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UNIT 1

FOOD CHAINS

FOOD WEBS

FOOD PYRAMID

Warm-up: Food chains

Introduce yourself: **I am a wolf. I am a carnivore**

Question: **what do you eat?**

Your partner answers: meat

If he/ she eats meat. He/she joins you

Introduce yourself: **I am a cow. I am an herbivore**

Question: **what do you eat?**

Your partner answers: plants

If he/ she eats plants. He/she joins you

Introduce yourself: **I am a pig. I am an omnivore**

Question: **what do you eat?**

Your partner answers: plants and meat
If he/ she eats plants and meat. He/she joins you

Introduce yourself: **I am a plant. I am a producer**

Question: **what do you need?**

Your partner answers: energy from the sun
If he/ she needs energy from the sun. He/she joins you

 Grass : producer	 Carrots: producers
 Corns: producers	 Red cabbage: producers

A herbivore

*An animal that eats only plants.

Panda

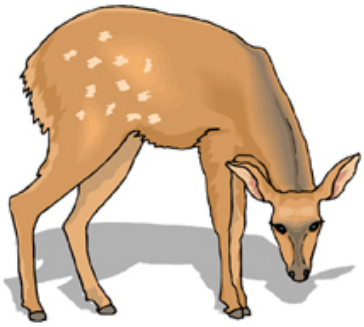
A herbivore

*An animal that eats only plants.

Rabbit

A herbivore

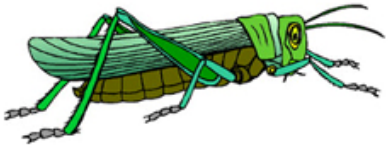
*An animal that eats only plants.



Deer

A herbivore

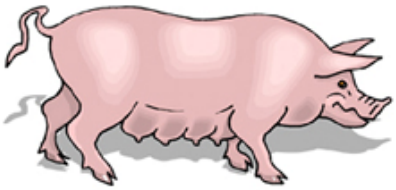
*An animal that eats only plants.



Grasshopper

A carnivore *an animal that eats only other animals.  Bull Shark	A carnivore *an animal that eats only other animals.  Nile Crocodile
A carnivore *an animal that eats only other animals.  Gila Monster	A carnivore *An animal that eats only other animals.  Piranha

An omnivore
*An animal that eats both plants and animals



Pig

An omnivore
*An animal that eats both plants and animals

Raccoon

An omnivore
*An animal that eats both plants and animals

Human

An omnivore
*An animal that eats both plants and animals

Bear

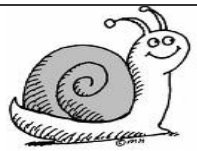
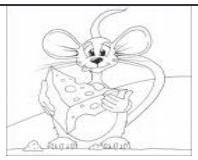
What are the three groups of animals based on their eating habits?

Food chains

All living things need energy to stay alive. This energy comes from the sun. Plants use energy from the sun to make their food. Animals get their energy from the food that they eat. Animals depend on other living thing for food. Some animals eat plants while others eat other animals. This passing of energy from the sun to plants to animals to other animals is called a FOOD CHAIN

Activity 1: Look at these livings things and write down their names. In the box you can find the names you need and one example is given for you.

fox, snail, mosquito, mouse, worm, seeds, grass, squirrel, hedgehog, bird, frog, snake.

			
			
		hedgehog	
			

Activity 2 Think about this! “Who eats who or what”? Match the two columns

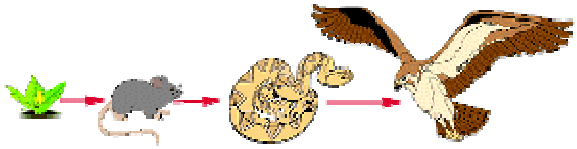
They eat	***They are eaten***
snake	mosquito
frog	frog
fox	mouse
hedgehog	seeds
squirrel	worm
snail	snail
blackbird	grass

Activity 3 Answer true (T) or false (F)

All living things need energy to stay alive	
Animals don't depend on other living things for food	
Plants make their food from energy from the sun	
Some animals eat plants while others eat other animals	
Animals get their energy from the food they eat	
The passing of energy from the sun to plants to animals to other animals is called a movie	

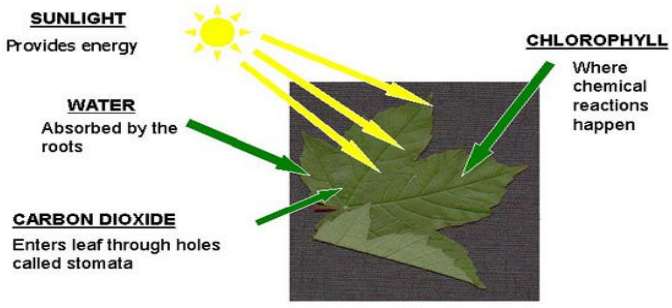
- Correct the wrong sentences and write them down:

A **food chain** is a model that shows how energy is passed, in the form of food, from one organism to another. The arrows between the organisms show the direction of energy flow.



The organisms in a food chain can be producers, consumers, or decomposers **Producers** always come first in a food chain because they make their own food using energy from the sun in a process called photosynthesis.

Green plants are the most important producers. Grass is an example of a producer.



Consumers come next in the food chain. They are animals that cannot make their own food. A food chain can have as many as three to four consumers

A food chain contains three kinds of consumers, herbivores, omnivores and carnivores.

First level consumers feed directly on plants; an example of this would be a mouse. Herbivores are consumers that only eat plants. A mouse is an example of an herbivore.

Second level consumers feed on first level consumers; an example of this would be a snake that eats the mouse. Carnivores are consumers that always eat other animals. A lion is an example of carnivore that hunts animals for its food

Third level consumers feed on second level consumers; an example of this would be a hawk eating the rattlesnake

Omnivores are consumers that eat both plants and animals. Coyotes are omnivores because they can eat both berries from plants and small animals..

Decomposers are a vital part of food chains. They are always at the end of the food chain. Decomposers are the living things that feed on dead plants and animals and break them back down into fertile soil. Fungi and bacteria are all examples of important decomposers. Although decomposers are very important to ecosystems, they are usually not shown on the food chain.

