Scales

A **scale** is a series of notes that are arranged in a specific order from the lowest note to the highest note. The note that is lowest in pitch is the first note of a scale. This note is also the one that sounds the strongest and is called the ***tonic***, or ***keynote***.

The last note of the scale is the same as the first, but higher, and is known as the ***octave***.

Scales can be played ***ascending*** or ***descending*** (upwards or downwards), and notes from scales are used for writing melodies (tunes) or for improvising.

Major

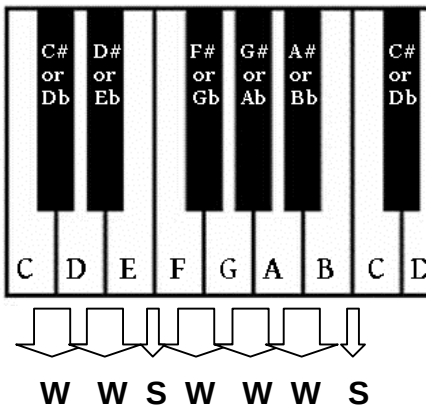
Major and ***Natural Minor*** scales are the most common scales in Western Music and are constructed using a combination of ***whole tones*** (whole steps), and ***semitones*** (half steps).

- A Semitone (S) is the distance from one note to the closest note above or below it, for example from F# to G or E to F. *This equates to the distance between any fret on a guitar to the next one above or below it.*
- A whole tone (W), for example from F to G or E to F#, is double the distance of a semitone; so a whole tone is equivalent to two semitones. *Or two guitar frets.*

Major scales are constructed using the pattern of whole tones and semitones shown here:

W	W	S	W	W	W	S

The C major scale, for example, is constructed in the following way:



- C to the 2nd note (D) = a whole tone
- D to the 3rd note (E) = a whole tone
- E to the 4th note (F) = a semitone
- F to the 5th note (G) = a whole tone
- G to the 6th note (A) = a whole tone
- A to the 7th note (B) = a whole tone
- B to the 8th note (C) = a semitone (also known as the octave – the same note as the first, but higher in pitch).

N.B. Because there are no sharps or flats between B and C, and between E and F, the gap within each of these pairs of notes is only a semitone.

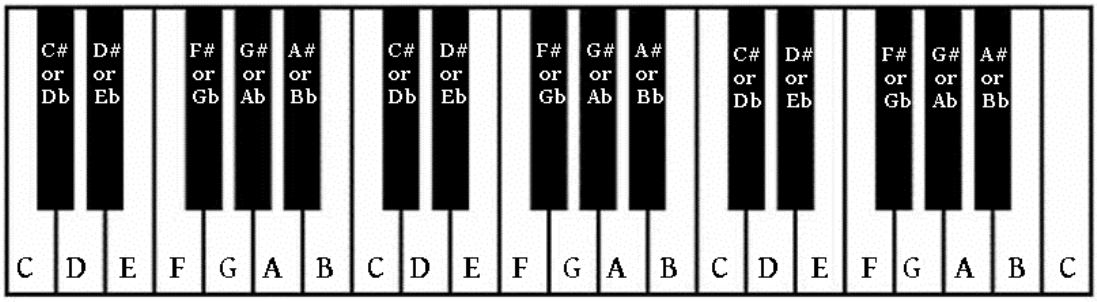
> ***N.B.***
> *The appearance of a 'b' sign in a scale spelling does not mean that the note that occurs on that scale degree is necessarily a flat note. Instead, the flat sign is used, in this instance as a method of indicating that this scale degree creates a 'minor' (i.e. smaller) interval when compared to the major scale – i.e. the distance between the tonic and this scale degree is a semitone smaller than the distance between the tonic and the corresponding scale degree from the major scale.*
>
> *Although the meaning is exactly the same, popular musicians generally prefer to call these intervals 'flattened' (rather than minor), and consequently a 'b' is placed before them to indicate this.*

If you can memorise this major scale pattern (W W S W W W S), you will always be able to find out which notes make up any of the major scales. Simply start with the tonic and then use the step pattern to find the other notes – making sure that, apart from the tonic and octave, each letter name is only used once.

I recommend writing down the letter names first before adding the sharps and flats that are necessary.

