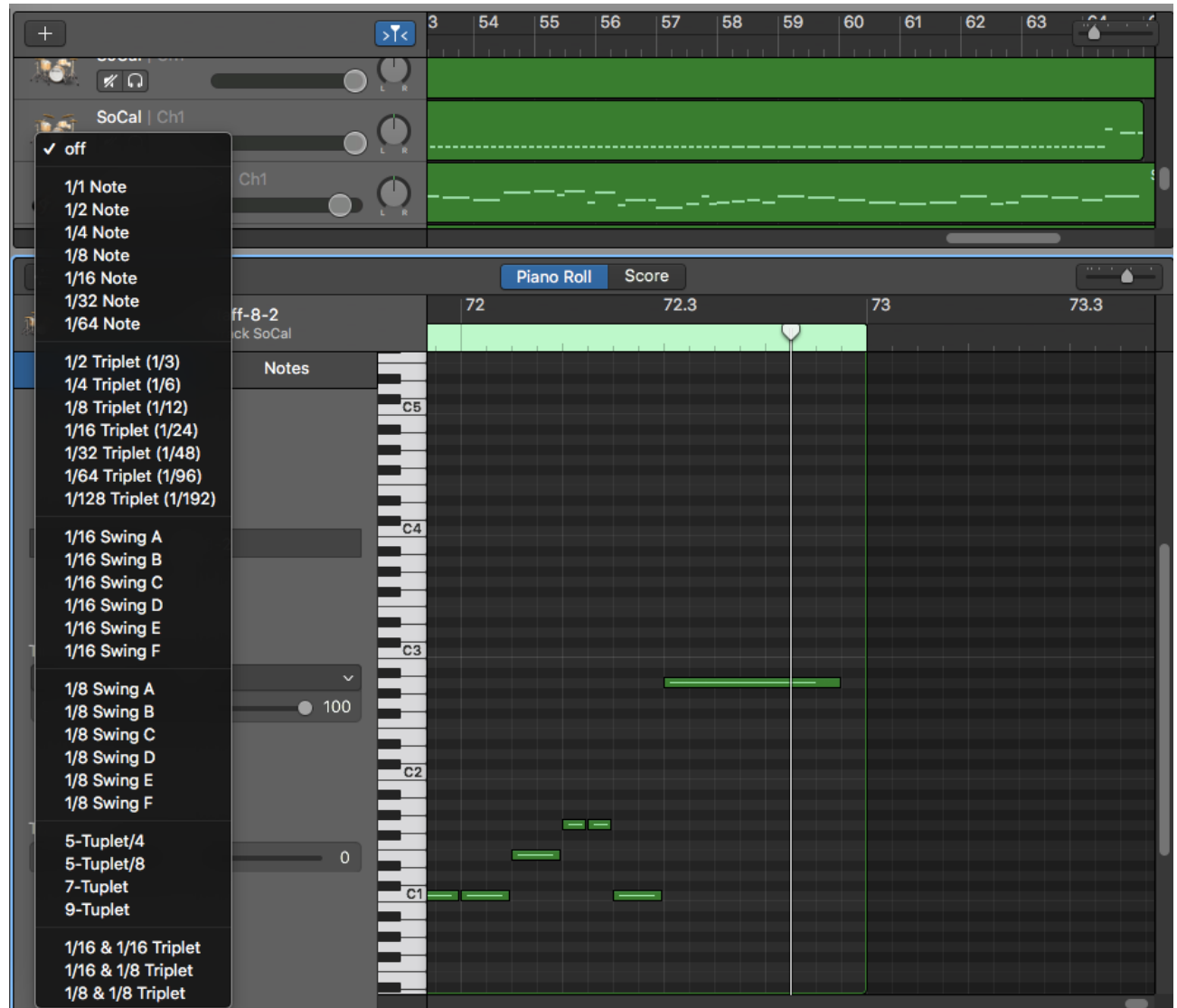
Velocity

- 也就是所謂的音色力度、 Software Instruments 會根據該數值的大小來決定音符的音色強弱。
- Velocity 的數值由 0 ~ 127 共有 128 階、 0 代表無聲、 127 則表示最大力度。



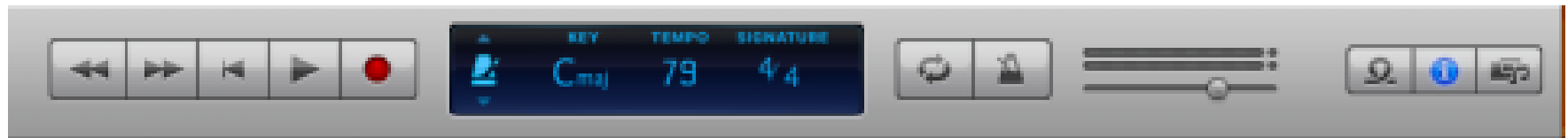
量化音符 Quantize

大多數 Drum & Bass 都可用 Quantize 來對準拍子，Quantize 值可去到 95-98，鋼琴則不可用大多數 Drum & Bass 都可用 Quantize 來對準拍子，Quantize 值可去到 95-98，鋼琴則不可用