Activity 4. Answer these questions

1) omnivore/ you / Are / a ?_____

2)lion/ carnivore/ Is/ a?_____

3) Snakes / Do / frogs/eat?_____

4) an / of /an Is /herbivore/ a / mouse/ example? _____

5) need /all living things/Do/ to stay alive/energy? _____

6) shows / What can we / *I* a/ is/ that / how/ is/ model / call / passed/ energy?

_____

7) and/ decomposers/ Are / of/) fungi/ bacteria /important/ all/ examples?

_____

Activity 5. Look at the following list of organisms and identify them as **producers**, **consumers**, or **decomposers**

Organisms	Role in food chain
Human	
Deer	
Pine tree	
Bear	
Rabbit	
Cat	

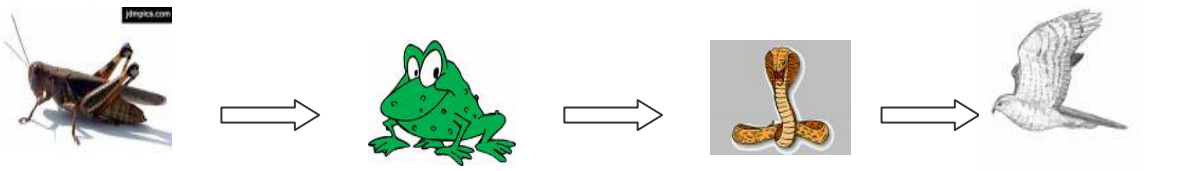
Organisms	Role in food chain
Bacteria	
Mouse	
Snake	
Wheat	
Millipede	
Frog	

Activity 6. Design and draw a food chain using some or all of the animals and plants listed below.

Plants	Animals	
Marsh Grass	Snakes	Ducks
Wheat	Dragonfly	Crayfish
Tree leaves	Trout	River Otters
Flower	Mosquitos	carterpillars

Your food chain should include a picture of the plant or animal with its name written next to it. Also, show the order of the food chain by drawing a line with an arrow pointing to the next drawing in the food chain.

An example is given for you

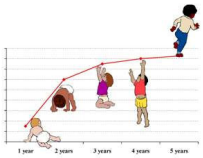


The grasshopper is eaten by the frog	The frog is eaten by the snake	The snake is eaten by the hawk

Activity 7. - A family is having their meal. Tick which trophic level each member of the family has when they are eating the following items

	Consumers			
	First level	**Second level**	**Third level**	**Second or third level**
Tomato, onion, lettuce				
Paella with:				
Chicken				
Rice				
Peppers				
Oil				
Tuna				
prawns				
Squid				
Beef				
Melon				

Activity 8.- How I grow up!



Look at the table and analyze the data.

Remember! 

is recorded information that come from observation

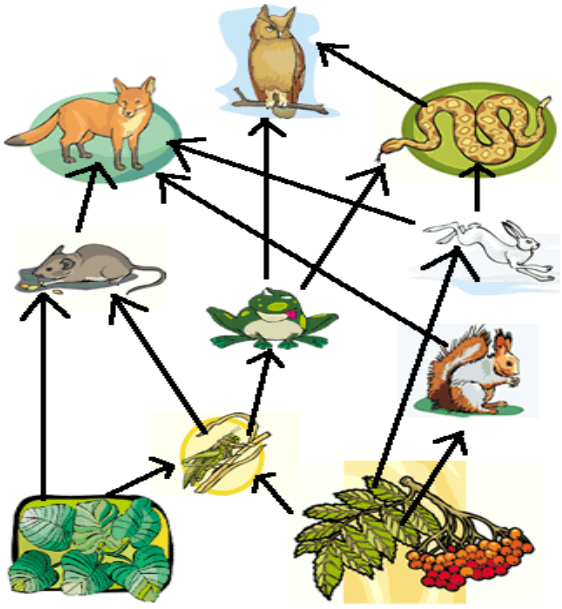
Age	At the Birth	3 months	3 years	6 years	12 years
Weigh (Kg)	3	6	20	30	40

Write these sentences in the right order.

that we eat	its use in order	our own body
The organic and inorganic matter	to built and to grow up	around our entire life

Now tell your classmate the whole paragraph in the right order

Food web: extends the *food chain* concept from a simple linear pathway to a complex network of interactions.



Identify the:

1. Producers:
2. Primary Consumers:
3. Secondary Consumers:
4. Herbivores:
5. Carnivores:
6. Omnivores:
7. What elements are missing from this food web?

www.biologycorner.com/worksheets/foodweb.htm

What is the difference between a food web and a food chain?

- **A food chain** only follows just one path as animals find food. e.g.: A hawk eats a snake, which has eaten a frog, which has eaten a grasshopper, which has eaten grass.
- **A food web** shows the many different paths in which plants and animals are connected**.** e.g.: A hawk might also eat a mouse, a squirrel, a frog or some other animal. The snake may eat a beetle, a caterpillar, or some other animal. And so on for all the other animals in the food chain.

Think about it!

- A change in the size of one population in a food chain will affect other populations.

  This interdependence of the populations within a food chain helps to maintain the balance of plant and animal populations within a community
- For example, when there are too many giraffes; there will be insufficient trees for all of them to eat. Many giraffes will starve and die.
- Fewer giraffes means more time for the trees to grow to maturity and multiply. Fewer giraffes also mean less food is available for the lions to eat and some lions will starve to death. When there are fewer lions, the giraffe population will increase.

Questions

What would happen to the population of toads if there were no plants for the grasshopper to eat?

How would the change in the toad population affect the snakes and hawks in the area?

Let's scan the food web!

