دائـرة التـعـلـيـم والـمـعـرفـة
DEPARTMENT OF EDUCATION
AND KNOWLEDGE

Science Grade 5

Term 1 (2018/2019)

Chapter 3: Interactions in Ecosystems

- **Lesson1: Photosynthesis**
- **Lesson2: Energy flow in Ecosystems**
- **Lesson3: Relationships in Ecosystems**
- **Lesson4: Adaptation and survival**

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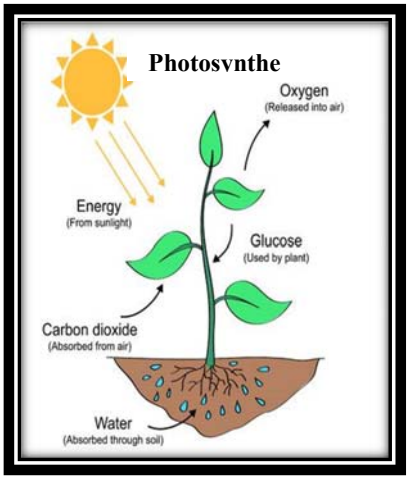
2018/2019

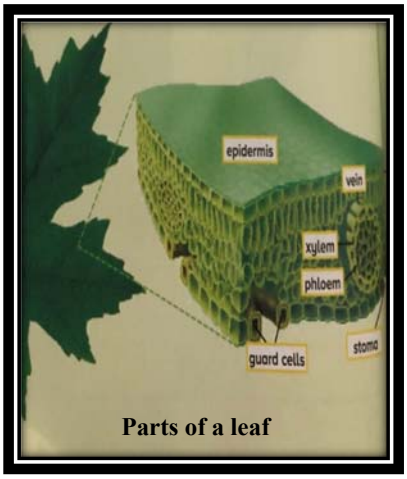
Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

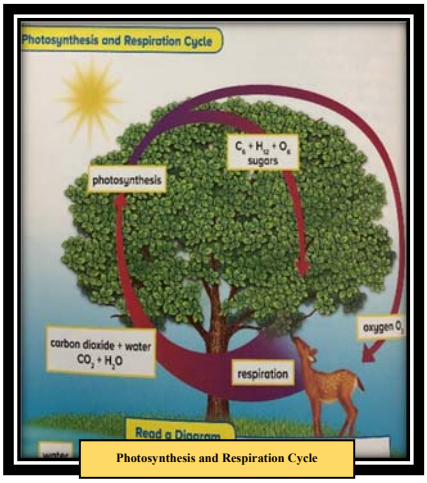
- **Photosynthesis**: is the process of making food using sunlight in the plant (the plant use sunlight, water and carbon dioxide to perform photosynthesis).

$$\underset{\text{Carbon Dioxide}}{6CO_2} + \underset{\text{Water}}{6H_2O} \xrightarrow{\text{Sunlight}} \underset{\text{Glucose (Energy)}}{C_6H_{12}O_6} + \underset{\text{Oxygen}}{6O_2}$$

- **Chloroplast**: is a structure inside the plant cell where the plant making their own food.
- **Chlorophyll**: is a green chemical found in the chloroplast inside the leaf cells and it capture energy from the sun.
- **Sunlight**: is a form of energy that pants use to make their food. More sunlight results in the production of more sugars
- **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 opening and closing of stomata is controlled by two guard cells
- **Exylem**: the tissue that carried the water from the roots to the leaves
- **Epidermis**: is the outermost layer of a leaf which has the cells where the photosynthesis occurs
- **Cuticle**: a layer that prevent water loose
- **Phloem**: is tissue where the sugars transported to the plant's cells through it.
- **Carbohydrate**: (sugar that plant produce during photosynthesis) is a name given to a group of substance made from carbo, hydrogen and oxygen
- **Transpiration**: is the loss of water from the plant leaves







Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

Please choose the correct answer.

