

Intervals

Intervals are the musical colors from which all other structures in music are formed—i.e. chords and scales. An interval is the specific quality of sound produced from the distance between two pitches. The interaction of two pitches vibrating at different speeds creates a quality of sound that is based on that ratio. It does not matter so much which two pitches but how far they are apart. Distances between pitches are measured in half steps (one fret) and whole steps (two frets).

The **musical names** for intervals are controlled by the seven letters we borrow from the English alphabet—A B C D E F G. Intervals come in three types: Perfect, Major and Minor. There is one exception and that is the tritone. This anomaly was called “Los Diablos en Musica” or “The Devil in Music” during the Middle Ages because of strange position exactly cutting and Octave in half and its corresponding tension-filled sound. The European siren uses the tritone because of this disturbing tension. Here is a table of intervals up to an octave.

List of Intervals

Name	Minor 2nd	Major 2nd	Minor 3rd	Major 3rd	Perfect 4th	Tri-tone	Perfect 5th	Minor 6th	Major 6th	Minor 7th	Major 7th	Octave
Distance in frets	1	2	3	4	5	6	7	8	9	10	11	12
Distance in steps	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6

When spelling intervals the name should reflect the second pitch's position in the alphabet in relation to the first pitch: 2nd interval C - D, 3rd interval C_D E, 4th interval C_{DE} F, 5th interval C_{DEF} G, 6th interval C_{DEFG} A, 7th interval C_{DEFGA} B, and octaves C_{DEFGAB} C.

Example 1.

Starting Pitch	Minor 2nd	Major 2nd	Minor 3rd	Major 3rd	Perfect 4th	Tri-tone	Perfect 5th	Minor 6th	Major 6th	Minor 7th	Major 7th	Octave
C	D ^b	D	E ^b	E	F	F [#] G ^b	G	A ^b	A	B ^b	B	C
Distance in frets	1	2	3	4	5	6	7	8	9	10	11	12

Example 2.

Starting Pitch	Minor 2nd	Major 2nd	Minor 3rd	Major 3rd	Perfect 4th	Tri-tone	Perfect 5th	Minor 6th	Major 6th	Minor 7th	Major 7th	Octave
E	F	F [#]	G	G [#]	A	A [#] B ^b	B	C	C [#]	D	D [#]	E
Distance in frets	1	2	3	4	5	6	7	8	9	10	11	12

Intervals

The **Tritone** can also be called an augmented fourth or a diminished fifth interval. The appropriate letter would need to be used:

Augmented 4th → C - F# E - A#
Diminished 5th → C - Gb E - Bb

As you can see spelling is a big part of labeling intervals. Another important aspect of intervals is the level of tension they create. **Dissonance** and **Consonance** are the musical words used to denote whether an interval is disturbing (causes tension) or pleasant (relieves tension). The intervals are not all the same. The **Dissonant** ones create varying levels of tension as do the **Consonant** intervals. Here is a list of Intervals.

Table of Interval Tension

Consonant Intervals			Dissonant Intervals		
Name	Fret Distance	Tension	Name	Fret Distance	Tension
Perfect Octave	12	0	Minor Seventh	10	6
Perfect Fifth	7	1	Major Second	2	7
Perfect Fourth	5	2	Tritone	6	8
Major Sixth	9	3	Major Seventh	11	9
Minor Sixth	8	4	Minor Second	1	10
Major Third	4	4			
Minor Third	3	5			

Perfect intervals create almost no tension hence the title "Perfect". Sixths and Thirds create levels of tension that are pleasing to the ear. Take notice of the paradox that the **most tension** is created by the pitch that is closest to the original pitch (**Minor Second**).

Counting across strings becomes necessary when both pitches of the interval are to sound at the same time. The distance two strings are tune apart will play an important part in counting the appropriate distance for the chosen interval. When crossing from one string to another on the same fret you will have gone the distance the two strings are tune apart.

Strings	6th to 5th	5th to 4th	4th to 3rd	3rd to 2nd	2nd to 1st
Fret Distance	5 frets	5 frets	5 frets	4 frets	5 frets
Interval	Perfect 4th	Perfect 4th	Perfect 4th	Major 3rd	Perfect 4th