If the population of	Toads Snakes Squirrels Rabbits Grasshopper Foxes	Decreases Increases

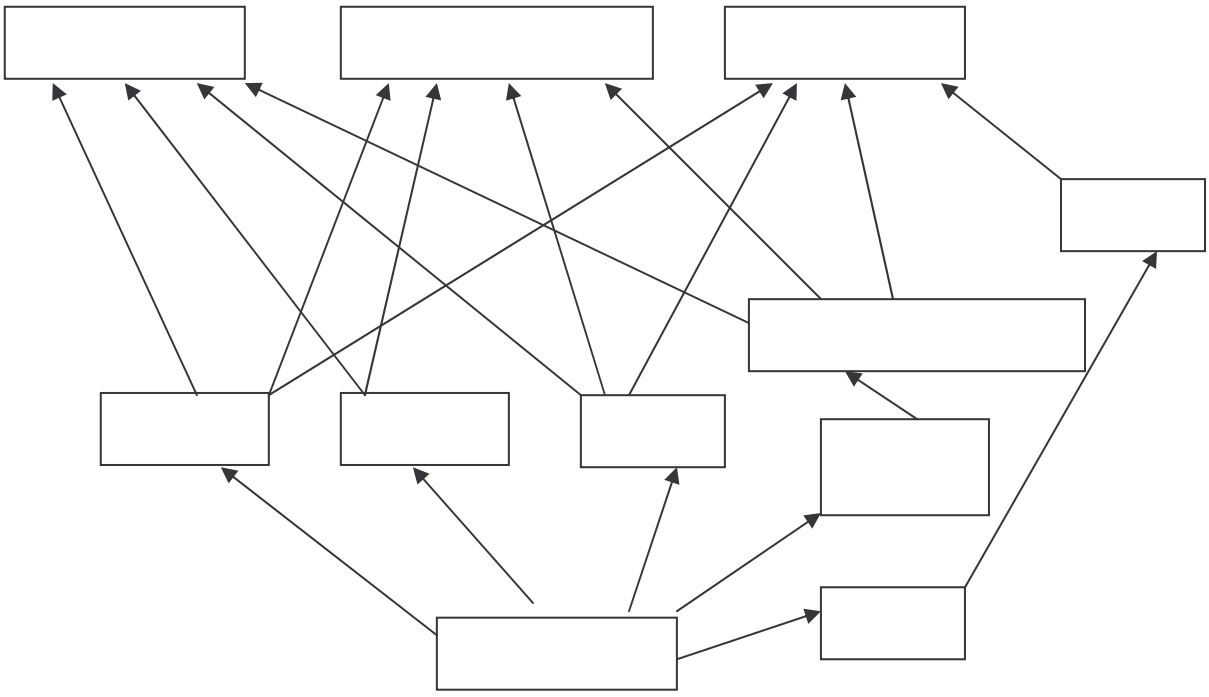
Then

the population of	Toads Snakes Squirrels Rabbits Grasshopper Foxes	Will grow Will decrease diminish

Conclusion: Any change in a population of the food web affects all the links in the food web.

Activity 9 Construct a Food web using the following living things. The plants are the main source of food for the herbivores. You do not have to draw pictures; you can just use the animal names and draw arrows between them.

Foxes, green plants, mice, grasshopper, snakes, toads, owls and hawks, rabbits, insectivorous birds, squirrels, spiders



Activity 10._ Write the answers to the following:

a) Name the straight-line relationship that shows what eats what. (Food chain)

b) Many food chains connected in a net shape is a what? (Food web)

c) What happens when one food chain in a food web is disrupted? (Other chains in the web will be affected; the entire web may collapse.)

Learn two more words!

Predator: A predator is an animal that hunts and kills other animals for food

Prey: An animal is prey when another animal hunts and kills it for food.

discover.edventures.com

Check out how much you have learnt about food chain and food web

Challenge group

Fill in the gaps below using words from the word bank.

Every organism needs to obtain energy in order to live. Plants get their energy from the _____ and make their own food.

Some animals eat plants (these animals are called _____), some animals eat other animals (these animals are called _____), and some animals eat both plants and animals (these animals are called _____).

A food chain starts with the primary _____source, the sun

The next link in the chain is an organism which makes its own food from the primary energy source an example is plants which make their own food from sunlight (using a process called_____). These organisms are called autotrophs or primary producers.

Next come organisms which eat autotrophs; these organisms are called herbivores or primary _____ an example is a rabbit that eats _____ .

The next link in the chain is animals which eat herbivores; these are called secondary consumers an example is a snake that eats rabbits.

In turn, these animals are eaten by tertiary consumers an example is an owl that eats _____.

The tertiary consumers are eaten by quaternary consumers an example is a hawk that eats owls.

Each food chain ends with a _____ predator, an animal with no natural enemies (some examples are alligators, hawks, and polar _____).

The _____ in a food chain show the flow of energy, usually from the sun to a top predator. As the energy flows from organism to organism, energy is _____ at each step.

Word Bank:

photosynthesis top lost

Check out how much you have learnt about food chain and food web

Middle group

Fill in the gaps below using words from the word bank.

Every organism needs to obtain energy in order to live. Plants get their energy from the sun and make their own food.

Some animals eat plants (these animals are called herbivores), some animals eat other animals (these animals are called _____), and some animals eat both plants and animals (these animals are called omnivores).

A food chain starts with the primary _____ source, the sun

The next link in the chain is an organism which makes its own food from the primary energy source an example is plants that make their own food from sunlight (using a process called photosynthesis).

These organisms are called autotrophs or primary producers.

Next come organisms which eat autotrophs; these organisms are called herbivores or primary _____an example is a rabbit that eats grass.

The next link in the chain is animals which eat herbivores; these are called secondary consumers an example is a snake that eats rabbits.

In turn, these animals are eaten by tertiary consumers an example is an owl that eats _____.

The tertiary consumers are eaten by quaternary consumers -- an example is a hawk that eats owls.

Each food chain ends with a top predator, an animal with no natural enemies (some examples are alligators, hawks, and polar _____).

The _____ in a food chain show the flow of energy, usually from the sun to a top predator. As the energy flows from organism to organism, energy is lost at each step.

Word Bank:

arrows	herbivores	grass	
energy	consumers	carnivores	snakes

Check out how much you have learnt about food chain and food web

Easy life

Fill in the gaps below using words from the word bank.

Every organism needs to obtain energy in order to live. Plants get their energy from the sun and make their own food.

Some animals eat plants (these animals are called herbivores), some animals eat other animals (these animals are called carnivores), and some animals eat both plants and animals (these animals are called omnivores).

A food chain starts with the primary energy source, the sun

The next link in the chain is an organism which makes its own food from the primary energy source an example is plants that make their own food from sunlight (using a process called photosynthesis).

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In turn, these animals are eaten by tertiary consumers an example is an owl that eats snakes.

The tertiary consumers are eaten by quaternary consumers -- an example is a hawk that eats owls.

Each food chain ends with a top predator, an animal with no natural enemies (some examples are alligators, hawks, and polar bears).