Exercise 1:

Add the sharps or flats necessary to the following scales to make them major. Use the piano diagram to help you if you like:



Use the upper row to indicate whether there should be a whole tone or semitone between the notes.

a)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
G	A	B	C	D	E	F	G	

N.B. There should only be one sharp in a scale of G Major.

Now try these:

b)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
A	B	C	D	E	F	G	A	

c)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
F	G	A	B	C	D	E	F	

d)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
D	E	F	G	A	B	C	D	

e)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
Eb	F	G	A	B	C	D	Eb	

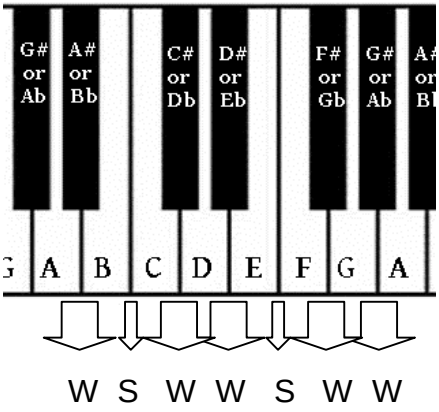
Natural Minor

Natural minor scales are constructed using a different pattern of whole tones and semitones. The pattern for natural minor scales is:

W	S	W	W	S	W	W

This is the same step-pattern as the major scale, but starting on the sixth note.

The A natural minor scale, for example, is constructed in the following way:



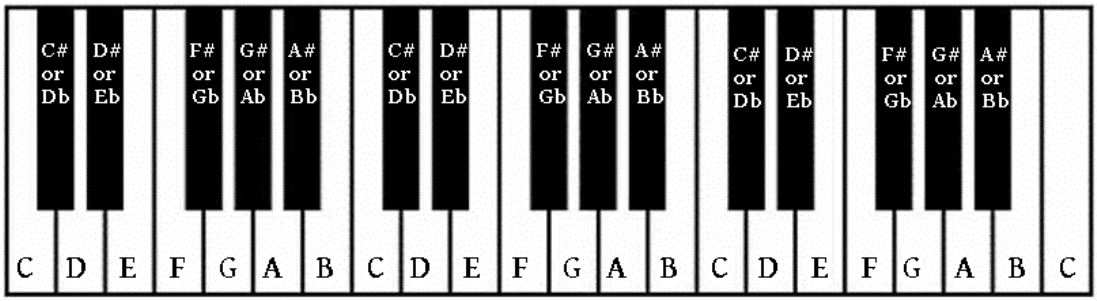
- A to the 2nd note (B) = a whole tone
- B to the 3rd note (C) = a semitone
- C to the 4th note (D) = a whole tone
- D to the 5th note (E) = a whole tone
- E to the 6th note (F) = a semitone
- F to the 7th note (G) = a whole tone
- G to the 8th note (A) = a whole tone (also known as the octave – the same note as the first, but higher in pitch).

If you can memorise this major scale pattern (W S W W S W W), you will always be able to find out which notes make up any of the major scales. Simply start with the tonic and then use the step pattern to find the other notes – making sure that, apart from the tonic and octave, each letter name is only used once.

You should notice that the notes of C major and A natural minor are the same – they just start with a different tonic.

Exercise 2:

Add the sharps or flats necessary to the following scales to make them natural minor. Use the piano diagram to help you if you like:



Use the upper row to indicate whether there should be a whole tone or semitone between the notes.

a)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
E	F	G	A	B	C	D	E	

b)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
D	E	F	G	A	B	C	D	

c)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
F#	G	A	B	C	D	E	F#	

d)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
G	A	B	C	D	E	F	G	

e)

	W / S	W / S	W / S	W / S	W / S	W / S	W / S	
B	C	D	E	F	G	A	B	

Pentatonic Scales

Pentatonic scales are five-note scales (like a *penta*gon has five sides). They are very useful for improvising and are probably the most commonly used scale in the world. They contain fewer notes than major or natural minor scales, so there is less chance of any notes clashing with the backing chords.