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

- **Which of these is not needed to make food in a plant?**
  - Sunlight
  - Carbon Dioxide
  - Chlorophyll
  - Flowers

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

- **Phloem**:
  - the tissue that carried the water from the roots to the leaves
  - 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 tubes that bring water from the roots to the leaves are called**
  - xylem
  - phloem
  - stomata
  - cuticle

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

Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

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

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

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

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

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

- **Where does photosynthesis take place?**
  - xylem
  - phloem
  - stomata
  - chloroplast

- **Cuticle**:
  - 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.
  - the outermost layer of a leaf which has the cells where the photosynthesis occurs

Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

- **What is the first step in photosynthesis?**
  - Producing sugar
  - Trapping sunlight
  - Producing water

- **What are the products of photosynthesis?**
  - water and oxygen
  - sugar and water
  - sugar and oxygen
  - water and carbon dioxide

- **The small openings in the underside of a leaf are called ----------**
  - Epidermis
  - Xylem
  - Stomata
  - Phloem

- **The loss of water through plant leaves is ----------**
  - Transpiration
  - Photosynthesis
  - Chlorophyll
  - Respiration

- **The outer layer of cells on a leaf is the----------**
  - Stomata.
  - Epidermis
  - Stem
  - Chloroplast

- **The process by which plants make food is ----------**
  - Transpiration
  - Growing
  - Photosynthesis
  - Respiration

- Three things needed by plants for the production of food are:
  - Water, oxygen, and sunlight.
  - Water, carbon dioxide, and fertilizer
  - Water, oxygen, and sugar
  - Water, carbon dioxide, and sunlight

Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

- **The green pigment in chloroplasts that enable a plant to absorb light energy to make food is ----------**
    - Carbon dioxide
    - Chlorophyll
    - Chloroplast
    - Stem

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

- **Exylem**:
    - 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.

- **---------- is released by plants as a by-product of photosynthesis.**
    - Energy
    - Carbon dioxide
    - Oxygen
    - Chlorophyll

- **What three things do plants need for the process of photosynthesis?**
    - Sunlight, oxygen, and sugar
    - Sunlight, carbon dioxide, and water
    - Carbon dioxide, oxygen, and soil
    - Sunlight, soil, and water
    -
- **If plants breathe in carbon dioxide, what do they breathe out?**
    - Nitrogen
    - Oxygen
    - Carbon monoxide
    - Hydrogen
    - Helium

- **Epidermis**:
    - 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.
    - the outermost layer of a leaf which has the cells where the photosynthesis occurs

Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

- **What is the compound that plants use to absorb the energy from light?**
    - Carbon Dioxide
    - H2O
    - Nitrogen
    - Chlorophyll

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

- **True or False: 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

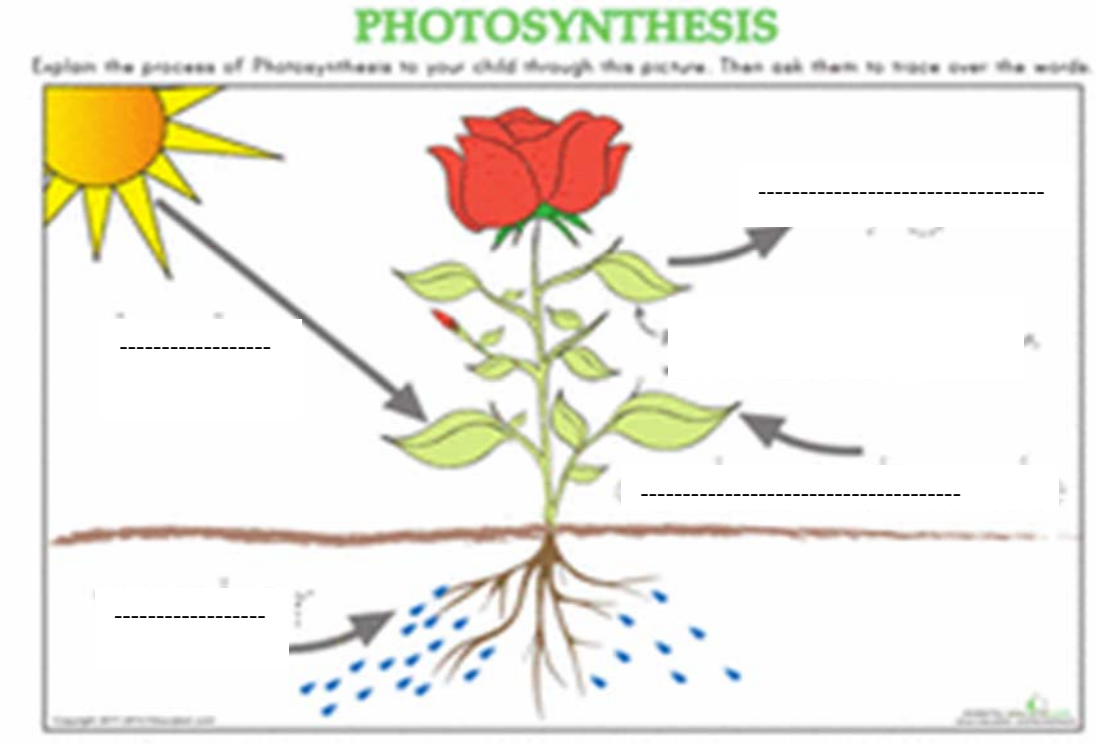
- **A layer that prevent water loose----------**
    - phloem
    - stomata
    - xylem
    - cuticle

Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

Match with the correct answer:

A. Chloroplast	**The green pigment in leaves which collects Energy from the sun**
B. Stomata	**invisible gas given off by plants is a by-product of photosynthesis**
C. Oxygen	**usable food made by plants during photosynthesis**
D. Glucose	**The structure in which photosynthesis takes place**
E. Chlorophyll	**small openings through which gas move in and out of the leaves**
F. Carbon dioxide	**Form of sugar produced during photosynthesis**

Label the below diagram:



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Science Grade 5
Chapter 3
Lesson 1 (Photosynthesis)

Fill in the blank.

Exylem	**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 pants 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 loose
- ----------is tissue where the sugars transported to the plant's cells through it.
- a name given to a group of substance made from carbo, hydrogen and oxygen is ----------
- the loss of water from the plant leaves is known as ----------

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Science Gr 5
Lesson2: Energy flow in Ecosystems

Biotic: are living things like plant and animals

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

Ecosystem: are all living (biotic) and non-living (abiotic) things in an environment

Population: all members of a single species in an area at a given time

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

food chains: model the feeding relationships between organisms in an ecosystem and the energy in food chain starts with the sun

Producers: are organisms the use the sun's energy to make sugar and oxygen and they are the base of every food chain

Consumers: is any animal that eats plants or other animals

Herbivores: animals that eat producers (plants) like squirrels, some birds, some insects and grazing animals

Carnivores: animals that eat other animals like bobcats and hawks

Omnivores: are animals that eat both plants and other animals like raccoons, mice and some crabs

Decomposers: are organisms that obtain energy by consuming wastes and dead organisms like fungi, bacteria, termites and many worms' species

Scavenger: is a consumer that eats the remains of dead animals that it didn't hunt or kill like vultures, raccoons, jackals, crows and some crabs.

Food web: is a network of food chains that has some links in common.

Predator: is a living thing that hunts and kills other living things for food.

Prey: are organisms that are eaten by predators.

Energy pyramid: is a diagram that shows the amount of energy available at each level of an ecosystem

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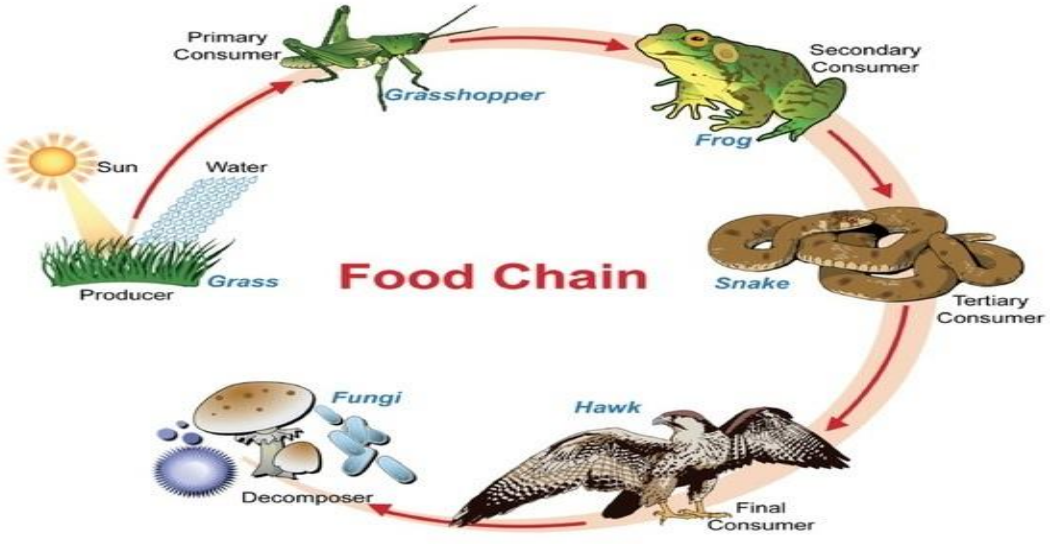
Science Gr 5
Lesson2: Energy flow in Ecosystems

