

# Chapter 14

## How Scales are Constructed

The term *scale* refers to the tonal material of music arranged in an order of rising pitches. Scales are the building blocks of music. Think of them as a kind of musical DNA. Everything in music - from melody, to chords, to harmonic progressions, is related to the scale that the music is in.

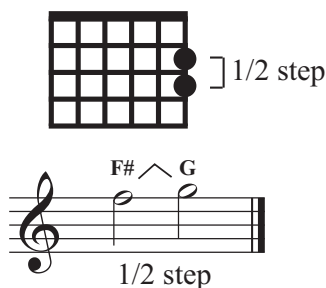
We have previously explored music notation, both for pitch and rhythm. Now we are in a position to take another step. To take this step we return to the concept of musical intervals.

### Intervals

An interval is the musical distance between two notes.

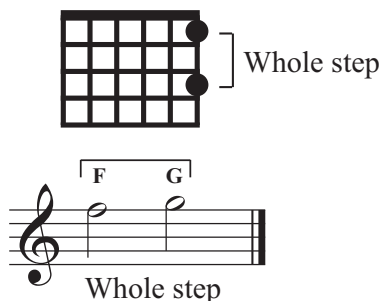
### Half-Step

The 1/2 step is the smallest interval. On the guitar a 1/2 step is formed between any two notes on adjacent frets of a string. Also, a 1/2 step is formed between any open string and the first fret of that string. In the example below the notes F# & G are on adjacent frets and form a 1/2 step interval:



### Whole Step

A whole step is equal to two 1/2 steps. On the guitar a whole step is formed between any two notes that are two frets apart. In the example below the notes F and G of the first string are a whole step apart:



### The Intervals Used to Construct Scales

All scales are built out of 1/2 steps and whole steps. The sequence and placement of the 1/2 and whole steps determine the *kind* of scale being played. The three most important kinds of scales are called *major*, *minor* and *chromatic*. Major and minor scales are called *diatonic* scales, which means the scale has seven tones. The chromatic scale uses all twelve notes within an octave.

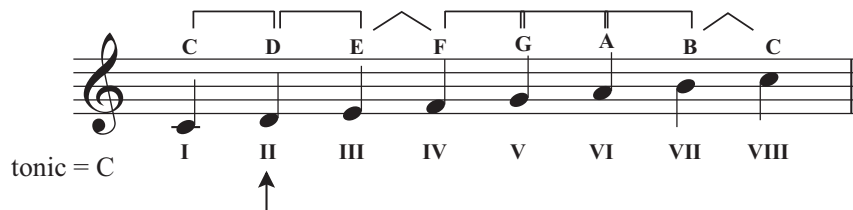
# Major Scales

The major scale is a diatonic, or seven tone, scale. It consists of five whole step intervals and two 1/2 step intervals. The 1/2 step intervals always occur between the 3rd & 4th tones, and the 7th & 8th tones of the scale. Illustrated below is a major scale built beginning on the note C. The note C is called the *tonic*. Tonic means the first and main note of a scale.

In the C major scale written below study the notes, the placement of the 1/2 and whole step intervals, and listen carefully to the character of the major scale as you play it.

## Scale of C major:

Whole and 1/2 step intervals → 1 1 1/2 1 1 1 1/2



In music theory roman numerals are used to number each note of a scale.

# Minor Scales

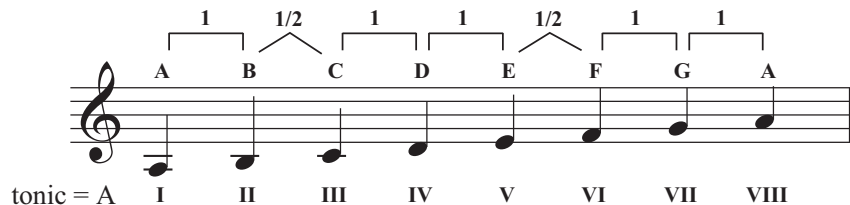
There are three kinds of minor scales. They are called *natural*, *harmonic* and *melodic* minor. The first five tones of all minor scales have the same sequence of 1/2 and whole tone intervals. Each of the three kinds of minor scale has different intervals between the sixth and seventh tones.