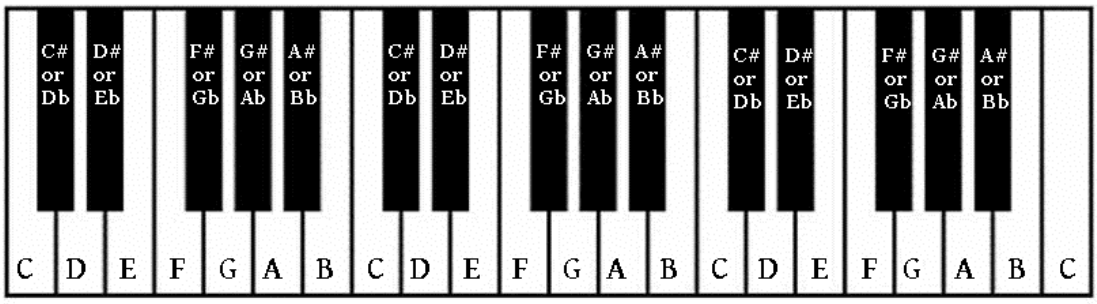
Major Pentatonic

Major Pentatonic scales are made up of five notes taken from the major scale of the same tonic. The five notes are the **first**, **second**, **third**, **fifth** and **sixth**. *When played or written as a scale the octave is also included.*

It is the fourth and seventh notes of the major scale that are omitted to create a major pentatonic scale.

Exercise 3:

Work out the major scales and then circle the notes that would constitute the major pentatonic scales that share the same tonic note.



a)

E							

b)

Ab							

c) *Don't worry if this one doesn't seem quite right – just stick to the theory*

F#							

d)

Bb							

e)

B							

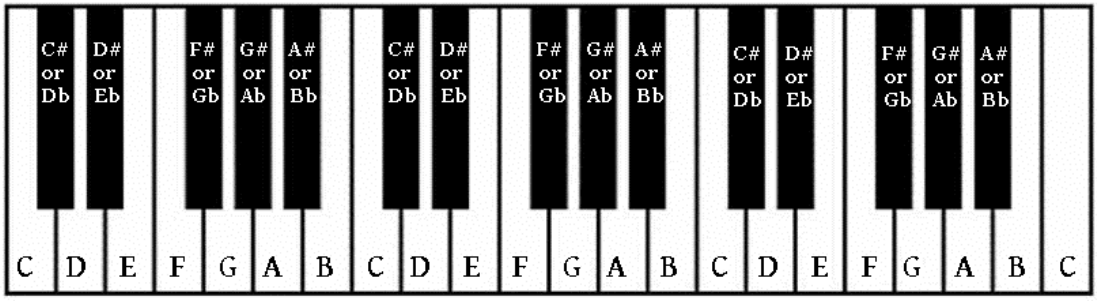
Minor Pentatonic Scales

Minor Pentatonic scales are made up of five notes from the ***natural minor*** scale, with the same tonic. The five notes are the **first**, **third**, **fourth**, **fifth** and **seventh**. *When played or written as a scale the octave is also included.*

It is the second and sixth notes of the natural minor scale that are omitted to create a minor pentatonic scale.

Exercise 4:

Work out the natural minor scales and then circle the notes that would constitute the minor pentatonic scales that share the same tonic note.



a)

G							

b)

A							

c)

F							

d)

D							

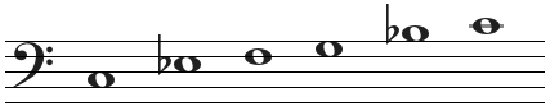
e)

Eb							

Exercise 5:
What scales are these?

1. 

2. 

3. 

4. 

Exercise 6:
Can you answer the following questions?

1. What is the code you need to remember (tone-formula), to create a major scale?

2. How would you work out the notes of a major pentatonic scale?

3. What is the code you need to remember to create a natural minor scale?

4. How would you work out the notes of a minor pentatonic scale?

Blues Scales

The ***blues scale*** is a six-note scale. It uses notes from the major scale, but lowers some of them by a semitone. The notes taken from the major scale are the first, third, fourth, fifth and seventh, however the **third, fifth and seventh notes are all lowered** by one semitone to create the ***'blue notes'***.

The b3rd and b7th notes replace the 3rd and 7th notes of the major scale, but the b5th note is used *in addition* to the 5th note of the major scale. The blues scale therefore contains the 1st, b3rd, 4th, b5th, 5th, and b7th. For example the notes in the C blues scale are C, Eb, F, Gb, G and Bb.

