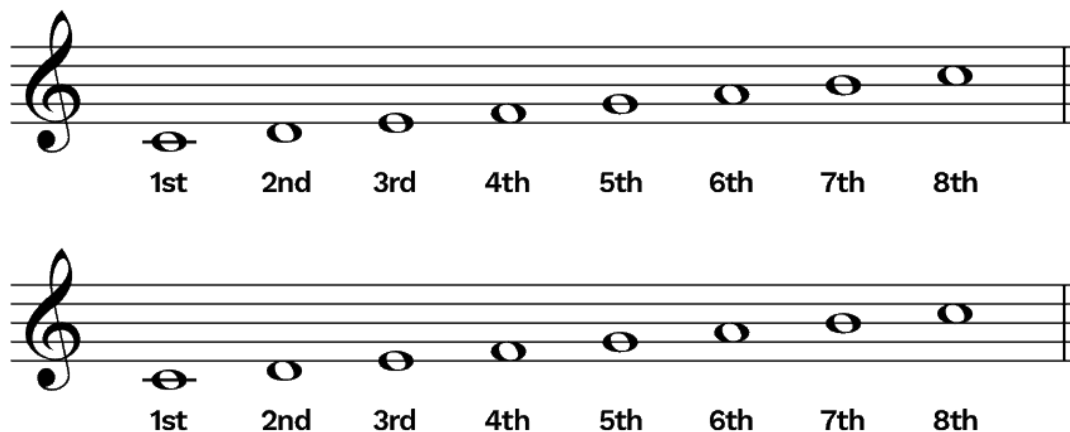


Scales, Modes, Intervals and the Circle of Fifths

The word **scale** comes from the Latin word meaning **ladder**. So you can think of a scale climbing the rungs of the ladder which is represented by the stave.



The degrees of a scale

You have to have a note on every single line or space. Each degree of the scale has a special name:

- 1st degree: the **tonic**
- 2nd degree: the **supertonic**
- 3rd degree: the **mediant**
- 4th degree: the **subdominant**
- 5th degree: the **dominant**
- 6th degree: the **submediant**
- 7th degree: the **leading note** (or leading tone)

The 8th degree of the scale is actually the tonic but an octave higher. For that reason when naming the degrees of the scale you should always call it the 1st degree.

MAJOR SCALES

One of the more common types of scale is the **major scale**.

Major scales are defined by their combination of semitones and tones (whole steps and half steps):

Tone – Tone – Semitone – Tone – Tone – Tone – Semitone

Or in whole steps and half steps it would be:

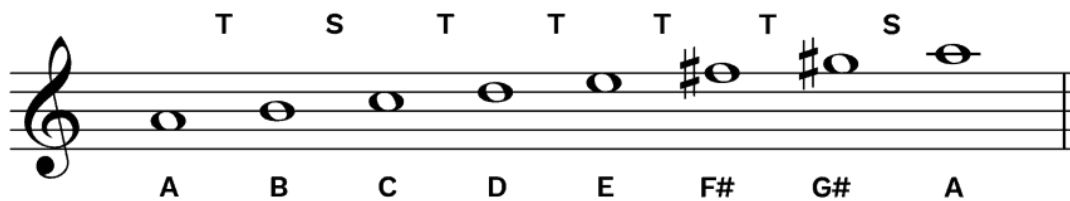
Whole – Whole – Half – Whole – Whole – Whole – Half

The image displays two musical staves in treble clef, illustrating the major scale formula. The top staff shows a scale starting on C4 (middle C). The intervals between notes are labeled as follows: C4 to D4 (tone), D4 to E4 (tone), E4 to F4 (semitone), F4 to G4 (tone), G4 to A4 (tone), A4 to B4 (tone), and B4 to C5 (semitone). The bottom staff shows a scale starting on D4. The intervals are: D4 to E4 (tone), E4 to F4 (tone), F4 to G4 (semitone), G4 to A4 (tone), A4 to B4 (tone), B4 to C5 (tone), and C5 to D5 (semitone). Brackets and labels 'tone' and 'semitone' are placed below the notes to indicate these intervals.

Major scale formula

MINOR SCALES

The second type of scale that we're going to look at is the **minor scale**. Minor scales also have seven notes like the major scale but they're defined by having a **flattened third**. This means that the **third** note of the scale is **three semitones** above the first note, unlike major scales where the third note of the scale is four semitones above.