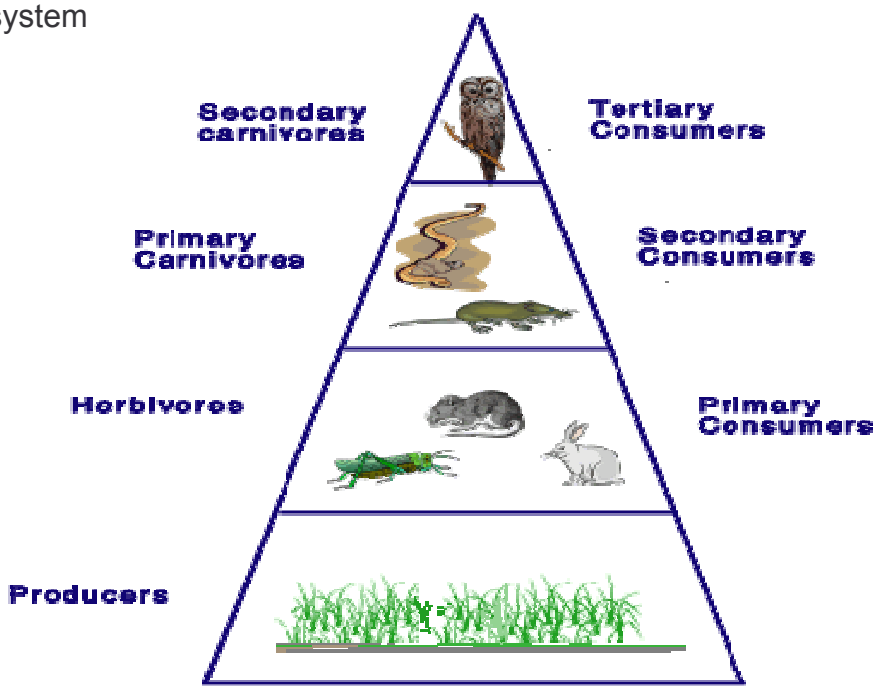
The arrows in a food chain show the flow of energy, usually from the sun to a top predator. As the energy flows from organism to organism, energy is lost at each step.

Word Bank:

arrows	herbivores	top	lost
energy	consumers	grass	omnivores
sun	photosynthesis	carnivores	snakes
	bears		

Ecological pyramid

An ecological pyramid describes the flow of energy between trophic levels of an ecosystem



http://www.eelsinc.org/id64.html

A food pyramid is drawn in a triangle shape with the producers on the broad base. The herbivores, first-level consumers, form the smaller second layer of the pyramid. The carnivores, second-level or higher-level consumers, form the continuing smaller upper layers of the pyramid. Omnivores will be at more than one level on the pyramid.
You have seen that as you move to higher levels on the pyramids, each layer is smaller. This is because the consumers, throughout their lives, are eating many organisms below them on the pyramid.

Activity 10._ Write the answers to the following.
a) Name a triangle shape showing feeding relationships. (Food pyramid)

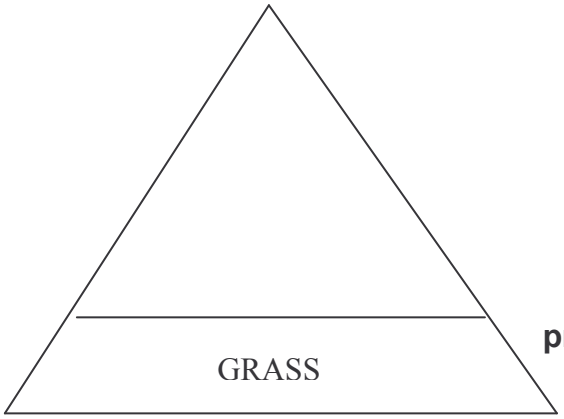
b) What happens to the numbers of organisms as you move to higher layers on a pyramid? (They decrease)

c) What happens to poisons such as DDT as you move to higher levels on a pyramid? (They become more concentrated)

d) Tick at which trophic level would the greatest concentration of pesticides per gram of biomass be found?
level 1 level 2 level 3 level 4

e) Where are humans located on most food pyramids? (At the top layer)

Activity 11._ Create an ecological pyramid. The bottom of the pyramid (producers) begins with grass. Your second level (a primary consumer) must eat grass. Your top most level should be your top predator (tertiary consumer). You can end either on the third or fourth level.



producers

Activity 12._ Select from the following to complete your pyramid.
Hawk, Bird, Rabbit, Grasshopper, Frog, Snake, Caterpillar, Beetle

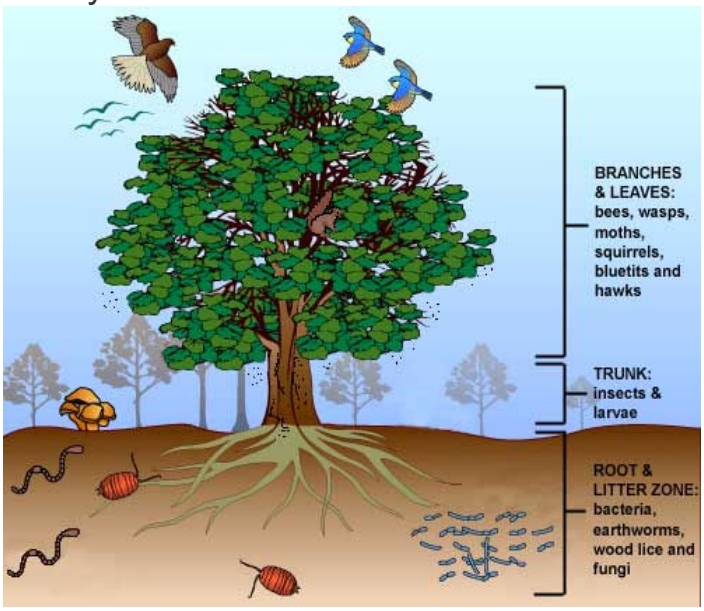
Activity 13._ Relate the two columns

.

Trophic level 1	Here are herbivores. Organisms at this level are also called primary consumers.
Trophic level 2	Here are plants and other autotrophs. Organisms at this level are also called producers.
Trophic level 3	Here are predators that eat herbivores. Organisms at this level are also called secondary consumers.
Trophic level	Here are predators that eat tertiary consumers. Organisms at this level are also called quaternary consumers
Trophic level 5	Here are s predators that eat secondary consumers. Organisms at this level are also called tertiary consumers
Decomposers	start the cycle again. Such as bacteria and fungi

UNIT 2
ECOSYSTEM

Ecosystems



http://www.bbc.co.uk/schools/gcsebitesize/biology/livingthingsenvironment/0habitatsandpopsrev5.shtml

Ecosystem.
An ecosystem is a community of living and non-living things that work together.