	Producers	consumers
Definition	are organisms the use the sun's energy to make sugar and oxygen and they are the base of every food chain	is any animal that eats plants or other animals
Example	Plant	Animals

	herbivores	Carnivores	Omnivores	decomposers	scavengers
Definition	animals that eat producers (plants)	animals that eat other animals	are animals that eat both plants and other animals	are organisms that obtain energy by consuming wastes and dead organisms	is a consumer that eats the remains of dead animals that it didn't hunt or kill
Type of food	Only plants	Only animals	Plant and animals	Waste and died organisms	Remains of dead animals
Example	• Squirrels • some birds • some insects • grazing animals	• Bobcats • hawks	• raccoons • mice • some crabs	• Fungi • Bacteria • termites • many worms species	• vultures • raccoons • jackals • crows • some crabs.



Science Gr 5
Lesson2: Energy flow in Ecosystems

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

- **Which of the following descriptions about the organization of an ecosystem is correct?**
  - Communities make up species, which make up populations.
  - Populations make up species, which make up communities.
  - Species make up communities, which make up populations.
  - Species make up populations, which make up communities.

- **What is a consumer?**
  - An animal that does not make its own food
  - an animal that eats other animals
  - a living organism that uses sunlight to make its own food
  - 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.**
  - not an important part of the food chain
  - animals such as deer and zebras
  - the first part of the food chain
  - break nutrients down into the soil

- **What is a food chain?**
  - model the feeding relationships between organisms in an ecosystem
  - An animal that eats other animals
  - A living organism that is able to use sunlight to make its own food
  - 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.**
  - not an important part of the food chain
  - animals such as deer and zebras
  - the first part of the food chain
  - break nutrients down into the soil

- **What is a producer?**
  - An animal that eats other animals
  - A living organism that uses sunlight to make its own food
  - An animal that only eats plants
  - An animal that has no known predators

Science Gr 5
Lesson2: Energy flow in Ecosystems

- **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.**
  - food
  - sunlight
  - energy
  - 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

Science Gr 5
Lesson2: Energy flow in Ecosystems

- **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 smaller than a food chain
  - 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

Science Gr 5
Lesson2: Energy flow in Ecosystems

- **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----------**
  - ecosystem
  - population
  - community
  - food chain

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Science Gr 5
Lesson2: Energy flow in Ecosystems

- **Food chains begin with ---------- that make their own food.**
  - decomposers
  - producers
  - consumers
  - energy

- **Nutrients from dead organisms are recycled by _____.**
  - decomposers
  - consumers
  - producers
  - scavengers

- **an example of omnivores is ----------**
  - mice
  - squirrels
  - Bobcats
  - hawks

- **vultures, raccoons, jackals, crows are example of ----------**
  - producers
  - scavengers
  - decomposers
  - consumers

- **the top of the energy pyramid represents the ----------**
  - Producer
  - Consumer
  - carnivores
  - Decomposer

- **all of the following are omnivores except ----------**
  - raccoons
  - mice
  - some crabs
  - bacteria

- **The diagram shows ----------**
  - food chain
  - energy pyramid
  - ecosystem
  - food web

Science Gr 5
Lesson2: Energy flow in Ecosystems

- **What is an animal that is eaten by a predator?**
  - Producer
  - Prey
  - Consumer
  - Decomposer
- **----------is a living thing that can make its own food.**
  - Producer
  - Consumer
  - Predator
  - Decomposer

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

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

- **Organisms that eat other organisms, they can be herbivores, carnivores, or omnivores are called ----------**
  - predator
  - prey
  - consumer
  - producer

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

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

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Science Gr 5
Lesson2: Energy flow in Ecosystems