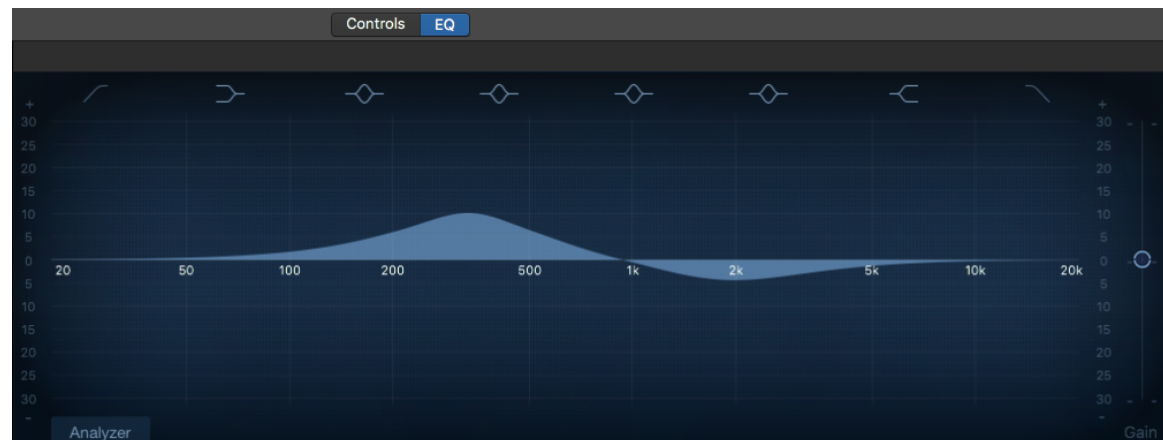
Transport

- 進行音樂播放、停止、快轉、錄音 ... 等功能的控制裝置。



Effect

- Volume, Reverb, Compressor, EQ, Pan, Delay



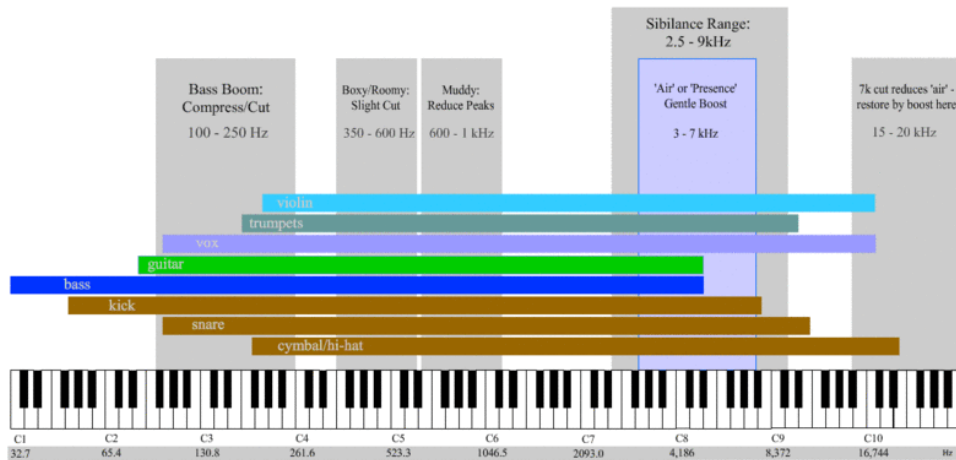
Equalisation

Podcomplex Frequency Overview Chart

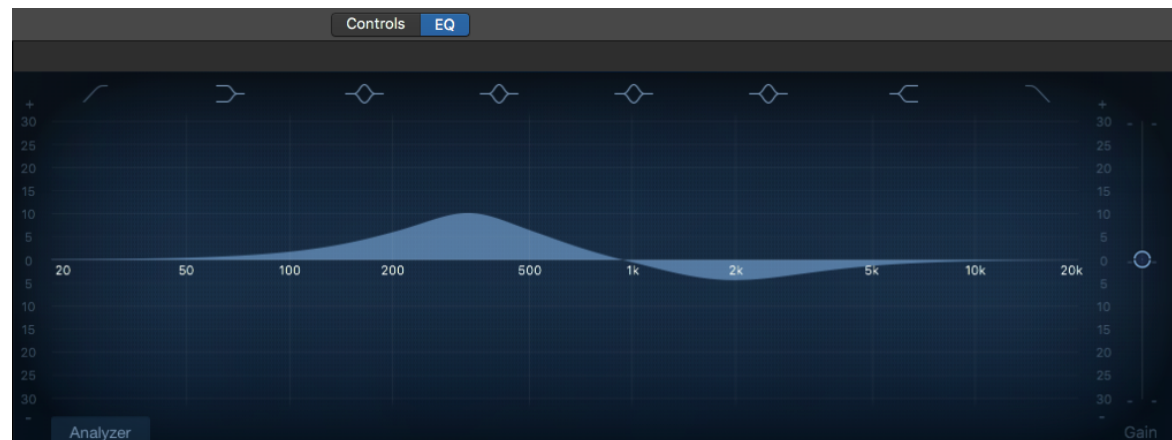
A graphical reference sheet for arrangement, equalisation and mastering

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
32.7	65.4	130.8	261.6	523.3	1046.5	2093.0	4,186	8,372	16,744