Ecosystems can be as large or as small as we decide. Any area you decide to study can be considered an ecosystem.

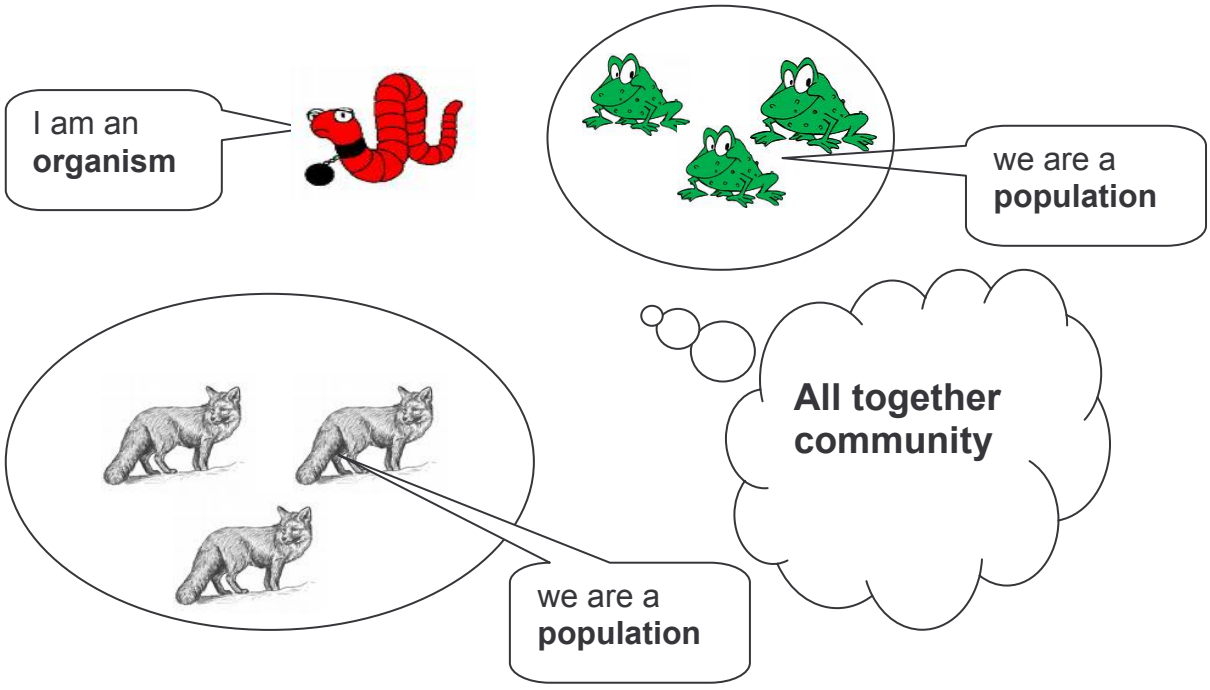
Components of Ecosystems

Some of the more important components are:
soil, atmosphere
sunlight, water,
and living organisms.

An ecosystem is an area where living (**biotic**) and nonliving (**abiotic**) things interact.

LIVING (biotic)	NON-LIVING (abiotic)
Plants	water
Animals	sunlight
Bacteria	soil
Fungi	air

Learn new words!



All the different populations that live in a particular area make up a **Community**

The simple level the organization is called **Organism**

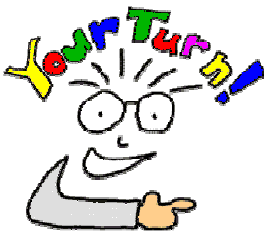
The **Population** includes all the members of the same species that live in one place at one time.
Every community lives in a place with specific abiotic factors, for exemple temperature, humidity, soil

Habitat - a place where a plant or animal can get the food, water, and shelter and space it needs to live.

Read and Think!

Within each ecosystem, there are *habitats* which may also vary in size. A habitat is the place where a *population* lives.
A population is a group of living organisms of the same species that living in the same place at the same time.
All of the populations interact and form a *community*. The community of living things interacts with the non-living world around it to form the ecosystem.
The habitat must supply the needs of organisms, such as food,
water, temperature, oxygen, and minerals. If the population's needs are not met, it will move to a better habitat.
Two different populations can not occupy the same *niche* at the same time, however. So the processes of *competition, predation, cooperation, and symbiosis* occur.

Activity 1_ Find 7 word related to the topic and use them in sentences below.



A	N	D	A	T	R	U	P	L	C	N	M	C	S
F	C	O	M	M	U	N	I	T	Y	X	S	Z	Y
H	Y	A	I	Q	B	G	H	R	P	FJ	J	I	M
U	E	D	M	T	B	L	K	S	T	Z	L	X	B
I	L	F	N	O	I	T	A	L	U	P	O	P	I
P	K	H	A	B	I	T	A	T	N	C	O	A	O
L	H	K	F	O	E	I	E	A	U	I	A	S	S
N	O	I	T	A	D	E	R	P	I	M	C	F	I
V	G	Q	A	E	A	H	L	E	M	U	G	H	S
S	N	O	I	T	A	R	E	P	O	O	C	T	E
Q	B	S	F	G	J	K	R	U	E	T	C	G	B

- A _____ is a group of living organisms of the same species that living in the same place at the same time.
- Two different populations can not occupy the same _____
- All of the populations interact and form a _____

- A _____ is the place where a population lives

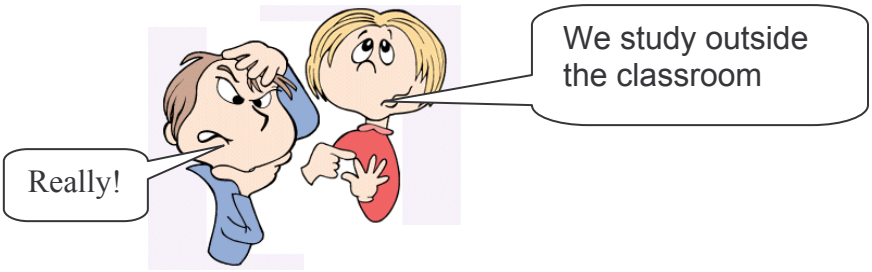
Activity 2._ Underline the odd word out: habitat, community, population, grasshopper, predation, cooperation, symbiosis

Activity 3._ Here there are words related to ecosystems. Use them in sentences. Think of an example, share this with a partner and then make a report

- A population is a group _____
- A habitat is _____
- The community _____
- An organism _____

Activity 4._ Go outside of your classroom and investigate an ecosystem

Materials:
String
Magnifying glass
Thermometer
Sticks
Paper



Method
Use string to mark out a small patch of land to examine.
Record your observations - include all living and non-living things.
Record temperatures
Turn over a small stone. Observe what's beneath the surface.