A MELODIC MINOR SCALE

There are three different types of minor scale:

- the **NATURAL** minor
- the **HARMONIC** minor
- the **MELODIC** minor

Each type of minor scale uses a slightly different formula of semitones and tones but they all have that **minor third**.

Major keys are quite often associated with the music feeling **happy** or **joyful** whereas minor keys are known for music that sounds **sad** or **melancholy**.



Ascending F major scale - F-G-A-B \flat -C-D-E

NATURAL MINOR SCALE

In order to create a natural minor scale, we simply start with the major scale and lower the **3rd**, **6th**, and **7th** scale degrees by a semitone. In our example above using the F major scale, this means we will be lowering the **A** (the **3rd**) to **Ab**, the **D** (the **6th**) to **Db**, and the **E** (the **7th**) to **Eb**.



Ascending F natural minor scale - F-G-Ab-Bb-C-Db-Eb

The natural minor scale is **related to a major scale** because it **shares the same key signature as a major scale**. Looking at our newly created F natural minor scale, we can see that we have **4 flats** in the scale, and so the key signature would read **Bb, Eb, Ab, and Db**. This is the **same key signature** as the key of **Ab major**. For this reason we can say that **F natural minor is the relative minor of Ab major**. (And remember that when in a major key, the relative minor scale can be constructed simply by using the same pitches but treating the 6th scale degree as the starting note).



HARMONIC MINOR SCALE

The harmonic minor scale differs from the natural minor scale in only one way – the 7th scale degree is raised by a semitone. In other words, in a natural minor scale the 7th scale degree is a **minor 7th**, whereas in a harmonic minor scale the 7th scale degree is a **major 7th** (and will be a semitone away from the root of the scale). When the 7th degree of any scale is a semitone away from the root it is called a **leading tone**, and so the important difference between the natural and harmonic minor scale is that one **has** a leading tone while the **other does not**.



Ascending F harmonic minor scale - F-G-Ab-Bb-C-Db-E

MELODIC MINOR SCALE

The melodic minor is a bit... weird! In the traditional sense, melodic minor has an **ascending form** and a **descending form**, meaning that the notes in the scale change based on whether you are playing up the scale or down the scale. When playing the ascending form of the melodic minor scale, only the **3rd** scale degree is lowered by semitone. The scale is the same as the major scale with the exception of the **lowered 3rd**.



When descending, the scale reverts to the **natural minor** form.

Ascending F melodic minor scale: F-G-Ab-Bb-C-D-E



Descending F melodic minor scale: F-Eb-Db-C-Bb-Ab-G

CHROMATIC SCALES

The two scales we've looked at so far are what we call **diatonic scales**. This means that they are in 'a key' and the first note of the scale is the **tonic**. **Diatonic scales** are also **heptonic** (which means they have seven notes) with two intervals of a **semitone** and five intervals that are **tones**.

A **chromatic scale** is very different from a diatonic scale as it is made up of **all 12 notes** in western music. Each note in a chromatic scale is an interval of a semitone apart. In other words, to play a chromatic scale you choose a note and then play the note a semitone above and keep going until you reach the note you started on.

For example here is an ascending chromatic scale starting on C:
Ascending chromatic scale on C



And here is a descending chromatic scale starting on Gb:
Descending chromatic scale on G flat

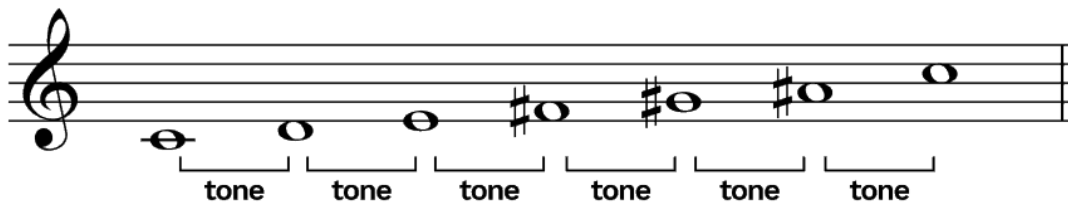


Because chromatic scales use every single note we don't say that a chromatic scale is in a certain key. We just use the note that the scale starts on.

WHOLE TONE SCALES

A **whole tone** scale is a type of scale where each note is an interval of a tone (whole step) apart. It's the complete opposite of the chromatic scale where every note is a semitone tone apart.

