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الملف أوراق عمل ومراجعة الوحدة الثالثة Ecosystems in Interactions مع الحل

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### CHAPTER 3 - Interactions in Ecosystems

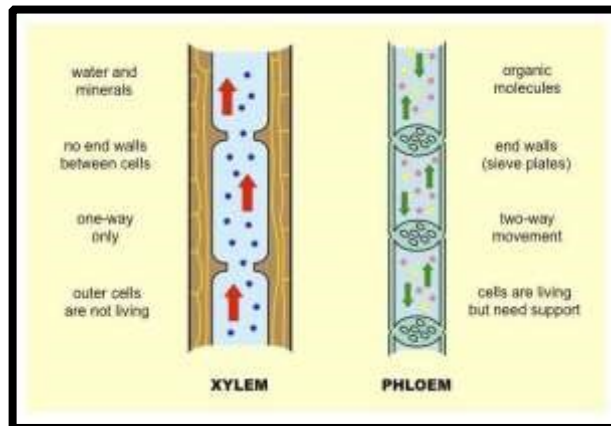
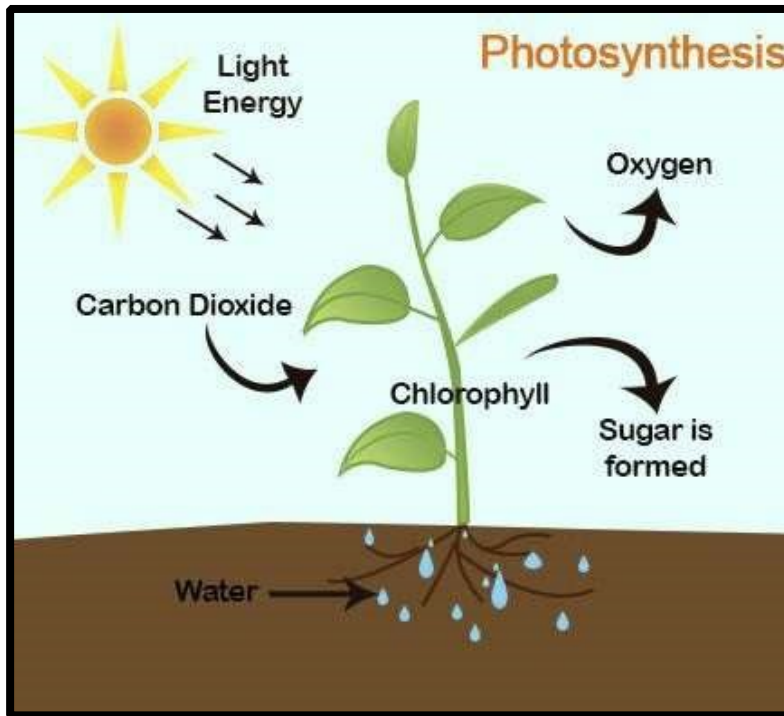
#### • LESSON 1 - Photosynthesis

##### Vocabulary:

<b>Photosynthesis</b>	The process of making food using sunlight, water and carbon-dioxide
<b>Chloroplasts</b>	Plants make their own food in structures called chloroplasts
<b>Chlorophyll</b>	Chemical inside the chloroplast that captures sunlight
<b>Stomata</b>	Tiny pores in a leaf that let carbon-dioxide in and oxygen out
<b>Epidermis</b>	Outer layer of the leaf
<b>Guard cells</b>	Cells that open and close the stomata
<b>Carbohydrate</b>	Sugar that the plant makes as their food
<b>Cellular respiration</b>	The process of breaking sugar into a form that the cell can use as energy.
<b>Transpiration</b>	The loss of water from plant leaves

**PHOTOSYNTHESIS** - Photosynthesis is the process through which plants use water, light and carbon dioxide to create their food and release oxygen into the air.

- Plants need three basic things to live: **water, sunlight, and carbon dioxide**.
- Plants breathe carbon dioxide through the **stomata** which are small pores on the leaves. They open and close to give off and take in gases.
- Plants capture sunlight using a chemical called **chlorophyll** inside the **chloroplasts**. Chlorophyll is green, which is why so many plants appear green.
- Sunlight is captured by the chloroplasts as energy. This energy is used
- to create **sugar** which is food for the plants and **oxygen**.



Plants have 2 vessels to transport things around the plant.

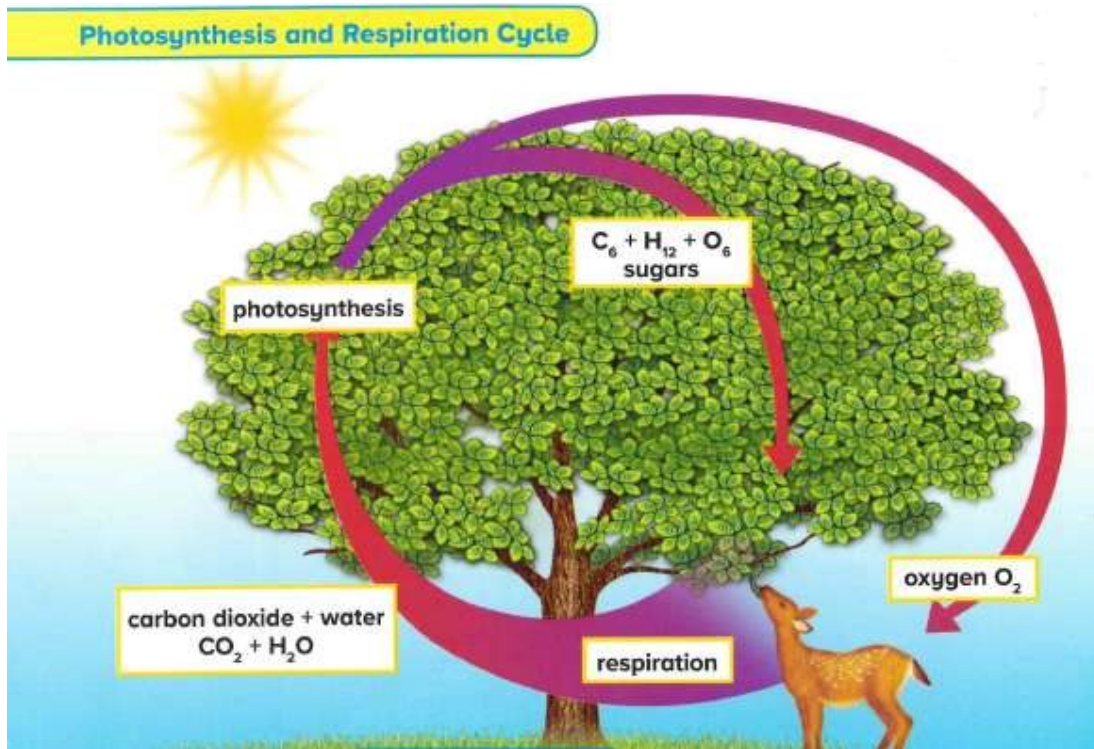
1. **Xylem** - takes water and minerals UP to all plant parts.
2. **Phloem** takes sugar and water from the leaves to other parts of the plant.

The sugar (Glucose) that's produced is a form of Carbohydrate. Carbohydrates are usually stored as Starch or Cellulose in plants.

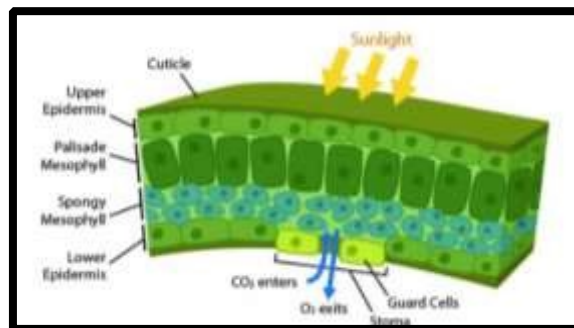
### RESPIRATION

All organisms including plants need energy. This energy is produced through a process called respiration.

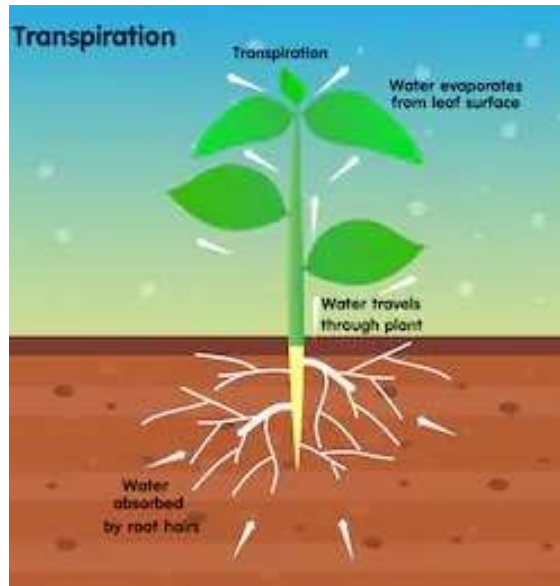




The **Stomata** allows gases and water to move through it. They open and close through the movement of the surrounding **Guard Cells**.



If a plant has too little water, the **Guard Cells** close. If a plant has plenty of the water the **Guard Cells** open and allow evaporating from the plant through the process of **Transpiration**.



**CHAPTER 3 - Interactions in Ecosystems**

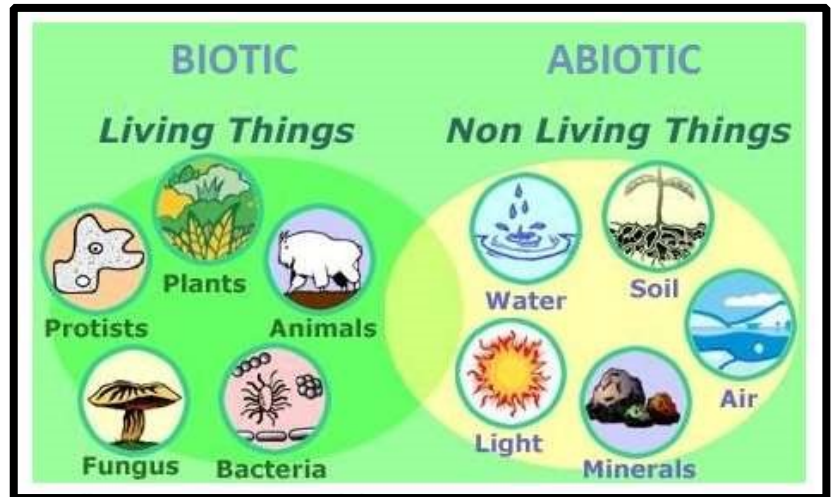
**LESSON 2 - ENERGY FLOW IN ECOSYSTEMS**

