

Musical Modes Explained

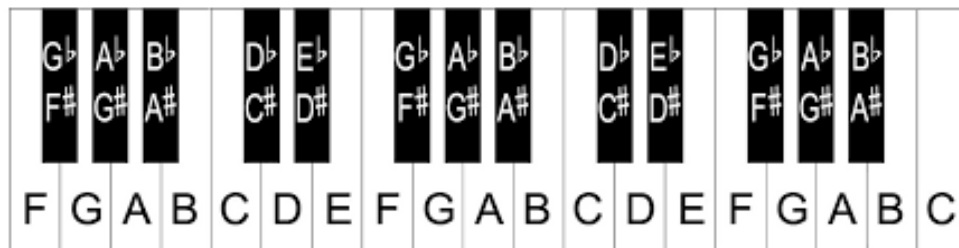
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Modes are confusing to many non-musicians and people new to music, not least because practically everything written about them is either overly complex, or so simplistic that nothing is really explained.

The Wikipedia entry for modes spends most of its verbiage on arcane historical aspects, and only at the end does it get to “Modern Western Modes,” but by then the non-musician is apt to feel bewildered. On the other extreme, many web sites – including Youtube videos on the subject – fail to clarify the differences and similarities among terms like “modes,” “scales,” “minor scale,” “major scale,” etc. Instead these terms are thrown out willy-nilly, without clear explanation.

Modes have encompassed a lot of musical patterns over the centuries of musical history, but today the term “mode” applies to one of seven specific sequences of musical notes. *A mode is a specific sequence of whole steps and half steps that begins on one note and ends on the same note an octave higher, e.g., C to C or D to D.*

There are 7 commonly-recognized musical modes today, each with a different sequence of half steps and whole steps. They are best demonstrated by starting on a specific white note of the keyboard and playing only white notes until you get to the same note an octave higher. They are listed in the table below the keyboard (W refers to “whole step” and h to “half step”).



<u>MODE</u>	<u>SEQUENCE OF NOTES</u>	<u>STEPS</u>	<u>Another name:</u>
Ionian	C D E F G A B C	W-W-h-W-W-W-h	Major scale
Dorian	D E F G A B C D	W-h-W-W-W-h-W	
Phrygian	E F G A B C D E	h-W-W-W-h-W-W	
Lydian	F G A B C D E F	W-W-W-h-W-W-h	
Mixolydian	G A B C D E F G	W-W-h-W-W-h-W	
Aeolian	A B C D E F G A	W-h-W-W-h-W-W	Minor scale
Locrian	B C D E F G A B	h-W-W-h-W-W-W	

Any two adjacent keys – black or white – are a half step apart. For example, C-C# are a half step apart, as are E-F and B-C. Any two keys with one key in between them are a whole step apart. For example, C-D are a whole step apart, as are E-F# and B-C#. What you really have with each new mode is a different sequence of half steps and whole steps, and it is that specific sequence that defines each mode.

Historically, the term “mode” and not “scale” was used for all these note sequences, going back to the ancient Greeks. Over time, the term for two particular modes – ionian and aeolian – came to be called “scales.” Today we call the ionian mode the major scale, and the aeolian mode the minor scale (more specifically, the natural minor scale). The term “mode” is still used for the other note sequences. This variation in terminology is one reason for confusion generated by many articles and web videos about modes. Although all 7 modes are variations on whole-step half-step sequences, only two of the variations are now called “scales” and the other five are still called “modes.”

So both “mode” and “scale” are simply a sequence of 8 notes, with the intervals between two successive notes either a half step or whole step apart. Whole step and half step are best appreciated on the piano keyboard, shown above. (Each black key can be labeled as a sharp or a flat.)