When played or written as a scale, the octave is also included.

For Blues Scales: work out the major scale, with the same tonic, using the 'step-pattern' (WWSWWWS), and then select the six notes you need for the blues scale – lowering the appropriate notes by a semitone. Remember you need to include the b5th and the natural 5th notes.

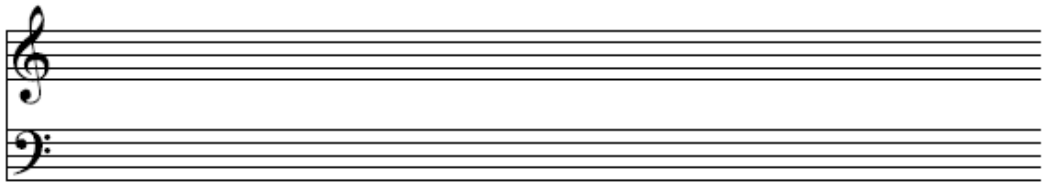
b5/#4

The b5 note within the blues scale is sometimes referred to as a #4. For example, in the C blues scale, Gb may be called F# by some musicians. This is because in music notation is traditionally 'correct' to avoid writing two notes on the 5th degree of the scale; hence the #4 note is used instead.

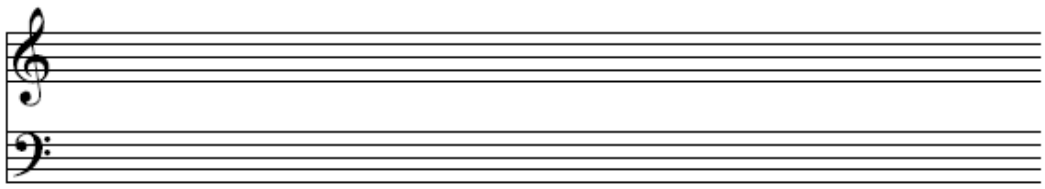
However, blues does not readily conform to the traditions of standard music notation and the term b5 is now commonly used (and notated), in the blues scale amongst blues, jazz and rock musicians. For this reason, whenever referring to the blues scale, I will use the term b5 and the notes and scale numbers will be named accordingly. Should you choose to take the exam, you can use either term – b5 or #4 – with the appropriate note names and scale numbers, but ***you must be consistent*** with your use.

Exercise 7:
Work out the blues scales and key signatures for the following scales using both clefs:

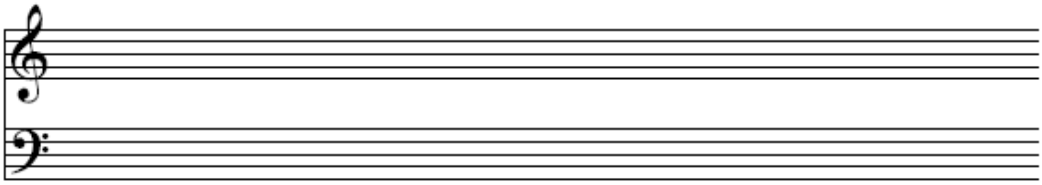
C blues:



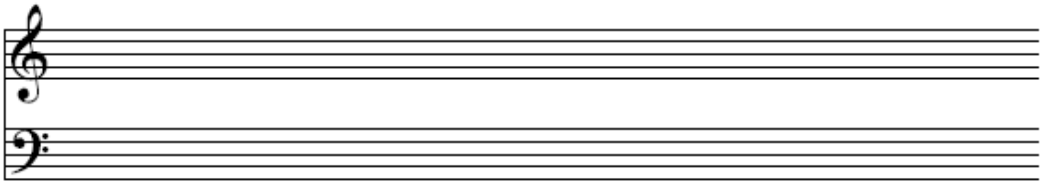
G blues:



F blues:



Bb blues:



Answers - Scales

Ex1.

a)

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

b)

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

c)

	W	W	S	W	W	W	S	
F	G	A	Bb	C	D	E	F	

d)

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

e)

	W	W	S	W	W	W	S	
Eb	F	G	Ab	Bb	C	D	Eb	

Ex2.

