

LESSON 8

SCALES

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You may have heard of musicians or music students talking about 'scales'. Many musicians spend a great deal of time playing scales.

Scales seem to be a pretty important part of learning to play an instrument.

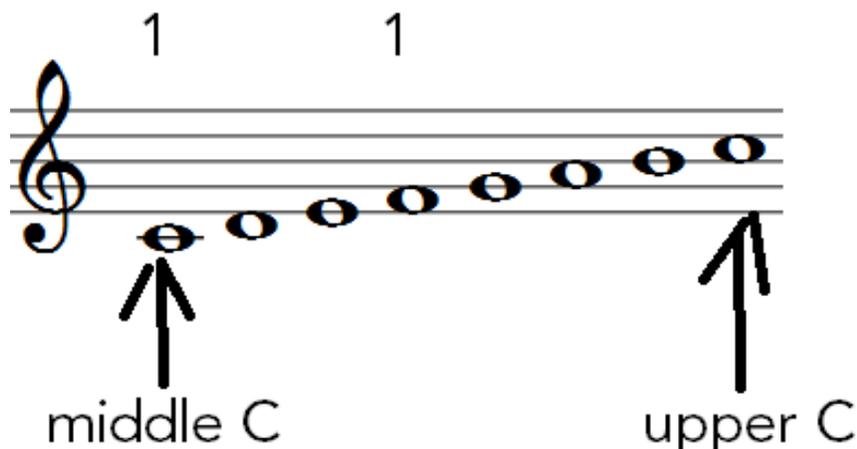
What are scales and why are they such a big deal?

Let's explore that now. We're going to start by looking at what a scale is, and then a bit later we'll learn about their purpose.

Your first scale

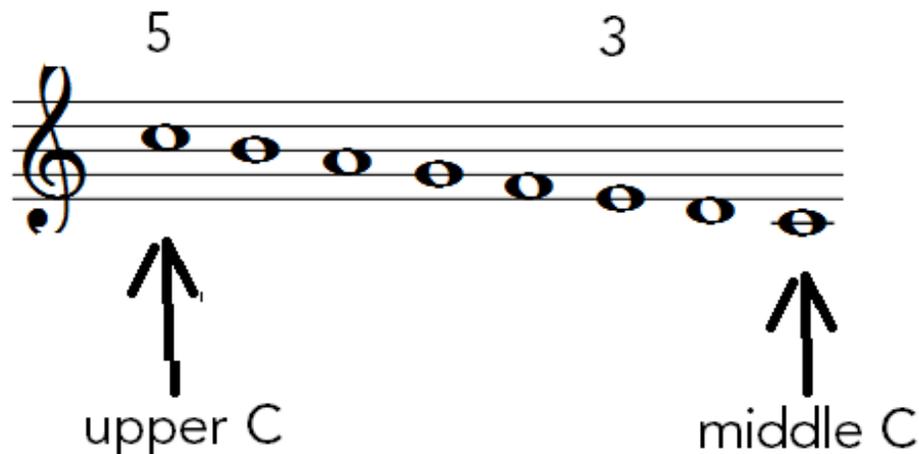
Definition: A **scale** is a sequence of consecutive notes, starting on a specific note, and ending on a higher or lower note with the same name. An **ascending scale** goes up and a **descending scale** goes down.

Here is an example of a scale. It starts on a C (middle C), and then has a sequence of consecutive notes going up to a higher note with the same name (upper C). This is an ascending scale, because it goes up.