Questions: 

- Consider the variety of living and non-living things in your ecosystem. Write the name of three populations. Later you will share in the plenary
- How are the survival needs in your ecosystem?

Air? Yes, they need air/ No, they don't need air

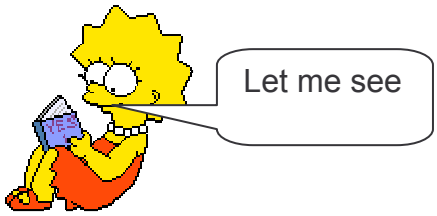
Food?

Water?

Sunlight?

- Think of other populations that could survive in your ecosystem.
- Think of populations that could not survive

Activity 5._ Answer these questions



- What is the name given to a place where plants and animals live?
- What is the collective name for plants and animals of an ecosystem?
- The community of animals, plants and micro-organisms, together with the habitat where they live, is called an...
- Conditions in a habitat make up the environment. Are the following features physical or biological? Tick abiotic or biotic into the boxes.

	abiotic	biotic
Decomposers		
Temperature		
Soil Pathogens		
Producers		
Air		
Predators		
Water		
Consumers		

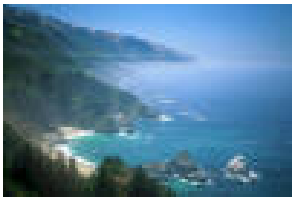
Around the world there are different ecosystems. We can divide ecosystems into two groups

Terrestrial ecosystem

Aquatic ecosystem

Activity 7._ Write down the names of the ecosystems

Forest ecosystem, Coral Reef, Coast ecosystem, Savannah ecosystem, Antarctic Polar ecosystem, Grassland ecosystem

www.eco-pros.com/biodiversity-ecosystems.htm

Human beings tend to produce changes in the ecosystems. Sometimes these

changes imply a substitution of one thing for another. Look at these pictures and make conclusions

Natural Ecosystem

Urban Ecosystem

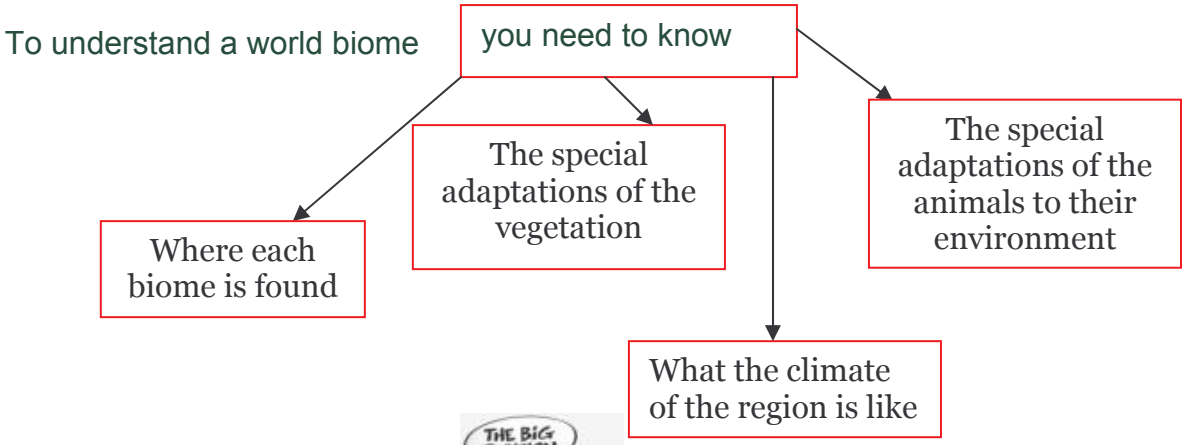
What is the difference between Natural Ecosystem and Urban Ecosystem?

In the first picture In the second picture	there are there are no	Skycrapers Buildings Plants People ships

UNIT 3
BIOMES

What is a Biome?

- A biome is a large geographical area of distinctive plant and animal groups, which are adapted to that particular environment.
- Major biomes include deserts, forests, grasslands, tundra, *and several types of aquatic environments.*
- The climate and geography of a region determines what type of biome can exist in that region.



How many biomes are there?

There is really no completely right answer to this question. Some people say there are only 8 major types of biomes: Tundra, taiga, grasslands, deciduous forest, desert, savannah, rainforest, alpine.

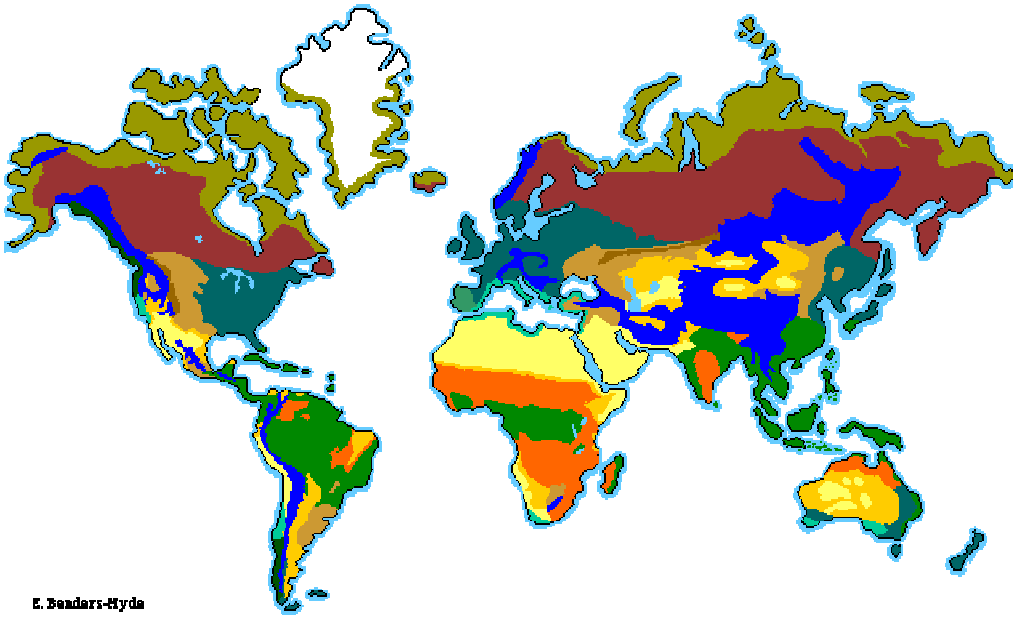
Activity 1._ Match parts of words and write the names of 8 biomes

rain	ous forest	Write them down
Decidu	slands	
alp	forest	
tun	iga	
gras	ine	
de	vannah	
ta	sert	
sa	dra	