The seven modes, with their sequence of whole steps and half steps, are shown in another table, below. Note that the ionian mode is also the major scale, and the aeolian mode is the minor scale. (More specifically, the aeolian mode is the natural minor scale. There are two other minor scales, the harmonic minor and melodic minor, which are not represented by any of these modes.)

		w	w	h	w	w	w	h	w	w	h	w	w	h		
C Ionian Mode	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	MAJOR SCALE
D Dorian Mode	D	E	F	G	A	B	C	D	E	F	G	A	B	C		
E Phrygian Mode	E	F	G	A	B	C	D	E	F	G	A	B	C			
F Lydian Mode	F	G	A	B	C	D	E	F	G	A	B	C				
G Mixolydian Mode	G	A	B	C	D	E	F	G	A	B	C					
A Aeolian Mode	A	B	C	D	E	F	G	A	B	C						MINOR SCALE
B Locrian Mode	B	C	D	E	F	G	A	B	C							

This table emphasizes the point that each mode can be determined by starting on a successive note of the C major scale (white keys only). In this way all the half steps are B-C and E-F. Again, the term “minor scale” in this table is the natural minor scale. (Table is from http://www.lotusmusic.com/lm_modes.html.)

- If you start on C and play C-D-E-F-G-A-B-C you will get the C ionian mode sequence, which is W-W-h-W-W-W-h. This is also the sequence for the major scale. The ionian mode and the major scale are synonymous.
- If you start on D and play D-E-F-G-A-B-C-D you will get the D dorian mode sequence, which is W-h-W-W-W-h-W. This mode does not have another

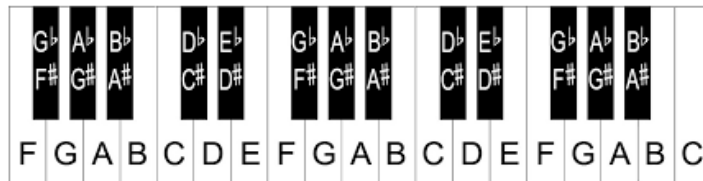
scale name. It goes by the name of the root note and “dorian.” Thus if you start the scale on D it is “D dorian”; if you start on E it is “E dorian,” etc.

- If you start on E and play E-F-G-A-B-C-D-E you will get the E phrygian Mode sequence, which is h-W-W-W-h-W-W. This mode does not have another scale name. It goes by the name of the root note and “phrygian.” Thus if you start the scale on E it is “E phrygian”; if you start on F it is “F phrygian,” etc.
- If you start on A and play A-B-C-D-E-F-G-A you will get the aeolian mode sequence, which is W-h-W-W-h-W-W. This is also the sequence for the natural minor scale. The aeolian mode and natural minor scale are synonymous.

Similarly, the other four modes have a unique sequence of half steps and whole steps.

So that’s how the modes are derived and named. Once you understand that each mode has a specific pattern of whole steps and half steps, it should be easy to see that within each mode there are 12 possible scales or “keys”. That’s because, *within any octave* there are 12 possible notes. The full octave that includes all the keys is called the chromatic scale, and is best visualized on the piano keyboard. From C to C are 12 notes (not counting the 2nd C).

Chromatic Scale



To create the 12 possible scales for any given mode, all you do is take that mode’s specific sequence of whole steps and half steps and start it on each of the 12 chromatic scale keys. For example, by moving the ionian pattern so that it starts on D, you now have the D ionian mode (D major scale). In order to keep the same pattern of whole steps and half steps, this D major scale includes both F# and C#.

D – E – F# – G – A – B – C# – D
 W W h W W W h

So there are 12 possible major scales, or keys, for the ionian mode. These major scales are listed below, with four examples shown on the treble clef. They all have the ionian (major scale) sequence of whole notes and half notes: W-W-h-W-W-W-h.

Note the terminology in the treble clef examples. The C major ionian mode is called simply “ionian mode.” The D major scale is called “D ionian”. The E major scale is

called “E ionian.” The F major scale is called “F ionian.” By convention, we now use the major scale names for these ionian modes: C major, D major, E major and F major.

Ionian modes = Major scales

W-W-h-W-W-W-h

- C major
- Db major
- D major
- Eb major
- E major
- Fb major
- F major
- Gb major
- G major
- Ab major
- A major
- B major

Four Ionian Modes on the Treble Clef

ionian mode

basicmusictheory.com

C D E F G A B C

C MAJOR

D ionian mode

basicmusictheory.com

D E F# G A B C# D

D MAJOR

E ionian mode

basicmusictheory.com

E F# G# A B C# D# E

E MAJOR

F ionian mode

basicmusictheory.com

F G A Bb C D E F

F MAJOR

There are also 12 possible natural minor scales, or keys, which is identical to saying there are 12 possible aeolian modes. These natural minor scales are listed below, with four examples shown on the treble clef. They all have the aeolian (minor scale) sequence of whole notes and half notes: W-h-W-W-h-W-W.