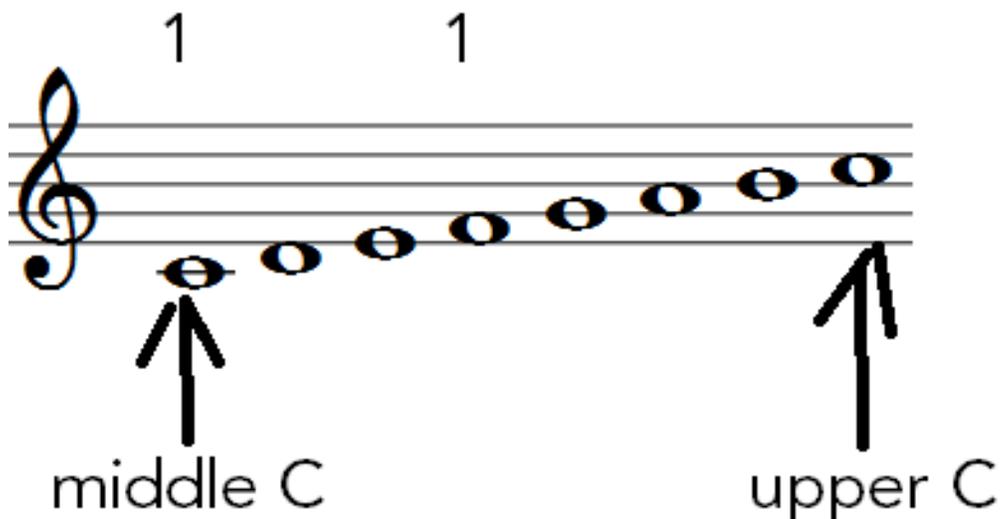
Play that scale now. Try using the fingering I've given, starting by playing C with your thumb and doing a 'thumb under' to play F with your thumb.

And here is the same sequence of notes shown as a descending scale. It starts on a C (upper C), and then has a sequence of consecutive notes going down to a lower note with the same name (middle C):



Play that scale now. Try using the fingering I've given.

Any scale can be played up (ascending) or down (descending). In our study of scales, we'll mostly just look at ascending scales to avoid having to show everything twice. So here is the scale we'll study for now:



This is generally considered to be the simplest scale because it uses only the white notes. You could play it with your eyes closed just by running the back of your hand along your keyboard. Try it.

We'll look at scales that use black notes shortly.

The character of this scale

We saw earlier that the essential character of a tune is the sequence of intervals as the tune moves up and down in pitch.

A tune is essentially made up of a sequence of *intervals*.

We saw that the beginning of 'Mary Had a Little Lamb' has this formula:

- **Start – down 1 – down 1 – up 1 – up 1 – same - same**

'1' means a whole tone.

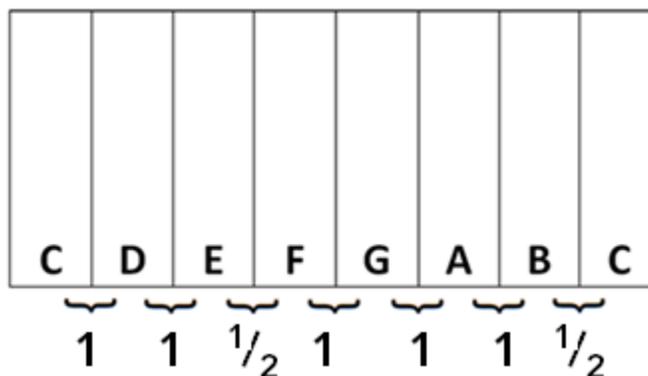
Pick any starting note and play that formula now to make sure it still sounds like 'Mary'.

The same is true of scales. The essential character of a scale is the sequence of intervals as you move from the starting note to the ending note.

A scale is essentially made up of a sequence of *intervals*.

What is the sequence of intervals for the scale we're studying? The first interval, from C to D, is a whole tone because there's a black note between them. Take a moment now to work out the rest of the intervals as you play the scale of white notes from middle C to upper C.

Here's what you should find:



The intervals of the scale consist of the white notes from middle C to upper C.

'1' = whole tone, '1/2' = half tone.

We saw that sequence of intervals earlier when studying the evolution of the keyboard.

