

Beats: Fundamental pulses at regular intervals

Tempo: The number of beats per minute BPM

Measure: A fundamental building block with a single rhythm element.

- Regular chunks of music that have related number of beats, often 4 or 8 beats
- Called **bars** in blues and pop.

Meter: Beats per measure

Most common: 4 beats per measure, marked 4/4

Notes: In Western European-derived music we have basically 11 notes to work with:

A A# B C C# D# E F F# G G#

Then what? It *starts over* with A,

at double the Hz of the first A. (An octave)

Sharps and Flats are notes that are between the C Scale notes. They are the black keys on a piano keyboard. Example: C# is the next note above C.

Scale A set of musical notes that *sound good together*. They are often mathematically and culturally defined. In Western European music, Pythagoras gave us the math:

Key note Hz $\times 1.25$ = third note in scale

Key note Hz $\times 1.33$ = fourth note in scale

Key note Hz $\times 1.5$ = fifth note in scale

Key

A starting note for a scale. Also a set of notes in a scale based on that starting note.

The key of C is easy to use for beginning digital editors because it is represented by the white keys on a piano keyboard. Play the white keys!

Notes in the Key of C C D E F G A B

Scale Steps

A **half-step** is going to the very next note on a keyboard, considering all 11 notes, whether black or white, like E to F, or F to F#. A half-step is also called a **semitone**. A **whole-step** is two half-steps, like C to D or E to F#.

A **Major Scale** is built on the **following** steps (any key) It is the most common scale, and *generally creates a positive feeling*.

Whole Whole Half Whole Whole Whole Half

A **Minor Scale** has two different notes.

Whole Half Whole Whole Half Whole Whole
Generally creates a sad or pensive feeling.

Chords and Harmony

Chords are groups of notes that sound good when played *at the same time* (in "harmony"). They are built using notes from the *scale*.

Chords are made up using even or odd numbered notes in a scale. So using the C-scale:

C-chord C D E F G A B C D E (1 3 5)

F-chord C D E F G A B C D E (4 6 8)

G-chord C D E F G A B C D E (5 7 9)

Alternately we can make a major chord in *any* key by starting with *any* note by *counting the half-steps*. A **major chord** is made up of:

Starting note + 4 half-steps + 3 half-steps

A **minor chord** is made up of:

Starting note + 3 half-steps + 4 half-steps

Note only the middle note has changed!

Using Chords as a Foundation For a Song

We generally use chords built up from the notes in the scale. So in C-major, the *common* chords are: C major, D minor or major, E minor F major, G major, A minor

Number System ("Scale Degrees")

Musicians often use numbers to identify the chords used in a song. Numbers are based on the notes in the scale. So in the key of C...

notes	C	D	E	F	G	A	B	C
number	1	2	3	4	5	6	7	8

By the way, the 2, 3, and 6 chords are *usually* minor chords!

So "1 4 5" means *C-major, F-major, G-major*

An 8-bar blues song is 1 1 4 1 5 4 1 5 in any key.

YMCA is 1 1 6 6 4 4 5 5 chorus 1 1 6 6 2 2 5 5

Octave: A note that is either twice the frequency or half the frequency. (notes 1 and 8 above)

Transpose: Moving pitches up or down, for instance to make a 4 (F) out of a 1 (C), transpose up 5 half-steps. This is easy if you look at a keyboard and count notes between C and F.

Emotion	Octave	peace, solidarity
	Fifth	harmonious
	Forth	harmony, gentle change
	Third	harmony, added interest
	Flatted Third	darker, sad
	Second	tension, dissonance
	Flatted Second	tense, urgent problem