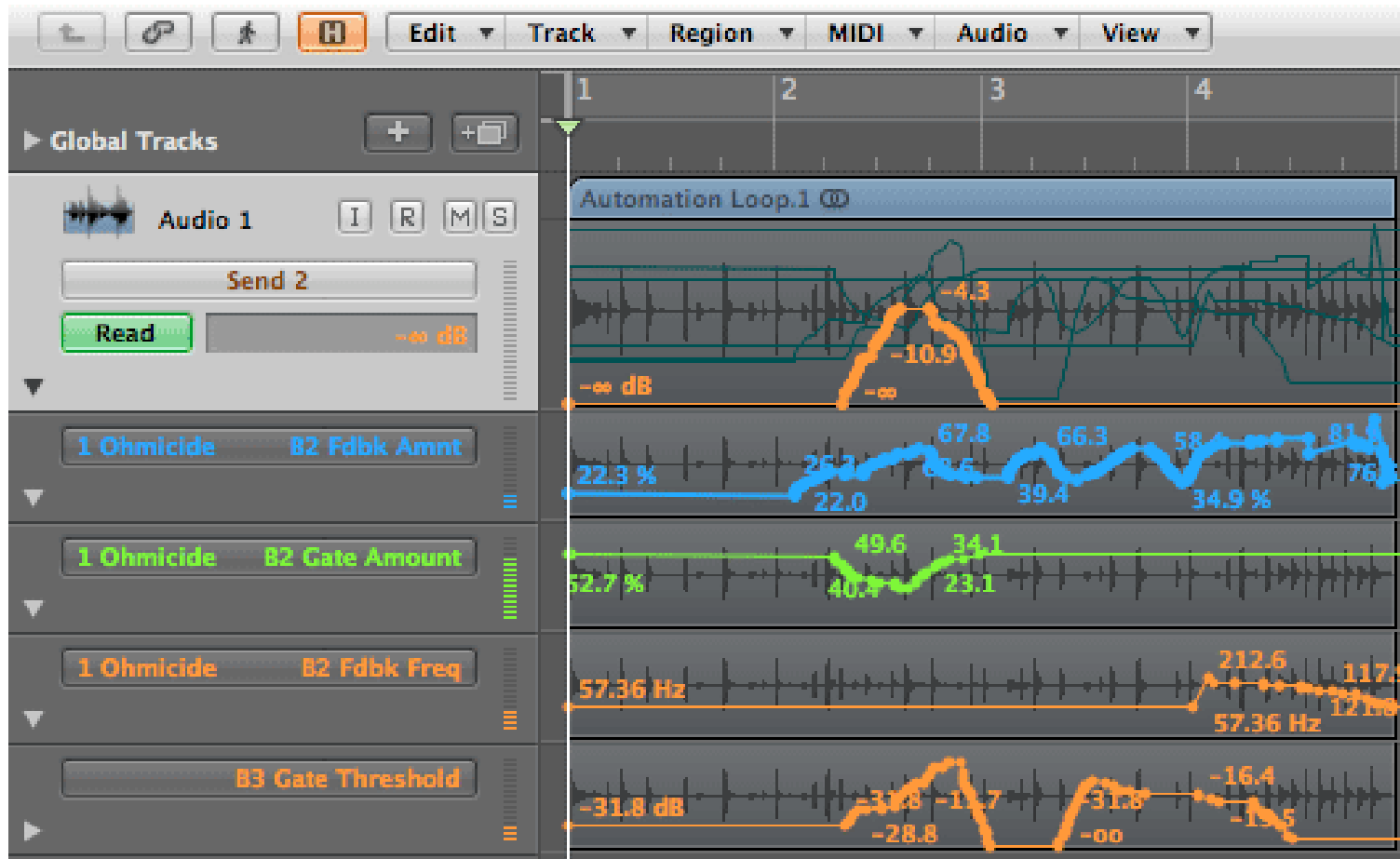
Hz



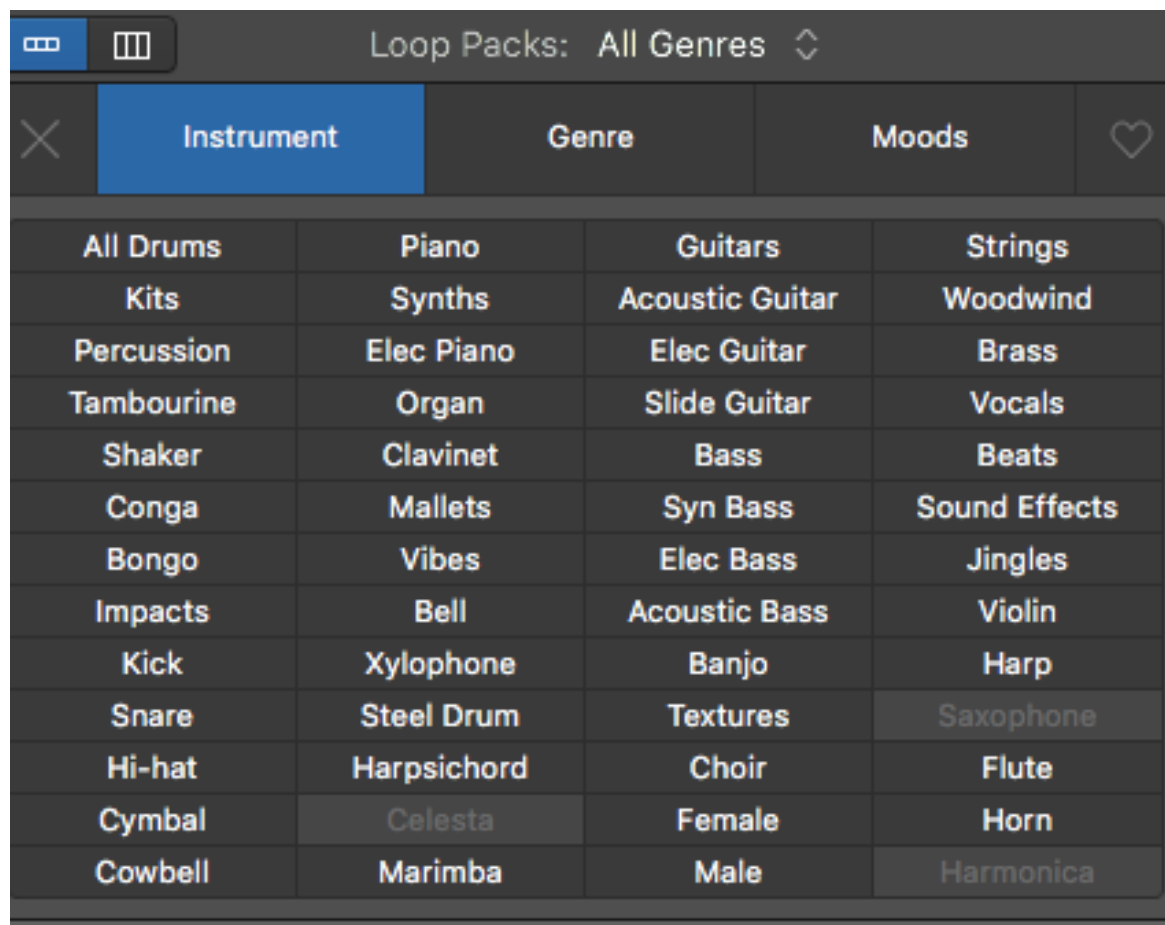
- Roll off low frequencies 30-80 Hz
- Cut at 250 Hz can seem like 5 kHz boost
- Cut at 1 kHz can reduce sharpness & add presence
- 2.5 kHz, shrill/sharp sounds cut to soften, boost to liven mix
- Reduce Noise/Hiss: 1-4dB cut at 3-5 kHz