So a formula for this scale is:

- **Start – 1 – 1 – ½ – 1 – 1 – 1 – ½**

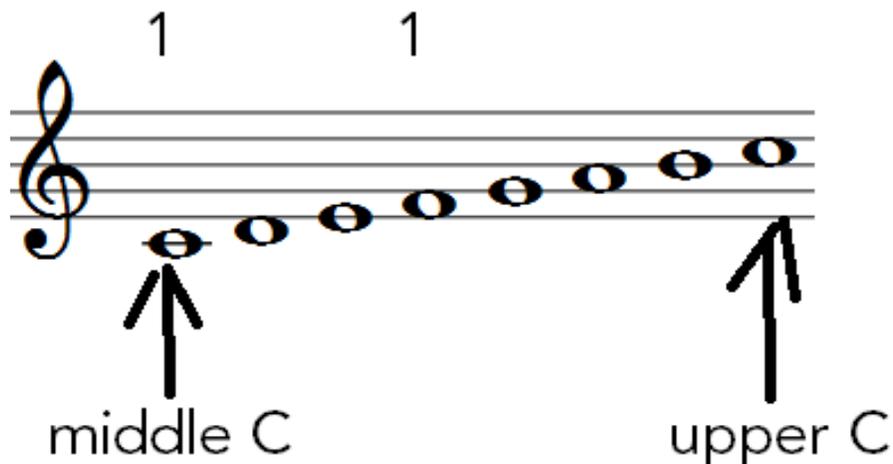
This little sequence of intervals, unassuming though it may look, turns out to be extremely important. It is the basis for much of the music you have ever heard: classical music, pop, reggae, jazz, swing, folk, traditional, rock and roll.

Being so important, it must of course have a name. It is called the **major scale**.

Definition: the **major scale** is the scale with the sequence of ascending intervals **1 – 1 – ½ – 1 – 1 – 1 – ½**.

Major scales

Here again is the scale we're studying:

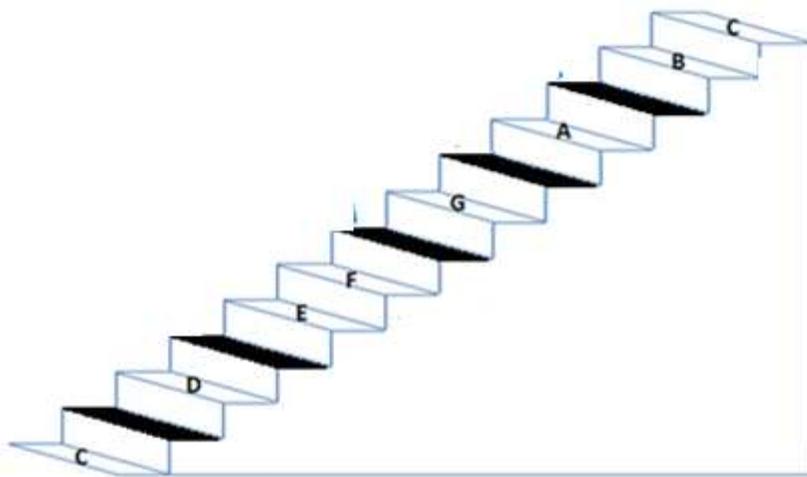


Because it starts and ends on C, and is a major scale, it is called the 'C major scale' or 'scale of C major'.

Definition: The **C major scale** is the major scale that starts and ends on C.

That immediately raises the question, can a major scale start on a different note?

And this is where we discover the genius of our system of music. Do you remember the staircase showing the 12 equal half tones between C and C?

