

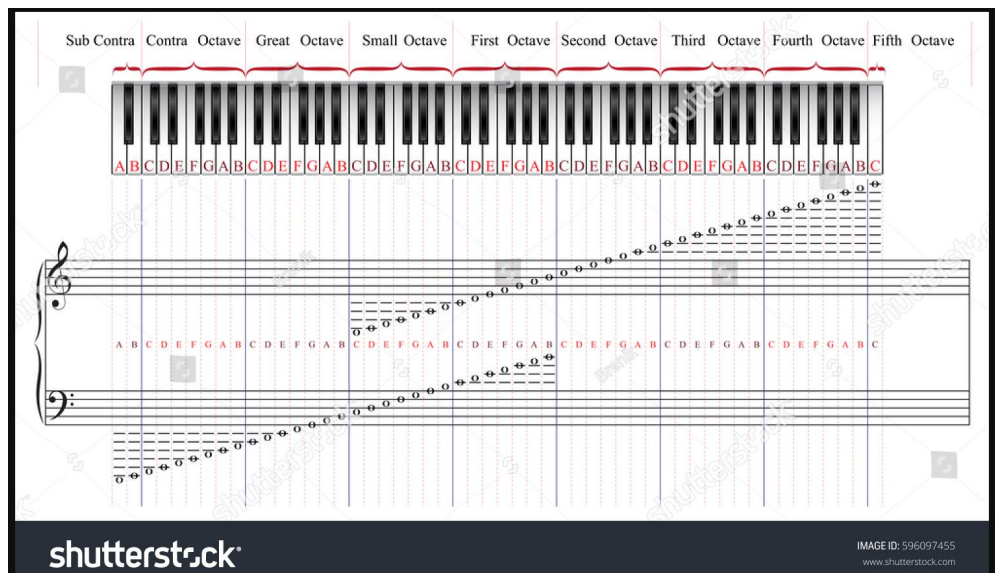
Notably, A Piano Note Calculator, Version 1.0.3

By R. G. Sparber



Protected by Creative Commons.¹

Disclaimer: I am a beginner, so some of what I believe to be accurate might be wrong. I trust that my readers will swiftly correct me.



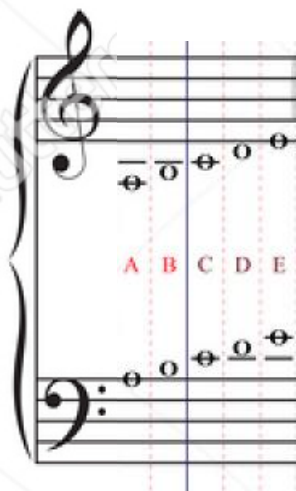
I'm very slowly learning to play the piano. As I progress, the pieces use notes further from the middle of the keyboard. Once they fall off of the long horizontal lines, the staff, I get even more lost. This excellent graphic, available from Shutterstock, illustrates my confusion. When I reach one of these wayward notes while learning, I can pull out such a graphic and figure out what note I must play. My goal is to have all of these notes memorized, but that has turned out to be a slow process. There are so many notes, all looking alike!

¹ This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

Music has a lot of mathematical aspects to it. As I looked at the notes on my top staff, marked by the fancy-looking G (the G or Treble Clef), I have notes on lines, between lines, plus notes on short line segments above and below these lines. The lower staff, marked by a backward comma and two dots (the F or Bass Clef), have the same placement of notes, but they have different meanings. These, too, extend beyond the staff on and between short-line segments. The pattern is all for good, logical reasons, but it sure makes it hard to memorize, let alone recall on the fly, while playing.

One solution for the beginner is to buy a long label that rests on top of the piano keys. It shows you where the corresponding note is on the staff. It provides immediate information, but I find it terribly distracting. Rather than my mind focusing on the keys, I tend to just look at that damn label.

I wanted a quick and easy way to identify a note. My first step was to see the pattern.



There are two sequences. The notes, at least in the USA, are named A through G. They repeat as we move across the piano keyboard.

The second sequence involves those long and short horizontal lines. The staff consists of five lines, so there are four spaces between these lines. The Bass Clef's staff is one short line below the Treble Clef's staff. Find the one marked "C"; it is the famous middle C. If I'm on the Treble staff, it is the note on the first short line below the staff. If I'm on the Bass staff, it is the first note on the short line above the staff. So, by my way

