



## How is energy transferred in a food chain?

The Sun is the source of all energy. How is this energy transferred through a food chain?

Click the Sun or "**play**" to find out more.



--	--	--	--



# Why aren't food chains very long?

This tiger is a top predator; the final level in a food chain.



Most food chains only contain four or five species, why is this?

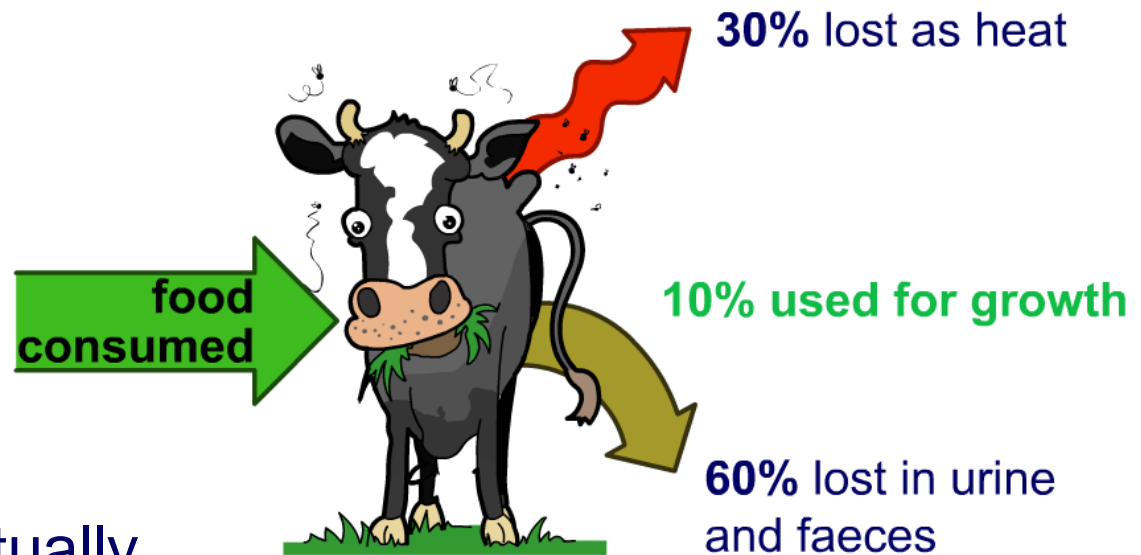
Energy is lost at all levels in food chains. Animals at the top of a long food chain would not get enough energy to survive.

Why do organisms need to feed?

Most animals get their energy from food. If the producers at the bottom of the food chain are small organisms, then the consumers at the top of chain need to eat many of them to gain enough energy.

Much of the energy that prey generate is lost on a daily basis through heat, growth and waste.

Very little energy is actually transferred to the predator.



A vibrant cartoon illustration of a circus performance. In the background, a purple banner with the text "Amazing Animal Acrobats" is held up by two poles. A giraffe stands to the left of the banner. To the right, a man in a red jacket is riding a horse. Several lions are running in the foreground. A large tree is in the background. A white owl is perched on a branch. A purple hippo is in the foreground.





