

Harmonics on the Cello

This is a catalog of fingerings for harmonics on the cello.

For each string, and each of the first three octaves on that string, there is a double staff. For each of the first 16 harmonics (multiples of the open string pitch) one bar is shown, with the harmonic note in the upper staff and all the possible fingerings in the lower staff.

Each bar corresponds to one harmonic note. The number of the harmonic (*i.e.* multiple of the string pitch) is shown above the bar. Below the bar (on upper staff) is indicated the number of cents sharp (+) or flat (-) that the harmonic sounds relative to tempered tuning.

The lower staff shows all the possible locations to play that harmonic, within the particular octave. Below each note is indicated the number of cents above (+) or below (-) that note where the actual harmonic node is located.

For example, referring to the next page, for the 1st octave on the A string, the 5th harmonic sounds as a C# but is 14 cents flat. It can be fingered at 14 cents below the C# in 1st position, or at 16 cents below the F-sharp in 4th position.

Cello A-string, 1st octave

pitch

location

x3 x4 x5 x6 8va x7

+2 +0 -14 -16 +2 -31 -17 -31

+2 -2 -14 -16 +16 -33 -17 -31

x8 8va x9 x10 15ma

+0 +4 -14

+31 +14 +4 +35 +18 -18 +17

x11 15ma x12

-49 +2

-35 +47 -49 -18 +49 -49 +33

x13 15ma x14

+41 -31

+39 -11 -46 +37 +41 -28 +28 +18 -35

x15 15ma x16

-12 +0

+19 +48 +37 -12 +12 -41 +49 -4

Cello A-string, 2nd octave

pitch

location

x2 x3 x5 x7 x8 x9 x10

8va 15ma

+0 +2 -14 -31 +0 +4 -14

+0 +2 -14 -33 -31 -2 +4 -16

x11 x12 x13 x14 x15 x16

15ma

-49 +2 +41 -31 -12 +0

-35 -49 +49 +16 +39 -46 +41 -17 +19 -12 +31 +14

Cello A-string, 3rd octave

pitch

location

x4 x5 x6 x7 x9 x11 x13 x14 x15 x16

8va 15ma

+0 -14 +2 -31 +4 -49 +41 -31 -12 +0

+0 -14 +2 -31 +4 -49 +39 +41 -33 -12 -2

8va 8va 8va 8va

Cello D-string, 1st octave

The musical score is divided into four systems, each with a 'pitch' staff (treble clef) and a 'location' staff (bass clef). The score shows fret positions x3 through x16. The 'pitch' staff contains diamond-shaped notes, and the 'location' staff contains circular notes. Numerical values are provided below each note, representing the fret position. The 'pitch' staff also includes octave markings: 8va for x9, x10, x11, x12, x13, and 15ma for x14, x15, and x16.

Fret	Pitch	Location
x3	+2	+2
x4	+0	-2
x5	-14	-14
x6	+2	-16
x7	-31	+16
x8	+0	-33
x9	+4	-17
x10	-14	-31
x11	-49	+31
x12	+2	+14
x13	+41	
x14	-31	
x15	-12	
x16	+0	

Cello D-string, 2nd octave

pitch

location

x2 x3 x5 x7 x8 8va x9 x10

x11 8va x12 x13 x14 15ma x15 x16

-49 -35 -49 +49 +16 +39 -46 +41 -17 +19 -12 +31 +14

Cello D-string, 3rd octave

pitch

location

x4 x5 x6 x7 x9 8va x11 x13 x14 15ma x15 x16

+0 -14 +2 -31 +4 -49 +41 -31 -12 +0

+0 -14 +2 -31 +4 -49 +39 +41 -33 -12 -2

Cello G-string, 1st octave

The musical score is divided into four systems, each with a 'pitch' staff (treble clef) and a 'location' staff (bass clef). The 'pitch' staff shows the fret number (x3 to x16) and the pitch deviation from the natural G string. The 'location' staff shows the fret number and the location deviation from the natural G string. The pitch staff also includes a key signature change to D major (F#) at fret x11.

Fret	Pitch Deviation	Location Deviation
x3	+2	+2
x4	+0	-2
x5	-14	-14
x6	+2	+16
x7	-31	-33
x8	+0	+31
x9	+4	+4
x10	-14	-18
x11	-49	-35
x12	+2	-49
x13	+41	+39
x14	-31	+28
x15	-12	+19
x16	+0	+12

Cello G-string, 2nd octave

pitch

location

x2 x3 x5 x7 x8 x9 x10

+0 +2 -14 -31 -31 -2 +4 -16

x11 x12 x13 x14 x15 x16

8va

-49 +2 +41 -31 -12 +0

-35 -49 +49 +16 +39 -46 +41 -17 +19 -12 +31 +14

Cello G-string, 3rd octave

pitch

location

x4 x5 x6 x7 x9 x11 x13 x14 x15 x16

+0 -14 +2 -31 +4 -49 +41 -31 -12 +0

+0 -14 +2 -31 +4 -49 +39 +41 -33 -12 -2

8va

Cello C-string, 1st octave

The image displays a musical score for the Cello C-string, 1st octave, organized into four systems. Each system contains two staves: 'pitch' (top) and 'location' (bottom). The 'pitch' staff uses a bass clef for frets x3 through x6 and a treble clef for frets x7 through x16. The 'location' staff uses a bass clef throughout. Fret numbers x3 through x16 are indicated above the pitch staff. Numerical values are provided below the notes in both staves, representing pitch and location offsets. The score concludes with a double bar line at the end of the x16 system.

Fret	Pitch Staff	Location Staff
x3	+2	+2
x4	+0	-2
x5	-14	-14
x6	+2	-16
x7	-31	+16
x8	+0	-33
x9	+4	-17
x10	-14	-31
x11	-49	+31
x12	+2	+14
x13	+41	+4
x14	-31	+35
x15	-12	+18
x16	+0	-18

Cello C-string, 2nd octave

Diagram showing the 2nd octave of the Cello C-string, including pitch and location data for frets x2 through x16.

pitch

location

Fret	Pitch	Location
x2	+0	+0
x3	+2	+2
x5	-14	-14
x7	-31	-33
x8	+0	-2
x9	+4	+4
x10	-14	-16
x11	-49	-35
x12	+2	+16
x13	+41	+39
x14	-31	-17
x15	-12	+19
x16	+0	+31

Cello C-string, 3rd octave

Diagram showing the 3rd octave of the Cello C-string, including pitch and location data for frets x4 through x16.

pitch

location

Fret	Pitch	Location
x4	+0	+0
x5	-14	-14
x6	+2	+2
x7	-31	-31
x9	+4	+4
x11	-49	-49
x13	+41	+39
x14	-31	-33
x15	-12	-12
x16	+0	-2