Physics of Music - Notes

Frequencies for equal-tempered scale, A_4 = 440 Hz

Other tuning choices, A_4 =

432 434 436 438 440 442 444 446

Speed of Sound = 345 m/s = 1130 ft/s = 770 miles/hr

More about Speed of Sound

("Middle C" is C_4)

Note	Frequency (Hz)	Wavelength (cm)
C_0	16.35	2109.89
$C^{\#}_0/D^{b}_0$	17.32	1991.47
D_0	18.35	1879.69
$D^{\#}_0/E^{b}_0$	19.45	1774.20
E_0	20.60	1674.62
F_0	21.83	1580.63
$F^{\#}_0/G^{b}_0$	23.12	1491.91
G_0	24.50	1408.18
$G^{\#}_0/A^{b}_0$	25.96	1329.14
A_0	27.50	1254.55
$A^{\#}_0/B^{b}_0$	29.14	1184.13
B_0	30.87	1117.67
C_1	32.70	1054.94
$C^{\#}_1/D^{b}_1$	34.65	995.73
D_1	36.71	939.85
$D^{\#}_1/E^{b}_1$	38.89	887.10
E_1	41.20	837.31
F_1	43.65	790.31
$F^{\#}_1/G^{b}_1$	46.25	745.96

G_1	49.00	704.09
$G^{\#}_1/A^{b}_1$	51.91	664.57
A_1	55.00	627.27
$A^{\#}_1/B^{b}_1$	58.27	592.07
B_1	61.74	558.84
C_2	65.41	527.47
$C^{\#}_2/D^{b}_2$	69.30	497.87
D_2	73.42	469.92
$D^{\#}_2/E^{b}_2$	77.78	443.55
E_2	82.41	418.65
F_2	87.31	395.16
$F^{\#}_2/G^{b}_2$	92.50	372.98
G_2	98.00	352.04
$G^{\#}_2/A^{b}_2$	103.83	332.29
A_2	110.00	313.64
$A^{\#}_2/B^{b}_2$	116.54	296.03
B_2	123.47	279.42
C_3	130.81	263.74
$C^{\#}_3/D^{b}_3$	138.59	248.93
D_3	146.83	234.96
$D^{\#}_3/E^{b}_3$	155.56	221.77
E_3	164.81	209.33
F_3	174.61	197.58
$F^{\#}_3/G^{b}_3$	185.00	186.49
G_3	196.00	176.02
$G^{\#}_3/A^{b}_3$	207.65	166.14
A_3	220.00	156.82
$A^{\#}_3/B^{b}_3$	233.08	148.02
B_3	246.94	139.71
C_4	261.63	131.87
$C^{\#}_4/D^{b}_4$	277.18	124.47

D_4	293.66	117.48
$D^{\#}_4/E^{b}_4$	311.13	110.89
E_4	329.63	104.66
F_4	349.23	98.79
$F^{\#}_4/G^{b}_4$	369.99	93.24
G_4	392.00	88.01
$G^{\#}_4/A^{b}_4$	415.30	83.07
A_4	440.00	78.41
$A^{\#}_4/B^{b}_4$	466.16	74.01
B_4	493.88	69.85
C_5	523.25	65.93
$C^{\#}_5/D^{b}_5$	554.37	62.23
D_5	587.33	58.74
$D^{\#}_5/E^{b}_5$	622.25	55.44
E_5	659.25	52.33
F_5	698.46	49.39
$F^{\#}_5/G^{b}_5$	739.99	46.62
G_5	783.99	44.01
$G^{\#}_5/A^{b}_5$	830.61	41.54
A_5	880.00	39.20
$A^{\#}_5/B^{b}_5$	932.33	37.00
B_5	987.77	34.93
C_6	1046.50	32.97
$C^{\#}_6/D^{b}_6$	1108.73	31.12
D_6	1174.66	29.37
$D^{\#}_6/E^{b}_6$	1244.51	27.72
E_6	1318.51	26.17
F_6	1396.91	24.70
$F^{\#}_6/G^{b}_6$	1479.98	23.31
G_6	1567.98	22.00

$G^{\#}_6/A^{b}_6$	1661.22	20.77
A_6	1760.00	19.60
$A^{\#}_6/B^{b}_6$	1864.66	18.50
B_6	1975.53	17.46
C_7	2093.00	16.48
$C^{\#}_7/D^{b}_7$	2217.46	15.56
D_7	2349.32	14.69
$D^{\#}_7/E^{b}_7$	2489.02	13.86
E_7	2637.02	13.08
F_7	2793.83	12.35
$F^{\#}_7/G^{b}_7$	2959.96	11.66
G_7	3135.96	11.00
$G^{\#}_7/A^{b}_7$	3322.44	10.38
A_7	3520.00	9.80
$A^{\#}_7/B^{b}_7$	3729.31	9.25
B_7	3951.07	8.73
C_8	4186.01	8.24
$C^{\#}_8/D^{b}_8$	4434.92	7.78
D_8	4698.63	7.34
$D^{\#}_8/E^{b}_8$	4978.03	6.93
E_8	5274.04	6.54
F_8	5587.65	6.17
$F^{\#}_8/G^{b}_8$	5919.91	5.83
G_8	6271.93	5.50
$G^{\#}_8/A^{b}_8$	6644.88	5.19
A_8	7040.00	4.90
$A^{\#}_8/B^{b}_8$	7458.62	4.63
B_8	7902.13	4.37

(To convert lengths in cm to inches, divide by 2.54)

More information on the equal tempered scale

Equations used for this table

Questions/Comments to: suits@mtu.edu

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