

Testing intonation

One of the keys to playing in tune is to relate each note to another note. The process is very simple:

- G's, D's, A's and E's are all tuned to the open strings.
- Sharps are tuned in relation to the natural above: C[#] is the 'leading note' to D.
- Flats are tuned in relation to the natural below: D^b is the 'leading note' to C.

This leaves three notes which are neither open strings nor sharps or flats:

- C is a perfect 4th above open G. B is the leading note to C. F is the leading note to E.

The exact tuning of sharps and flats is always relative to the key. B^b as the tonic in B^b major may be higher than B^b as a minor 3rd in a dark G minor passage. G[#] as the tonic of G[#] minor may be lower than G[#] as the leading note in A major. Furthermore, when playing with the piano it is often not possible to play 'high' sharps or 'low' flats if they clash with the tempered notes of the keyboard. The point is that however high or low a B^b or G[#] is, the reference point from which to measure them remains the note A.

- Continuously check that notes are in tune by comparing them against the following:

G	Tune to the open G	C[#]	Tune from D
A^b	Tune from G	D	Tune to the open D
G[#]	Tune from A	E^b	Tune from D
A	Tune to the open A	D[#]	Tune from E
B^b	Tune from A	F^b	Tune from E ^b , or same as E
A[#]	Tune from B	E	Tune to the open E
C^b	Tune from B ^b , or same as B.	F	Tune from E
B	Tune from C	G^b	Tune from F
C	Perfect 4th/5th from G	E[#]	Tune from F [#]
D^b	Tune from C	F[#]	Tune from G

- The small notes that follow indicate examples of 'tester' notes used to gauge the pitch and exact positioning of the actual notes of the melody. Play around with them and variations of them, to strengthen your concept of the harmonic and physical relationships of the notes.

Summer (The Four Seasons), op. 8 no. 3, Vivaldi
First movement

Example



- **Bar 21:** tune the B^b as shown in (1), below.
Then tune the D to the open D string.
Place the C exactly midway between the B^b and the D.
- **Bar 22:** tune the A^b as shown in (2), below.
Then place exactly the same B^b and C as in the previous bar. (The whole-tone between A^b and B^b must not be wider or narrower than the whole-tone between B^b and C.)
- **Bar 23:** tune the G to the open G.
Tune the A to the open A.
Place the B^b 'close' to the A. (This B^b should be exactly the same as in the previous bars).
- **Bar 24:** tune the G and A to the open strings as in the previous bar.
Place the F[#] 'close' to the G.

Polonaise brillante, op. 21, Wieniawski

Example 1

Violin Concerto no. 2 in E, BWV1042, J. S. Bach
Third movement

Example 2

Find the E that makes the open E vibrate the widest

Place midway between the G[♯] and the E

Make the open E vibrate

Prepare the next three notes here

Place midway between the D[♯] and the B