The whole tone is a type of **hexatonic** scale which means it only has six notes. This is because there aren't any semitones (half steps) in a whole tone scale.



Whole tone scale starting on C

Whole tone scales have a very distinctive sound and can be fun to play around with.

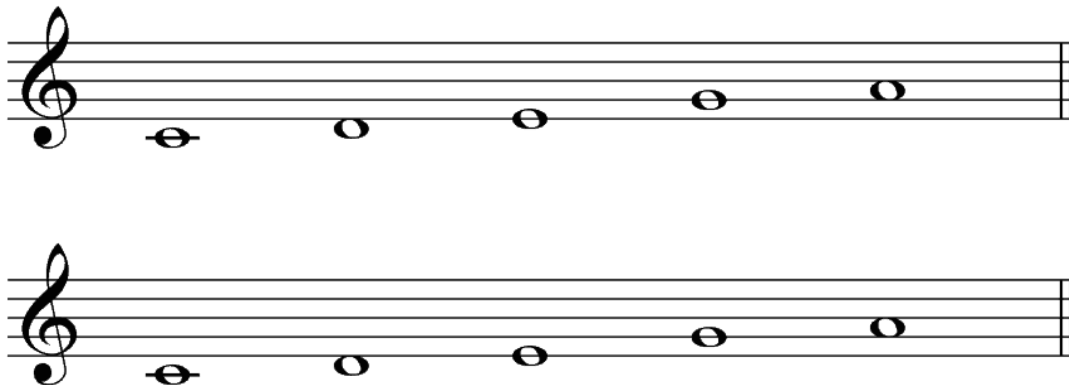
THE PENTATONIC SCALE

The next type of scale that we're going to look at is the **pentatonic scale**. Pentatonic scales are one of the simplest and have been around for a very long time. It's thought that they could even be as old as 50,000 years old! The word pentatonic comes from the Greek word '*pente*' meaning five. It's the same greek word that we get 'pentagon' meaning five sided shape from.

The five notes in a major pentatonic scale are:

- The first degree – **tonic**
- The second degree – **supertonic**
- The third degree – **mediant**
- The fifth degree – **dominant**
- The sixth degree – **submediant**

Here is a C major pentatonic scale so you can see:



C major pentatonic scale

The pentatonic scale is very common in lots of music that you'll be familiar with, everything from blues and jazz to folk and rock music the simplicity of the pentatonic scale makes it very versatile.

THE MUSIC MODES

There are seven main categories of **MODE** that have been part of musical notation since the middle ages.

The names of them are:

- Ionian (i)
- Dorian (ii)
- Phrygian (iii)
- Lydian (iv)
- Mixolydian (v)
- Aeolian (vi)
- Locrian (vii)

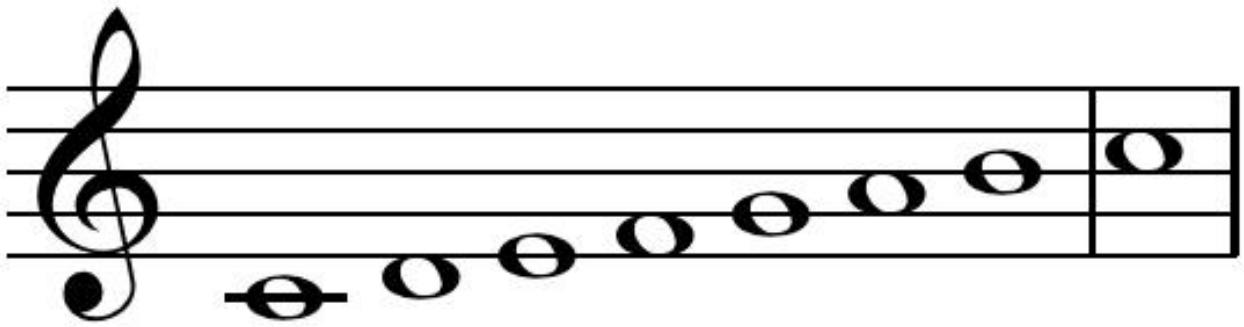
All though they can be quite confusing you likely are familiar with at least one of them already. The **Ionian mode** is just another name for the **major scale** and the **Aeolian mode** is the same as the **natural minor scale**.

