

Music's Alphabet and the Diatonic Major Scale

If music is a language then it should have an alphabet like all other languages. The musical alphabet is called the **Chromatic Scale**. All by itself the chromatic scale is difficult to do much with. This is because all the pitches are the same distance apart—a half step (one fret). Much like the letters of the English alphabet—words must be formed into verbs, nouns, etc.—one must apply formulas to extract groups of pitches of differing distance—i.e. scales or chords—so that these relationships can be manipulated to create and relieve tension.

Seven letters are borrowed from the English alphabet to name the twelve pitches of the chromatic scale—**A B C D E F G**. This might seem odd if we realize we could have borrowed twelve letters, one for each of the twelve pitches. The English alphabet contains more than enough letters. So there must be a reason only seven were chosen. That reason is the seven pitch Diatonic Major scale (do re mi fa so la ti do). Remember the do and its octave share the same letter. This fact creates the spelling rule for the Major scale: Use all seven letters without skipping a letter or using a letter twice. The Major scale also effects the spacing of the chromatic scale.



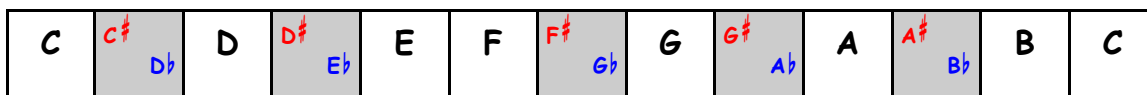
Every letter is a whole step (two frets) away from the next except **B/C** and **E/F**. These two anomalies must be memorized. Why this particular spacing? This becomes clear when we look at the formula for extracting the seven pitches of the Diatonic major scale from the twelve pitches of the chromatic scale.

Diatonic Major Scale Formula

Root + 1 step + 1 step + $\frac{1}{2}$ step + 1 step + 1 step + 1 step + $\frac{1}{2}$ step

The two half steps and the fact that the entire musical notation system was design to have the key of C major (all the white keys on the piano) as its center and starting point explains the half steps between **B/C** and **E/F**.

The pitches between the natural pitches have two names, one for **sharp** and one for **flat**. This is similar to other languages. In English there are multiple ways to spell one sound—to, too, two and see, sea. The different spellings allow the one sound to have many meanings.



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Now we can use our music alphabet to extract a Diatonic Major scale by simply applying the formula to any note of the Chromatic scale. You only have to remember the spelling rule:

Use all seven letters without skipping one or using one twice.

The Chromatic Scale

C	C [♯] D [♭]	D	D [♯] E [♭]	E	F	F [♯] G [♭]	G	G [♯] A [♭]	A	A [♯] B [♭]	B	C
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Diatonic Major Scale Formula

Root + 1 step + 1 step + $\frac{1}{2}$ step + 1 step + 1 step + 1 step + $\frac{1}{2}$ step

Example 1. Starting with G as our root and applying the formula we get the following seven pitches including F sharp.

G		A		B	C		D		E		F [♯]	G
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Example 2. Starting with B flat as our root and applying the formula we get the following seven pitches including B flat and E flat.

B [♭]		C		D	E [♭]		F		G		A	B [♭]
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Example 3. Starting with A as our root and applying the formula we get the following seven pitches including F sharp, C sharp, and G sharp.

A		B		C [♯]	D		E		F [♯]		G [♯]	A
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Example 4. Starting with D flat as our root and applying the formula we get the following seven pitches including B flat, E flat, A flat, D flat, and G flat.

D [♭]		E [♭]		F	G [♭]		A [♭]		B [♭]		C	D [♭]
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