Calculating Intervals

Guitarist Songwriter
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An Interval is the **musical distance** between two pitches. Intervals can be written **melodically** – one pitch after the other – or **harmonically** with both pitches sounding together.

An interval has two components: **Number and Quality**

Number

The number of an interval is calculated by starting with the lower pitch as 1 (one), then counting the consecutive lines and spaces above that note ending on the target note – the highest pitch in the interval. We can <u>disregard all accidentals</u> when calculating the number.

Quality

The quality of the interval is a way of further specifying the exact pitches. The terms used to identify quality are:

- Perfect – an interval of a unison, forth, fifth or octave in the key of the bottom note.
- Major – an interval of second, third, sixth or seventh in the key of the bottom note.
- Minor – an interval that is one half step smaller than a major interval.
- Diminished – An interval that is one half step smaller than a Perfect interval; also an interval that is one half step smaller than a minor interval
- Augmented – An interval that is one half step larger than either a Major interval or an Augmented interval.

Process

To calculate the interval when given two pitches, think in the key of the lower note and follow this process:

1. Is the upper note in the key of the lower note?
2. If yes, then it is either Major (2,3,6,7) or Perfect (1,4,5,8)
3. If not, then see how many half steps up or down it is removed from the note that would be in the key. Use the rules for quality (above) to calculate the variation and that is the interval quality.

For example, calculate the interval C up to Eb.

1. In the key of C, the E is the third and is natural.
2. Since this note is Eb, it is still a third, but it is one half step smaller than the Major third that occurs in the key, so it is a minor third.

To calculate the interval from G# to D:

First of all recognize that G to D is a fifth. If the upper key is in the key of the lower note, then it is a Perfect fifth. If not, then we adjust accordingly.

In this case, there is no key of G#, so we can momentarily just think of G and see what the resulting interval would be. From G to D is Perfect fifth.

But we are using G# so we have moved the bottom note closer to the top note by one half step.

This means it is a diminished Fifth because we made what would have been a Perfect fifth smaller by ½ step.