Each mode has a different sound, some are **MAJOR** and some are **MINOR**.

Modes all originated in ancient Greece, so they have Greek names. The modes were named after various regions, perhaps to represent the people who lived there, because Greek musical theorists were philosophers too, and associated the arts with aspects of morality.

Basically, a mode is a type of scale, as in 'doh re mi fa so la ti do'. Alter just one of those notes and you can call the scale a 'mode'. Long before people started thinking about pieces of music having 'keys', each mode is believed to have begun on a different note of the scale, conferring its own character to the set of notes running, for example, C to C (**Ionian mode**) or E to E (**Phrygian mode**) and so on.

Ionian Mode



The **Ionian** mode is a simple 'doh re mi' major key. It is the modern major scale. It is composed of natural notes beginning on C.

Dorian Mode



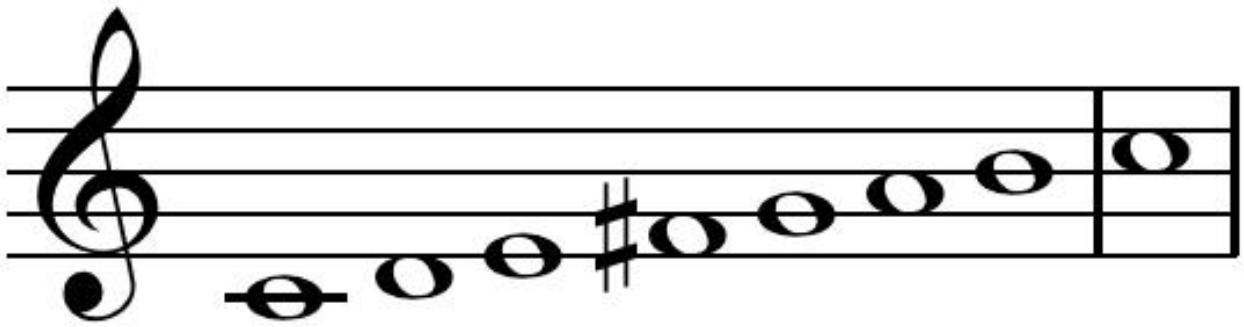
The **Dorian** mode is very similar to the modern natural minor scale. The only difference is in the sixth note, which is a major sixth above the first note, rather than a minor sixth.

Phrygian Mode



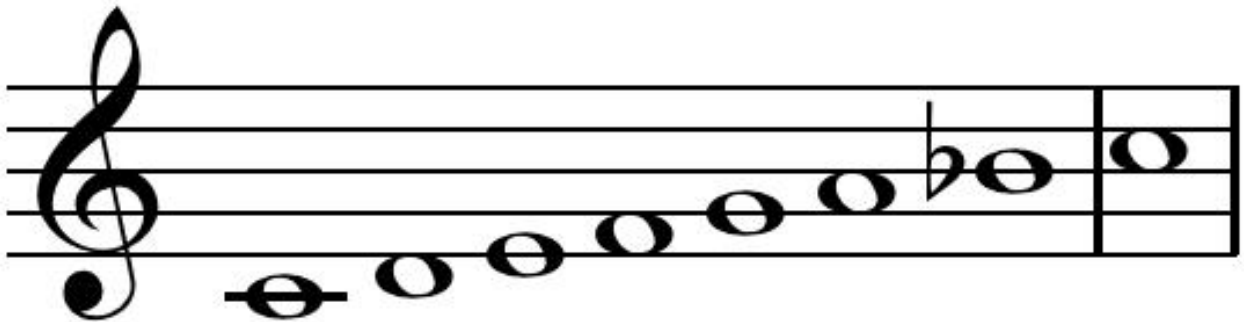
The **Phrygian** is the third mode. It is also very similar to the modern natural minor scale. The only difference is in the second note, which is a minor second not a major. The Phrygian dominant is also known as the Spanish gypsy scale, because it resembles the scales found in flamenco music.

Lydian Mode



The **Lydian** mode has just one note changed from the Ionian, a major scale, but with the fourth note from the bottom sharpened to give a slightly unsettling sound.

Mixolydian Mode



The single tone that differentiates the **Mixolydian** mode/scale from the major scale is its seventh note, which is a flattened seventh rather than a major seventh.