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

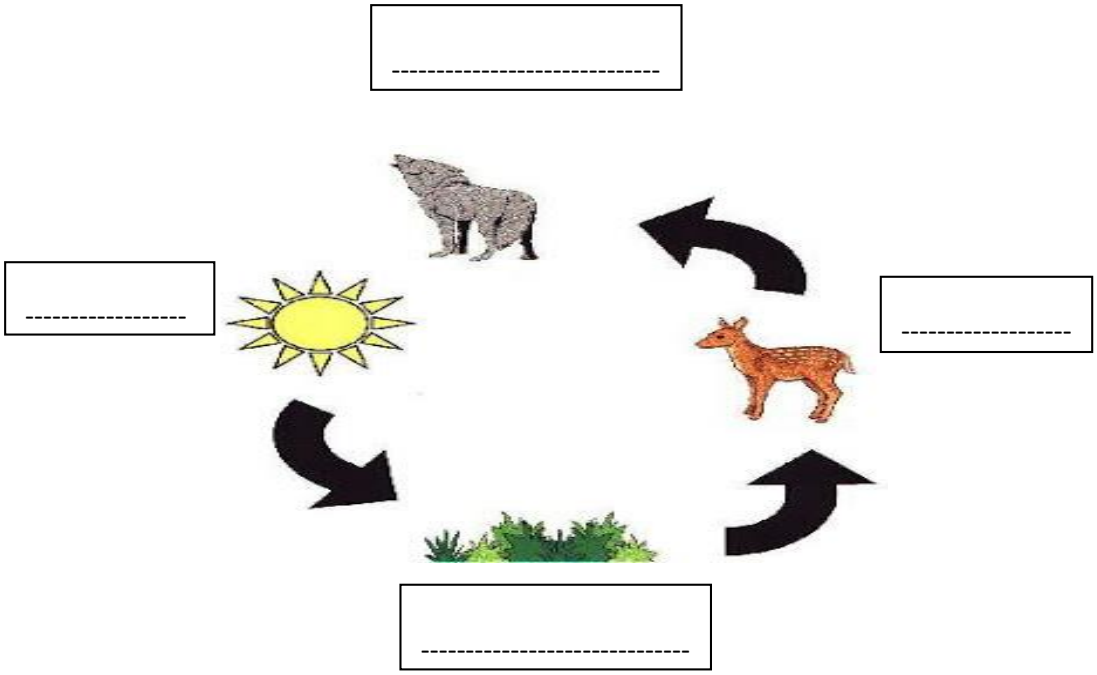
Classify the following organisms

raccoons- mice- Fungi- Bacteria - Squirrels – vultures- raccoons – jackals- Bobcats – hawks - termites –- crows

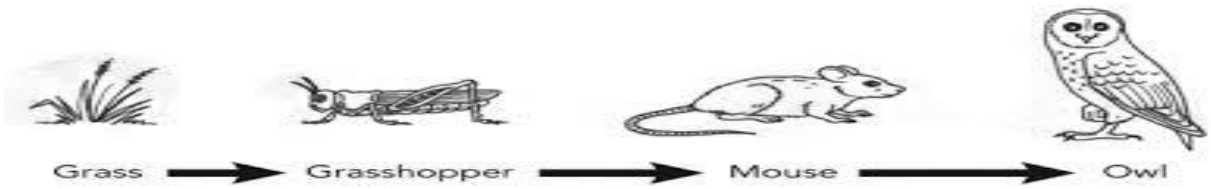
herbivores	Carnivores	Omnivores	decomposers	scavengers

Science Gr 5
Lesson2: Energy flow in Ecosystems

- **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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Science Grade 5
Lesson 3: Relationships in Ecosystems

- **Competition:** the fight for limited resources

- **Limiting factor:** is any resource that restricts the growth of populations
  - **Abiotic limiting factors**: water, temperature, weather, soil type, space to grow, shelter and sunlight.
  - **Biotic limiting factors**: the amount of available food

- **Carrying capacity**: is the greatest number of individuals within a population that an ecosystem can support

- **Habitat**: is the physical place where an organism lives and hunts for food.

- **Niche**: is the special role that an organism plays in a community.

