

# HOW SCALES, KEY SIGNATURES, & ARPEGGIOS WORK

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## WHAT IS A SCALE?

A scale is all the pitches that you can play in a key signature without playing any accidentals. The key of Bb is Bb and Eb; that means the Bb scale is Bb C D Eb F G A Bb.

## IN CASE YOU FORGOT, HERE ARE ALL THE PITCHES

A  
Ab / G#  
G  
Gb / F#  
F / E#  
Fb / E  
Eb / D#  
D  
Db / C#  
C / B#  
Cb / B  
Bb / A#  
A

## WHY DO WE HAVE TO LEARN SCALES?

Most music in the western hemisphere (Europe and the Americas) is essentially scales and arpeggios cut up and put in a different order. If you look closely at any piece of music, you'll find scales everywhere. If you practice your Bb major scale, you get a little better at every piece of music written in the key of Bb major.

## HOW DO KEY SIGNATURES WORK?

A key signature is a series of sharp or flat symbols placed on the staff, designating notes that are to be consistently played one half-step (semitone) higher or lower than the equivalent natural notes unless otherwise altered with an accidental. In other words, if there's a Bb in the key signature, every B in the piece is flat unless it has an accidental. The purpose of the key signature is to minimize the number of accidentals required to notate the music. In principle, any piece can be written with any key

signature, using accidentals to correct any notes where the key signature should not apply.

## TWO KEY SIGNATURES YOU JUST HAVE TO KNOW

No sharps or flats is C major.  
One flat is F major.

## KEY SIGNATURES WITH FLATS

Flats always appear in the key signature in the same order. We call this the ORDER OF FLATS.

**Bb Eb Ab Db Gb Cb Fb**

You will never see Ab in a key signature without Bb and Eb. You will never see Cb without Bb Eb Ab Db Gb.

For key signatures with more than one flat, the major key is the next-to-last (second from right) flat. So if a key signature has Bb and Eb, we call it "the key of Bb major;" if you play the Bb major scale, you will play ALL the pitches in this key signature. If a key signature has Bb, Eb, Ab, Db, and Gb, we call it "the key of Db major." In reverse, to make the "key of Gb major," go one past Gb in the order of flats: Bb Eb Ab Db Gb Cb.

## KEY SIGNATURES WITH SHARPS

Sharps always appear in the key signature in the same order. We call this the ORDER OF SHARPS.

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

You will never see A# in a key signature without F#, C#, G# and D#. You will never see C# without F#.

For any number of sharps, take the last sharp displayed in the key signature and go up one half-step (semitone) to get the major key. For example, if a key signature has F#, C#, and G#, the last sharp is G#, so we call this "the key of A major." If you play

the A major scale, you will play ALL the pitches in this key signature. If a key signature has F#, C#, G#, D#, A#, and E#, E# is the last sharp, so we call this “the key of F# major” (because E# is the same as F, F# is one half-step above E#). In reverse, to make the “key of E major,” go down a half-step (to D#), then read off the order of sharps until you reach it: F# C# G# D#.

### **HOW DO MINOR KEYS WORK?**

Put simply, major keys sound “happy,” while minor keys sound “sad.” Every major key has a RELATIVE MINOR KEY which uses the exact same key signature but starts on a different pitch and sounds sad instead of happy.

The relative minor is three half-steps (a minor third) down from the NAME OF THE MAJOR KEY, regardless of whether it is a “flat” or a “sharp” key signature. For example, the relative minor key of C major is A minor (B is one half-step below C, Bb is two half-steps, and A is three half-steps). The A minor scale uses the same key signature as the C major scale (no flats, no sharps), only starting on A. Therefore, the notes of the A minor scale are: A B C D E F G A. We call this the A MINOR NATURAL SCALE, to differentiate it from the A MINOR HARMONIC SCALE and the A MINOR MELODIC SCALE. We also say that A minor is the “relative minor key of C major” and C major is the “relative major of A minor.”

The relative minor key of A major (F#, C#, G#) is F# minor, therefore the F# minor scale is: F# G# A B C# D E F#. We call this the F# MINOR NATURAL SCALE, as opposed to the F# MINOR HARMONIC SCALE and the F# MINOR MELODIC SCALE.

