

Modular Transformation

Scale Step	0	1	2	3	4	5	6	7	8	9	10	11	0
Chromatic	C	C#	D	D#	E	F	F#	G	G#	A	Bb	B	C
Octatonic1	C	D	D#	F	F#	G#	A	B	C				
Octatonic2	C	C#	D#	E	F#	G	A	Bb	C				
Major	C	D	E	F	G	A	B	C					
Dorian	C	D	Eb	F	G	A	Bb	C					
Phrygian	C	Db	Eb	F	G	Ab	Bb	C					
Lydian	C	D	E	F#	G	A	B	C					
Mixolydian	C	D	E	F	G	A	Bb	C					
Minor	C	D	Eb	F	G	Ab	Bb	C					
Locrian	C	Db	Eb	F	Gb	Ab	Bb	C					
Whole Tone	C	D	E	F#	G#	Bb	C						
Pentatonic1	C	D	E	G	A								
Pentatonic2	C	D	F	G	Bb								
Pentatonic3	C	Eb	F	Ab	Bb								
Pentatonic4	C	D	F	G	A								
Pentatonic5	C	E	F	G	Bb								

Each step of one scale is equal to the same step of another scale. In this way you can easily modulate between modes. You can add any type of scale to this chart.

Each scale can be transposed.

Modular Wrap Around

Any scale that is smaller than another being transposed to can be be “wrapped around”. In other words, simply start the smaller scale over.

Chromatic C C# D D# E F F# G G# A Bb B C
 Pentatonic1 C D E G A C D E G A C D E

Module Completion Mapping

Another solution to the scale size problem above is called “module completion mapping”. Essentially you put the fragment in ascending order and equate the notes as a separate scale type to the transposition scale.

Chromatic C C# D E G A Scale Steps 0 1 2 4 7 9
 Whole Tone C D E F# G# Bb Scale Steps 0 1 2 3 4 5

This system was used by Bela Bartok and discussed in a 1943 lecture at Harvard University.

