

## Useful Measurements and Information

Small Viola's and some thoughts - For as long as violas have been played by children, the problem of getting a good sound, especially on the "C" string, has followed. Many things have been tried from making an asymmetrically shaped instrument to enlarge the air volume to a large body with a short neck. None of things have worked consistently and even if they did, the cost is prohibitive to a new young player. A very interesting test was tried a few years back in London when a blind sound test of 13" small viola's before a panel of 60 private viola teachers was undertaken. 7 instruments were in the 14" size (4/4 violin equivalent) and 6 comparable to a 3/4 size violin (13"). All the violas had strings designed for small viola's. The different models included hand made violas, commercially made violas and violins strung as violas as well as a special experiment.

The clear favourites were not the traditionally higher ribbed instruments but rather the restrung violins and the clear runaway champion - an experimental violin. A modification was made to a commercially made violin in which a hole was drilled in the top of the violin through which an extended sound post was fitted so that the treble bridge foot sat directly on the post. Although not recommended for a hand made higher grade instrument, the modification produced stronger low harmonics and resonances and reduced higher ones.

Some more experimentation must be done, but the idea that the top of the instrument being bypassed essentially to produce a more viola sound on a small violin is intriguing.

**Proper Bridge Placement** is achieved by following the instructions that follow. The "f" hole notches are only a guide and do not provide an exact placement guide. The proper location is called the MENSUR which is a ratio of neck length to bridge location. First measure the distance from the nut to the edge of the violin next to the neck. Take this number and divide by two and then multiply by three, this resulting measurement (from the edge by the neck, to the bridge) is the proper location of the top of the front of the bridge (side closest to the fingerboard) for violin. Thus a 2:3 ratio. For the Cello the ratio is 7:10 and the Bass is 3:4.

This is one of a series of Instruction sheets prepared by JPB Music to help players gain a better understanding. We write these to assist, but if you are still unsure, please either phone for more advice, or ask your teacher for help.

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## STANDARD INSTRUMENT MEASUREMENTS (in inches)

Instrument/Size	Body Length	String Spacing	String Spacing
<b>Violin 4/4</b>	14	15/32	7/32
3/4	13 1/2	7/16	3/16
1/2	12 3/8	13/32	5/32
1/4	11	3/8	1/8
1/8	10 1/4	5/16	1/8
1/10	9 1/4	5/16	3/32
1/16	8 5/16	5/16	3/32
<b>Viola Standard</b>	16	17/32	1/4
Small	15 1/4	1/2	7/32
<b>Cello</b>	30	5/8	5/16
3/4	27	9/16	9/32
1/2	25 5/8	1/2	1/4
1/4	23	7/16	7/32
1/8	20	3/8	7/32
<b>Double Bass</b>	43 3/4	1	3/8
1/2	40 1/8	7/8	5/16
1/4	37 3/8	3/4	1/4
1/8	33 1/2	5/8	3/16

### Bridge Height between Strings and Fingerboard

Violin - E= 1/8", G=3/16"

Viola - A=3/16", C=1/4"

Cello- A=1/4", C=5/16"

Bass- G=7/16", E=11/16"

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