**Aeolian modes =
Natural minor scales**

W-h-W-W-h-W-W

- C minor
- Db minor
- D minor
- Eb minor
- E minor
- Fb minor
- F minor
- Gb minor
- G minor
- Ab minor
- A minor
- B minor

Four Aeolian Modes on the Treble Clef

aeolian mode

A B C D E F G A **A MINOR**

C aeolian mode

C D Eb F G Ab Bb C **C MINOR**

D aeolian mode

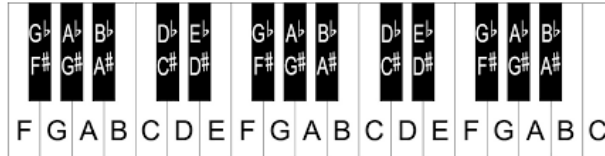
D E F G A Bb C D **D MINOR**

E aeolian mode

E F# G A B C D E **E MINOR**

You can do this exercise for the other five modes as well. Each mode has 12 possible keys, because there are 12 keys of the chromatic scale. Below are listed all the keys for the other five modes, starting on C of the chromatic scale. Also shown is the key of C for that mode on the treble clef.

Chromatic Scale



Dorian modes

Sequence: W-h-W-W-W-h-W

- C# Dorian
- D Dorian
- D# Dorian
- E Dorian
- F Dorian
- F# Dorian
- G Dorian
- G# Dorian
- A Dorian
- A# Dorian
- B Dorian

C dorian mode

Phrygian modes

Sequence: h-W-W-W-h-W-W

- C Phrygian
- C# Phrygian
- D Phrygian
- D# Phrygian
- E Phrygian
- F Phrygian
- F# Phrygian
- G Phrygian
- G# Phrygian
- A Phrygian
- A# Phrygian
- B Phrygian

C phrygian mode

Lydian modes

Sequence: W-W-W-h-W-W-h

- C Lydian
- C# Lydian
- D Lydian
- D# Lydian
- E Lydian
- F Lydian
- F# Lydian
- G Lydian
- G# Lydian
- A Lydian
- A# Lydian
- B Lydian

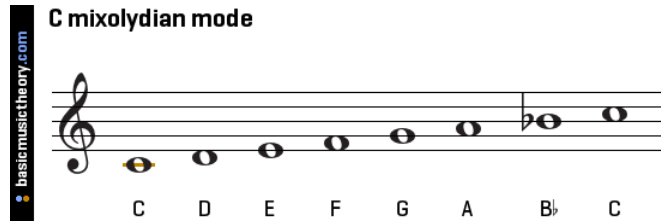
C lydian mode

Mixolydian modes

Sequence: W-W-h-W-W-h-W

- C Mixolydian
- C# Mixolydian
- D Mixolydian
- D# Mixolydian
- E Mixolydian
- F Mixolydian
- F# Mixolydian
- G Mixolydian
- G# Mixolydian
- A Mixolydian
- A# Mixolydian
- B Mixolydian

C mixolydian mode



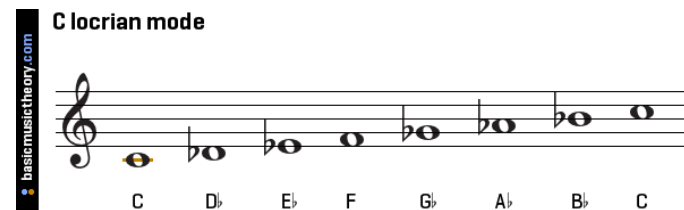
The image shows a musical staff in treble clef with a key signature of one flat (Bb). The notes are C, D, E, F, G, A, Bb, C. The Bb note is highlighted with a yellow circle. The staff is labeled 'C mixolydian mode' and the notes are labeled C, D, E, F, G, A, Bb, C below the staff. A vertical watermark 'basicmusictheory.com' is on the left.