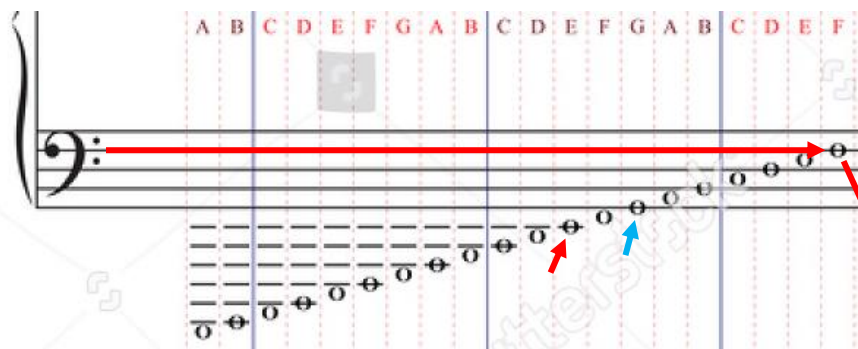
of thinking, this short line is shared by the two staff although I've never seen it drawn that way.

These two sequences tie together. On the Bass staff, those two dots bracket a line that marks the F note. On the Treble staff, the curl is around a line that marks the G note.



All of this music theory was necessary for you to understand the 3D-printed device I created. I call it “Notably” because it tells me the location of all notes. It is a form of slide rule.

Let’s take it out for a spin.

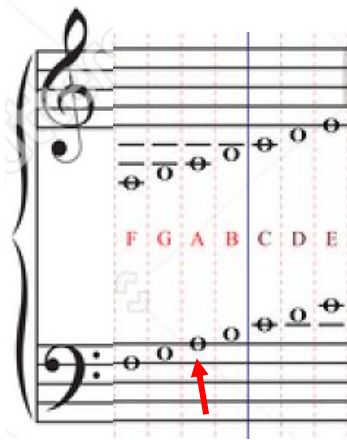


Say I am on the Bass staff and want to know the notes at and below F.

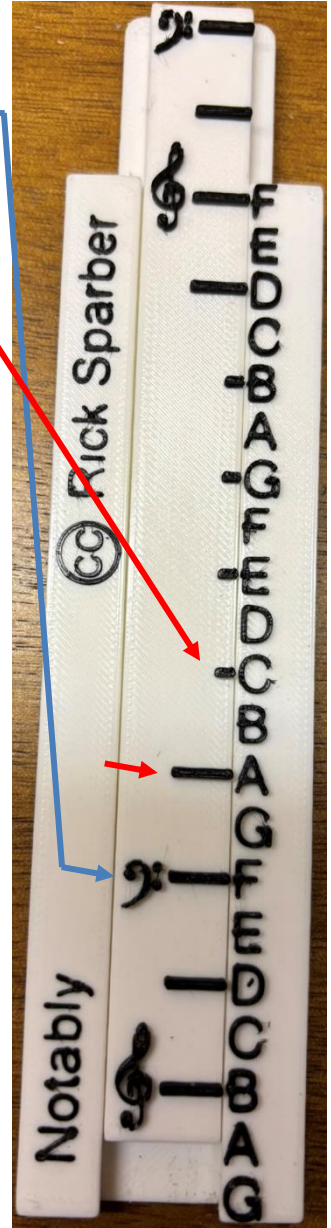
I slide the top Bass Clef to the nearest F printed on the right. The notes at and below F are on long lines and short lines. Do you see that the last note on a long line is G? The first note on a short line below the Bass staff is E.

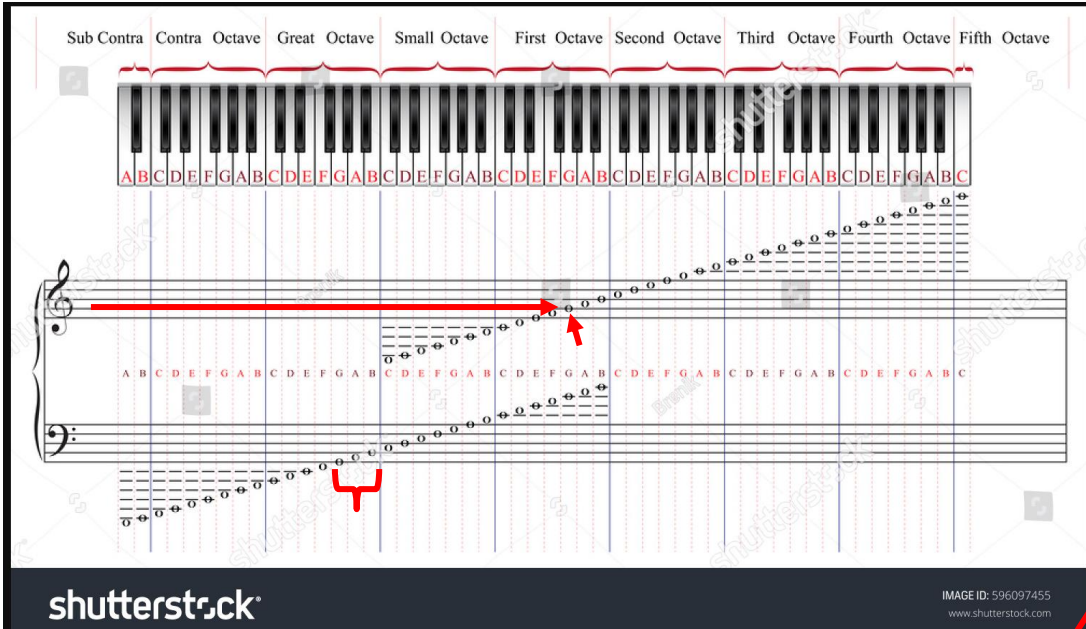
In this case, the long lines on Notably, next to D and B, at the bottom should be read as short lines. The note A is the lowest note so the G at the bottom does not exist.