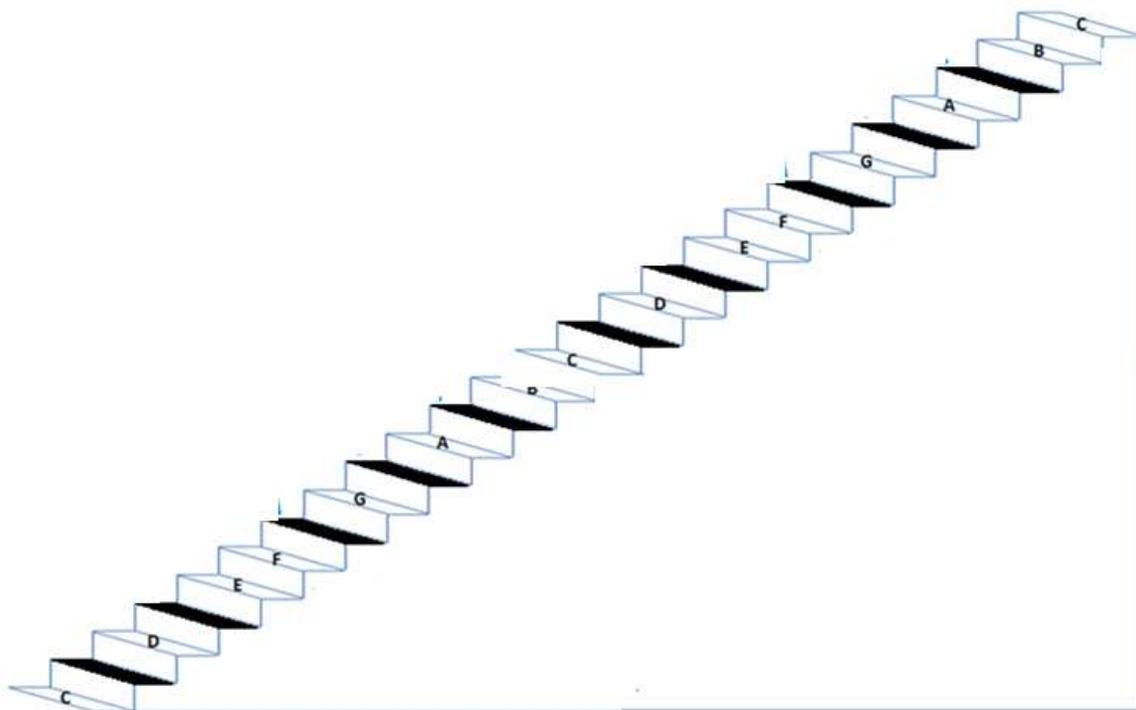


the modern system of 12 equal half tones:
like a staircase made of 12 small equal steps

Each stair is a half tone. To play a C major scale, you start on the lower C, and climb the stairs like this:

- Up 2 stairs (2 half tones = 1 tone)
- Up 2 (1 tone)
- Up 1 ($\frac{1}{2}$ tone)
- Up 2 (1 tone)
- Up 2 (1 tone)
- Up 2 (1 tone)
- Up 1 ($\frac{1}{2}$ tone)

Now imagine the staircase being much longer.



You can start *on any stair* and climb up the staircase following that formula:

- **Start 1, 1, 1/2, 1, 1, 1, 1/2**

Let's try it.

First play the C major scale to remind yourself how it sounds: C D E F G A B C.

Now start on the note F (any F will do) and play an ascending scale following the formula of the major scale:

- **Start 1, 1, 1/2, 1, 1, 1, 1/2.**

How did that go? You should have played these notes: F G A [B flat] C D E F.

Did it sound similar in character to the C major scale?

What you just played was the F major scale.

Let's do one more. This time start on D. Play an ascending scale following the formula of the major scale:

- **Start 1, 1, ½. 1. 1. 1, ½.**

You should have played D E [F sharp] G A B [C sharp] D.

Did it sound similar to the C major scale?

You just played the scale of D major.

The tonic

Definition: The **tonic** of a scale is the note the scale begins and ends on.

The starting and ending note of a scale is pretty important, so we have that name for it.

You just played the scale of D major. The tonic of that scale is D.

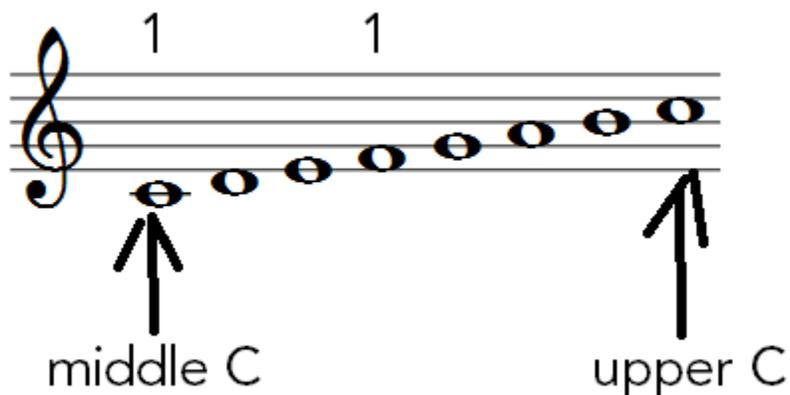
Before that, you played the scale of F major. The tonic of that scale is F.

