Welcome to the first lecture. Before we get started, a word about pianos and keyboards.

We are going to use the piano quite a lot for this music theory course.

And we're hoping that you can get access to any kind of keyboard, including one that you might download as an app.

You don't need to be a piano player, you simply need to be able to put your fingers on the keys and play along with some of the stuff as we do it.

>> The only reason that we're doing this is because it's a really

nice visual illustration of some of the things that we're going to be talking about.

[BLANK_AUDIO]

>> So let's get started. Here's a sound.

[SOUND].

>> And here is another sound.

[SOUND].

>> You'd probably say that this one is high.

[NOISE].

>> Whereas this one [NOISE] is low.

>> And that is the case in nearly every language in the planet.

The thing is with this sound [NOISE], while I can say it's high, I can't seem to sing it. [tries to sing] I can't find the note.

>> And that's just exactly the same as this one.

We know it's low, but again bom, bom, bom.

There's no, there's no note to, to latch on to and recognize there.

>> But compare with this, [piccolo note] which is high, but is a note.

La- sings same note [sxophone low note].

>> And then we've got a low note.

That's, again, something that we can sing, we can recognize.

>> So those two examples have what we call Pitch. Okay?

A singable musical quality to the sound, all right?

Now, we're going to be looking at how to represent this stuff graphically. This is the written part of music. So, I could say obviously my note was high, so I'll stick it up here.

Zack's note came afterwards with low down here, shall we, shall we say. That would imply that this axis is giving us time.

My note first, Zack's second. And this axis, this axis is giving us

Pitch. High and low, okay?

>> And that's fine. But actually, it's really quite difficult

to know just how high that note is, or how low this note is.

It's not very good for us to able to give this to someone else, to be able to replicate what we did. You know?

It's, it's, it's purely a, a kind of graph of where our notes were.

>> I can try and make a tune, like, la, la, la, la.

But we don't really know.

>> Yeah, this is just a, a, Scatter Graph.

It's just plotting where things happened, and roughly how high or low they were.

>> In the 7th century, Archbishop Isidore of Seville, said, that unless sounds could be held in the memory of man, they are lost

because they cannot be written down.

You've got to imagine you're a 9th century monk and you've come

up with a really great piece of music for the church liturgy, okay?

You can use this kind of system here, as a memory jogger for you and for the people you're immediately working with.

But you have no musical instrument and you have no recording devices.

So if you wanted to send this to another monastery, if you wanted to submit it to the Pope for authentication, you couldn't.

There's no way that anyone else would be able to interpret these dots. They struggled with this right through, until in the 16th century, they came up with this.

[BLANK_AUDIO]

Five lines called a Stave, or if you're American, a Staff. Okay?

These five lines are like a grid system that can be overlaid onto those dots. Now we have some relativity that we can work with.

Right.

So we got this stave, and I'm going to put a symbol here, which you'll probably recognize.

Now, these monks started naming the notes.

Things like Do Re Mi, which we still use.

But, also, particularly in English speaking countries, letters

from the alphabet, and we'll start with A.

Which on the piano, sounds like.

[MUSIC]

A, and I'll put that right here, on this space. So that's, A.

>> Okay, so we said it was alphabetical.

So the next thing obviously is B, and that sits on the line, just above that space.

>> B.

>> You guessed it.

The next one is C, and that's in the space above.

>> C.

>> And then we've got D on the next line.

>> D.

>> E on the next space.

>> E.

>> F on the next line.

>> F.

>> G compares just on top of the stave.

>> G.

>> And then it looks like we've ran out of stave actually, but we can, we can write notes that are higher than this and there's a trick for getting around that.

Richard's going to show you [CROSSTALK].

>> It's called a Ledger Line, and that gets us that note.

>> Okay, so on that note if we were following that up alphabetically, A, B, C, D, E, F, G. Not H, what we get is another.

>> A.

>> Okay, so we can say that our musical alphabet runs A,

B, C, D, E, F, G and then the sequence starts repeating itself.