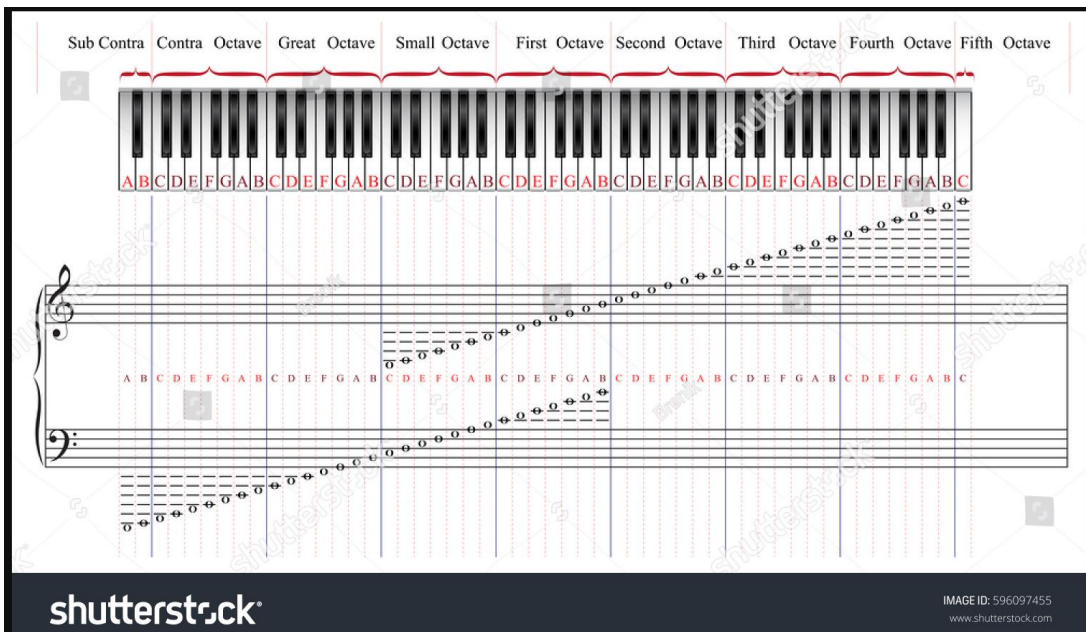
Next, say I am again on the Bass staff but want to know the notes above F. I slide the Bass Clef nearest the bottom to the first F marked on the right. I now see that **A** is the last note on a line before we leave the Bass staff towards the Treble Clef. The first note on a short line above the Bass staff is our old friend, Middle C.





I perform the same actions on the Treble staff, except now I use G. Slide the top Treble Clef to the first G on the right, and I have all notes below G. This includes B and G, which are on the long lines that are part of the Bass staff.





For notes above the Treble Clef, I slide the bottom Treble clef to the lowest G. I can then see all of the notes on the Treble staff at and above G. I reach the highest F but do miss the highest G, A, B, C above it. A slightly longer Notably would address this short coming. I suspect that if you are skilled enough to play these notes, you don't need Notably.



If you are interested in having one of these devices and have access to a 3D printer, I have posted the information on [Thingiverse](https://www.thingiverse.com/thing:6891329) (<https://www.thingiverse.com/thing:6891329/files>). You are free to print it, sell it, or even modify the design as long as you give me credit.

My hope in sharing “Notably” is that others will try it out and improve on the design. We will all benefit. I welcome your comments and questions.

If you want me to contact you each time I publish an article, email me with “Subscribe” in the subject line. In the body of the email, please tell me if you are interested in metalworking, software plus electronics, kayaking, and/or the Lectric XP eBike so I can put you on the right distribution list.

If you are on a list and have had enough, email me “Unsubscribe” in the subject line. No hard feelings.

Rick Sparber
Rgsparber.ha@gmail.com
Rick.Sparber.org