MUSIC TECHNOLOGY

MIDI Note Numbers for Different Octaves

Octave	Note Numbers											
	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
0	0	1	2	3	4	5	6	7	8	9	10	11
1	12	13	14	15	16	17	18	19	20	21	22	23
2	24	25	26	27	28	29	30	31	32	33	34	35
3	36	37	38	39	40	41	42	43	44	45	46	47
4	48	49	50	51	52	53	54	55	56	57	58	59
5	60	61	62	63	64	65	66	67	68	69	70	71
6	72	73	74	75	76	77	78	79	80	81	82	83
7	84	85	86	87	88	89	90	91	92	93	94	95
8	96	97	98	99	100	101	102	103	104	105	106	107
9	108	109	110	111	112	113	114	115	116	117	118	119
10	120	121	122	123	124	125	126	127				

MIDI Note Numbers

The MIDI specification only defines note number 60 as "Middle C", and all other notes are relative. The absolute octave number designations shown here are based on Middle C = C5, which is an arbitrary assignment.

There is a discrepancy that occurs between various models of MIDI devices and software programs, and that concerns the octave numbers for note names. If your MIDI software/device considers octave 0 as being the lowest octave of the MIDI note range, then middle C's note name is C5. The lowest note name is then C0 (note number 0), and the highest possible note name is G10 (note number 127).

Some software/devices instead consider the third octave of the MIDI note range (2 octaves below middle C) as octave 0. In that case, the first 2 octaves are referred to as -2 and -1. So, middle C's note name is C3, the lowest note name is C-2, and the highest note name is G8.

A MIDI controller can have up to 128 distinct pitches/notes. But whereas musicians name the keys using the alphabetical names, with sharps and flats, and also octave numbers, this is more difficult for MIDI devices to process, so they instead assign a unique number to each key.

The numbers used are 0 to 127. The lowest note upon a MIDI controller is a C and this is assigned note number 0. The C# above it would have a note number of 1. The D note above that would have a note number of 2. So "Middle C" is note number 60. A MIDI note number of 69 is used for A440 tuning, that is the A note above middle C.

Most keyboard controllers have a "MIDI transpose" function so that, even if you don't have the full 128 keys, you can alter the note range that your keyboard covers. For example, instead of that lowest A key being assigned to note number 21, you could transpose it down an octave so that it is assigned a note number of 9.

MIDI Note Names

Many instruments can play distinct pitches. For example, an acoustic piano has 88 keys, or 88 distinct pitches/notes.

Instruments with keyboards were among the earliest, most versatile musical instruments at around the time when musicians were devising a way to notate music. So, it's traditional to name musical pitches based upon the piano keyboard. They are visually grouped into octaves where one octave contains 12 keys.

Musicians name the musical pitches played upon the white keys by using the alphabetical names A to G. For example, "middle C" is the white key closest to the center of the keyboard. Musicians append sharps or flats to the alphabetical names to identify the black keys. For example, the black key above middle C is a C#. Also, musicians use the octave number to further identify a particular key.