## Natural Minor

The natural minor is a diatonic scale. The 1/2 step intervals are placed between the 2nd and 3rd tones, and the 5th and 6th tones of the scale. The other five intervals of the scale are whole steps.

In the natural minor scale written below, with a tonic of the note A, study the notes, the placement of the 1/2 and whole step intervals, and listen carefully to the character of the natural minor scale as you play it.

## Scale of A natural minor:



## Harmonic Minor Scale

The first six notes of the harmonic minor are the *same* as the natural minor scale. The interval between the sixth and seventh notes of the scale is called an *augmented second*. The augmented second has three 1/2 steps between the two adjacent scale notes. In the example below the three 1/2 steps are between the note F and the note G#.

The harmonic minor scale imparts a distinctive flavor and is often used in flamenco music.

In the harmonic minor scale written below, with a tonic of the note A, study the notes, the placement of the 1/2 steps, whole step and especially the augmented second interval. Listen carefully to the character of the harmonic minor scale as you play it.

### Scale of A harmonic minor:

tonic = A

## Melodic Minor Scale

The melodic minor scale combines the qualities of both the natural and harmonic minor scales. By learning the melodic minor scale, in various keys, you will also be practicing the complete *set* of notes found in the natural and harmonic minor scales.

The first five notes of the melodic minor are the same as the natural and harmonic minor scales. It is the variations of the sixth and seventh notes that impart its distinctive character. Notice that the sixth and seventh notes vary, depending on whether the scale is ascending or descending. In the ascending scale the sixth and seventh notes are each raised by 1/2 step, and in the descending scale the sixth and seventh notes are lowered by 1/2 step.

In the A melodic minor scale written below study the notes and the placement of the 1/2 and whole steps. Listen carefully to the ascending and descending scale as you play it.

### Scale of A melodic minor:

tonic = A

Throughout this book the melodic minor scale is emphasized. Later on in your studies you may wish to work with the natural and harmonic minor scales in greater detail.

## Chromatic Scale

The chromatic scale consists entirely of 1/2 steps. Unlike the diatonic major and minor scales, it has twelve notes, and uses every tone within a span of one octave.

Sharps are used when ascending, and flats are used when descending. The chromatic scale is excellent as an exercise to develop technique on the guitar. Within the music you play there may be occasional small segments that use a chromatic scale.

In the chromatic scale written below, based on the note E, study the notes and the sequence of the 1/2 steps, both ascending and descending. Listen carefully to the "uniform" sound of the chromatic scale as you play it.

### Chromatic scale beginning on the note E:



## A Few More Thoughts About Scales

Keep the following essential elements in mind as you study scales:

1. Work on only one scale at a time.
2. Write out the notes of the scale. Visualize where the notes are played on the guitar and listen intently to the succession of whole and 1/2 steps.
3. Memorize the scale.
4. After a few weeks the smoothness and tone quality will get better and better. Don't be in a hurry. And refine your intention, as necessary, to play each scale with complete accuracy. When you make an error, take a breath and begin it again, repeating with care and patience until it sounds the way you wish.
5. When the left hand is consistently playing the correct sequence of notes, try using different pairs of right hand fingerings.
  - a. Begin with i & m alternating.
  - b. Then use m & a until that combination feels more natural.
  - c. Then also experiment with i & a.
  - d. Practice all the scales until both free strokes and rest strokes can be applied at will.
6. The exercises and preview pages for each key contain more detailed practice scenarios and suggestions for you to explore when you are ready.

# Major and Melodic Minor Scales

*in the first and second positions*

This page presents the scales of the nine major and minor keys that are most commonly used for guitar. Study and play these scales until they are completely familiar.

## C Major

## A Minor

## G Major

## E Minor

## D Major

## A Major

## E Major

## F Major

## D Minor