Automation



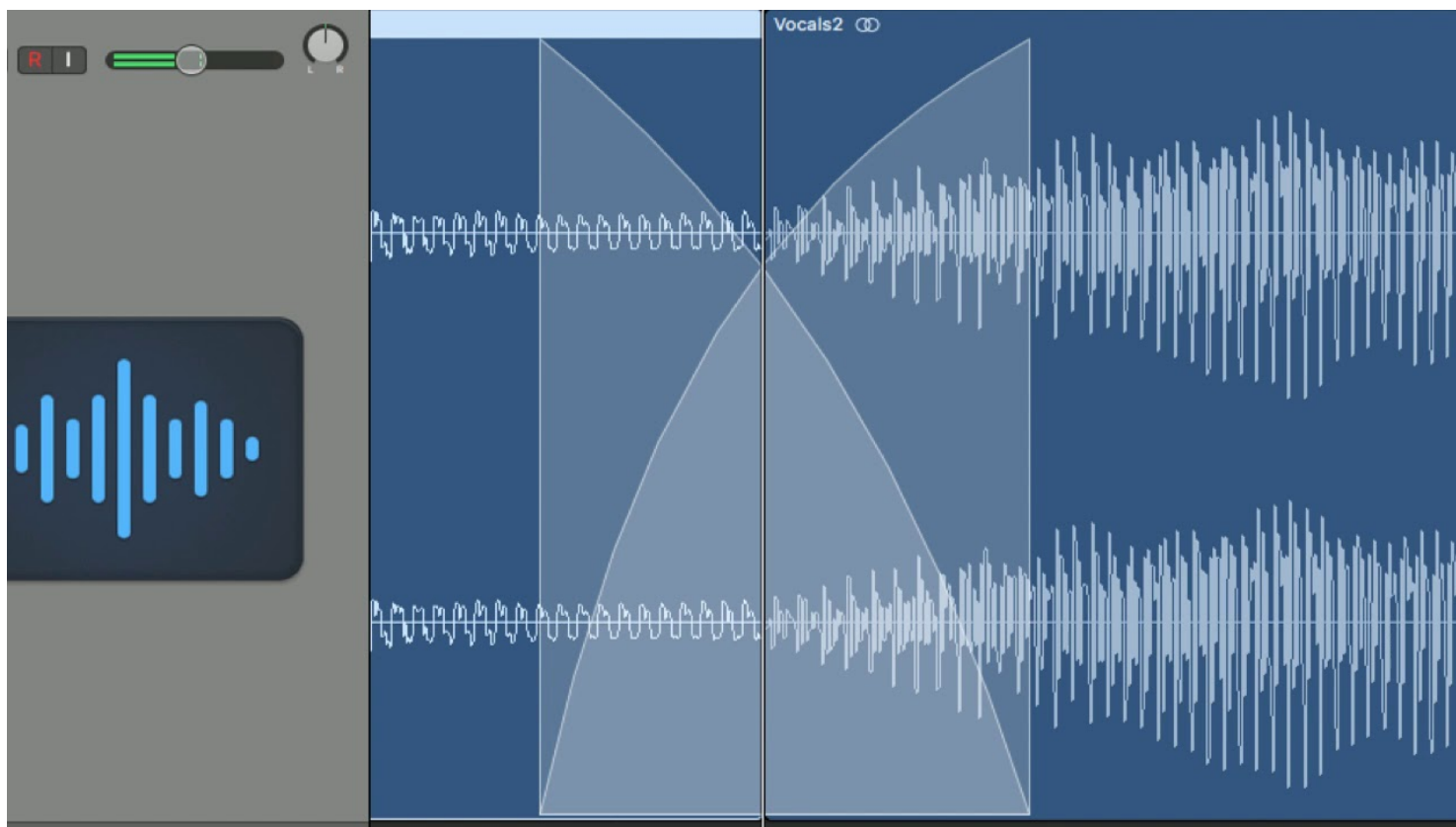
Loop



The screenshot shows a music software interface with a dark theme. At the top, there are two icons (a list and a grid) and the text "Loop Packs: All Genres" with a dropdown arrow. Below this is a table with four columns: "Instrument", "Genre", "Moods", and a heart icon. The "Instrument" column is highlighted in blue. The table contains 16 rows of loop pack categories.