**Vocabulary:**

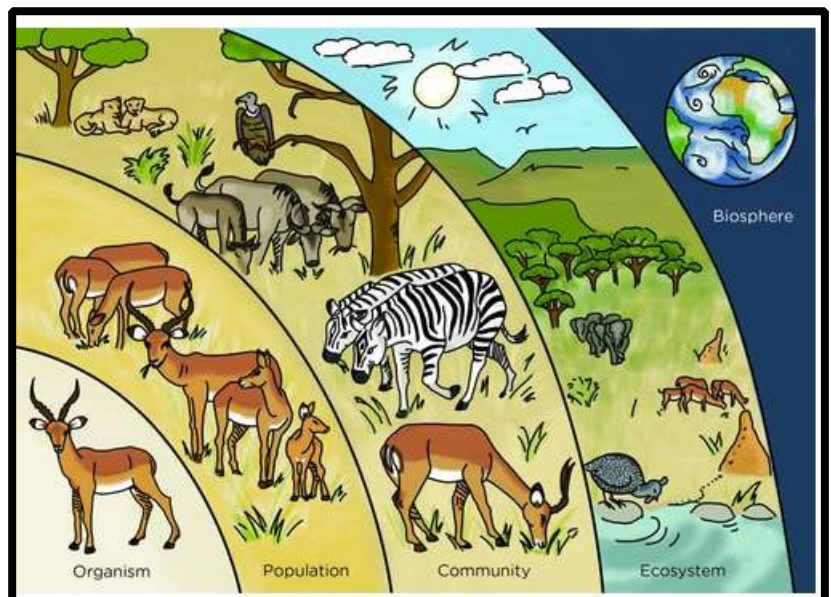
<b>Ecosystem</b>	A community of living and non-living things (sun, cloud,
<b>Community</b>	All the living things in an ecosystem (trees, plants, animals, insects )
<b>Population</b>	Members of one kind of organisms
<b>Abiotic</b>	Non-living things in an ecosystem
<b>Biotic</b>	Living things in an ecosystem
<b>Herbivores</b>	Animals that eat only plants
<b>Carnivores</b>	Animals that eat only meat
<b>Omnivores</b>	Animals that eat plants and meat
<b>Food web</b>	Network of food chains linked together
<b>Predator</b>	Animal that hunts and kills another animal for food
<b>Prey</b>	Animal that is hunted and killed
<b>Producers</b>	Plants that make their own food
<b>Decomposers</b>	Organisms that break down dead animals and plants
<b>Consumers</b>	Any animal which eats other animals or plants

**ECOSYSTEMS**

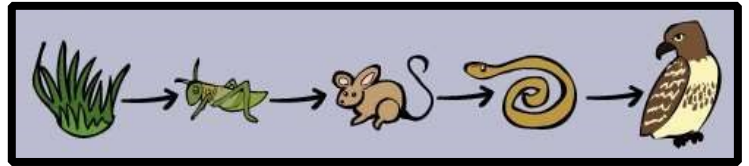
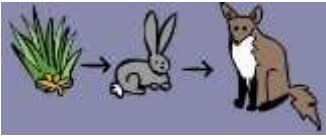
An **environment** refers to the surroundings or dwelling place of all living things while an **ecosystem** is likened to a community that functions as a single unit.



The main **difference between population and community** is that a **population** is a group of individuals of a particular species living **in a** particular ecosystem at a particular time whereas a **community** is a collection of **populations** living **in a** particular ecosystem at a particular time.

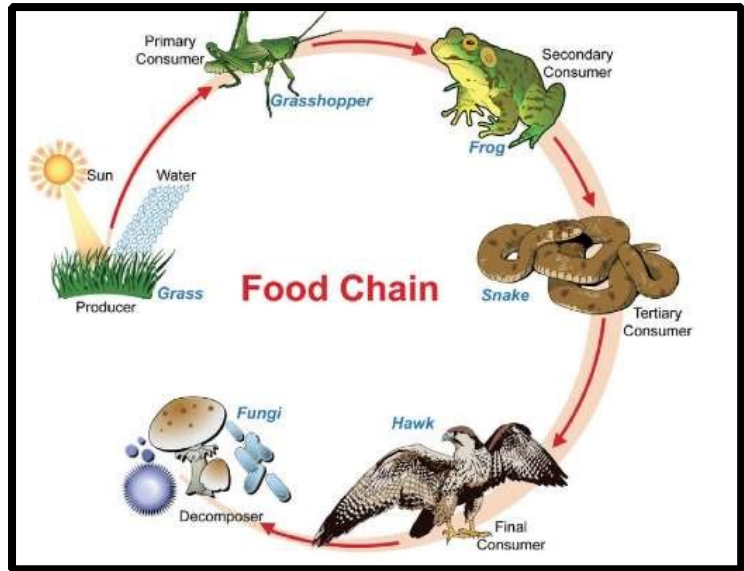
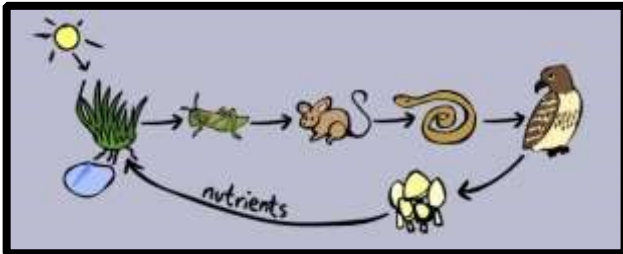


**FOOD CHAINS** - A food chain shows how each living thing gets food, and how nutrients and energy are passed from creature to creature. Food chains begin with plant-life, and end with animal-life. Some animals eat plants, some animals eat other animals. A simple food chain could start with grass, which is eaten by rabbits. Rabbits are eaten by fox.



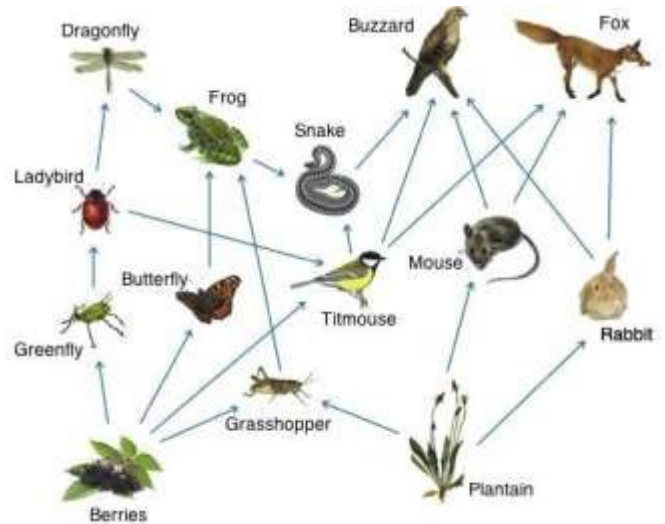
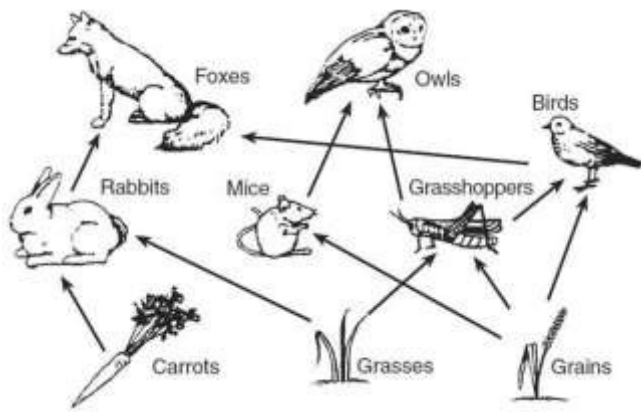
Acorns • Mice • Snakes • Hawks.

After a hawk dies, fungi (like mushrooms) and other decomposers break down the dead hawk, and turn the remains of the hawk into nutrients, which are released into the soil.



**FOOD WEBS** - This consists of more than one Food Chains linked together in some way.

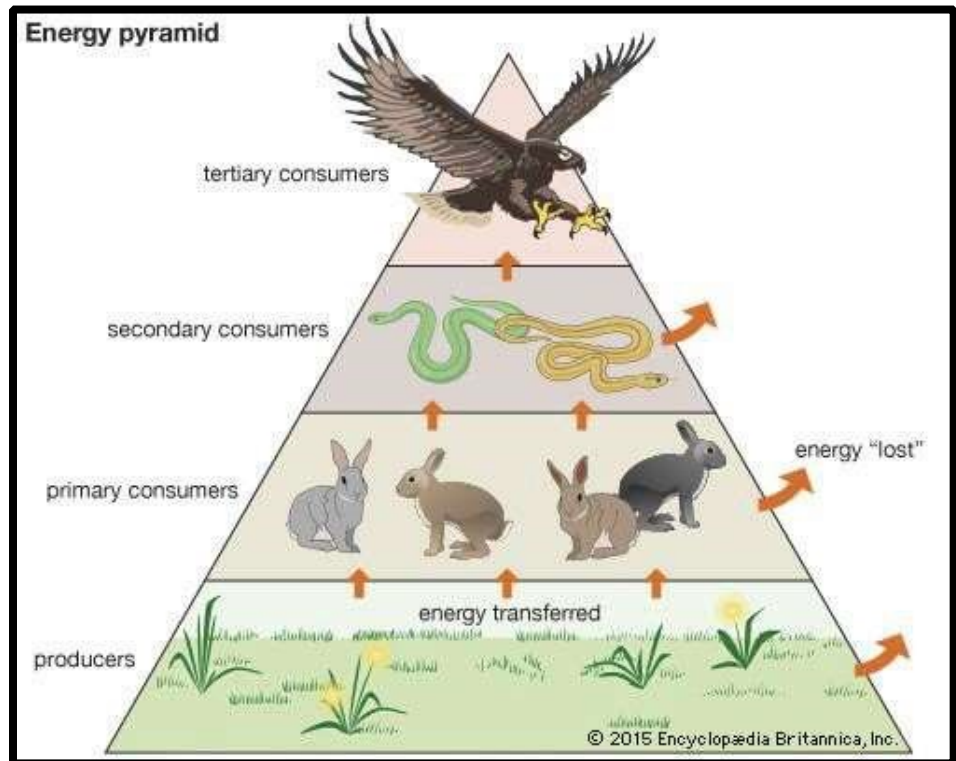




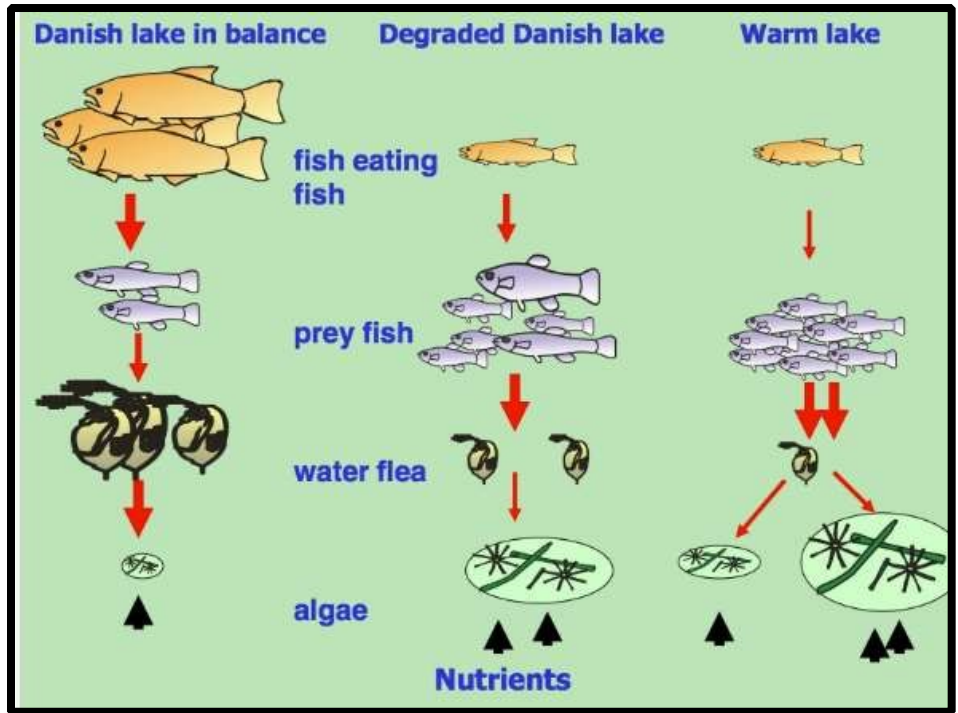
**ENERGY PYRAMID** – The Sun's energy is captured by Plants and used in photosynthesis to produce food.