Activity 2._ Find five biomes in this word snake

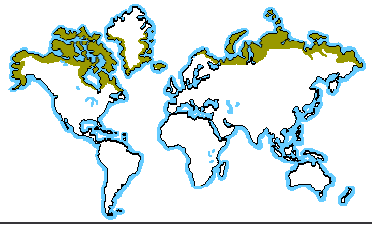
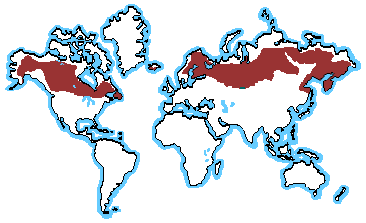
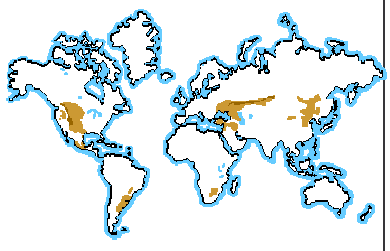
higrasslandsghtaigaktundrajlrainforestvgalpinehjdeciduousforestjdesertsavannahs

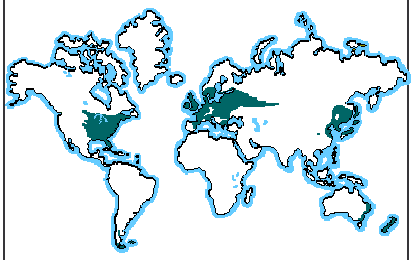
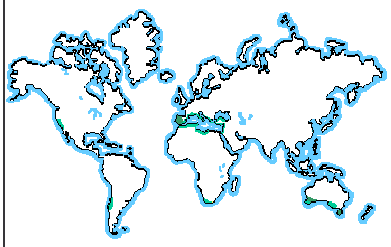
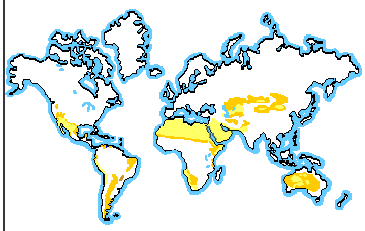
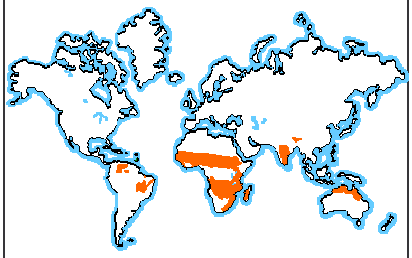
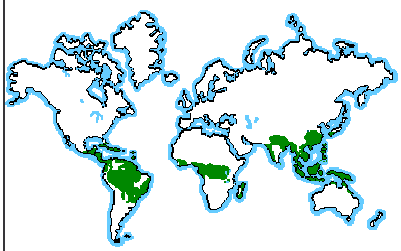
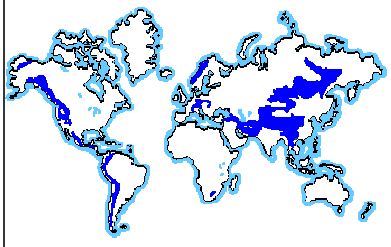
Look at several WORLD BIOMES



Tundra
Taiga
Grasslands
Deciduous forest
Chaparral
Desert
Savannah
Rainforest
Alpine

Location

		Location
	The tundra is located near the North Pole. This biome covers a fifth of the earth's surface.	
	The taiga stretches over Eurasia and North America. This biome is located just below the tundra biome	
	Grasslands are found on every continent except Antarctica	

	The deciduous forests are located in the eastern half of the United States, Canada, and Europe, parts of Russia, China, and Japan.	
	The chaparral biome is found in the west coast of the United States, the west coast of South America, the western tip of Australia and the coastal areas of the Mediterranean	
	Most hot and dry Deserts are near the Tropic of Cancer or the Tropic of Capricorn	
	A savannah is a rolling grassland scattered with shrubs and isolated trees, which can be found between a tropical rainforest and a desert biome	
	Rainforests are located near the equator and are found in Africa, Asia, Australia, and Central and South America	
	Alpine biomes are found in the mountain regions all around the world	

Activity 3._ Complete the sentences with that you can find in the chart above

☞ The tundra is located near the _____

☞ The taiga stretches over _____ and _____

☞ Grasslands are found on every continent except _____

☞ The deciduous forests are located in the eastern half of the United States, Canada, and Europe, parts of Russia, _____, and _____

☞ The chaparral is found in the west coast of the United States, the west coast of South America, the western tip of Australia and _____

☞ Deserts are near the _____ or _____

☞ A savannah can be found between a _____ and _____

☞ Tropical rainforests are located near _____

☞ Alpine biomes are found in _____ regions all around the world

Climate

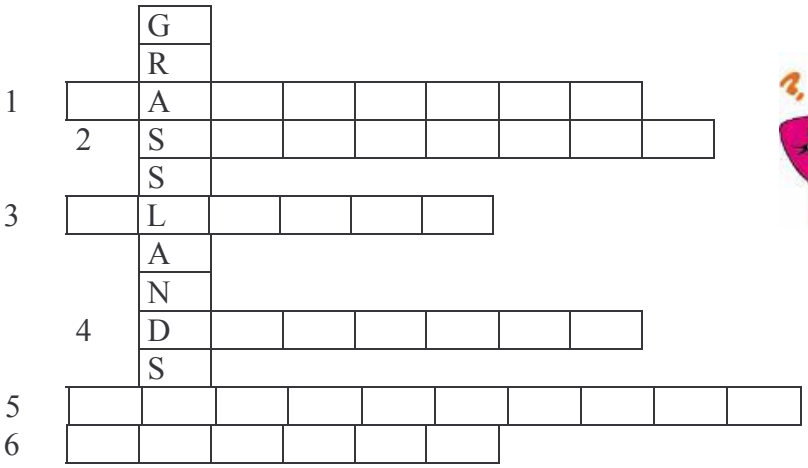
Climate		
Biome	**Temperature**	**Precipitation**
Tundra	The tundra is the coldest of all the biomes on Earth	There is very little rainfall. Tundra is the driest of all the biomes on Earth
Taiga	Long, cold winters, and short, mild, wet summers	Precipitation is relatively high
Grasslands	Warm to hot (often with a cold season)	The rainfall is very irregular
Deciduous forests	Cool season and warm season	Adequate
Dessert	During the day temperatures	Almost none