Scales can keep on going

Do you remember the following definition from **Book 1**?

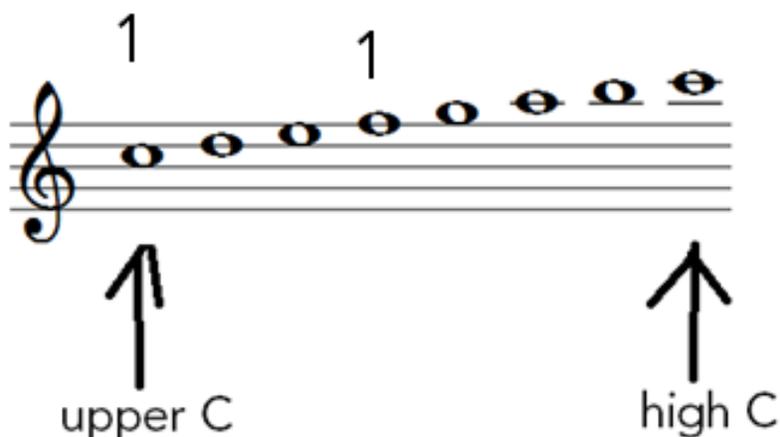
Reminder: an **octave** (from the Latin 'oct' meaning 'eight') is the difference in pitch between 2 notes that are 8 notes apart and have the same name.

The C major scale we just looked at goes from middle C to upper C (the next C 8 notes higher). So that scale covers one octave.



C major scale covering 1 octave.

But you don't need to stop there. You can play the next octave above that, from upper C to high C, and you get another C major scale:



C major scale covering the next octave up.

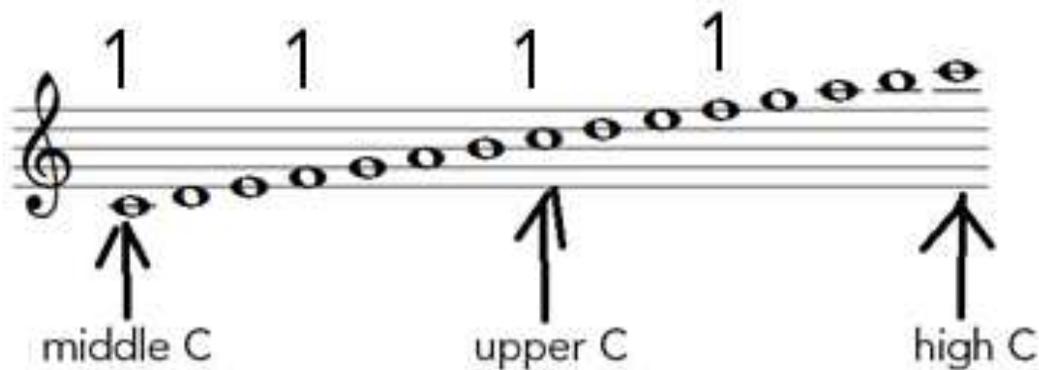
Play these 8 notes now, and see for yourself that you get the same sequence of intervals:

- **Start 1, 1, 1/2, 1, 1, 1, 1/2.**

For example, you can see that the first interval, from upper C to upper D, is a whole tone because there's a black note between them.

So this sequence of 8 notes is also a C major scale, but in a higher octave.