Plants as all organisms use energy for their survival. Only 10% of this energy is passed on to the Primary Consumer. The same happens with the Primary Consumer which passes on 10% of its energy to the secondary consumer.

The energy available decreases going up the Energy Pyramid.



An imbalance in an ecosystem can cause changes in Food Chains and Food Webs. It can cause certain organisms to increase in numbers or decrease in numbers.



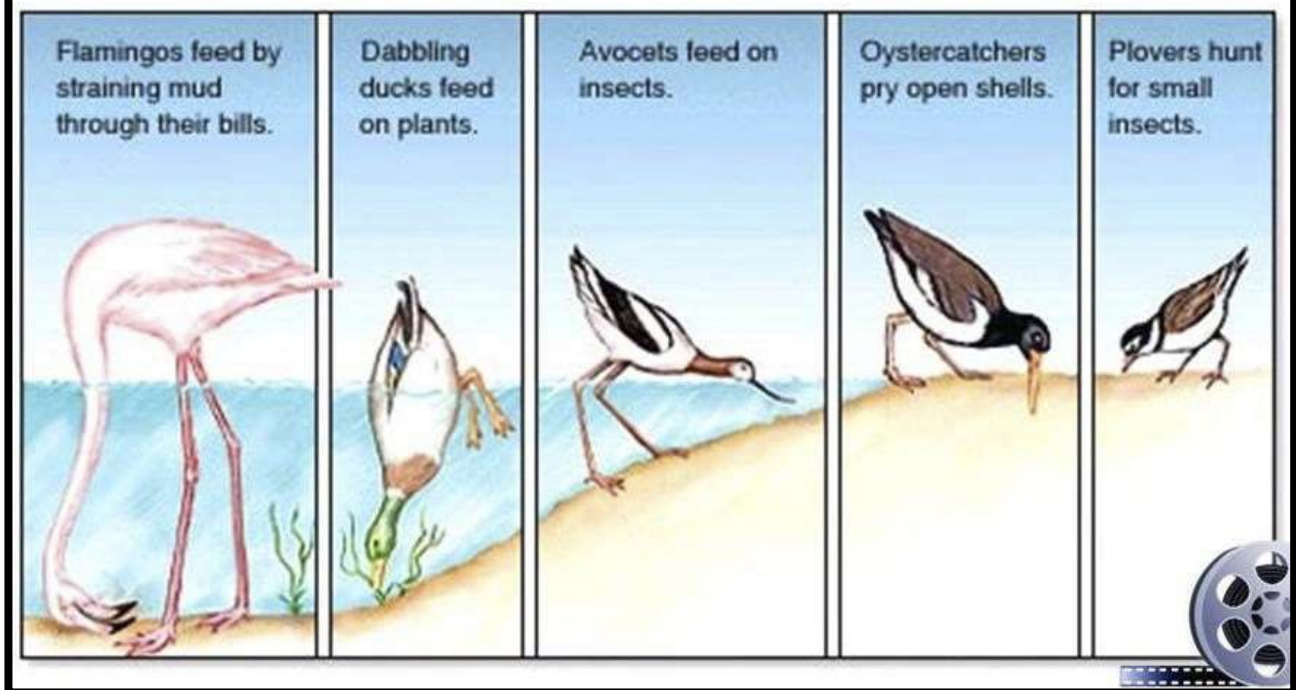
### CHAPTER 3 - Interactions in Ecosystems

#### LESSON 3 - RELATIONSHIPS IN ECOSYSTEMS

**Vocabulary:**

<b>Habitat</b>	Physical place where an organism lives
<b>Niche</b>	The role an organism plays in its habitat
<b>Limiting factor</b>	Any resource that keeps under control growth of populations
<b>Carrying capacity</b>	The largest number of 1 kind of population in an ecosystem
<b>Symbiosis</b>	Relationship between 2 or more kinds of organisms
<b>Mutualism</b>	Relationship where 2 organisms benefit
<b>Commensalism</b>	Relationship where 1 organism benefits but other is not harmed
<b>Parasitism</b>	Relationship where 1 organism benefits but other harmed

An organism's **habitat** is its "address" while its **niche** is its "occupation"



# Habitat

- The habitat is the place where an organism lives out its life.
  - It is where the organism finds food, shelter and mates.

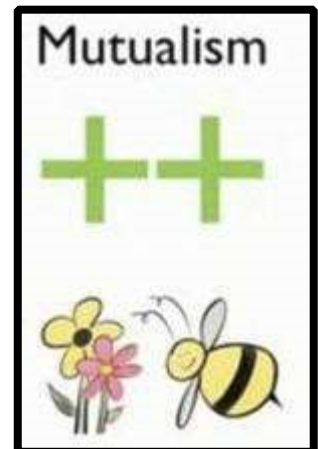


# Niche

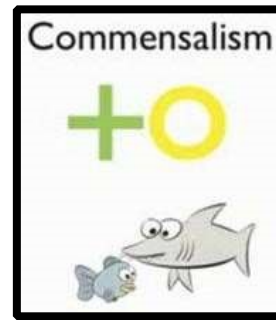
- A niche is its role in the community and how it interacts with the environment.
  - How it obtains food, mates and protection from predators.



There are 3 types of Symbiosis.



## SYMBIOSIS



## Types of Limiting Factors

### Biotic Factors

- Food description 
- Predation description 
- Disease description 
- Parasitism description 
- Invasive species description 
- Competition description 

### Abiotic Factors

- Water description 
  - Living Space description 
  - Global Warming description 
- Combos Biotic/Abiotic Factors
- Habitat Destruction description 
  - Shelter description 
  - Soil description 

**CARRYING CAPACITY:** No population can grow indefinitely. Due to limited resources there's always a limit as to how many individuals there are in any population.

**CHAPTER 3 - Interactions in Ecosystems****LESSON 4 - ADAPTATIONS AND SURVIVAL****Vocabulary**

<b>Adaptation</b>	any characteristic that helps an organism survive.”
<b>Structural adaptation</b>	Changes to body parts to survive in an environment
<b>Behavioural adaptation</b>	Changes to how you act to survive in an environment
<b>Migration</b>	Traveling to a warmer place
<b>Hibernation</b>	Doing no activity when the weather is cold (bears sleeping)
<b>Mimicry</b>	An animal which look like an unpleasant animal.
<b>Camouflage</b>	Ability for an organism to blend in with the environment.

**STRUCTURAL ADAPTATIONS**

long legs to run with;  
 protective coloration to hide from predators;  
 beaks that can extract nectar from certain flowers;  
 fur coats for protection from cold

**BEHAVIOURAL ADAPTATIONS**

wolves traveling in packs;  
 hunting at night;  
 migration;  
 hibernation when there is no food

**ADAPTATIONS:** any behavioral or physical characteristics of an animal that help it to survive in its environment.

BEHAVIORAL	STRUCTURAL
The things organisms <b>DO</b> to survive.	The <b>physical features</b> of an organism that help it survive.
Birds migrate in winter to get food all year. 	Thick fur on a polar bear to keep it warm. 
 Chipmunks collect and store food so they can find it in winter.	Ducks have webbed feet to help them swim. 
Opossums "play dead" to confuse predators. 	Hawks have sharp claws to help them catch and kill their prey. 
Woodchucks hibernate through a long winter. 	 Rabbits have large ears so they can hear and avoid danger.
Plants grow towards the sunlight to capture more. 	Cactus have long roots to get water in the desert. 

## Mimicry Helps Animals Hide

- Some animals use **mimicry** to avoid being seen by predators
- **Mimicry** is when an animal adapts to look like another animal in order to deceive a predator
  - The Viceroy butterfly mimics the characteristics of the Monarch butterfly to avoid its predators



Viceroy Butterfly



Monarch Butterfly



**OWL BUTTERFLY MIMICRY:** Eye spots on wings resemble owl eyes. When the butterfly spreads its wings, the eye spots may scare predators.

© iStockphoto.com

(Conant 1958)



Eastern Coral Snake  
(venomous)

Scarlet King Snake  
(non-venomous)



## What is camouflage?

- ❑ Camouflage is a kind of colouring, body shape, and/or behaviour animals use to protect themselves.
- ❑ Camouflage helps animals hide by blending in with their environment.



United Arab Emirates  
Ministry of Education

Grade: 5



## Chapter 3 Practice Questions

Please choose the correct answer.

- The process of making food in a plant is called ----- o transpiration o photosynthesis o fertilization o respiration
- Which of these is not needed to make food in a plant?  
o Sunlight o Carbon Dioxide o Chlorophyll o Flowers
- The tiny pores or openings in leaves that take in the carbon dioxide are called o stomata o xylem o phloem o cuticle

- **Phloem:** o the tissue that carried the water from the roots to the leaves o is tissue where the sugars transported to the plant's cells through it. o are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant. o the outermost layer of a leaf which has the cells where the photosynthesis occurs

- **The tubes that bring water from the roots to the leaves are called** o xylem o phloem o stomata o cuticle

- **The animals breathe out what that plants need for photosynthesis?** o oxygen o carbon dioxide o chlorophyll o water

- **Which gas is needed for photosynthesis?** o Oxygen o Carbon dioxide o Hydrogen o Nitrogen

- **What type of energy is needed for photosynthesis to happen?** o Light o Heat o Electrical

- **The waste by-product of photosynthesis is:** o Oxygen o Carbon dioxide o Glucose o Nitrogen

- **In addition to sunlight, what other raw material is required for photosynthesis to take place?** o sugar and water o water and oxygen o carbon dioxide and water o oxygen and carbon dioxide

- **Photosynthesis can be summarised by which word equation?** o carbon dioxide + oxygen → glucose + water o oxygen + glucose → carbon dioxide + water o carbon dioxide + water → glucose + oxygen

• **Where does photosynthesis take place?** o xylem o phloem o stomata o chloroplast

• **Cuticle:**

o the tissue that carried the water from the roots to the leaves o a layer that prevents water loss o is tissue where the sugars transported to the plant's cells through it.  
o the outermost layer of a leaf which has the cells where the photosynthesis occurs

• **What is the first step in photosynthesis?**

o Producing sugar o Trapping sunlight o Producing water

• **What are the products of photosynthesis?**

o water and oxygen o sugar and water o sugar and oxygen o water and carbon dioxide

• **The small openings in the underside of a leaf are called -----**

----- o Epidermis o Xylem o Stomata o Phloem

• **The loss of water through plant leaves is -----** o

Transpiration o Photosynthesis o Chlorophyll o Respiration

• **The outer layer of cells on a leaf is the-----** o

Stomata. o Epidermis o Stem o Chloroplast

• **The process by which plants make food is -----** o

Transpiration o Growing o Photosynthesis o Respiration

• **Three things needed by plants for the production of food are:**

o Water, oxygen, and sunlight. o

Water, carbon dioxide, and fertilizer

o Water, oxygen, and sugar o Water, carbon dioxide, and sunlight

• **The green pigment in chloroplasts that enable a plant to absorb light energy to make**

**food is -----** o Carbon dioxide o Chlorophyll o Chloroplast o Stem

• **Plants take in -----from the air.** o Carbon dioxide o Chlorophyll o Oxygen o Energy

• **Xylem:**

o the tissue that carried the water from the roots to the leaves o a layer that prevent water loose o is tissue where the sugars transported to the plant's cells through it.

o are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.