- **Symbiosis:** is a relationship between two or more kinds organisms that last over times

- **Mutualism:** a symbiotic relationship that benefits both organisms. Examples:
  - Pollinator (insect or bird) and a flowering plant
  - Ants and acacia trees
  - Lichens (the fungus and alga)

- **Commensalism:** a symbiotic relationship that benefits one organism without harming the other. Example:
  - Remoras are fish attach themselves to the bodies of rays and shark to get food, transportation and protection.
  - Orchids growing on trees in a rain forest.

- **Parasitism:** symbiotic relationship where one organism benefit and the other harmed. Example:
  - Ticks and parasites on animals
  - Tapeworm in human
  - Amoeba cause a disease called dysentery.

	Mutualism	Commensalism	Parasitism
Definition	benefits both organisms	benefits one organism without harming the other.	one organism benefit and the other harmed
Example	○ Pollinator (insect or bird) and a flowering plant ○ Ants and acacia trees ○ Lichens (the fungus and alga)	○ Remoras are fish attach themselves to the bodies of rays and shark to get food, transportation and protection. ○ Orchids growing on trees in a rain forest.	o Ticks and parasites on animals o Tapeworm in human o Amoeba cause a disease called dysentery.

Science Grade 5
Lesson 3: Relationships in Ecosystems

- **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

- **the following picture is an example of what kind of symbiotic relationship?**
  - 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.
  - hey 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

Science Grade 5
Lesson 3: Relationships in Ecosystems

- **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

Science Grade 5
Lesson 3: Relationships in Ecosystems

- **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 on 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

- **An owl and a mouse are examples of which symbiotic relationship?**
  - Mutualism
  - Parasitism
  - Commensalism
  - Predator/Prey

- **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

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Science Gr 5
Lesson 4: Adaptation and Survival

- **Adaptation:** is any characteristic that helps an organism survive in its environment.
- **Structural adaptation:** are adjustment to internal or external physical structures. Ex: Fur colour, long limbs, strong jaws, and the ability to run fast.
- **Behavioral adaptation:** an adjustment in an organism's behaviour. Ex: wolves traveling in packs. Birds, fish and Butterflies migration.
- **Migration:** is the movement of animals to find food. Reproduce in better condition or find a less sever climate.
- **Hibernation:** is a period of inactivity during cold weather. Ex: bats, turtle, frogs and snakes.
- **Nocturnal:** desert animals that are active at night.
- **Camouflage:** any coloring, shape or pattern that allows an organism to blend in with its environment
- **Protective coloration:** is a type of camouflage in which the color of an animal helps it blend in with its background. Example:
    - In winter, the arctic fox has a white coat that blend in with the snow.
    - In summer, the fox's coat changes color to help it blend in with the plants that grow in the worm weather.
    - Tiger's strips make it difficult to see in the grass
- **Protective resemblance**: matching the color, shape and texture of an environment
- **Mimicry:** an adaptation in which an animal is protected against predators by its resemblance to an unpleasant animal. Example:
    - Viceroy butterfly look like poisons monarch butterfly
    - Robber fly resemble the dangerous bumblebee
    - The king snake mimics the coloring of the poisons coral snake

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Science Gr 5
Lesson 4: Adaptation and Survival

Plant Adaptation:

Plant	Adaptation
Cacti	• Thick waxy stem to prevent water loss • Dense shallow roots to soak up rain quickly
Oak tree	• Loose their leaves in winter to prevent water loss
Moss	• Complete their life cycle in a shortened growing season
Water lilies	• Have stomata on the top surface of the leave instead of the bottom to take in and release carbon dioxide and oxygen
Milkweeds	• Produce chemicals that are poisons to most animals to protect the plant from the predators

Animal Adaptation:

Animal	Adaptation
Animal lives in cold climate	• Have thick fur and extra body fat that keep them worm
Desert animal	• Are nocturnal or active at night to search for food • They stay in shelters or underground burrows during the day to avoid the heat.
Aquatic animals (Animals live in water)	• Swim quickly • Can breathe under the water • Can hold their breath for long periods of time. •
Prey animals	• Gazelles can run at speed of up to 80 km/hr to escape from predator • Skunks spray a bad smelling liquid
Predator animals (Owls)	• Ears excellent in hearing • Large Eyes to see tiny prey • Large muscular wings to help it swiftly hunt for prey • Feet with large claws for hunting