Instrument	Genre	Moods	Heart
All Drums	Piano	Guitars	Strings
Kits	Synths	Acoustic Guitar	Woodwind
Percussion	Elec Piano	Elec Guitar	Brass
Tambourine	Organ	Slide Guitar	Vocals
Shaker	Clavinet	Bass	Beats
Conga	Mallets	Syn Bass	Sound Effects
Bongo	Vibes	Elec Bass	Jingles
Impacts	Bell	Acoustic Bass	Violin
Kick	Xylophone	Banjo	Harp
Snare	Steel Drum	Textures	Saxophone
Hi-hat	Harpsichord	Choir	Flute
Cymbal	Celesta	Female	Horn
Cowbell	Marimba	Male	Harmonica

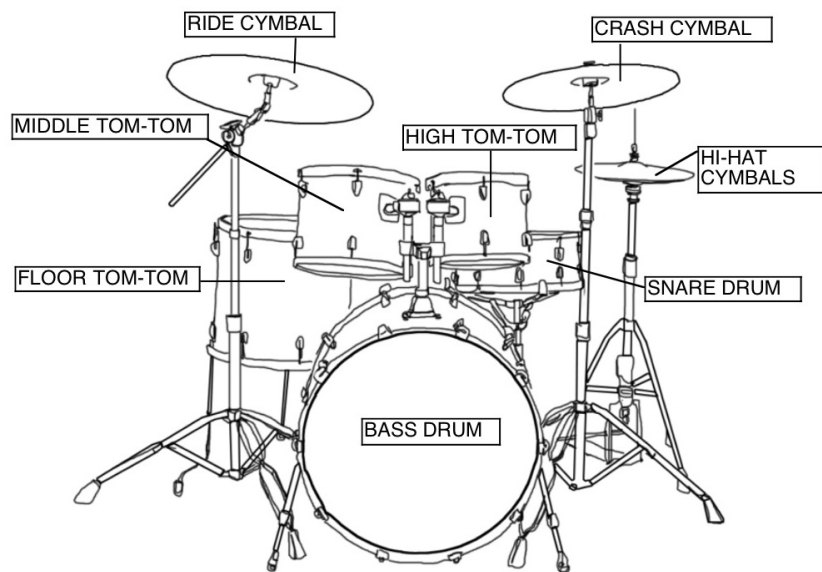
CrossFade



AABA 曲式

- AABA 的曲式通常指的是我們所知道的許多 Jazz 的標準曲式，其中很多都是
 - 前奏 Introduction
 - 獨奏樂器 Instrumental Solo
 - 結尾 Coda (Outro 或 Ending)
 - 主歌 Verse
 - 副歌 Chorus
 - 過渡 Transitional Bridge (or Pre-Chorus)
 - 主橋 Primary Bridge

節奏樂器 Drum Part

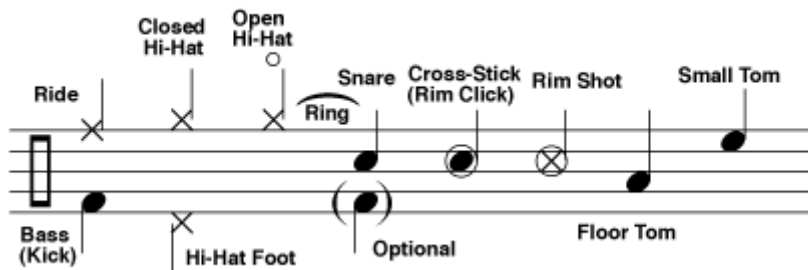
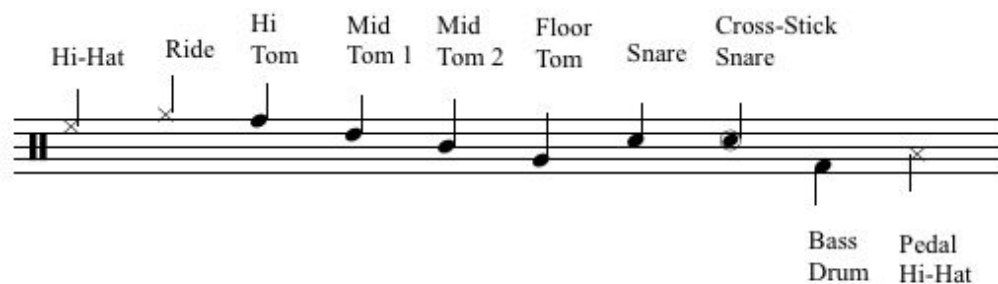


大鼓 / bass drum

踏鈸 / hi-hat cymbal

中鼓 / tom tom / Tenor Drums

Berklee Drum Notation Standard



Berklee Drum Map Notes

節奏樂器 Drum Part

Pop Rock Drum Pattern



Swing Pattern



Bossa Nova Pattern



低音結他 Bass Guitar

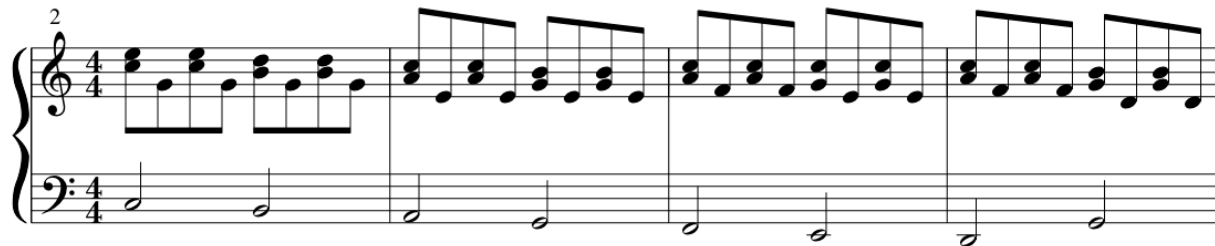
- 將和弦的每個根音 Root 放在小節或和弦的第一拍。
- 半音 Half Step, Leading Tone
- 重複的根音 Repeat Root
- 根音和五音 Root and Dominant
- 八度 8ve
- 7 和弦 (1,3,5,7)
- 過度音 Passing Note

The image shows a musical staff in bass clef with a 4/4 time signature. The key signature has two flats (Bb and Eb). The notation is a walking bass line. A red bracket under the first four notes is labeled "Walking Bass". Above the staff, a box labeled "A" is positioned over the first measure. Chord symbols are placed above the staff: "EbMaj7" above the first measure, "D-7" above the second measure, and "G7(b9)" above the third measure. The notes are: Measure 1: Eb2, G2, Bb2, Eb3; Measure 2: Eb3, G3, Bb3, Eb4; Measure 3: Eb4, G4, Bb4, Eb5. A red bracket under the last two notes of the third measure indicates a passing note.

