Hello dear students.

The title of this unit is unit to the

module name is structure and composition

of the earths crust, Mantle and Co.

The model number is 12.

My name is Kimberly Fern Alfonso.

In this particular module,

we are now going to check on the

Earth's interior based on the mechanical

and physical layering of the Earth.

At the end of this module we will

be able to understand what is the

mechanical layering of the earth

and how is the Earth divided.

In the previous module,

we had learned that the Earth's

crust is divided into 2,

the uppermost crust and the lowermost crust.

The uppermost crust is see all the

llamas crust asima CR stands for Silicon

Aluminum as a dominant component,

and SEMA is for Silicon magnesium.

The seal occupies the continental area,

whereas the Seamark occupies the Oceanic

basin as well as below the continents.

After this the P waves attain a higher

velocity entering into the mental zone.

This mantle is basically divided into 2

the upper mantle and the lower mantle.

The mental is mainly made up

of parity clocks.

How do we know it is basically from

the journalists that are brought

from the inner depths from the

when magma erupts to the surface?

Where is your goal then?

Is divided into outer core and inner core.

It is at 2900 kilometers depth that

the S waves and P waves suffers

of drastic velocity drop.

The primary ways there is a decrease

in sharp velocity from around 13

to around 8 kilometers per second.

That is, the S waves drops to 0.

The code is divided into the

outer core and the inner core,

and it is mainly made up of iron with

some amounts of nickel and sulfur.

The two major discontinuity is the

mower sick discontinuity that occurs

between the crust and the mental,

and you have the other discontinued colors.

The Gutenberg or mental code is

continuity that occurs between

the mental in the coal.

The Lemon discontinuity is also between

the outer core and the inner core.

Similarly,

you have the contact discontinuity

that occurs between the outer

crust and the inner crust.

Now let's take a look at the mechanical

layering within the Earth's crust.

This figure was left hand side.

You have a divided into your crust.

Mental Co were different colors.

So your mental isn't green,

whereas the outer core is in yellow.

Your inner core is an orange.

An your class that you can see is having a

brownish color or a reddish color to it.

Now in this mechanical earring,

basically we divide the Earth based on the

rheology or how how strong the material is.

So the lithosphere,

which is considered to be the top

most according to this division,

is basically made up of crust and a

small portion of the upper mantle.

Your estimate sphere, which is basically

occurring below the little sphere,

is made up dominantly of your upper mental.

Then you have the meso sphere that

is made up of your upper mantle and

the whole part of your lower mental.

Your article and then you have

your inner goal.

Let us take a look at each

of these in details now.

So the little sphere.

What is the lithosphere?

This is about 100 kilometers thick and

it can go up to 200 kilometers thick.

If you're Bennett the continent,

whereas it will be thinner if

you're beneath Oceanic crust.

That is because over the continent

you have a thicker layer.

This class is considered to be very brittle,

obviously why?

Because it's at the outermost layer

it is exposed to the atmosphere and

and if you take this rock and you try

to chip it off, it will break easily.

It's like glass when you take

a glass near the glass,

the glass will shatter,

so this little sphere is very

brittle and therefore it can easily

fracture at these low temperatures.

The little sphere is now made up of crust

as well as an upper part of the mantle.

The plates that we talk about

in plate tectonics are mainly

made up of the lithosphere.

These appear to float above the below

above the underlying Athena sphere.

So the odds lithosphere are divided

into major plates and these plates are

in constant motion with one another

and the US considered to be floating.

And because of the movements of this

place that we have a formation of an

ocean or the formation of a mountain.

So as we can see over here to your left,

sorry to your right.

You have the litho sphere,

which is basically a rigid crust

and it can brittle.

It's very brittle and can shatter easily.

It is made up of the crust and

a part of the upper mantle.

Then we come to the next zone,

call us asthenosphere.

This zone is about 250 kilometers thick.

This is made up of mainly solid rock,

but it is capable of flow as it is duck tile.

It deforms in ductile manner.

This topmost part of Destiny's Fear

is called as a low velocity zone.

Let's because it in this particular

zone your P waves

and S waves suffers a drop in the velocity.

And it is lower than the litho

sphere above it. The velocity of

the P waves and S waves is lower in

this particular zone compared to

the little sphere that is above it.

However, the P waves and the S

waves neither of them go to zero,

indicating that the low velocity zone

is not entirely inadequate state.

So we can see below the lithosphere

you have destiny's fear that deforms

the plastic way and above it you

have the Ello vilocity zone that is a

place where your P waves and S waves

suffers in drops and drop in velocity

compared to the little sphere above.

Then we come to the mesosphere.

This mesosphere is around

2500 kilometers thick,

but it is capable of flow and

it is made up of solid rock.

The outer core is 2250 kilometers

thick and it is in liquid form.

We know this because the S wave

velocities are zero and outer core,

implying that the material is

in liquid state.

The inner core is basically 1230 kilometers

in radius and that is solid form.

Now let us take a look

at the low velocity zone.

So this particular low velocity

zone lies within less than a sphere.

It is at this particular place where your

P waves in your space drops in velocity.

So this lies within the upper mantle

and is thought to depends upon

the temperature of the material

in relation to its melting point.

The low velocity zone it extends

from about 65 to 220 kilometers

in in the ocean basin.

The luminosity zone in the upper

mantle is this kind of a lubricating

zone as it deforms and it's in

plastic nature and it is dependent

upon the temperature of the material

in relation to its melting point.

It makes movement relatively easier

between the overlying lithosphere

and the interior.

Let us conclude this module by

dividing and understanding the

whole of the Earth into crust,

mantle and core.

Your crust is further divided into

upper crust and lower crust.

The upper classes,

basically granitic in nature,

having an average density of 2.7

grams per centimeter cube and its

components are mainly Silicon aluminium.

You have the lower crust,

which is basic in composition

is made up of mainly silica and

magnesium and it's called as a

basaltic layer connecting the

two as the contact discontinuity.

Then you have the more discontinuity

between your cost and the mental.

Within the mental you have the

upper mantle and the lower mantle

in the upper mantle you have zone

color estenoz fear.

Within it you had a low velocity

zone and the completion of the

mental is mainly period otic.

Then finally you have the comentale

boundary or the Gutenberg Oldham boundary

that's occurring at 2900 kilometers depth.

Below it,

you have a code in the code you

have the outer core,

which is a liquid form because S

waves goes to zero and your inner core,

where in your essays appears back again

and your P waves also results in the

increase in velocity is collagen in ARCO,

and both the calls the outer core and

the inner core is basically made up of

iron with some amount of nickel and sulfur.

This is your reference.

Thank you.