• ----- **is released by plants as a by-product of photosynthesis.**

o Energy o Carbon dioxide o Oxygen o Chlorophyll

• **What three things do plants need for the process of photosynthesis?**

o Sunlight, oxygen, and sugar o

Sunlight, carbon dioxide, and water

o Carbon dioxide, oxygen, and soil o

Sunlight, soil, and water

• **If plants breathe in carbon dioxide, what do they breathe out?** o Nitrogen o

Oxygen o Carbon monoxide o Hydrogen o Helium

• **Epidermis:**

o the tissue that carried the water from the roots to the leaves o a layer that prevent water loose o is tissue where the sugars transported to the plant's cells through it.

o the outermost layer of a leaf which has the cells where the photosynthesis occurs

• **What is the compound that plants use to absorb the energy from light?**

o Carbon Dioxide o Water o Nitrogen o Chlorophyll

• **What colour is chlorophyll?**  Red  Blue  Yellow  Green

• **All plants need the same amount of sun to make enough food to be healthy.**

TRUE  FALSE

• **Where in plants does most photosynthesis occur?**

roots  flowers  leaves  All parts of a plant perform photosynthesis.

• **Stomata:**

the tissue that carried the water from the roots to the leaves  a layer that prevent water loose  is tissue where the sugars transported to the plant's cells through it.

are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.

the outermost layer of a leaf which has the cells where the photosynthesis occurs

• **The tissue where the sugars transported to the plant's cells through it -----**  xylem  phloem  stomata  cuticle

• **A layer that prevent water loss-----**  phloem  stomata  xylem  cuticle

**Match with the correct answer:**

**A. Chloroplast 1. The green pigment in leaves which collects Energy from the sun**

**B. Stomata 2. Invisible gas given off by plants is a by-product of photosynthesis**

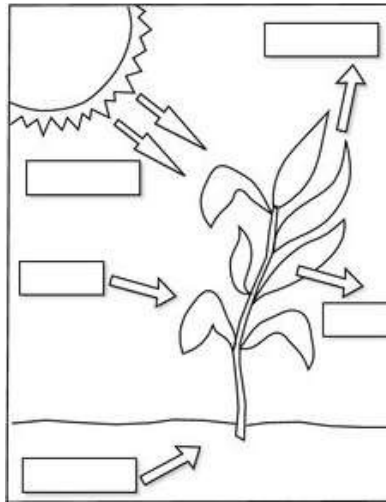
**C. Oxygen 6. Form of sugar produced during photosynthesis**

**D. Glucose 4. The structure in which photosynthesis takes place**

**E. Chlorophyll 5. Small openings through which gas move in and out of the leaves F. Carbon dioxide 6. Invisible gas taken in by plants for photosynthesis**

**Label the below diagram:**

**Light    Water    Oxygen    Carbon Dioxide    Glucose**



**Xylem   Epidermis   Phloem   Chloroplast   Chlorophyll   Cuticle   Sunlight   Stomata**  
**Carbohydrate   Transpiration**

- ----- is a structure inside the plant cell where the plant making their own food.
- The tissue that carried the water from the roots to the leaves -----
- -----is a form of energy that plants use to make their food
- -----is a green chemical found in the chloroplast inside the leaf cells and it capture energy from the sun.
- -----are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.
- The outermost layer of a leaf which has the cells where the photosynthesis occurs is -----
- ----- a layer that prevent water loss
- -----is tissue where the sugars transported to the plant's cells through it.
- A name given to a group of substance made from carbon, hydrogen and oxygen is -----
- The loss of water from the plant leaves is known as -----

• **In a food chain, -----is passed on from one organism to another** o Waste o Sunlight o Energy o Gas

• **Which of the following descriptions about the organization of an ecosystem is correct?**

- o Communities make up species, which make up populations.
- o Populations make up species, which make up communities. o
- Species make up communities, which make up populations. o
- Species make up populations, which make up communities.

• **What is a consumer?**

- o An animal that does not make its own food
- o an animal that eats other animals
- o a living organism that uses sunlight to make its own food
- o an animal that has no known predators

• **Producers are ----- because they get energy from the sun, make their own food, and make food for some animals.**

- o not an important part of the food chain
- o animals such as deer and zebras
- o the first part of the food chain
- o break nutrients down into the soil

• **What is a food chain?**

- o model the feeding relationships between organisms in an ecosystem
- o An animal that eats other animals
- o A living organism that is able to use sunlight to make its own food
- o An animal that has no known predators

• **What is a producer?**

- o An animal that eats other animals
- o A living organism that uses sunlight to make its own food
- o An animal that only eats plants
- o An animal that has no known predators

• **A carnivore is an animal that only eats meat.**

- o True
- o False

• **Food chain is a series of relationships between members of an ecosystem so that ----- can be transferred between them.**

- o food
- o sunlight
- o energy
- o water

• An example of a food chain in a pond environment would be: algae: water bug: fish: otter. In this example the \_\_\_\_\_ is at the bottom of the food chain.

algae

water bug

fish

otter

• Which food chain correctly describes the flow of energy in an ecosystem?

Grass - cow - human

Caterpillar – leaf - human

Cow – grass - human

Leaf – bird – caterpillar

• Rabbits eat grass and other plants to survive, but they do not eat animals. What kind of animal are rabbits?

Decomposers

Carnivores

Producers

Herbivores

• How do decomposers help other organisms in an ecosystem?

They break down dead organisms and add nutrients back to the soil that plants use.  They use the sunlight to make their own food that other organisms eat for energy.  They help disperse seeds for plant growth.

Decomposers do not help other organisms in an ecosystem

• In what order do a falcon, grass, and rabbit form a food chain in a meadow?

Falcon----->grass----->rabbit

Grass----->falcon----->rabbit

Rabbit----->grass----->falcon

Grass----->rabbit----->falcon

• A predator is an animal that hunts for food  True  False



• **An animal that eats other animals is known as a-----**

- o herbivore
- o food chain
- o carnivore
- o omnivore

• **Which of the following lists only consumers?**

- o Hawks, lizards, chipmunks
- o Acorns, squirrels, rabbits
- o Grass, chipmunks, eagles
- o Mice, squirrels, grass

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

- o A food chain is larger than a food web
- o A food chain is the combination of all the food webs in an ecosystem
- o A food web is smaller than a food chain
- o A food web is the combination of all the food chains in an ecosystem

• **What is the name of an animal that only eats meat?**

- o carnivore
- o human
- o omnivore
- o herbivore

• ----- **break down dead plants and animals.**

- o decomposers
- o producers
- o consumers
- o prey

• **The living and non-living things that interact in an environment is called a -----**

- o food chain
- o consumer
- o ecosystem
- o food web

• **An organism that makes its own food is a-----** o Producer o Decomposer

- o food web
- o food chain
- o consumer

• A -----shows how energy passes from one organism to another in an ecosystem.

- Omnivore
- food web
- herbivore
- food chain

• An organism that eats other organisms is called a -----  Producer

- food chain  ecosystem  Consumer

• A-----shows how food chains are linked together.

- consumer
- food web
- producer
- food chain

• An animal that eats plants is called a-----  herbivore

- carnivore  food web  omnivore

• An animal that eats both plants and animals is called a-----

- herbivore  omnivore  carnivore  food chain

• Producers use energy from the sun.

- True  False

• The organisms hunted by predators are called-----  predators

- consumers  producers  prey

• All members of a single species in an area at a given time is a-----

- ecosystem  population  community  food chain

• Food chains begin with ----- that make their own food.

- o decomposers
- o producers o
- consumers o
- energy

• **Nutrients from dead organisms are recycled by \_\_\_\_\_.**

- o decomposers
- o consumers
- o producers o
- scavengers

• **An example of omnivores is \_\_\_\_\_** o mice o squirrels o bobcats o hawks

• **Vultures, raccoons, jackals, crows are examples of \_\_\_\_\_** o producers o scavengers o decomposers o consumers

• **The top of the energy pyramid represents the \_\_\_\_\_** o Producer o Consumer o carnivores o Decomposer

• **All of the following are omnivores except \_\_\_\_\_** o raccoons o mice o some crabs o bacteria

• **The diagram shows \_\_\_\_\_** o food chain o energy pyramid o ecosystem o food web



• **What is an animal that is eaten by a predator?**

- o Producer o
- Prey o
- Consumer o
- Decomposer

• -----is a living thing that can make its own food.

o Producer o

Consumer o

Predator o

Decomposer

• **All food chains start with**----- o the plant o the sun o the predator o the prey

• **Lions, tigers and other big cats are** ----- o predators o Prey o Producers o Herbivores

• **Organisms that eat other organisms, they can be herbivores, carnivores, or omnivores are called**

-----

o predator o

prey o

consumer o

producer

• **The bottom of the energy pyramid represents the** -----

o Producer o Consumer o Carnivores o Decomposer

• **Community is** -----

o all living (biotic) and non-living (abiotic) things in an environment o all members of a single species in an area at a given time o made from many different populations including all the living things in an ecosystem

**Fill in the blank with the right word**

**Abiotic    Population    Ecosystem    Biotic    Community**

• ----- are living things like plant and animals

• -----are non-living things like soil, sunlight, air, and water

- All living (biotic) and non-living (abiotic) things in an environment are -----
- All members of a single species in an area at a given time is a -----
- -----is made from many different populations including all the living things in an ecosystem

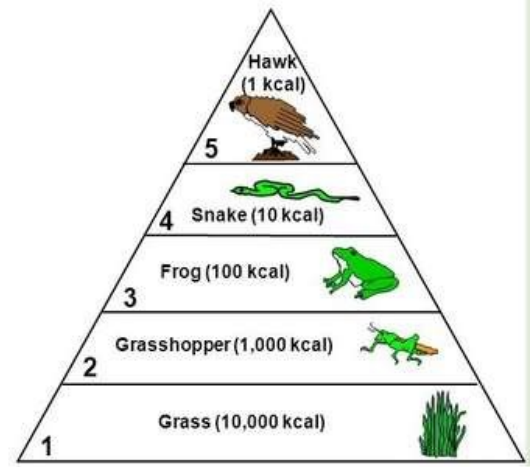
**Choose the correct answers.**

- A. Omnivores animals that eat producers (plants)
- B. Carnivores organisms that obtain energy by consuming wastes and dead organisms
- C. Herbivores animals that eat other animals
- D. Decomposers a consumer that eats the remains of dead animals that it didn't hunt or kill
- E. Scavengers are animals that eat both plants and other animals

• **Fill the blank with correct information**

• **Please look at the following diagram and answer the following questions**

- The diagram represents -----
- What represents the producer in the diagram? -----
- What represents the herbivores in the diagram? -----
- What represents the carnivores in the diagram? -----



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## Chapter 3 Practice Questions Answers

**Please choose the correct answer.**

- **The process of making food in a plant is called -----** o transpiration o **photosynthesis** o fertilization o respiration

• **Which of these is not needed to make food in a plant?**

- o Sunlight o Carbon Dioxide o Chlorophyll o **Flowers**

- **The tiny pores or openings in leaves that take in the carbon dioxide are called o stomata** o xylem o phloem o cuticle

- **Phloem:** o the tissue that carried the water from the roots to the leaves o is tissue where the sugars transported to the plant's cells through it.
  - o are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.
  - o the outermost layer of a leaf which has the cells where the photosynthesis occurs
- **The tubes that bring water from the roots to the leaves are called** o **xylem** o phloem
  - o stomata o cuticle
- **The animals breathe out what that plants need for photosynthesis?**
  - o oxygen o **carbon dioxide** o chlorophyll o water
- **Which gas is needed for photosynthesis?**
  - o Oxygen o **Carbon dioxide** o Hydrogen o Nitrogen
- **What type of energy is needed for photosynthesis to happen?**
  - o **Light** o Heat o Electrical
- **The waste by-product of photosynthesis is:** o **Oxygen** o Carbon dioxide o Glucose o Nitrogen
- **In addition to sunlight, what other raw material is required for photosynthesis to take place?**
  - o sugar and water o water and oxygen o **carbon dioxide and water** o oxygen and carbon dioxide
- **Photosynthesis can be summarised by which word equation?**
  - o carbon dioxide + oxygen → glucose + water o oxygen + glucose → carbon dioxide + water o **carbon dioxide + water → glucose + oxygen**

• **Where does photosynthesis take place?** o xylem o phloem o stomata o chloroplast

• **Cuticle:**

o the tissue that carried the water from the roots to the leaves o a layer that prevents water loss o is tissue where the sugars transported to the plant's cells through it.  
o the outermost layer of a leaf which has the cells where the photosynthesis occurs

• **What is the first step in photosynthesis?**

o Producing sugar o Trapping sunlight o Producing water

• **What are the products of photosynthesis?**

o water and oxygen o sugar and water o sugar and oxygen o water and carbon dioxide

• **The small openings in the underside of a leaf are called -----**

----- o Epidermis o Xylem o Stomata o Phloem

• **The loss of water through plant leaves is -----** o

Transpiration o Photosynthesis o Chlorophyll o Respiration

• **The outer layer of cells on a leaf is the-----** o

Stomata. o Epidermis o Stem o Chloroplast

• **The process by which plants make food is -----** o

Transpiration o Growing o Photosynthesis o Respiration

• **Three things needed by plants for the production of food are:**

o Water, oxygen, and sunlight. o

Water, carbon dioxide, and fertilizer

o Water, oxygen, and sugar o Water,

carbon dioxide, and sunlight

• **The green pigment in chloroplasts that enable a plant to absorb light energy to make**

food is ----- o Carbon dioxide o Chlorophyll o Chloroplast o Stem

• Plants take in -----from the air. o Carbon dioxide o Chlorophyll o Oxygen o Energy

• Xylem:

o the tissue that carried the water from the roots to the leaves o a layer that prevent water loose o is tissue where the sugars transported to the plant's cells through it.

o are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.

• ----- is released by plants as a by-product of photosynthesis.

o Energy o Carbon dioxide o Oxygen o Chlorophyll

• What three things do plants need for the process of photosynthesis?

o Sunlight, oxygen, and sugar o

Sunlight, carbon dioxide, and water

o Carbon dioxide, oxygen, and soil o

Sunlight, soil, and water

• If plants breathe in carbon dioxide, what do they breathe out? o Nitrogen o

Oxygen o Carbon monoxide o Hydrogen o Helium

• Epidermis:

o the tissue that carried the water from the roots to the leaves o a layer that prevent water loose o is tissue where the sugars transported to the plant's cells through it. o the outermost layer of a leaf which has the cells where the photosynthesis occurs

• What is the compound that plants use to absorb the energy from light?

o Carbon Dioxide o Water o Nitrogen o Chlorophyll



• What colour is chlorophyll? o Red o Blue o Yellow o **Green**

• All plants need the same amount of sun to make enough food to be healthy.

o TRUE o **FALSE**

• Where in plants does most photosynthesis occur?

o roots o flowers o **leaves** o All parts of a plant perform photosynthesis.

• **Stomata:**

o the tissue that carried the water from the roots to the leaves o a layer that prevent water loose o is tissue where the sugars transported to the plant's cells through it.

o **are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.**

o the outermost layer of a leaf which has the cells where the photosynthesis occurs

• **The tissue where the sugars transported to the plant's cells through it** ----- o xylem o **phloem** o stomata o cuticle

• **A layer that prevent water loss**----- o phloem o stomata o xylem o **cuticle**

Match with the correct answer:

A. **Chloroplast** **1. The green pigment in leaves which collects Energy from the sun**

B. **Stomata** **2. Invisible gas given off by plants is a by-product of photosynthesis**

C. **Oxygen** **6. Form of sugar produced during photosynthesis**

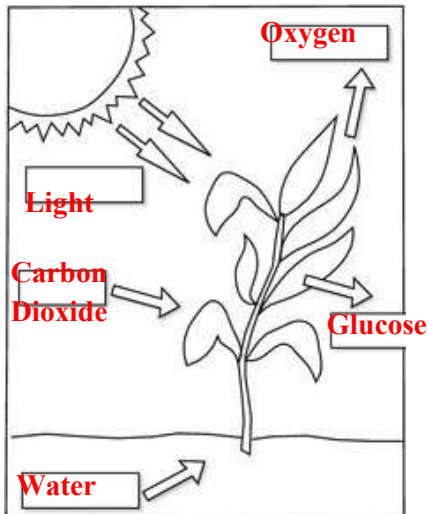
D. **Glucose** **4. The structure in which photosynthesis takes place**

E. **Chlorophyll** **5. Small openings through which gas move in and out of the leaves** F. Carbon dioxide **6.**

Invisible gas taken in by plants for photosynthesis

Label the below diagram:

Light Water Oxygen Carbon Dioxide Glucose



**Xylem Epidermis Phloem Chloroplast Chlorophyll Cuticle Sunlight Stomata**  
**Carbohydrate Transpiration**

- **Chloroplast** is a structure inside the plant cell where the plant making their own food.
- The tissue that carried the water from the roots to the leaves **Xylem**
- **Sunlight** is a form of energy that plants use to make their food
- **Chlorophyll** is a green chemical found in the chloroplast inside the leaf cells and it capture energy from the sun.
- **Stomata** are tiny pores in the plant leaves and also in some stems where the carbon dioxide need to carry out photosynthesis enters from the air to the plant.
- The outermost layer of a leaf which has the cells where the photosynthesis occurs is **Epidermis**
- **Cuticle** a layer that prevent water loss
- **Phloem** is tissue where the sugars transported to the plant's cells through it.
- A name given to a group of substance made from carbon, hydrogen and oxygen is **Carbohydrate** • The loss of water from the plant leaves is known as **Transpiration**

• **In a food chain, -----is passed on from one organism to another** o Waste o Sunlight o **Energy** o Gas

• **Which of the following descriptions about the organization of an ecosystem is correct?**

- o Communities make up species, which make up populations.
- o Populations make up species, which make up communities. o
- Species make up communities, which make up populations. o
- Species make up populations, which make up communities.**

• **What is a consumer?**

- o An animal that does not make its own food
- an animal that eats other animals
- o a living organism that uses sunlight to make its own food
- o an animal that has no known predators

**• Producers are ----- because they get energy from the sun, make their own food, and make food for some animals.**

- o not an important part of the food chain
- o animals such as deer and zebras  the first part of the food chain
- o break nutrients down into the soil

**• What is a food chain?**

- model the feeding relationships between organisms in an ecosystem
- o An animal that eats other animals
- o A living organism that is able to use sunlight to make its own food
- o An animal that has no known predators

**• What is a producer?**

- o An animal that eats other animals
- o A living organism that uses sunlight to make its own food
- o An animal that only eats plants
- o An animal that has no known predators

**• A carnivore is an animal that only eats meat.**  True  False

**• Food chain is a series of relationships between members of an ecosystem so that -----can be transferred between them.**

- o food
- o sunlight
- o energy
- o water

• An example of a food chain in a pond environment would be: algae: water bug: fish: otter. In this example the \_\_\_\_\_ is at the bottom of the food chain.

algae

water bug

fish

otter

• Which food chain correctly describes the flow of energy in an ecosystem?

Grass - cow - human

Caterpillar – leaf - human

Cow – grass - human

Leaf – bird – caterpillar

• Rabbits eat grass and other plants to survive, but they do not eat animals. What kind of animal are rabbits?

Decomposers

Carnivores

Producers

Herbivores

• How do decomposers help other organisms in an ecosystem?

They break down dead organisms and add nutrients back to the soil that plants use.  They use the sunlight to make their own food that other organisms eat for energy.  They help disperse seeds for plant growth.

Decomposers do not help other organisms in an ecosystem

• In what order do a falcon, grass, and rabbit form a food chain in a meadow?

Falcon----->grass----->rabbit

Grass----->falcon----->rabbit

Rabbit----->grass----->falcon

Grass----->rabbit----->falcon

• A predator is an animal that hunts for food  True  False

• An animal that eats other animals is known as a-----

herbivore  food chain  carnivore  omnivore

• Which of the following lists only consumers?

Hawks, lizards, chipmunks

Acorns, squirrels, rabbits

Grass, chipmunks, eagles

Mice, squirrels, grass

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

A food chain is larger than a food web

A food chain is the combination of all the food webs in an ecosystem

A food web is the combination of all the food chains in an ecosystem

• What is the name of an animal that only eats meat?

carnivore

human

omnivore

herbivore

• ----- break down dead plants and animals.

decomposers

producers

consumers

prey

• The living and non-living things that interact in an environment is called a -----

food chain

consumer

ecosystem

food web

• An organism that makes its own food is a-----  Producer

Decomposer

food web

food chain

consumer

• A -----shows how energy passes from one organism to another in an ecosystem.

- Omnivore
- food web
- herbivore
- food chain

• An organism that eats other organisms is called a -----  Producer  food chain  ecosystem  Consumer

• A-----shows how food chains are linked together.

- consumer
- food web
- producer
- food chain

• An animal that eats plants is called a-----  herbivore  carnivore  food web  omnivore

• An animal that eats both plants and animals is called a-----  herbivore  omnivore  carnivore  food chain

• Producers use energy from the sun.

- True
- False

• The organisms hunted by predators are called-----  predators  consumers  producers  prey

• All members of a single species in an area at a given time is a-----  ecosystem  population  community  food chain

• Food chains begin with ----- that make their own food.