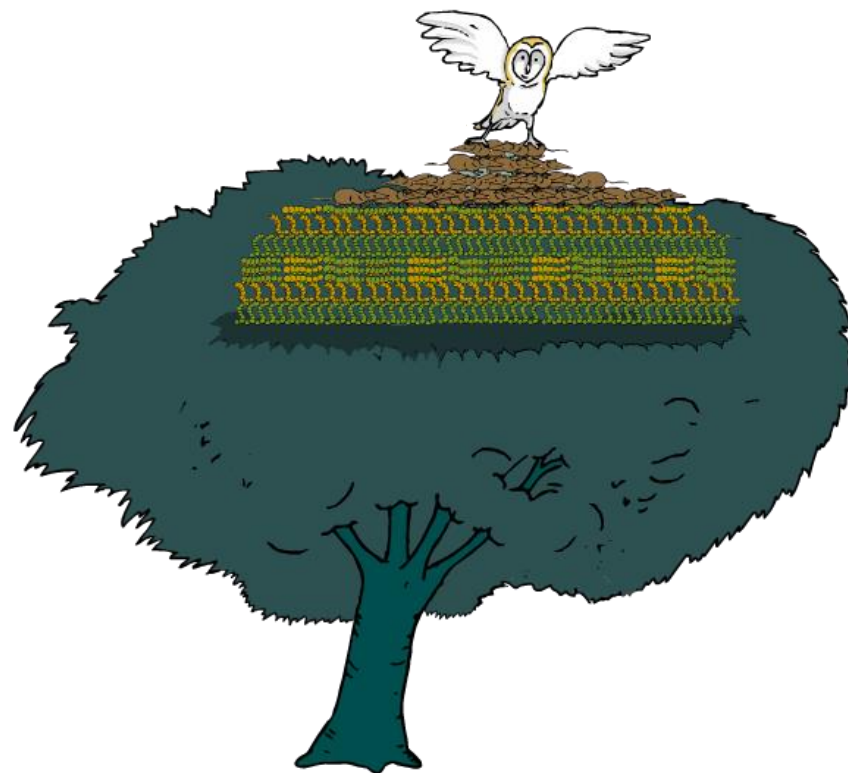
# What are pyramids of numbers?

**Pyramids of numbers** are a **quantitative** way of representing food chains.

They record the number of organisms at each trophic level in a specified area.

What are the problems of representing food chains in pyramids of numbers?

Pyramids of numbers only give an accurate impression of the flow of energy in a food chain if the organisms are of similar size. Measuring the **biomass** at each trophic level can give a more accurate picture.



## Comparing pyramids of numbers and biomass

Click on a type of pyramid below to see how the same food chain can be represented in different quantitative ways.