a)

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

b)

	W	S	W	W	S	W	W	
D	E	F	G	A	Bb	C	D	

c)

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

d)

	W	S	W	W	S	W	W	
G	A	Bb	C	D	Eb	F	G	

e)

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

Ex3.

a)

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

b)

Ab	Bb	C	Db	Eb	F	G	Ab

c)

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

d)

Bb	C	D	Eb	F	G	A	Bb

e)

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

Ex.4

a)

G	A	Bb	C	D	Eb	F	G

b)

A	B	C	D	E	F	G	A

c)

F	Gb	Ab	Bb	C	Db	Eb	F

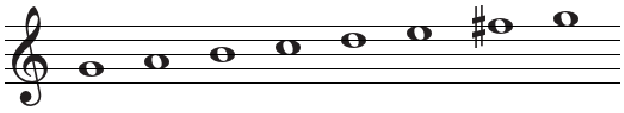
d)

D	E	F	G	A	Bb	C	D

e)

E	F#	G	A	B	C	D	E

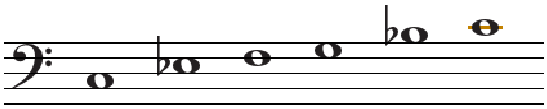
Ex5.

1. 

   G Major

2. 

   D Major Pentatonic

3. 

   C Minor Pentatonic

4. 

   A Natural Minor

Ex6.

1. *What is the code you need to remember (tone-formula), to create a major scale?*

W W S W W W S

2. *How would you work out the notes of a major pentatonic scale?*

Use the formula for a major scale to work out the notes of the scale with the same tonic note, *then* select the five notes needed for the major pentatonic scale i.e. 1, 2, 3, 5, 6

3. *What is the code you need to remember to create a natural minor scale?*

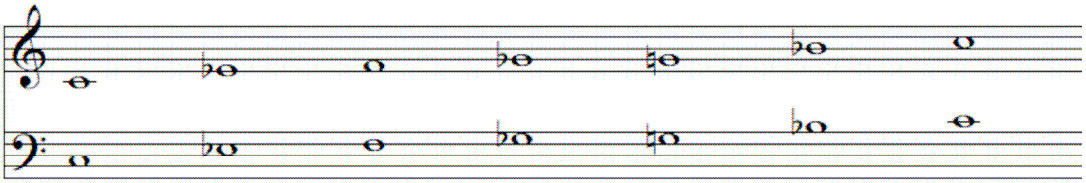
W S W W S W W

4. *How would you work out the notes of a minor pentatonic scale?*

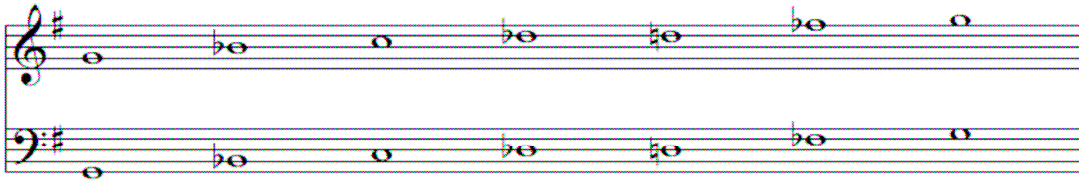
Use the formula for a natural minor scale to work out the notes of the scale with the same tonic note, *then* select the five notes needed for the minor pentatonic scale i.e. 1, 3, 4, 5, 7

Ex.7

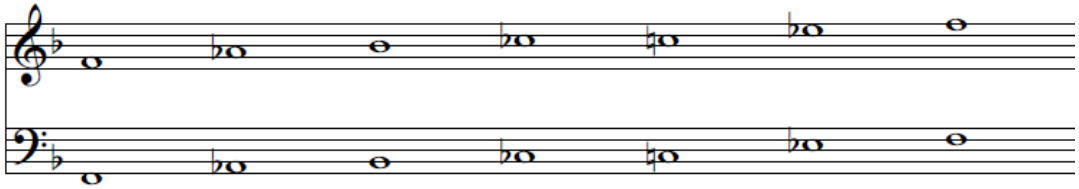
C Blues:



G Blues:



F Blues:



Bb Blues: