

Music by Numbers

by Dennis Winge

Do you want the holy grail of music? I'll tell you where it is, but remember, don't look at it directly or you will turn to stone. Of course I'm being facetious, but what I mean is, I can tell it to you in one sentence, but it can take years or decades to perfect. The holy grail is when you a) conceive of a musical idea (or hear it played by someone else) b) hear its intervallic relationship (by training your ears) and c) knowing where it is on your instrument.

This last step is the crux of this article. Many guitar students learn patterns, shapes and licks but they can't adapt them into every day musical situations because they don't really grasp the underlying construction of the lick or pattern. They learn a lick in a certain position, in a certain key, and at a certain tempo, and in any other context where even one of those elements is different, they can't play the lick.

Take a nursery rhyme for example. They are easy to hear because everyone knows them, and they are almost always diatonic to the major scale. Can you play "Mary Had a Little Lamb" on your instrument? You probably can figure it out by ear, but how much hunting-and-pecking?

I once read about a college-level course in which a grade would be lowered (from A plus to A to A minus to B plus, etc.) for every wrong note that was hit while playing a melody by ear. Test yourself by choosing a key and a fret area. Suppose we randomly pick the key of Bb and fret number ten. Can you play "Mary Had a Little Lamb" flawlessly in the key of Bb at or around the 10th fret? My guess is: not so easily.

You have to understand that the melody, in Bb, would go "d, c, bb, c, d, d, d." The bb is the first note in the key of Bb, so we assign that note the number 1. The note c is the 2nd note in the key, so we assign that note number 2. Thus the tune goes "3, 2, 1, 2, 3, 3, 3." Knowing this is huge because it allows you to:

1. **Play the scale in any position.** Any place you know a Bb major scale, you will now be able to easily play the tune. Most positions on the guitar cover 2 octaves, so for every position it's likely you'll be able to play the melody twice: once in a lower octave and once in a higher octave. Whether you use 3-notes per string or some other system of playing scales, the point is that your knowledge of the intervals can enable you to take it to a different position a lot faster than if you were thinking letter names.

2. **Play the melody in any key.** The numbers never change from key to key. "Mary Had a Little Lamb" is always the numerical formula given above, and always will be. When you think letter names, you would have to change them for every key. But now you can transpose the tune very easily in a new key because you understand the intervals that comprise it.

In our example of Bb at the 10th fret, if you were asked to play it in the key of G, you could simply slide the whole fingering that you worked out down 3 frets, and you're instantly in the new key. As your musicianship advances, however, you will be able to also play it at the 10th fret (because that is where you happened to be in this example). In fact, you'll be able to play it in roughly 10 different places on the neck. How many can you find right now?

Let's take a classic rock example. Led Zeppelin's "The Ocean" is a recognizable riff that starts off with 8, 8, b7, 5, b3. (Here 8 is the same as 1 since the major scale has 7 notes, with the 8th one being an octave above the starting root. We could have written "1" instead of "8" but then that note would be an octave lower. In writing tunes out in numbers, I sometimes borrow from the Indian "sargam" (their version of solfege) notation whereby they put a dot below any note in a lower octave or a dot above any note in a higher octave. So in this case we could have written "1" with a dot over it.)

Suppose you really like that riff but it's not part of your band's repertoire. Wouldn't it be great to use the idea as part of a phrase in your solo? Since you understand its intervallic construction, work it out in lots of different positions in its original key of A. Can you take that riff and play it in different keys?

If you have trouble thinking in numbers, it's good to write out the scale fingerings you use in integers instead of dots. Thinking in numbers is like "paint by numbers." You simply hear the phrase, and you know where to find it. It is truly liberating. Along with training your ear, it's the holy grail.