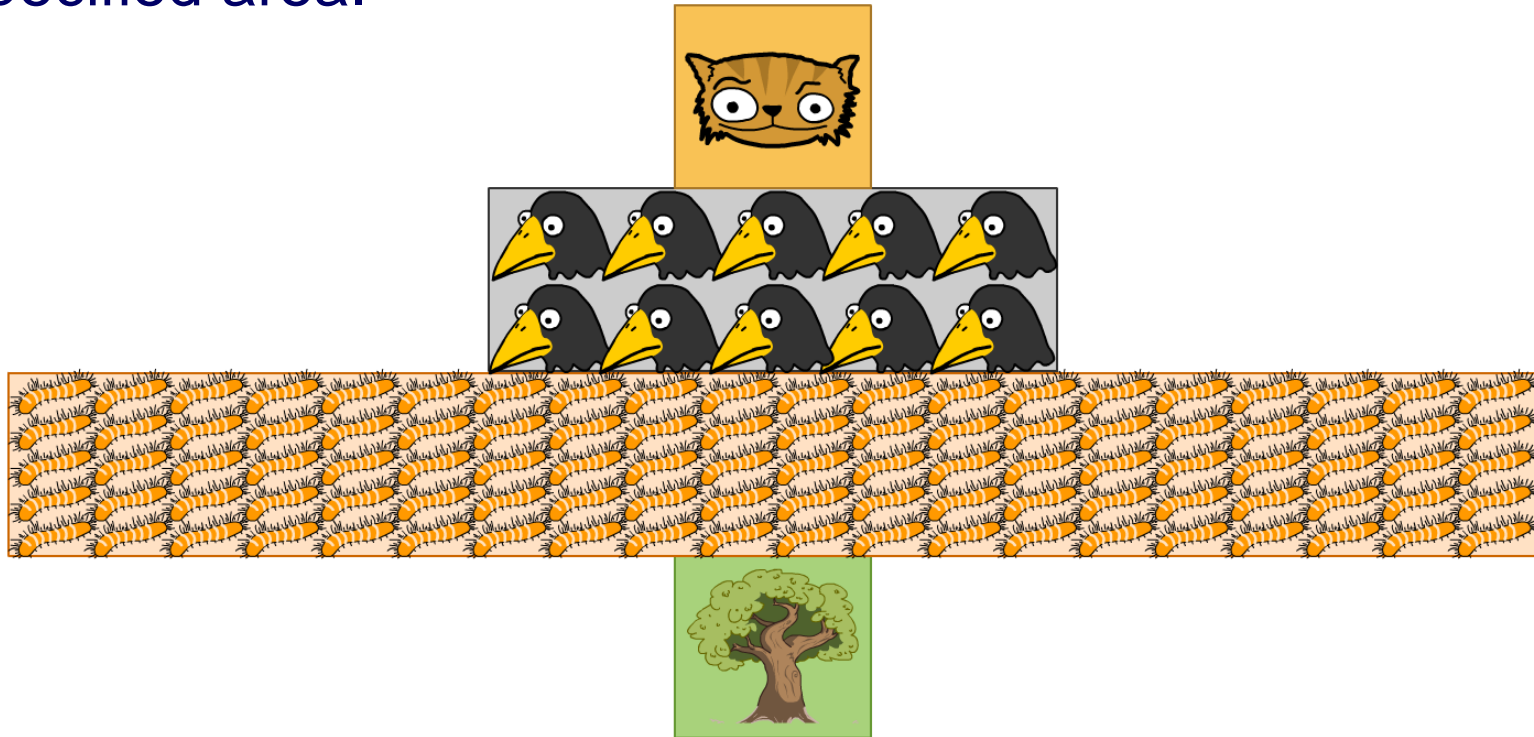
**numbers**

**biomass**



# Understanding pyramids of numbers

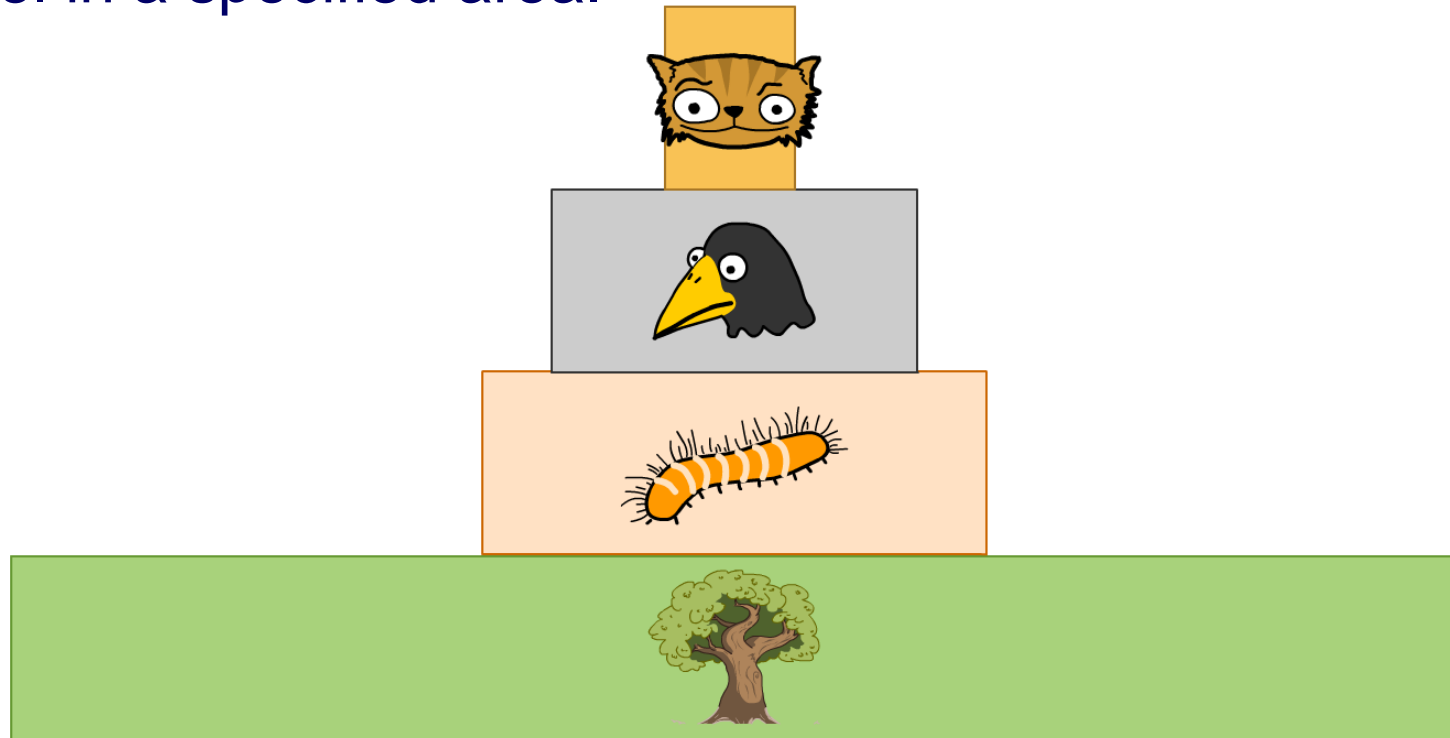
In a pyramid of numbers, the length of each bar represents the **number of organisms** at each trophic level in a specified area.



As a single tree can support many organisms, this food chain produces an unbalanced pyramid.

# Understanding pyramids of biomass

In a pyramid of biomass, the length of each bar represents the **amount of organic matter** – **biomass** – at each trophic level in a specified area.



At each trophic level, the amount of biomass and energy available is reduced, giving a pyramid shape.



## What are the missing words about food chains and pyramids?

1. Biomass is the living material that makes up  .
2. Plants are called primary   because they make their own food by photosynthesis.
3. Biomass and energy are transferred from one organism to another along food  .
4. A pyramid of   is a scale drawing that represents the amount of organisms at each trophic





**solve**



## What are the missing words about food chains and pyramids?

represents the amount of organisms at each trophic level.

5. A pyramid of   is a scale drawing that represents the mass of living material at each trophic level.
6. A pyramid of numbers that represents a food chain containing a single tree at the first trophic level will be   at the bottom relative to the middle.



**solve**



## How is energy lost in food chains?

Organisms do not use all the energy from their food for growth.

Click a trophic level below to find out how energy is lost.



**primary  
producer**



**primary  
consumer**



**secondary  
consumer**



# Why do some animals need more energy?

Mammals and birds are able to regulate their body temperature. This has many advantages but it uses lots of energy.

Other animals, such as snakes, lizards and fish, are unable to regulate their body temperature, so need less energy.

Would it be more energy efficient to farm snakes for food than chickens?

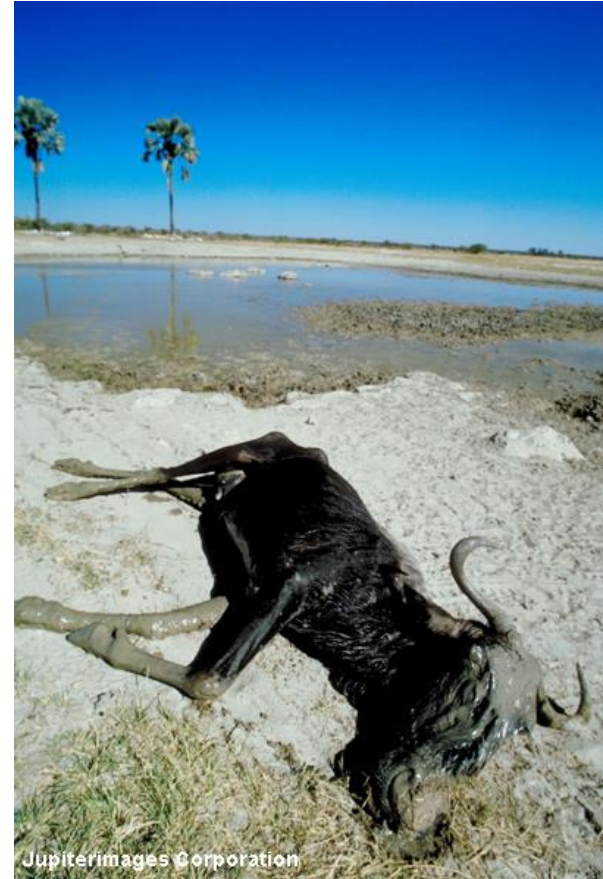


# Death benefits?

When animals and plants die, they are decomposed by microbes.

In this way, the nutrients that were stored in animals and plants are eventually returned to the soil.

The nutrients fertilize the soil, helping producers, such as plants, to grow better.



As the number of producers increases, how will this affect the populations of organisms higher up in the food chain?





## What are the missing words about food chains and pyramids?

1. Biomass is the living material that makes up  .
2. Plants are called   because they make their own food by photosynthesis.
3. Biomass and energy are transferred from one organism to another along food  .
4. A pyramid of   is a scale drawing that represents the number of organisms at each level in



**solve**



## What are the missing words about food chains and pyramids?

5. A pyramid of  is a scale drawing that represents the mass of living material at each level in a food chain.
6. A pyramid of numbers that represents a food chain containing a single tree at the first level in the food chain will be  at the bottom relative to the middle.



**solve**



## Feeding relationships

**biomass** – The living material that makes up all organisms.

**carnivore** – An organism that only eats other animals.

**consumer** – An organism that feeds on plants or animals.

ABC

DEF

GHI

JKL

MNO

PQR

STU

VWX

YZ



How quickly can you unscramble  
anagrams of words about

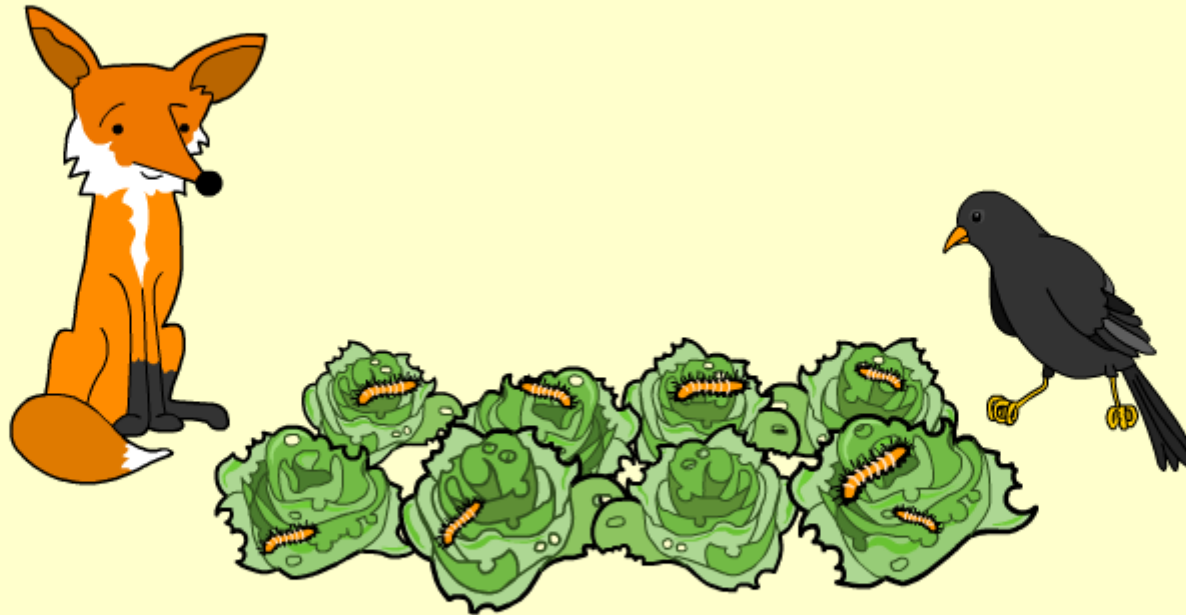
f e e d i n g

r e l a t i o n s h i p s ?

start



Are you adaptable enough for this  
quiz on feeding relationships?



start