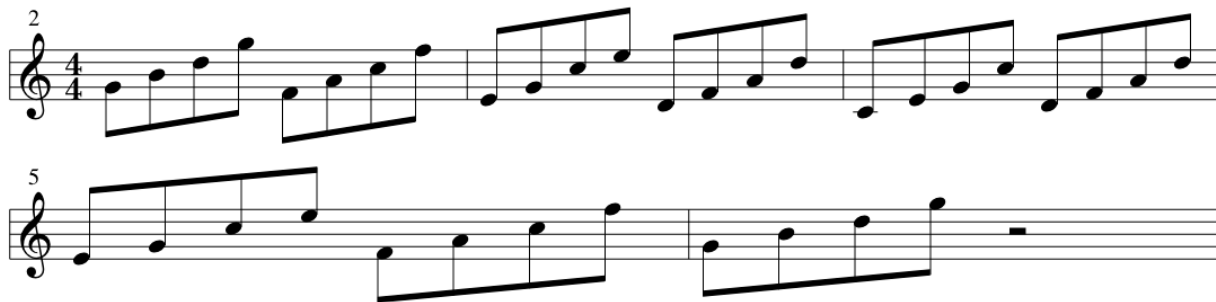
鋼琴一般伴奏技巧

Piano/Keyboard

和弦伴奏 Chord



分解和弦 Broken Chord



弦樂 String Arrangement

Voice Leading

先將每個和弦的 3 音與 7 音都找出來後，這兩個音是一個和弦中最強的兩個點，然後兩個和弦之間會以這兩個點相互吸引，產生力量。當和弦與和弦之間的根音，是呈「五度下行」的方向時，你就可以用：

$3 > 7 > 3$, $7 > 3 > 7$

The image displays two staves of musical notation in 4/4 time, illustrating voice leading for a sequence of four chords: Dm7, G7, CMaj7, and A7. The first staff shows the 3rd and 7th notes of each chord, and the second staff shows the 7th and 3rd notes. The progression is Dm7 (3=F, 7=C) to G7 (3=B, 7=F) to CMaj7 (3=E, 7=C) to A7 (3=G#, 7=C). The notes are written as whole notes on a treble clef staff.

Chord	3rd Note	7th Note
Dm7	F	C
G7	B	F
CMaj7	E	C
A7	G#	C

Sampler Native Instruments



Vienna Library Articulation

- <https://www.youtube.com/watch?v=m00W14KqqOo>



VI_trill-accelerando_dynamic

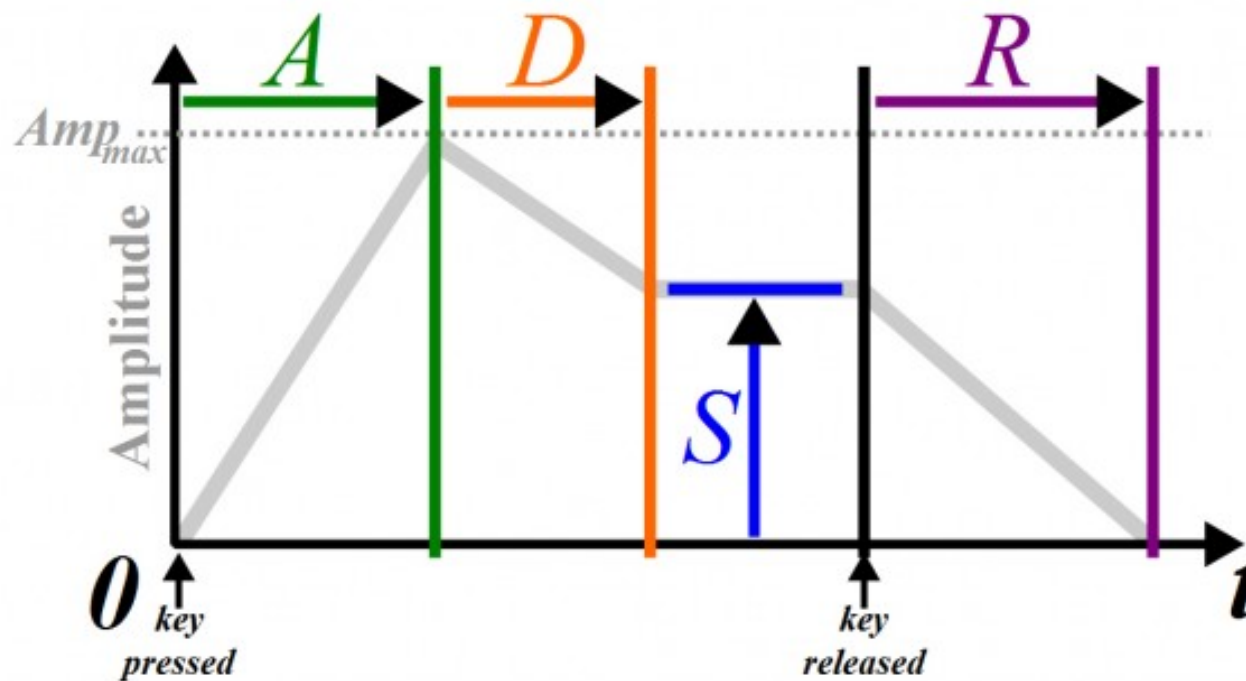
Sampling ADSR Envelope

Attack - beginning when the key is pressed.