### **WHAT'S AN ARPEGGIO?**

An arpeggio is all the pitches of a chord played one at a time. There are countless types of chords, but the most important are the MAJOR CHORD and the MINOR CHORD. A major chord is the FIRST, THIRD, and FIFTH pitch in a major scale. The Bb scale is Bb C D Eb F G A Bb, so the Bb major chord (and the Bb major arpeggio) is Bb D F.

A minor chord is the FIRST, THIRD and FIFTH pitch in a minor scale, OR the FIRST, FLAT THIRD, and FIFTH pitch in a major scale. The Bb major scale is Bb C D

Eb F G A Bb, so the Bb minor chord (and the Bb minor arpeggio) is Bb Db F. Additionally, the Bb minor scale is Bb C Db Eb F Gb Ab Bb. Again, the Bb minor chord (and the Bb minor arpeggio) is Bb Db F.

### **HARMONIC MINOR AND MELODIC MINOR**

Minor scales come in three main varieties: natural, harmonic, and melodic.

The harmonic minor (or “minor harmonic;” they are often spoken interchangeably) scale is the same as the natural minor but with a chromatically raised (one half-step) seventh degree (pitch).

For example, in the key of A minor, the harmonic minor scale is: A B C D E F G# A. The F# minor harmonic scale is: F# G# A B C# D E# F#.

The melodic minor scale is played differently going up than when it is played coming down. The melodic minor scale is the same as the natural minor but with chromatically raised sixth and seventh pitches ONLY WHEN THE SCALE IS ASCENDING (played up), but is identical to the natural minor when the SCALE IS DESCENDING.

For example, A minor melodic scale goes up like this: A B C D E F# G# A. But it comes down like this: A G F E D C B A.

The F# minor melodic scale goes up like this: F# G# A B C# D E# F#. But it comes down like this: F# E D C# B A G# F#.

### **QUIZ**

- 1) What's the name of this key signature:  
Bb Eb Ab Db?  
a. Db  
b. Ab  
c. Eb  
d. D
- 2) What's the name of this key signature:  
Bb Eb Ab Db Gb Cb?  
a. C  
b. Cb  
c. Gb  
d. Db
- 3) What's the name of this key signature: F# C# G# D#?

- a. G#  
b. D  
c. D#  
d. E
- 4) What's the name of this key signature: F#  
C# G# D# A# E# B#?  
a. C#  
b. E#  
c. B#  
d. C
- 5) What's in the key of Db?  
a. Bb Eb Ab  
b. Bb Eb Ab Db  
c. Bb Eb Ab Db Gb  
d. Bb Eb Ab Db Gb Cb
- 6) What's in the key of A?  
a. F# C# G#  
b. F# C# G# D#  
c. F# C# G# D# A#  
d. F# C# G# D# A# E#
- 7) What key signature has three flats?  
a. Bb  
b. Eb  
c. Ab  
d. Cb
- 8) What key signature has no flats or sharps?  
a. A  
b. B  
c. C  
d. F
- 9) What key signature has one sharp?  
a. E  
b. F  
c. G  
d. F#
- 10) What's the relative minor of Bb major?  
a. Db minor  
b. G minor  
c. Bb minor  
d. B minor
- 11) What's the relative minor of Gb major?  
a. E minor  
b. Eb minor  
c. D minor  
d. F minor
- 12) What's the relative minor of F major?  
a. F minor  
b. G minor  
c. D minor  
d. Eb minor
- 13) What's the relative major of C minor?  
a. A major  
b. Eb major  
c. Ab major  
d. E major
- 14) What's the relative major of C# minor?  
a. D major  
b. D# major  
c. E major  
d. F major
- 15) What's the relative major of D# minor?  
a. E major  
b. E# major  
c. F major  
d. F# major
- 16) What's the Db major arpeggio?  
a. Db Eb F  
b. Db F Ab  
c. Db F Gb  
d. Db Ab Bb
- 17) What's the A major arpeggio?  
a. A C E  
b. A C# E  
c. A D F  
d. A Db F
- 18) What's the Eb minor arpeggio?  
a. Eb D F  
b. Eb Ab Bb  
c. Eb Gb Bb  
d. Eb F Bb
- 19) What's the D minor arpeggio?  
a. D E A  
b. D F A  
c. D G A  
d. D E F
- 20) Which of these is the G minor harmonic scale?  
a. Going up & going down:  
G A Bb C D E F G  
b. Going up & going down:  
G A B C D E F# G  
c. Going up & going down:  
G A Bb C D Eb F G  
d. Going up & going down:  
G A Bb C D Eb F# G  
e. Going up: G A Bb C D E F# G;  
Going down: G F Eb D C Bb A G
- 21) Which of these is the G minor melodic scale?  
a. Going up & going down:  
G A Bb C D E F G  
b. Going up & going down:  
G A B C D E F# G  
c. Going up & going down:

- G A Bb C D Eb F G
- d. Going up & going down:  
G A Bb C D Eb F# G
- e. Going up: G A Bb C D E F# G;  
Going down: G F Eb D C Bb A G
- 22) Which of these is the G minor natural scale?
- a. Going up & going down:  
G A Bb C D E F G
- b. Going up & going down:  
G A B C D E F# G
- c. Going up & going down:  
G A Bb C D Eb F G
- d. Going up & going down:  
G A Bb C D Eb F# G
- e. Going up: G A Bb C D E F# G;  
Going down: G F Eb D C Bb A G
- 23) Which of these is the B major scale?
- a. Going up & going down:  
B C# D# E F# G# A B
- b. Going up & going down:  
B C# D# E F# G# A# B
- c. Going up & going down:  
B C# D E F# G A B
- d. Going up & going down:  
B C# D E F# G A# B
- e. Going up: B C# D E F# G# A# B;  
Going down: B A G F# E D C# B
- 24) What's the relative minor of B major?
- a. A#
- b. Bb
- c. C#
- d. D
- e. G#
- 25) What's the relative major of B minor?
- a. A#
- b. Bb
- c. C#
- d. D
- e. G#
- 26) Which of these is the B minor natural scale?
- a. Going up & going down:  
B C# D# E F# G# A B
- b. Going up & going down:  
B C# D# E F# G# A# B
- c. Going up & going down:  
B C# D E F# G A B
- d. Going up & going down:  
B C# D E F# G A# B
- e. Going up: B C# D E F# G# A# B;  
Going down: B A G F# E D C# B
- 27) Which of these is the B minor harmonic scale?
- a. Going up & going down:  
B C# D# E F# G# A B
- b. Going up & going down:  
B C# D# E F# G# A# B
- c. Going up & going down:  
B C# D E F# G A B
- d. Going up & going down:  
B C# D E F# G A# B
- e. Going up: B C# D E F# G# A# B;  
Going down: B A G F# E D C# B
- 28) Which of these is the B minor melodic scale?
- a. Going up & going down:  
B C# D# E F# G# A B
- b. Going up & going down:  
B C# D# E F# G# A# B
- c. Going up & going down:  
B C# D E F# G A B
- d. Going up & going down:  
B C# D E F# G A# B
- e. Going up: B C# D E F# G# A# B;  
Going down: B A G F# E D C# B

## ANSWERS

- |       |        |        |        |        |
|-------|--------|--------|--------|--------|
| 1) b. | 7) b.  | 13) b. | 19) b. | 25) d. |
| 2) c. | 8) c.  | 14) c. | 20) d. | 26) c. |
| 3) d. | 9) c.  | 15) d. | 21) e. | 27) d. |
| 4) a. | 10) a. | 16) b. | 22) c. | 28) e  |
| 5) c. | 11) b. | 17) b. | 23) b. |        |
| 6) a. | 12) c. | 18) c. | 24) e. |        |

## CHROMATIC CHEAT – EASY CHROMATIC SCALE

	4	23	12	1	2	0
24	4	23	12	1	2	0
		23	12	1	2	0
			12	1	2	0
				1	2	0
0	2	1				
0	2	1	12			
0	2	1	12	23		
0	2	1	12	23	4	24
0	2	1	12	23	4	

## CHROMATIC CHEAT – ADVANCED CHROMATIC SCALE

24	4	23	12	1	2	0
24	4	23	12	1	2	0
		23	12	1	2	0
			12	1	2	0
				1	2	0
		23	12	1	2	0

0	2	1	12	23		
0	2	1				
0	2	1	12			
0	2	1	12	23		
0	2	1	12	23	4	24
0	2	1	12	23	4	