Aeolian Mode



Aeolian is the **natural minor scale**, heard in such popular songs as Bob Dylan's 'All along the watchtower' or REM's 'Losing my Religion'.

Locrian Mode



The **Locrian** mode has five notes in its scale flattened a half-step.

Identifying Major and Minor Intervals

An interval is the distance between one note to another.

Below are song suggestions that will help you to identify the different intervals.



<u>INTERVAL</u>	<u>ASCENDING</u>	<u>DESCENDING</u>	<u>EXAMPLES</u>
<u>Minor 2nd</u>	<i>The Jaws Theme</i> by John Williams		Jaws: The introductory notes go up and down a minor second
<u>Major 2nd</u>	<i>Happy Birthday</i> by Patty and Mildred J. Hill		Happy Birthday: Up a major second and back down again: "Happy B irth-day"
<u>Minor 3rd</u>	<i>Mad World</i> - Gary Jules	<i>Hey Jude</i> - Beatles	Mad World: "All a- r ound m e are familiar faces" Hey Jude: "Hey J ude"

<u>Major 3rd</u>	<i>When the Saints Go Marching In</i> by Unknown	<i>Swing Low, Sweet Chariot</i> by Wallace Willis	<p>Saints: “Oh when the saints”</p> <p>Swing Low: “Swing low, sweet chariot”</p>
<u>Perfect 4th</u>	<i>Amazing Grace</i> by John Newton	<i>O Come All Ye Faithful</i> by John Francis Wade	<p>Amazing Grace: “A-maz-ing grace, how sweet the sound”</p> <p>O Come: “O come, all Ye faithful, joyful”</p>
<u>Tritone/ Augmented 4th/ Diminished 5th</u>	<p><i>Maria</i> (from <i>West Side Story</i>) by Leonard Bernstein and Stephen Sondheim</p> <p><i>The Simpsons</i> Theme Tune by Danny Elfman</p>	<p><i>The Sound of Music</i> (from <i>The Sound of Music</i>) by Richard Rodgers and Oscar Hammerstein</p> <p><i>Close Every Door</i> (from <i>Joseph and his Technicolour Dreamcoat</i>) by Andrew Lloyd Webber and Tim Rice</p>	<p>Maria: “Ma-ri-a”</p> <p>Simpsons: “The Simp-sons”</p> <p>Sound of Music: “And I’ll sing once more”</p> <p>Close Every Door: “Close every door to me”</p>
<u>Perfect 5th</u>	<i>Twinkle Twinkle Little Star</i> by Jane Taylor	<i>The Flintstones</i> Theme Tune by Hoyt Curtin	<p>Twinkle: “Twinkle, Twinkle, little star”</p> <p>Flintstones: “Flint-stones, meet the Flintstones”</p>
<u>Minor 6th</u>	<i>Close Every Door</i> (from <i>Joseph and his Technicolour Dreamcoat</i>) by Andrew Lloyd Webber and Tim Rice	<i>12 Days of Christmas</i> by Frederic Austen	<p>Close Every Door: “Close eve-ry door to me”</p> <p>12 Days of Christmas: “3 french hens”</p>
<u>Major 6th</u>	<i>Call Me Maybe</i> by Carly Rae Jepsen	<i>Man In The Mirror</i> by Michael Jackson	<p>Call Me Maybe: “Hey I just met you”</p> <p>Man In The Mirror: “I’m start-ing with the man in the mirror”</p>

<p><u>Minor 7th</u></p>	<p>Somewhere (from <i>West Side Story</i>) by Leonard Bernstein and Stephen Sondheim</p>	<p>White Christmas by Irving Berlin</p>	<p>Somewhere: “There’s a place for us”</p> <p>White Christmas: “And may all your christ-masses be white”</p>
<p><u>Major 7th</u></p>	<p>Don’t Know Why by Norah Jones</p>	<p>Have Yourself A Merry Little Christmas by Hugh Martin</p>	<p>Don’t Know Why: “I wait-ed til I saw the sun”</p> <p>Have Yourself: (Last Line) “And have your-self a merry little Christmas now”</p>
<p><u>Octave</u></p>	<p>Somewhere Over The Rainbow (from <i>The Wizard of Oz</i>)</p>	<p>Someone To Watch Over Me by George Gershwin</p>	<p>Somewhere: “Some-where over the rainbow”</p> <p>Someone To Watch: (Last line) “Someone to watch ov-er me</p>