- decomposers
- producers
-

consumers o  
energy

• **Nutrients from dead organisms are recycled by \_\_\_\_\_.**

decomposers

consumers

producers o

scavengers

• **An example of omnivores is -----  mice o**

squirrels o Bobcats o hawks

• **Vultures, raccoons, jackals, crows are example of -----**

-----  producers o scavengers  decomposers o consumers

• **The top of the energy pyramid represents the -----**

-  Producer o Consumer  Carnivores o Decomposer

• **All of the following are omnivores except ----- o**

raccoons o mice o some crabs  bacteria

• **The diagram shows -----**

food chain  energy pyramid o

ecosystem o food web



• **What is an animal that is eaten by a predator?**

Producer

Prey o

Consumer o

Decomposer

• -----is a living thing that can make its own food.

o Producer o

Consumer o

Predator o

Decomposer

• All food chains start with----- o the plant o the sun o the predator o the prey

• Lions, tigers and other big cats are ----- o Predators o Prey o Producers o Herbivores

• Organisms that eat other organisms, they can be herbivores, carnivores, or omnivores are called

-----

o predator o

prey o

consumer o

producer

• The bottom of the energy pyramid represents the -----  
o Producer o Consumer o carnivores o Decomposer

• Community is -----

o all living (biotic) and non-living (abiotic) things in an environment o all members of a single species in an area at a given time o made from many different populations including all the living things in an ecosystem

**Fill in the blank with the right word**

**Abiotic Population Ecosystem Biotic Community**

• **Biotic** are living things like plant and animals

• **Abiotic** are non-living things like soil, sunlight, air, and water

• All living (biotic) and non-living (abiotic) things in an environment are **Ecosystem**

• All members of a single species in an area at a given time is a **Population**



- **Community** is made from many different populations including all the living things in an ecosystem

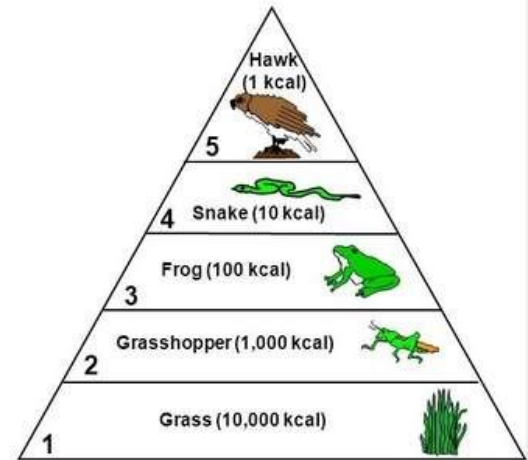
**Choose the correct answers.**

- A. Omnivores are animals that eat producers only (plants)
- B. Carnivores are organisms that obtain energy by consuming wastes and dead organisms
- C. Herbivores are animals that eat other animals
- D. **Decomposers a consumer that eats the remains of dead animals that it didn't hunt or kill** E. **Scavengers are animals that eat both plants and other animals**

• **Fill the blank with correct information**

• **Please look at the following diagram and answer the following questions**

- The diagram represents - **Energy Pyramid**
- What represents the producer in the diagram? - **Grass**
- What represents the herbivores in the diagram? - **Grasshopper**
- What represents the carnivores in the diagram? - **Frog, Snake and Hawk**



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## **Chapter 3 Further Questions**

- **Why do plants do photosynthesis?**
  - A. To get energy
  - B. To get CO<sub>2</sub>
  - C. To have green leaves
  - D. To get minerals
  
- **Why all plants in ecosystem are called “producers”?**
  - A. Because they produce soil
  - B. Because they get energy from sun light
  - C. Because they produce flowers
  - D. Because they produce fruits
  
- **What gas do plants produce during photosynthesis?**
  - A. Oxygen/ O<sub>2</sub>
  - B. Carbon dioxide CO<sub>2</sub>
  
- **What do plants consume during photosynthesis?**
  - A. Oxygen/ O<sub>2</sub>
  - B. Carbon dioxide CO<sub>2</sub>

The process by which plants obtain energy using light is called \_\_\_\_\_

• **Plants do photosynthesis using their** A. Leaves B. Roots C. Stems D. Flowers

• **Challenge question: Photosynthesis happens inside part of a plant cell, called \_\_\_\_\_, and the colour of this cell part is \_\_\_\_\_.**

• **We, people, breathe through our nose. What do plants breathe through?** A. Nose B. Stomata on their leaves C. Gills D. Petals

• **Stomata are located**

- A. At the bottom of the leaf C. At the top of the flower
- B. At the top of the leaf D. At the bottom of the flower

• **What do you call the process opposite to photosynthesis**

- A. Cellular respiration C. Food Chain
- B. Plant oxidation D. Energy pyramid

• **Challenge question: Write down the equation of photosynthesis**

\_\_\_\_\_ + 6 H<sub>2</sub>O + \_\_\_\_\_ → sugar + 6 \_\_\_\_\_

• **Ecosystems include**

- A. Living things B. Both living and non-living things C. Non-living things

• **Population includes**

- A. Members of a single species living in the same ecosystem
- B. All organisms living in the same ecosystem

• **Community includes**

- A. Members of a single species living in the same ecosystem
- B. All organisms living in the same ecosystem

• **The path that nutrients and energy flow in an ecosystem is called a \_\_\_\_\_**

• **Plants can ‘eat’ sun light and ‘produce’ energy for all the other members of the ecosystem. That’s why all plants in an ecosystems are called \_\_\_\_\_**

• **The organisms that eat plants or other animals are called**

- A. Consumers C. Decomposers
- B. Producers

• **Animals/ consumers that eat plants are called**

- A. Carnivores C. Omnivores
- B. Herbivores

• **Animals/ consumers that eat other animals are called**

- A. Carnivores    C. Omnivores
- B. Herbivores

**A. Animals/ consumers that can eat either plants or other animals are called**

- A. Carnivores    C. Omnivores
- B. Herbivores

• **One organism benefit and the other harmed Example**

- A. Pollinator (insect or bird) and a flowering plant
- B. Ants and acacia trees
- C. Lichens (the fungus and alga)
- D. Remoras are fish attach themselves to the bodies of rays and shark to get food, transportation and protection.
- E. Orchids growing on trees in a rain forest.
- F. Ticks and parasites on animals
- G. Tapeworm in human
- H. Amoeba cause a disease called dysentery.

• **A lichen is a combination of fungus and algae that lives on the sides of trees, rocks, and other materials. The fungus provides the algae with water and minerals and the algae uses the water and minerals to make food for both organisms. What type of relationship does the lichen represent?**

- Parasitism
- Commensalism
- Mutualism

• **When a symbiotic relationship benefits both organisms, it is an example of:**

- Commensalism
- Mutualism
- Parasitism
- Carnivores

• **When a symbiotic relationship helps one organism and hurts the other it is an example of:**

- Commensalism
- Mutualism
- Parasitism

• **Which of the following symbiotic relationships is considered parasitic?**

- ticks feeding on a dog
- bees transporting pollen from flowers
- pilot fish swimming under sharks
- birds eating the insects from the back of a hippopotamus

• **Ants and acacia trees have a mutualistic relationship because**

- they benefit each other.
- they are part of the same ecosystem.
- they are both adapted to a humid climate.
- the ants eat part of the acacia tree.

• **Which of the following is a symbiotic relationship where one partner benefits and the other does not benefit or lose from the relationship?**

commensalism  mutualism  parasitism  decomposition

• **Which of the following is a symbiotic relationship where both partners benefit?**

commensalism  mutualism  parasitism  decomposition

• **Which of the following is a symbiotic relationship where one partner benefits and the other is harmed?**

commensalism  mutualism  symbolism  parasitism

• **Which of the following symbiotic relationships is considered parasitic?**

Tapeworm in an intestinal tract  Bees transporting pollen from flowers

Pilot fish swimming under sharks

Birds eating the insects from the back of a hippopotamus

• **Ants and acacia trees have a mutualistic relationship because.**

They both benefit from living with each other.

They are part of the same ecosystem.  They are both adapted to a humid climate.

The ants eat part of the acacia tree

• **This occurs when organisms try to get the same resources.**

Symbiosis  Competition  Predation  Parasitism

• **A relationship in which one animal hunts, kills and eats another.**

Parasitism  Symbiosis  Predation  Mutualism

• **The animal that is hunted and killed for food.**  Predator  Scavenger

Decomposer  Prey

• **A close relationship between two different species of organisms living together.**

Food Web  Food Chain  Symbiosis  Competition

• **A symbiotic relationship in which both species benefit.**  Competition  Commensalism  Parasitism  Mutualism

• **A symbiotic relationship in which one species benefits without benefiting or harming the other organism.**

Competition  Parasitism  Commensalism  Mutualism

• **A symbiotic relationship in which one species benefits by harming another.**

Mutualism  Competition  Commensalism  Parasitism

• **A dog and a tick are examples of which symbiotic relationship?**

Predator/Prey  Parasitism  Commensalism  Mutualism

• **A clownfish lives in a sea anemone. The anemone is not hurt, but the clownfish can live in its safety. This is an example of what symbiotic relationship?**

Mutualism  Parasitism  Predator/Prey  Commensalism

**Please choose the correct answer**

• **The main purpose of an adaptation is to -----**  Help an animal survive  Get food  Provide a habitat  Change the animal's appearance

• **An example of protective coloration is an arctic fox with a white coat that blends with the snow in winter.**

True  False

• **An adaptation is a behaviour or body part that helps organisms survive in an ecosystem.**

True  False

• **That helps an animal look like another animal to protect it from predators?**

niche  migration  camouflage  mimicry

• **A Viceroy butterfly looks like the Monarch butterfly. The Monarch tastes terrible to birds, so birds won't take the chance and eat the Viceroy. What is this kind of adaptation?**

Mimicry  Camouflage  Hibernation  Migration

• **What is a characteristic of an organism that increases its chances of survival in its environment?**

species  camouflage  behavior  adaptation

• **The behavior or part of a living thing that helps it survive in a certain environment is -----**

-----  a producer  an ecosystem  an adaptation  a consumer

• **A chameleon changing colors to blend in with its surroundings is an example of - -----**

hibernation  migration  extinction  camouflage

• **Which of the following is an example of a behavior?**

having white fur

living in an ocean

producing enough

food for yourself  traveling

to a new place to find food

• **An adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal.**  Behavioral adaptation  Protective coloration  Mimicry  Camouflage

• **Are adjustment to internal or external physical structures. Ex: Fur colour, long limbs, strong jaws, and the ability to run fast.**

Protective resemblance  Structural adaptation  Behavioral adaptation

• **Matching the color, shape and texture of an environment**  Structural adaptation  Behavioral adaptation  Protective coloration  Protective resemblance

• **A type of camouflage in which the color of an animal helps it blend in with its background**  Protective resemblance  Protective coloration  Behavioral adaptation

Structural adaptation

• **An adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal.**

Camouflage  Mimicry  Behavioral adaptation  Protective coloration

• **The movement of animals to find food. Reproduce in better condition or find a less severe climate.**

o Hibernation o Mimicry o Migration o Adaptation

• **Any characteristic that helps an organism survive in its environment.**

o Protective coloration o Camouflage o Nocturnal o Adaptation

• **A type of camouflage in which the color of an animal helps it blend in with its background.**

o Protective resemblance  
o Structural adaptation o  
Behavioral adaptation o  
Protective coloration

• **Nocturnal animals** ----- o Seek food during the day

o Sleep during the night o Sleep during the day o Do not sleep

• **One reason an animal may be nocturnal is the temperature in his habitat during the day is cold.**

o True o False

• **Which is NOT an example of an animal's Behavioral adaptation?**

o Taking flight o Mimicry o Playing dead o Claws

• **Hibernation is a resting state that helps animals survive in the summer heat.**

o True o False

• **During hibernation, what does NOT occur?**

o The animal eats a lot of food in the autumn months to store up fat. o Animals burrow in the ground or hide in dens to stay safe and warm.  
o Animals awaken in the spring. o The animal's breathing speeds up.

• **Migration is:**

o The movement of animals over the same route at different times of the year.

- o A form of locomotion. o The movement of animals over the same route in the same season each year.
- o A resting state that helps animals survive in the winter months.

• **Migration allows animals to take advantage of resources like food or water in one location when they run low in another location.**

- o True o False

• **Tiger's strips make it difficult to see in the grass, this is an example of -----** o Camouflage o Mimicry o Behavioral adaptation o Protective coloration

• **Oak tree, a plant lives in forest prevent water loss through -----** o Losing their leaves in winter o Completing their life cycle in a shortened growing season o Having stomata on the top surface of the leave instead of the bottom

• **Desert animal-----** o have thick fur and extra body fat that keep them warm o are nocturnal or active at night to search for food o can run fast o can Swim quickly

• **Wolves traveling in packs is example of -----**

- Protective coloration
- Behavioral adaptation
- Protective resemblance
- Mimicry

**Fill in the blank with the correct word.**

**Mimicry   Structural adaptation   Migration   Viceroy butterfly   Protective coloration**  
**Behavioral adaptation   Protective resemblance**

- ----- a type of camouflage in which the color of an animal helps it blend in with its background.
- Matching the color, shape and texture of an environment known as -----



- An adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal-----
- -----look like poisons monarch butterfly
- Fur colour, long limbs, strong jaws, and the ability to run fast are example of -----
- Birds, fish and Butterflies migration are example of -----
- ----- is the movement of animals to find food. Reproduce in better condition or find a less sever climate.