Join those two together, and we have a 2-octave C major scale:

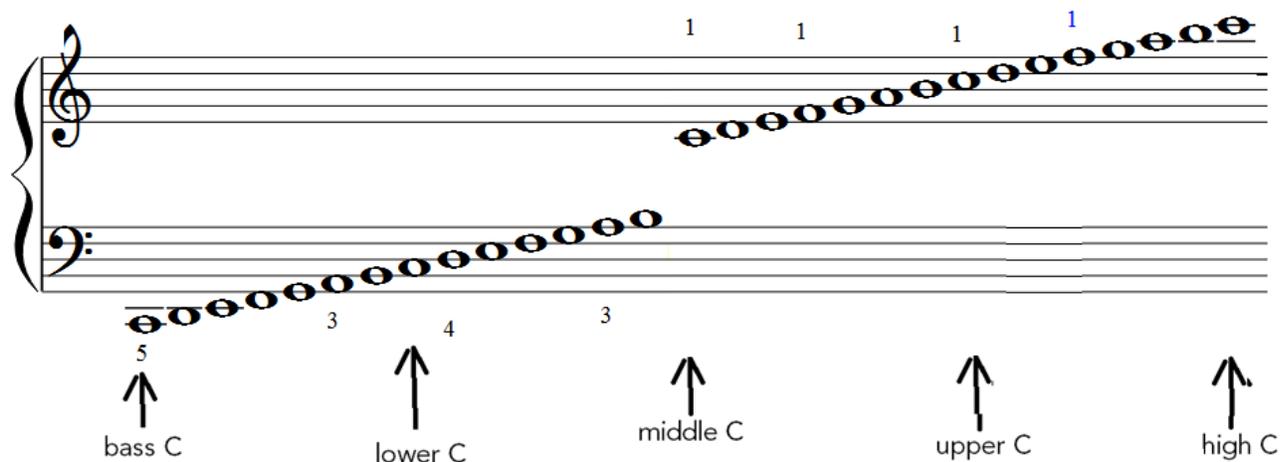


C major scale covering 2 octaves.

Play that now, and check that the sequence of intervals repeats twice over:

- **Start 1, 1, 1/2, 1, 1, 1, 1/2.**
- **1, 1, 1/2, 1, 1, 1, 1/2.**

Now play the music below. Start with your left hand playing the bass clef part, and then use your right hand where it switches to the treble clef. Try using the fingering I've given.



C major scale covering 4 octaves.

You just played a 4-octave C major scale.

If your keyboard has more octaves to the left and more to the right, you can start on the lowest C and go all the way to the highest C. How many octaves does your keyboard have?

Practical

Build Your Skill

Exercise 1:

Play an ascending major scale starting on any note

1. On a piece of paper, write down the major scale intervals. This is your formula for creating major scales. If you don't remember the intervals, work them out from your keyboard by looking at the intervals from middle C up to upper C. If you're unclear about this, review this lesson.
2. Starting on A:
 - a. Pick the note A as the tonic of the scale you're going to play.
 - b. Play an ascending major scale starting on A, by applying the formula. Like this:
 - i. Start: Play A
 - ii. Up 1 (a whole tone): play B.
 - iii. Up 1: C sharp
 - iv. Up $\frac{1}{2}$: D
 - v. And so on to play the rest of the scale: E [F sharp] [G sharp] A.
 - c. Say to yourself, 'That was an A major scale'.
3. Starting on another note:
 - a. Pick any note on your keyboard. It can be a white note or a black note. You will use this note as the tonic of a major scale.
 - b. Play an ascending major scale by applying the formula.
 - i. It should sound right, meaning it should sound similar to the other major scales you played in this lesson.

- ii. And it should end on the tonic an octave higher than your starting note. For example, if you chose E as the tonic, the scale should start on E and end on E an octave higher.
 - c. Say to yourself the name of the scale you just played. For example, if you started on C sharp, say 'That was a C sharp major scale'.
 4. Pick any other note as the tonic and play an ascending major scale by applying the formula. End by saying the name of the scale.
 5. If you haven't already done so, pick F sharp (a black note) as the tonic and play an ascending major scale.
 - a. This scale uses all 5 black notes, and it is considered an advanced scale to play.
 - b. If you're playing it with all your fingers, try starting with finger 2, and then use your thumb each time there's a white note to play.
 6. Keep doing this with different notes as the tonic until you can do it easily and accurately.
 7. End by picking a very low note on your keyboard (not a C!) and playing a 4-octave major scale. To do that, you repeat the formula for the major scale four times.