Decay - the attack level to the designated sustain level.

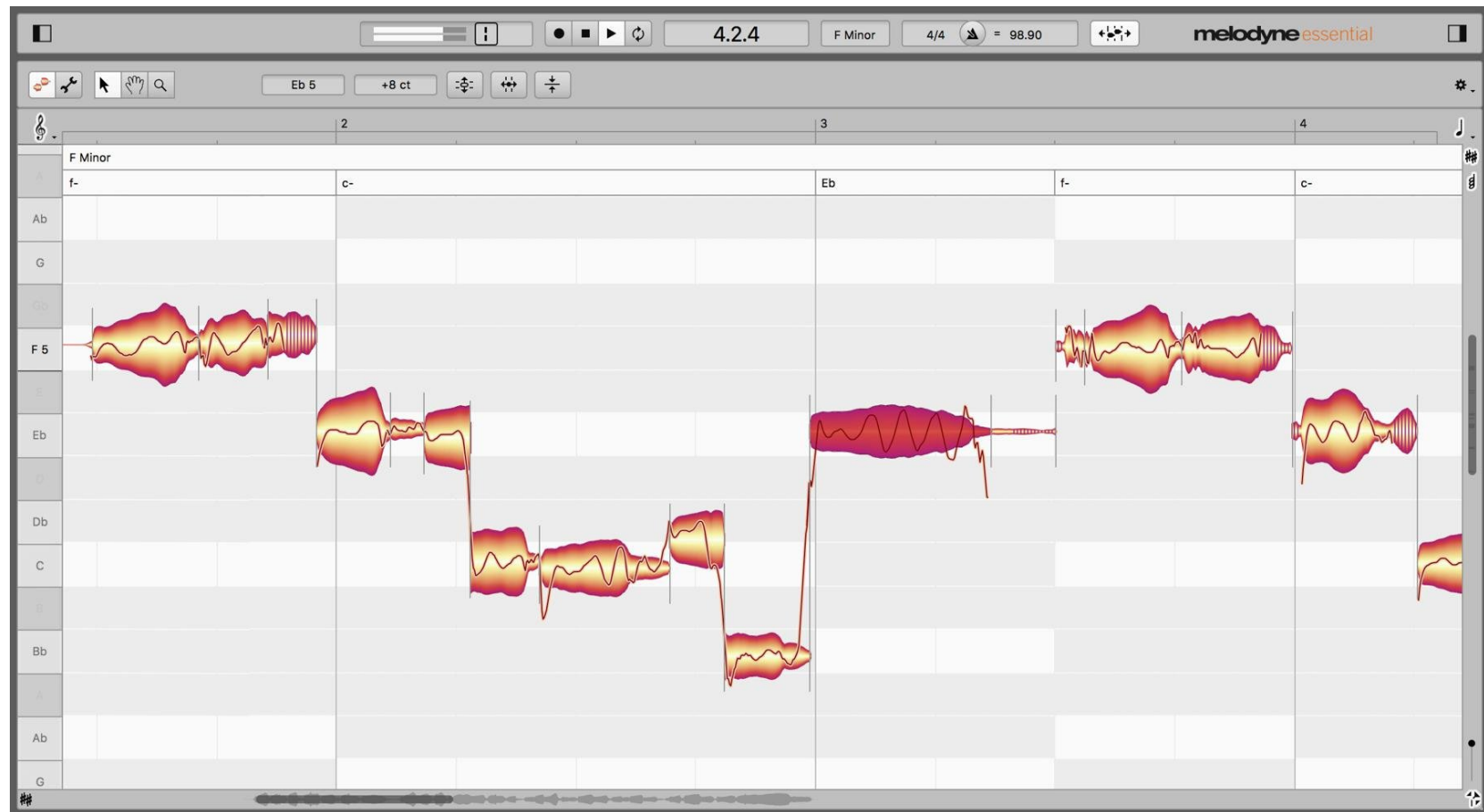
Sustain - sound's duration, until the key is released.

Release - sustain level to zero after the key is released.