• **What happens when light strikes a green leaf?**

---

• **Why is it important for people to eat food from every major food group?**

---

• **Why aren't the roots of a plant green like the stem and leaves?**

---

• **What happens during transpiration?**

---

• **What are biotic (non-living) things would you see in the forest ecosystem?**

---

• **What are some of the biotic (living) things you would see in the forest ecosystem?**

---

• **How are producers and consumers different?**

---

**• How are herbivores, carnivores, and omnivores similar and different?**

---

---

**• How are herbivores, carnivores, and omnivores similar and different?**

---

---

**• In the aquatic ecosystem, which organisms are consumers?**

---

---

**• In the land ecosystem, which organisms are the producers?**

---

---

**• What would happen to the mouse population if the bobcats and raccoons were removed from the ecosystem?**

---

---

**• Why is it important to have predators in an ecosystem?**

---

---

**• What do you think organisms might compete for in an environment?**

---

---

**• What is the carrying capacity of the environment?**

---

---

**• What are three limiting factors in an environment?**

---

---

**• How do you think one organism in the relationship benefits?**

---

---

- How do you think the other organism is harmed in this relationship?
- 

- Why are adaptations important to organisms?
- 

- How do organisms get adaptations?
- 

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## Chapter 3 Further Questions Answers

- Why do plants do photosynthesis?  
A. To get energy B. To get CO<sub>2</sub> C. To have green leaves D. To get minerals
- Why all plants in ecosystem are called “producers”?  
A. Because they produce soil  
B. Because they get energy from sun light  
C. Because they produce flowers  
D. Because they produce fruits
- What gas do plants produce during photosynthesis?  
A. Oxygen/ O<sub>2</sub>  
B. Carbon dioxide CO<sub>2</sub>

- What do plants consume during photosynthesis?

A. Oxygen/ O<sub>2</sub>  
B. Carbon dioxide CO<sub>2</sub>

The process by which plants obtain energy using light is called **Photosynthesis**

- Plants do photosynthesis using their A. **Leaves** B. Roots C. Stems D. Flowers

- Challenge question: Photosynthesis happens inside part of a plant cell, called **Chloroplast**, and the colour of this cell part is **Green**.

- We, people, breathe through our nose. What do plants breathe through? A. Nose **B. Stomata on their leaves** C. Gills D. Petals

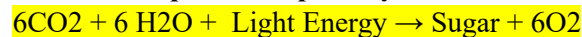
- **Stomata are located**

A. **At the bottom of the leaf** C. At the top of the flower  
B. At the top of the leaf D. At the bottom of the flower

- **What do you call the process opposite to photosynthesis**

A. **Cellular respiration** C. Food Chain  
B. Plant oxidation D. Energy pyramid

- **Challenge question: Write down the equation of photosynthesis**



- **Ecosystems include**

A. Living things **B. Both living and non-living things** C. Non-living things

- **Population includes**

A. **Members of a single species living in the same ecosystem**  
B. All organisms living in the same ecosystem

- **Community includes**

A. Members of a single species living in the same ecosystem  
B. **All organisms living in the same ecosystem**

- **The path that nutrients and energy flow in an ecosystem is called a **Food Chain****

- **Plants can ‘eat’ sun light and ‘produce’ energy for all the other members of the ecosystem. That’s why all plants in an ecosystem are called **Producers**.**

- **The organisms that eat plants or other animals are called**

A. **Consumers** C. Decomposers  
B. Producers

• **Animals/ consumers that eat plants are called**

- A. Carnivores
- C. Omnivores
- B. **Herbivores**

• **Animals/ consumers that eat other animals are called**

- A. **Carnivores**
- C. Omnivores
- B. Herbivores

**B. Animals/ consumers that can eat either plants or other animals are called**

- A. Carnivores
- C. Omnivores**
- B. Herbivores

• **One organism benefit and the other harmed Example**

- A. Pollinator (insect or bird) and a flowering plant
- B. Ants and acacia trees
- C. Lichens (the fungus and alga)
- D. Remoras are fish attach themselves to the bodies of rays and shark to get food, transportation and protection.
- E. Orchids growing on trees in a rain forest.
- F. **Ticks and parasites on animals**
- G. **Tapeworm in human**
- H. **Amoeba cause a disease called dysentery.**

• **A lichen is a combination of fungus and algae that lives on the sides of trees, rocks, and other materials. The fungus provides the algae with water and minerals and the algae uses the water and minerals to make food for both organisms. What type of relationship does the lichen represent?**

- Parasitism
- Commensalism
- Mutualism**

• **When a symbiotic relationship benefits both organisms, it is an example of:**

- Commensalism
- Mutualism**
- Parasitism
- Carnivores

• **When a symbiotic relationship helps one organism and hurts the other it is an example of:**

- Commensalism
- Mutualism
- Parasitism**

• **Which of the following symbiotic relationships is considered parasitic?**

- ticks feeding on a dog**
- bees transporting pollen from flowers
- pilot fish swimming under sharks
- birds eating the insects from the back of a hippopotamus

• **Ants and acacia trees have a mutualistic relationship because**

- they benefit each other.
- they are part of the same ecosystem.
- they are both adapted to a humid climate.
- the ants eat part of the acacia tree.

• **Which of the following is a symbiotic relationship where one partner benefits and the other does not benefit or lose from the relationship?**

- commensalism
- mutualism
- parasitism
- decomposition

• **Which of the following is a symbiotic relationship where both partners benefit?**

- commensalism
- mutualism
- parasitism
- decomposition

• **Which of the following is a symbiotic relationship where one partner benefits and the other is harmed?**

- commensalism
- mutualism
- symbolism
- parasitism

• **Which of the following symbiotic relationships is considered parasitic?**

- Tapeworm in an intestinal tract
- Bees transporting pollen from flowers
- Pilot fish swimming under sharks
- Birds eating the insects from the back of a hippopotamus

• **Ants and acacia trees have a mutualistic relationship because.**

- They both benefit from living with each other.
- They are part of the same ecosystem.
- They are both adapted to a humid climate.
- The ants eat part of the acacia tree

• **This occurs when organisms try to get the same resources.**

- Symbiosis
- Competition
- Predation
- Parasitism

• **A relationship in which one animal hunts, kills and eats another.**

- Parasitism
- Symbiosis
- Predation
- Mutualism

• **The animal that is hunted and killed for food.**

- Predator
- Scavenger
- Decomposer
- Prey

• **A close relationship between two different species of organisms living together.**

Food Web  Food Chain  Symbiosis  Competition

• **A symbiotic relationship in which both species benefit.**  Competition

Commensalism  Parasitism  Mutualism

• **A symbiotic relationship in which one species benefits without benefiting or harming the other organism.**

Competition  Parasitism  Commensalism  Mutualism

• **A symbiotic relationship in which one species benefits by harming another.**

Mutualism  Competition  Commensalism  Parasitism

• **A dog and a tick are examples of which symbiotic relationship?**

Predator/Prey  Parasitism  Commensalism  Mutualism

• **A clownfish lives in a sea anemone. The anemone is not hurt, but the clownfish can live in its safety. This is an example of what symbiotic relationship?**

Mutualism  Parasitism  Predator/Prey  Commensalism

**Please choose the correct answer**

• **The main purpose of an adaptation is to -----**  Help  
 an animal survive  Get food  Provide a habitat  Change the animal's appearance

• **An example of protective coloration is an arctic fox with a white coat that blends with the snow in winter.**

True  False

• **An adaptation is a behaviour or body part that helps organisms survive in an ecosystem.**

True  False

• **That helps an animal look like another animal to protect it from predators?**

niche  migration  camouflage  mimicry

• A Viceroy butterfly looks like the Monarch butterfly. The Monarch tastes terrible to birds, so birds won't take the chance and eat the Viceroy. What is this kind of adaptation?

o Mimicry o Camouflage o Hibernation o Migration

• What is a characteristic of an organism that increases its chances of survival in its environment? o species o camouflage o behavior o adaptation

• The behavior or part of a living thing that helps it survive in a certain environment is -----  
----- o a producer o an ecosystem o an adaptation o a consumer

• A chameleon changing colors to blend in with its surroundings is an example of - -----  
o hibernation o migration o extinction o camouflage

• Which of the following is an example of a behavior?

o having white fur o

living in an ocean

o producing enough

food for yourself o traveling

to a new place to find food

• An adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal. o Behavioral adaptation o Protective coloration o Mimicry o Camouflage

• Are adjustment to internal or external physical structures. Ex: Fur colour, long limbs, strong jaws, and the ability to run fast.

o Protective resemblance o Structural adaptation o Behavioral adaptation

• Matching the color, shape and texture of an environment o Structural adaptation o Behavioral adaptation o Protective coloration o Protective resemblance

• A type of camouflage in which the color of an animal helps it blend in with its background o Protective resemblance o Protective coloration o Behavioral adaptation o

Structural adaptation



• **An adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal.**

o Camouflage o Mimicry o Behavioral adaptation o Protective coloration

• **The movement of animals to find food. Reproduce in better condition or find a less severe climate.**

o Hibernation o Mimicry o Migration o Adaptation

• **Any characteristic that helps an organism survive in its environment.**

o Protective coloration o Camouflage o Nocturnal o Adaptation

• **A type of camouflage in which the color of an animal helps it blend in with its background.**

o Protective resemblance

o Structural adaptation o

Behavioral adaptation o

Protective coloration

• **Nocturnal animals ----- o Seek food during the day**

o Sleep during the night o Sleep during the day o Do not sleep

• **One reason an animal may be nocturnal is the temperature in his habitat during the day is cold.**

o True o False

• **Which is NOT an example of an animal's Behavioral adaptation?**

o Taking flight o Mimicry o Playing dead o Claws

• **Hibernation is a resting state that helps animals survive in the summer heat.**

o True o False

• **During hibernation, what does NOT occur?**

o The animal eats a lot of food in the autumn months to store up fat. o Animals burrow in the ground or hide in dens to stay safe and warm.

o Animals awaken in the spring. o The animal's breathing speeds up.

• **Migration is:**

o The movement of animals over the same route at different times of the year.

o A form of locomotion. o The movement of animals over the same route in the same season each year.

o A resting state that helps animals survive in the winter months.

• **Migration allows animals to take advantage of resources like food or water in one location when they run low in another location.**

o True o False

• **Tiger's strips make it difficult to see in the grass, this is an example of -----** o Camouflage o Mimicry o Behavioral adaptation o Protective coloration

• **Oak tree, a plant lives in forest prevent water loss through -----** o Losing their leaves in winter o Completing their life cycle in a shortened growing season o Having stomata on the top surface of the leaf instead of the bottom

• **Desert animal-----** o have thick fur and extra body fat that keep them warm o are nocturnal or active at night to search for food o can run fast o can Swim quickly

• **Wolves traveling in packs is example of -----**

• Protective coloration

• Behavioral adaptation

• Protective resemblance

• Mimicry

Fill in the blank with the correct word.