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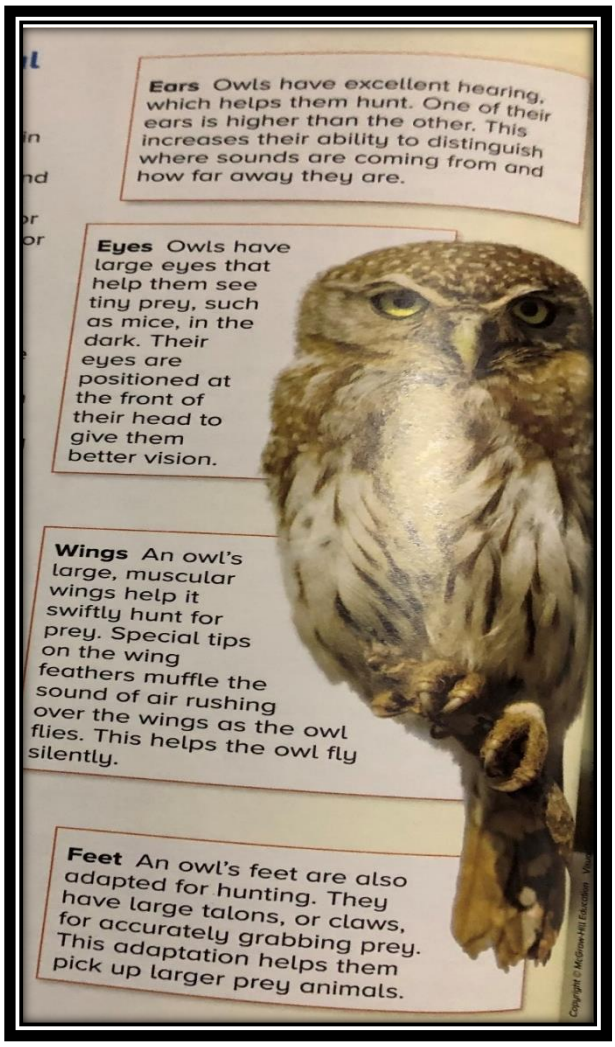
Science Gr 5
Lesson 4: Adaptation and Survival

Example of animal and plant adaptation:



Science Gr 5
Lesson 4: Adaptation and Survival

Please choose the correct answers

- **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 Viceroy 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

Science Gr 5
Lesson 4: Adaptation and Survival

- **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

Science Gr 5
Lesson 4: Adaptation and Survival

- **The movement of animals to find food. Reproduce in better condition or find a less sever climate.**
  - Hibernation
  - Mimicry
  - Migration
  - Adaptation

- **Any characteristic that helps an organism survive in its environment.**
  - Protective coloration
  - Camouflage
  - Nocturnal
  - Adaptation

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

- **Nocturnal animals ----------**
  - Seek food during the day
  - Sleep during the night
  - Sleep during the day
  - Do not sleep

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

- **Which is NOT an example of an animal's Behavioral adaptation?**
  - Taking flight
  - Mimicry
  - Playing dead
  - Claws

- **Hibernation is a resting state that helps animals survive in the summer heat.**
  - True
  - False

Science Gr 5
Lesson 4: Adaptation and Survival

- **During hibernation, what does NOT occur?**
  - The animal eats a lot of food in the autumn months to store up fat.
  - Animals burrow in the ground or hide in dens to stay safe and warm.
  - Animals awaken in the spring.
  - The animal's breathing speeds up.

- **Migration is:**
  - The movement of animals over the same route at different times of the year.
  - A form of locomotion.
  - The movement of animals over the same route in the same season each year.
  - 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.**
  - True
  - False

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

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

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

- **Wolves traveling in packs is example of ----------**
  - Protective coloration
  - Behavioral adaptation
  - Protective resemblance
  - Mimicry

Science Gr 5
Lesson 4: Adaptation and Survival

- **Match with the correct answer:**

Cacti	• Has complete their life cycle in a shortened growing season
Oak tree	• Produce chemicals that are poisons to most animals to protect the plant from the predators
Moss	• Has thick waxy stem to prevent water loss and has dense shallow roots to soak up rain quickly
Water lilies	• Have stomata on the top surface of the leave instead of the bottom to take in and release carbon dioxide and oxygen
Milkweeds	• Loose their leaves in winter to prevent water loss

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.