Locrian modes

Sequence: h-W-W-h-W-W-W

- C Locrian
- C# Locrian
- D Locrian
- D# Locrian
- E Locrian
- F Locrian
- F# Locrian
- G Locrian
- G# Locrian
- A Locrian
- A# Locrian
- B Locrian

C locrian mode



The image shows a musical staff in treble clef with a key signature of two flats (Bb, Eb). The notes are C, Db, Eb, F, Gb, Ab, Bb, C. The C note is highlighted with a yellow circle. The staff is labeled 'C locrian mode' and the notes are labeled C, Db, Eb, F, Gb, Ab, Bb, C below the staff. A vertical watermark 'basicmusictheory.com' is on the left.

Again, note the difference in nomenclature between ionian/aeolian modes and the other modes. Ionian modes are called by the names of the major scale, e.g., C major, D major, etc.; they are not called C ionian, D ionian, etc. Aeolian modes are called by names of the minor scale, e.g., C minor, D minor, etc., and not C aeolian or D aeolian. The other modes are called by their modal name.

Music in the Various Modes

While most music played today is in either ionian or aeolian mode (or the other minor scales, harmonic and melodic), there are many pieces of music in the other modes. Below are some examples of music in each of the modes. The majority of popular music is written in one of the major scales (i.e., ionian mode), but there is also much music in the minor scale. Classical music often combines major and minor scales. One interesting category included below is music written in all 24 major and minor keys (i.e., the 12 major scales and the 12 minor scales).

Musical composition is very complex, and classical music as well as popular songs may use more than one mode. This list is simply to show examples gleaned from the internet. Web site sources specific to a mode are listed under the mode. Web sites that cover more than one mode include:

<http://www.classicfm.com/discover/music/guide-to-musical-modes/#JWZIAq0MTi6oZY0A.99>
<http://www.dreamtheaterforums.org/boards/index.php?topic=27396.0>
<http://www.classicfm.com/discover/music/guide-to-musical-modes/#3WDl8cadHmB6Rfiz.97>
<http://www.secretsofsongwriting.com/2009/10/29/dorian-mode-aeolian-mode-minor-key-whats-the-difference/>

Major scale (ionian mode)

“Happy Birthday”
“God Bless America”
“Star Spangled Banner”
“Yankee Doodle”
“You Are My Sunshine”
Mozart symphony #23 in D major
Beethoven Symphony #1 in C major
Beethoven Symphony # 7 in A major
Schubert Symphony #9 in C major

Minor scale

(The aeolian mode is the natural minor scale; much minor scale music is also in harmonic or melodic minor scales, which are variations of the natural minor and technically not the aeolian mode)

Classical

Beethoven Symphony #5 in C minor
Mozart symphony #40 in G minor
Brahms Symphony #1 in C minor
Brahms Symphony #4 in E minor
Tchaikovsky Symphony #1 in G minor

Popular: <http://www.musicarrangerspage.com/6029/popular-songs-in-a-minor/>

Bob Dylan - All Along the Watchtower
R.E.M. - Losing My Religion (R.E.M.)
Animals – House Of The Rising Sun (Animals version)
Bob Dylan – Hurricane
The Beatles – Things we said today
The Beatles – Glass Onion
The Beatles – Happiness is a warm gun

The Beatles – While My Guitar Gently Weeps
 The Beatles – I Me Mine
 The Beatles – I Want You (She’s So Heavy) (Verses in A minor, Instrumental part in D minor)
 John Lennon – Working Class Hero

Music written in all 24 major and minor keys

https://en.wikipedia.org/wiki/Music_written_in_all_major_and/or_minor_keys

- Johann Sebastian Bach: *The Well-Tempered Clavier* (1722 and 1742; two separate sets of 24 Preludes and Fugues, together known as "the 48")
- Frédéric Chopin: 24 Preludes, Op. 28 (1835–39)
- Charles-Valentin Alkan: 25 Preludes, Op. 31 (1847), 24 Études in all the major and minor keys, Opp. 35 and 39 (1848 and 1857)
- Alexander Scriabin: 24 Preludes, Op. 11 (1893–95)
- Sergei Rachmaninoff: 24 Preludes, Opp. 3/2, 23 and 32 (1892; 1901–03; and 1910)
- Paul Hindemith: *Ludus Tonalis* (1942, twelve keys)
- Dmitri Shostakovich: 24 Preludes and Fugues, Op. 87 (1950–51). He also wrote a separate set of 24 Preludes, Op. 34, in 1933