Mimicry   Structural adaptation   Migration   Viceroy butterfly   Protective coloration  
Behavioral adaptation   Protective resemblance

- **Protective coloration** a type of camouflage in which the color of an animal helps it blend in with its background.
- Matching the color, shape and texture of an environment known as **Protective resemblance**
- An adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal **Mimicry**
- **Viceroy butterfly** look like poisons monarch butterfly
- Fur colour, long limbs, strong jaws, and the ability to run fast are example of **Structural adaptation**
- Birds, fish and Butterflies migration are example of **Behavioral adaptation**
- **Migration** is the movement of animals to find food. Reproduce in better condition or find a less sever climate.

• **What happens when light strikes a green leaf?**

**Plant cells make food.**

• **Why is it important for people to eat food from every major food group?** **To get the materials they need for growth and health**

- **Why aren't the roots of a plant green like the stem and leaves?**

The roots are underground and not exposed to sunlight. Roots are responsible for absorbing water and minerals, not making food for the plant.

- **What happens during transpiration?**

Water from the leaf evaporates and moves out of the leaf through the stomata.

- **What are biotic (non-living) things would you see in the forest ecosystem?** Dirt, gravel, rocks, water

- **What are some of the biotic (living) things you would see in the forest ecosystem?** Birds, trees, wildflowers, insects, rabbits, grasses

- **How are producers and consumers different?**

Producers are organisms that make their own food using the Sun's energy. Consumers are animals that eat plants or other animals to get energy.

- **How are herbivores, carnivores, and omnivores similar and different?**

Similar: All are consumers, and they cannot make their own food.

Different: Herbivores eat producers/plants directly; carnivores are animals that eat other animals; and omnivores eat both plants and other animals.

- **How are herbivores, carnivores, and omnivores similar and different?** Similar: All are consumers, and they cannot make their own food.

Different: Herbivores eat producers/plants directly; carnivores are animals that eat other animals; and omnivores eat both plants and other animals.

- **In the aquatic ecosystem, which organisms are consumers?**

Grasshopper, frog, bacteria

- **In the land ecosystem, which organisms are the producers?**

Tree with berries, grass

- **What would happen to the mouse population if the bobcats and raccoons were removed from the ecosystem?**

The mouse population would increase because there would be no predators to eat them.

• **Why is it important to have predators in an ecosystem?** Predators help to control the size of the prey populations.

• **What do you think organisms might compete for in an environment?**  
Food, space, water, sunlight, places to live

• **What is the carrying capacity of the environment?**  
The maximum population that an area can support

• **What are three limiting factors in an environment?**  
Water, sunlight, space, temperature, shelter

• **How do you think one organism in the relationship benefits?** It gets food and shelter from the other organism.

• **How do you think the other organism is harmed in this relationship?**  
The other organism might become weak or sick because of the first organism.

• **Why are adaptations important to organisms?**  
Successful adaptations help organisms survive in their environments

• **How do organisms get adaptations?**  
They inherit adaptations from their parent or parents when they reproduce.

**United Arab Emirates**

**Ministry of Education**

**Grade: 5**



دائرة التعليم والمعرفة  
DEPARTMENT OF EDUCATION  
AND KNOWLEDGE

## Past Exam Paper Questions

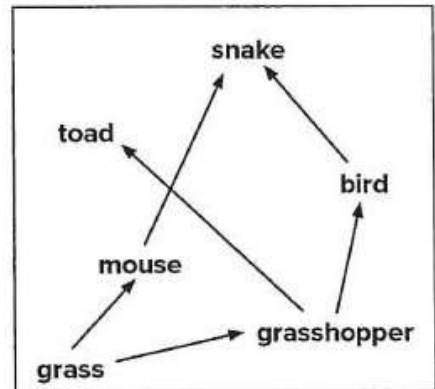
Use the food web below to answer questions (10–11):

10. Based on the information in the food web which two animals are in competition?

- a. mouse and snake
- b. toad and grasshopper
- c. snake and bird
- d. bird and toad

11. Which is an herbivore?

- a. snake
- b. toad
- c. grasshopper
- d. grass



12. A pride of lions and a herd of elephants on a grassland in Africa are:

- a. part of a population
- b. an example of commensalism
- c. part of a community
- d. groups of producers.

13. Any resource needed for a population to survive the survival in an ecosystem may become a(n):

- a. abiotic factor.
- b. biotic factor.
- c. limiting factor.
- d. niche.

14. A relationship between two organisms that benefits both organisms is called:

- a. symbiosis.
- b. mutualism.
- c. commensalism.
- d. parasitism.

15. The greatest number of individuals that an ecosystem can support within a population is the:

- a. limiting factor.
- b. habitat.
- c. carrying capacity.
- d. community.

16. Which of the following is a behavioral adaptation?

- a. An arctic hare has a white coat in winter.
- b. A fawn hides to avoid being seen.
- c. A male cardinal has very bright red feathers.
- d. A hummingbird has a long, thin bill.

17. Forest butterflies are often brown. This helps them to:

- a. find nectar.
- b. avoid predators
- c. keep warm.
- d. avoid the need to hibernate

18. A cheetah's spotted coat is an example of:

- a. camouflage.
- b. a limiting factor.
- c. symbiosis.
- d. a niche.

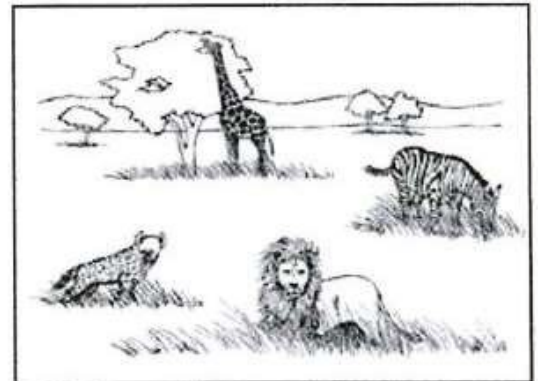
19. In a water ecosystem, why are many producers found near the surface?

- a. They require sunlight
- b. There are more organisms there for them to eat
- c. They need cooler and darker water.
- d. There is no threat from consumers.

21. Draw a line to match each box on the left with a category on the right.

frog		abiotic factors
rock		
lake		
flower		
bird		
		biotic factors

29. Look at the scene to the right. Use arrows to connect the predators to their prey.



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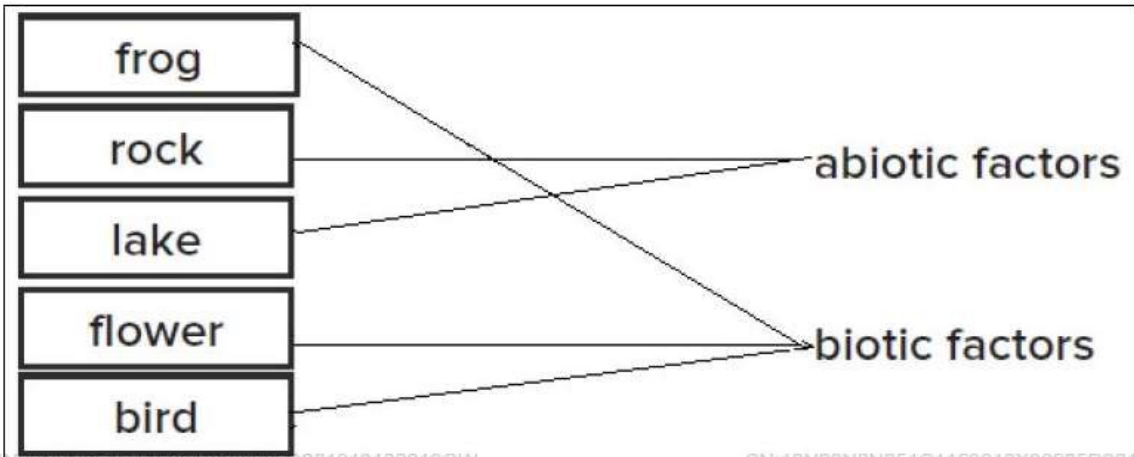
## Past Exam Paper Questions Answers

10	d. bird and toad
11	c. grasshopper
12	b. part of a community.
13	c. limiting factor.
14	b. mutualism.
15	c. carrying capacity.

16	b. A fawn remains to avoid being seen
17	b. avoid predators
18	a. camouflage.

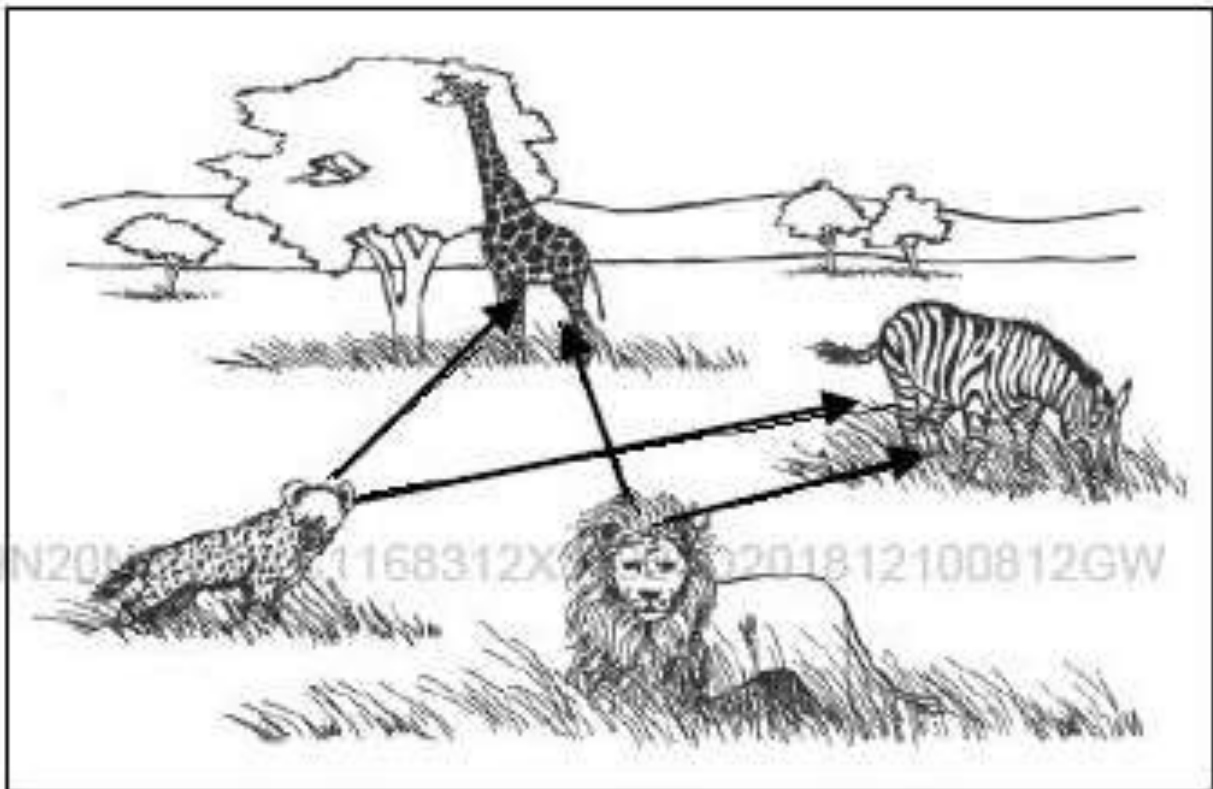
19	a. They require sunlight
----	--------------------------

21.



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