	are very high and during the night very low	
Savannahs	Savannahs have warm temperatures around the year	A very long dry season (winter), and a very wet season (summer)
Rainforest	It is always warm	Very wet. The rainfall is heavy and constant.
Alpine	In the summer average temperatures range from 10 to 15° C. In the winter the temperatures are below freezing	Snow, high winds, ice, all the typical winter things

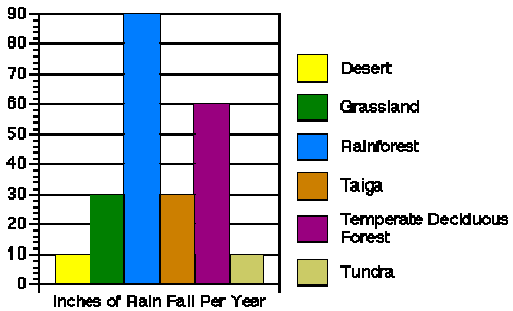
Activity 4._

Use these clues to complete the crossword puzzle related to biomes

1.- Long, cold winters, and short, mild, wet summers
2.- A very long dry season (winter), and a very wet season (summer)
3.- Snow, high winds, ice, all the typical winter things
4.- During the day the temperatures are very high and during the night very low.
5.- It is always warm and lots of rain
6.- It is the coldest and the driest of all biomes in the world



Activity 5.- Look at the graph for each biome. Compare the precipitations



it rains more it rains less it rains as much	in the Desert in the Grasslands in the Rainforest in the Taiga in the Deciduous in the Forest in the Tundra	than in the as in the	Desert Grasslands Rainforest Taiga Deciduous Forest Tundra

Think about it!

- What does adaptation mean?

- The special characteristics that enable plants and animals to be successful in a particular environment are called adaptations.
- Adaptations afford the organism a better chance to survive in its surroundings.

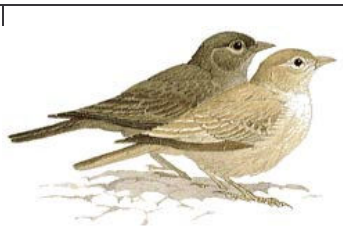
Desert adaptations

Deserts, where the environment is generally hot and extremely dry, provide many examples of how plants and animals are adapted to their surroundings.

Desert plants have two main adaptations:

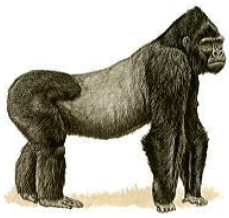
- The ability to collect and store water
- Features that reduce water loss

Desert animals also have many adaptations as well to help them survive in the desert climate. Many are nocturnal, meaning active during the cool night rather than the hot daylight hours.

	Prickly Pear Cactus		Desert Lark

Tropical Rainforest adaptations

The climate of the tropical rainforest is hot and wet. Plants have adaptations that enable them to loose water efficiently. Large leaves of many rainforest plants have pores for this purpose. Roots are thought to provide extra support for trees growing in wet soils.
Life inside the rainforest is dangerous. An animal must be both smart and strong to survive in this environment. The intense competition from other species makes rainforest species the most interesting. There is a huge variety of different animals.

	Giant bamboo		Gorilla

Tundra adaptations

During the short-growing season in the summer, the tundra blooms with a variety of low-growing plants. The plants growing in the tundra are often small and grow close to the ground.
So what plant life is found there?

- Lichens are unusual organisms that often grow on rock surfaces.

Tundra animals: Every animal must adapt in order to survive.

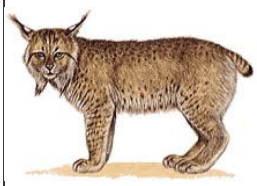
- Some have grown thick fur which turns white in the winter.
- They may have the ability to accumulate thick deposits of fat during the short summer
- Others find a place to hibernate during the winter months.

	Lichens		Polar bear

Taiga adaptations. Taiga is the largest terrestrial biome on earth

There are not many species of plants in the taiga. Not many plants can survive the extreme cold of the taiga winter. Most plants are coniferous trees like pine. Coniferous trees are also known as evergreens. Coniferous trees keep their needles (leaves) all year long.

Life in the **Taiga** is cold and lonely. Some of the animals in the taiga hibernate in the winter; some fly south if they can, while some just cooperate with the environment, which is very difficult.

	Conifers		Linx

Activity 6._ Label the world map with the main terrestrial biomes

Activity 7._ Which the largest terrestrial biome on the earth?

Activity 8._ Complete the chart with exemplars of a plant and an animal found in each of the biomes

	Plants	Animals
Tundra		
Taiga		
Grasslands		
Deciduous forest		

Desert		
Savannahs		
Rainforest		
Alpine		

Activity 9._ what does adaptation mean?

Activity 10._ Try to identify the biomes using the data below

a) It is always warm. Very wet. The rainfall is heavy and constant. Plants have adaptations that enable them to lose water efficiently

b) During the day temperatures are very high and during the night very low. Plants have two main adaptations: the ability to collect and store water and features that reduce water loss

Activity._ 11 Match the parts of sentences

a. Coniferous keep their needles (leaves)) hibernate in the winter

b. Some of the animals in the taiga) all year long

c. Lichens are unusual organisms) accumulate thick deposits of fat during the short summer

d. Tundra animals have the ability to) meaning active during the cool night rather than the hot daylight hours.

e. Some desert animals are nocturnal,) that often grow on rock surfaces

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