

Just ABE (instrument score)

Bob DuCharme

9

17 (*mp* almost quieter than the background drones)

mp *mf* *ff* *mp* *mf* *ff* *fff*

25

mf *f* *ff*

33 **Group 1**

37 **Group 2**

There are three movements, each 32 bars long. Follow bars 1 - 32 above but replace the groupings of four quarter notes with patterns from Groups 1 and 2.

For the first and third movements play any combination of the notes concert A and concert E from any octave.

Second movement: same thing but with E and B.

First movement: Andante (100 BPM)

Second movement: Moderato (120 BPM)

Third movement: Adagio (70 BPM)

One instrument per movement sticks with Group 1 patterns to set the tempo for everyone else. Others are encouraged to play mostly Group 2 patterns. Substitute rests for any notes shown in the patterns.

Program Notes

Just ABE by Bob DuCharme

Audience participation instructions:

1. Use the URL <https://bobdc.com/just-abe/> or the QR code below to send your phone's web browser to this web page. You will see buttons on the page that can play various notes. (Please don't try playing them until we're all ready to do so together. They are noisy, so if you do it before then, we will all know.)



2. For the first movement of *Just ABE*, play any A and E notes on that screen that you like whenever you like. One of the musicians will cue you when the movement starts and stops. Feel free to vary the volume and to move your phone around in space—stand up, walk around, move to a different seat.

3. For the second movement, do the same with the E and B notes.

4. Third movement: back to A and E.

Background:

Each button is labeled with the note name and frequency of that note in Hz—for example, A440. The E to the right of that one is 660, because $440 \times 3/2$ is 660. If a piano was tuned using simple ratios of 440 like this, it would sound great when playing in A, but not so good in keys such as B flat, so on a piano the E above A will actually be tuned to 659.25 Hz. This makes it easier to play in different keys on the same instrument. This system of pitch tweaks is known as equal tempered tuning and was developed in the 17th and 18th centuries. (Bach's *Well-tempered Clavier* was a part of this evolution.)

Because we'll be using the notes A, B, and E calculated with simple integer ratios such as $3/2$, we'll be using "just intonation," which in the west has its roots in ancient Greek music. This piece is called *Just ABE* because we're playing just those notes, in different octaves, and also because we're using the just intonation versions of them.

— Bob DuCharme