Dorian mode

https://en.wikipedia.org/wiki/Dorian_mode

Smoke on the Water by Deep Purple
 Scarborough Fair
 Eleanor Rigby (The Beatles)
 Dear Old Stockholm - (Miles Davis)
 Bach - Toccata and Fugue in D minor, BWV 538 (NOT the famous one, which is BWV 565)
 “Drunken Sailor”

**What shall we do
 with the drunken sailor?**



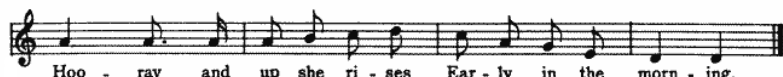
1. What shall we do with the drunken sai - lor, What shall we do with the drunken sai - lor,



What shall we do with the drunk-en sai - lor Ear - ly in the morn - ing?



Hoo - ray and up she ri - ses, Hoo - ray and up she ri - ses,



Hoo - ray and up she ri - ses Ear - ly in the morn - ing.

Phrygian mode

https://en.wikipedia.org/wiki/Phrygian_mode

Liszt's Hungarian Rhapsody No.2

Rimsky Korsakov's Scheherezade

Vaughan Williams's Fantasia on a Theme of Thomas Tallis

Final aria of Philip Glass's Satyagraha.

Samuel Barber's Adagio for Strings, op. 11

Lydian mode

https://www.reddit.com/r/musictheory/comments/112fsr/any_good_suggestions_for_lydian_mode_pieces/

Chopin's Mazurka No. 15

Theme to "The Simpsons"

Stravinsky – Prelude in the Lydian Mode

Third movement of Beethoven's String Quartet No. 15 in A minor

Os Justi by Bruckner

Mixolydian mode

https://en.wikipedia.org/wiki/Mixolydian_mode

"Norwegian Wood" by The Beatles (some verses in Dorian mode)

Theme to the TV series *Star Trek*

Debussy's "The Sunken Cathedral"

"The Wreck of the Edmund Fitzgerald" by Gordon Lightfoot

"Hey Jude" by the Beatles

"Express Yourself" by Madonna

"Let it Loose" by The Rolling Stones

"Old Joe Clark"

Key of A Mixolydian
 Played A A B B

Old Joe Clark

Traditional
 Slow Jam Version

- | | |
|--|---|
| <p>1. Old Joe Clark, the preacher's son
 The only text he ever knew</p> <p>[Chorus] Fare thee well Old Joe Clark
 Fare thee well Old Joe Clark</p> <p>2. Old Joe Clark had a mule
 And every tooth in that mule's head</p> <p>3. Old Joe Clark had a yellow cat
 Stuck her head in a buttermilk jar</p> <p>4. Old joe clark had a house
 And every story in that house</p> <p>5. I went down to Old Joe's house
 I stumped my toe on the table leg</p> <p>6. Wished I had a sweetheart
 And every time she'd smile at me</p> | <p>Preached all over the plain
 Was high low jack and the game</p> <p>Fare thee well I'm bound
 Goodbye Betsy Brown</p> <p>His name was Morgan Brown
 Was sixteen inches round Chorus</p> <p>She would neither sing nor pray
 And washed her sins away Chorus</p> <p>Fifteen stories high
 Was filled with chicken pie Chorus</p> <p>He invited me to supper
 And stuck my nose in the butter Chorus</p> <p>Put her on the shelf
 I'd get up there myself Chorus</p> |
|--|---|

Locrian mode

https://en.wikipedia.org/wiki/Locrian_mode

John Kirkpatrick's song "Dust to Dust"

Brief passages of Sibelius Rachmaninov (Prelude in B minor, op. 32, no. 10), Hindemith (Ludus Tonalis), and Sibelius (Symphony no. 4 in A minor, op. 63) "may be regarded as in the Locrian mode."

Debussy's *Jeux* has three extended passages in the Locrian mode.