>> Going down, I'm just going to come down to this stave and A goes down, of course, to G.

>> And then if you keep going down we've got an F

and the space, E on the line, D perched just below the stave.

And again, we've got the same problem.

But as Richard says, we can use a short line, which

is temporary and it's called a Ledger Line that represents our C.

We can draw them, the line again, and write the next note in the

space below, that gives us a B and we can keep going with this.

So, so the next thing is two ledger lines.

And all we're doing is temporarily extending the stave when we

do this and this takes us back down to our E, again.

>> Now one other thing I'll just mention.

So we started on A and we came down to a G.

This G is on the line and this line is where this symbol circles itself around.

So this symbol can be called a G-Clef, or more commonly nowadays, a Treble-Clef.

But the really important thing we've got to deal with is the existence of more than one A.

And in fact now we've seen this being a C, more than one C.

What does that mean?

That's what we're going to look at next.

>> Following on from this idea of having more than one

of any given note represented at different points on the stave.

Let's use the guitar as an illustration.

So on the guitar, if we play this string,

[SOUND] we get an A.

Now this instrument makes sound by having a string that vibrates.

If I was to put my finger halfway along the length

of that string, [SOUND] it now vibrates at double the frequency.

This is what we call an Octave.

This A [SOUND] is an octave higher than [SOUND] this A.

But we can hear, although there are different notes on there're

different points on the instrument, they do sound equivalent in some way.

And this is something that we'll recognize intuitively, and

we'll be able to illustrate that with our voices.

Okay, so imagine you're at a party.

Sing:Happy birthday to you, happy birthday to you.

That's quite enough of that!

but, I sang high, the part that often children or, some women would sing, and Zack sang low.

We were singing the same melody.

You always do this in your everyday life.

We were singing in octaves.

Okay?

>> It sounded equivalent.

It didn't sound weird.

It didn't clash.

This is what we mean by the an Octave.

>> So again looking at our stave, let's see what this octaves mean.

Right here's A, and if we count these notes,

A being 1, B 2, C 3, D 4, E 5, F6, G7, number 8 is when we come back to A.

>> That's not going to be much of a surprise to us given that we've called it an Octave.

>> The 8.

>> So we've looked at these notes on the stave, but let's just go

back to the keyboard so we can look at where they are on an instrument.

So the A that we've started with was here.

[SOUND] We never got that A.

An octave above [SOUND] up here.

So we had A, B, C, D, E, F, G, and A.

And you'll notice that that's just used every line and space on the stave, but we've only used the white notes on a piano and that's going to become important.

We'll talk about that more in a minute.

We can go down to A.

[piano plays]

A, G, F, E, B, C, B, and right down to A.

So again, just to highlight this idea of the octaves.

We've got an A here.

We've got an A here.

We've got an A here.

We've even got an A up here, and this carries on both ways up and down the piano.

>> Great.

So we've seen the notes on the keyboard.

We've been writing them down.

You need a way to remember where they are on the stave, if you don't already read music.

>> So as Richard said, this is called the G-Clef, the Treble Clef and if we wanted, we could always go back to first principles and

count everything from this G on the second line.

[CROSSTALK].

>> G, A, B, C, D, E [CROSSTALK].

>> That's going to take a long time though.

So, we've got some nice ways to remember it.

>> So, if I start on the bottom line, it's an E.

Then the next line is a G.

The next line is a B.

The next one a D.

And then the line at the top is an F.

E G B D F could spell Every Good Boy Deserves Fruit.

>> Football.

>> Fun.

>> Food.

>> And, if we go to the spaces, the bottom

space is

F, the next space is an A, a C, then an E: F-A-C-E.

>> So, that's a way to remember the lines and the spaces separately, but of course we've always got to remember

that it's part of a spectrum.

So at the bottom we've got E line, F on the space, G line, A on the space and so on alphabetically.

These two things come together.

[BLANK_AUDIO]