Vocal Recording Melodyne

音高修正



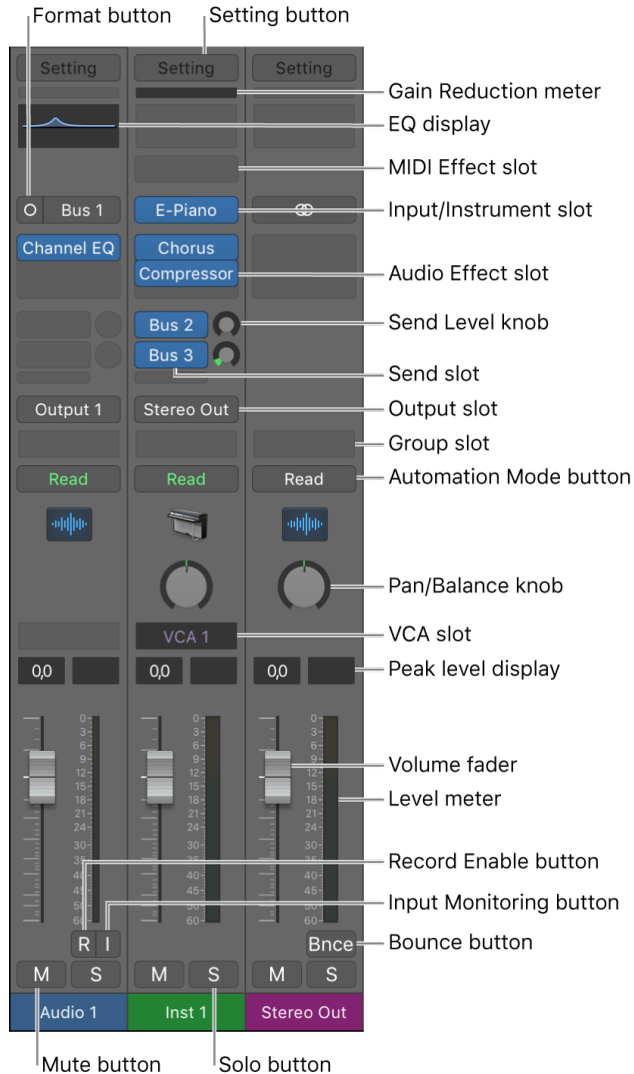
Mixing



Mixing

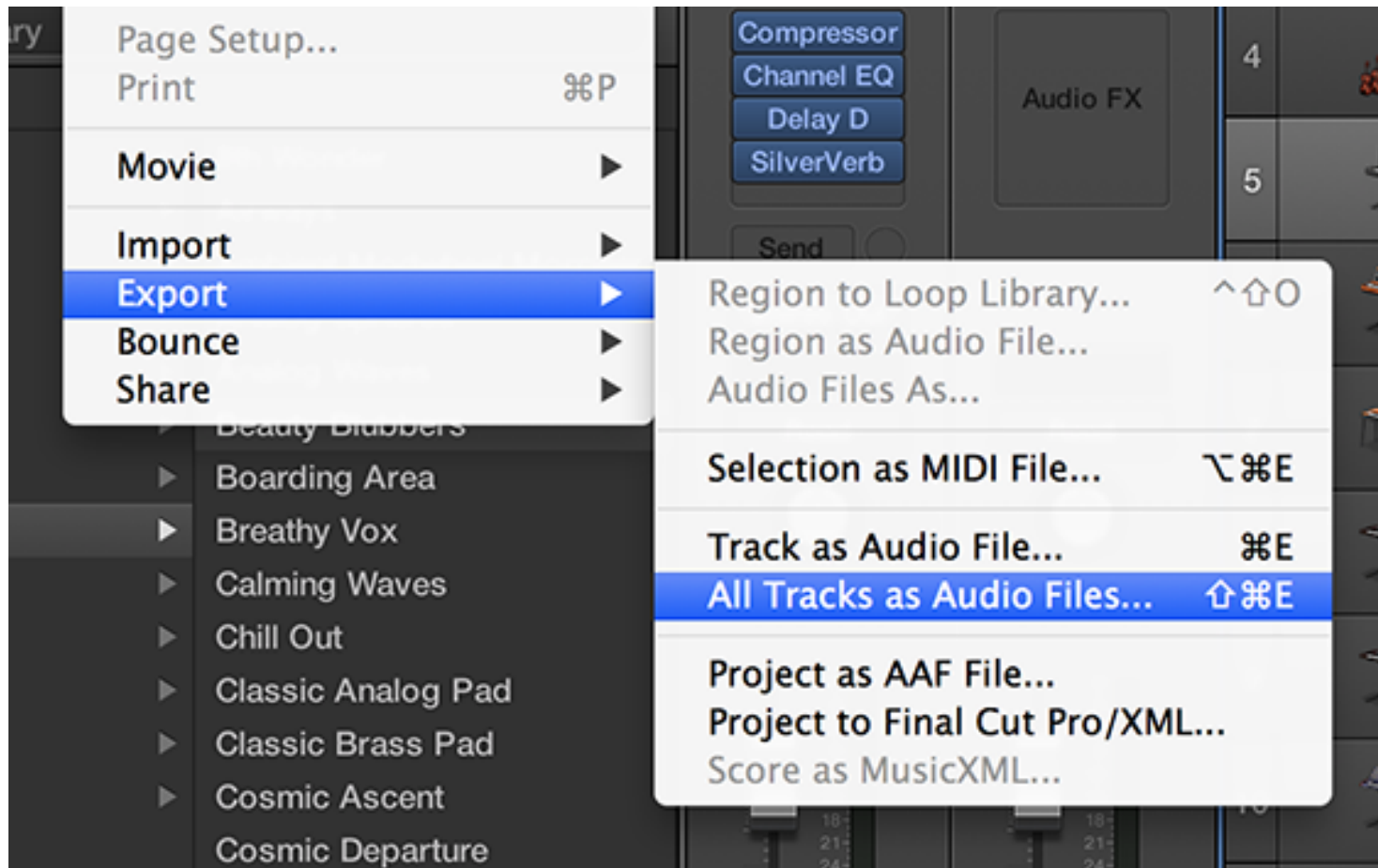
- 1. 混合準備：使用 Group 和 Bus
- 2. 獲得很好的 Volume Level
- 3. 應用 EQ 以獲得清晰度
- 4. 施加 Compressor 以獲得 Punch
- 5. 應用 Reverb 混響以給予空間感
- 6. 使用 Pan 來調節立體聲
- 7. Automation 自動化和 Effect 效果

Mixer Channel Strip

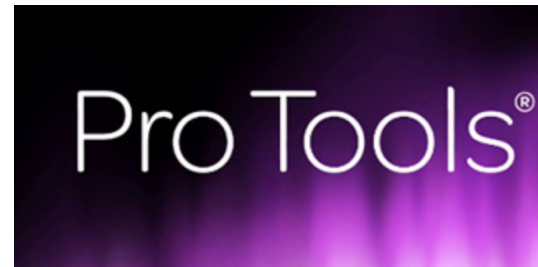


Effect Insert
 Input
 Output
 Pan
 Volume
 Mute
 Solo
 Automation
 Bus
 Aux

Export MP3 / Wave File



Music Brands





GarageaBand 快捷鍵功