Hello students, today we are

covering a topic from course title,

introduction and scope of microbiology

from Unit 8 Ecology and ecosystem.

We are covering a module titled

trophic level primary and secondary

production food chain and food web.

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The outline of the presentation

is introduction to trophic level,

primary production, secondary production,

food chain and food web.

Upon completion of this module,

the students will be able to

explain the trophic level,

explain what is primary production,

describe what is secondary production.

Explain the food chain.

Explain and describe what is food web.

Starting with the trophic level.

The feeding position in a

food chain or a food web.

It is called as trophic level.

All food chains and webs have at

least two to three trophic level and

it can go up to four trophic level.

Now energy which is passed through

the food chain or a web from

lower to higher trophic level

is called as trophic energy.

Now generally only about 10% of the

energy passes from one level to another,

and this is called as ecological pyramid.

A photo representative you can see

on right hand side where the bottom

level is of primary producers,

then second is for the primary consumer,

then carnivores,

then top carnivores and at the bottom

underground you can see the decomposers.

Now,

90% of the energy is used in the

metabolic process and it is either

given out in the atmosphere as heat.

Now this loss of energy explains
why there is only four trophic
level in the food chain or web.
Now we will see different types of
trophic level and where they get
they're food from and the examples.
The first trophic level we have
producers which make their own food and
examples are plants and cyanobacteria.
Now second trophic level
are the primary consumers.
They eat the producers.
That means they consume the producers.
And example is mice eating a plant.
Seeds on the 3rd trophic level we have
secondary consumer that will consume
the primary consumer or that will.
Eat the primary consumer example
we have is snake eating the
mice on the 4th trophic level.
It is tertiary consumer that consumes
the secondary consumer and the example
we have is hawk eating a snake.
Now trophic level are the steps

in a nutritive series or a food

chain of an ecosystem.

Now the organisms of the chain they

are classified into this level on

basis of their feeding behavior.

The 1st and the lowest level

contains the producers.

The example for it are the

green plants which are able to

synthesize their own food through

the process of photosynthesis.

Now the plant or their

products are consumed by the.

Second level organisms and those are

called as herbivores or plant eaters.

At the third level we have primary

carnivores who are meat eaters who

will eat the herbivores now at the

4th level we have secondary

carnivore who are eating the.

Primary carnivores?

Now coming towards the primary production,

primary production is the synthesis of

organic material from an inorganic molecule.

Primary production.

In most of the ecosystem it is dominated

by the process of photosynthesis in

which the Organism will synthesize a

organic molecule from the sunlight,

water and carbon dioxide.

Now primary production is divided

into two types, that is net.

Primary production referred as empty and

gross primary production referred as GP.

Now the gross primary production

will measure all the carbons which

has been assimilated into an organic

molecule by a primary producer.

The net primary production measures the

organic molecule by primary producers.

Net primary production that is North

P also measures the amount of the

carbon which has been assimilated.

From inorganic molecule by a primary

producer and does not include the

organic molecule that has been

broken down again by this Organism

through the cellular respiration.

Primary producers are divided into two types,

photoautotrophs and litho auto troughs.

The photoautotrophs are the organisms

that will rely on the light energy to

fix the carbon and litho autotrophs

are the organisms which uses reduced

chemical compounds such as hydrogen,

hydrogen sulfide, methane,

etc to fix the carbon.

In photoautotrophs,

the examples are cyanobacteria and

certain pro bacteria in lead to autotrophs.

There are members of both bacteria

as well as archaeol domains.

Now litho litho autotrophs can only

be possible in the absence of light.

So it will only undergo in a

places such as underground water,

hydrothermal vent, soil cave ecosystem.

Etc.

Coming towards the secondary production,

secondary production is the generation

of biomass of a heterotrophic Organism
that is consumer in an ecosystem.
Now this is driven by the transfer
of organic material from trophic
level and represents the quantity
of new tissue which is created
through the use of a simulated food.
Secondary production is sometimes
defined to only.
Including consumptions of primary
producers by herbivores consumers,
but it is more commonly defined
to include all biomass generation
by heterotrophs now organisms
responsible for secondary production
are animals protest fungai,
and many of the bacteria secondary production
can be estimated through various methods,
including including increment
summation removal.
Submission instantaneous growth method,
and very famously the LM curve method
now coming towards the food chain food
chain is the transfer of food energy

from producer through series of Organism,
that is from producer to herbivores,
to carnivores, to finally decomposers.
This is a repeat it eating and
being eaten process now this is
called as food chain in nature.
Basically two types of food
chains are recognized.
First one is grazing food chain
and the second one is detritus,
food chain,
grazing food chain starts from the
green plant that make their own food
for herbivores and herbivores is in
turn it turn up by the carnivore.
This type of this type of.
Food chain in an ecosystem are
directly dependent on the
influx of solar radiation.
Now grazing food chain depends on
the autotrophic energy captured
and the movement of the captured
energy to the harpy woods.

Most of the ecosystem in nature

follows this type of chain.

A simple example is a phytoplankton

is eaten up by zoo plankton,

which is again eaten up by small faces

and small fishes are eaten up by big fish.

Is the second kind of food chain.

These dictators,

food chain or called as it starts

from the dead organic matter to the

detrivore Organism detrivore Organism

here refers to the bacteria and fungi

which are decomposers which in turn

will make the food for protozoans

or carnivore which in turn make food

for protozoan to carnivorous etc.

It is made up of decomposers which

are heterotrophic organisms such as.

Fungi and bacteria.

As I've told before,

they meet their energy and nutrient

requirement by degrading the dead organic

matter or or it is called as Detroiters.

Now they are also known as separate rows.

Separate meaning to decompose

decomposers will secret certain

enzymes which are known as digestive

enzymes that will breakdown the dead

and waste material into simpler

inorganic material which are.

Absorbed by the decomposers

themselves in an aquatic ecosystem,

the grazing food chain is major

conduct for the energy flow,

whereas in the terrestrial ecosystem

a large fraction of the energy flow

is through the detritus food chain.

Now detritus food chain may be

connected to the grazing food chain

at some level because certain of the

organisms from Detroiters food chains.

Other pray to the grazing food chain animal.

One example is certain certain animals,

such as cockroaches,

certain animals such as cockroaches and

crows. They are omnivorous in nature.

The last food chain that is parasitic

food chain is an auxiliary food chain.

It begins with a host and it ends

in the parasite.

Now coming towards the food web.

A simple food chain.

Are not possible in the nature because

each organisms may obtain their food

from more than one trophic level.

Now that is why all the food chains are

interconnected and they are forming a

network which is called as food web.

Now food web illustrate all the

possible transfers of energy and

nutrients among the organisms

in a particular ecosystem.

Whereas food chain will trace

only the one pathway of the.

Food food webs are very important

in order to maintain certain

stability to the to the ecosystem.

This is my reference, thank you.