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DEPARTMENT OF EDUCATION

Science

Quarter 2 – Module 8:
Ecological Relationships

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Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

What I Need to Know

Hello! How are you? Have you ever had a question about the environment, like what is an ecosystem? What are the components of an ecosystem? How do these components interact with each other? There is a way to find out the answer to these questions. Be an environmentalist. This module will help you explore the environment. How do living and non-living things interact? What ecological relationships exist between them?

Most Essential Learning Competency:

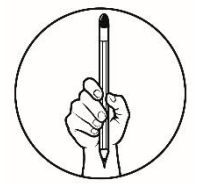
Describe the different ecological relationship found in an ecosystem.

This module is divided into two lessons:

Lesson 1 - Ecological Level of Organizations in an Ecosystem.
Lesson 2 - Ecological Relationships in an Ecosystem

After going through this module, you are expected to:

1. describe an ecosystem and its ecological relationship;
2. identify the ecological levels of organizations in the ecosystem;
3. differentiate symbiotic and non-symbiotic relationship; and
4. relate the importance of ecosystem in daily living.



What I Know

Directions: Read and understand the questions carefully. Choose the letter of the correct answer. Write your answer on a separate sheet of paper.

1. What is the study of the relationship of plants and animals with their physical environment?
   A. Biology
   B. Biosphere
   C. Ecology
   D. Ecosphere

2. Which of the following statements correctly describes an ecosystem?

I. It includes living and nonliving things in a particular area.
II. It is an interaction between biotic and abiotic factors.
III. It includes living things with their physical environment.
IV. It is composed of organisms only.

   A. I,II,III,IV
   B. I,II,III only
   C. I,II,IV only
   D. II,III,IV only

3. Which best describes a pond where a frog lives?
   A. Ecosystem
   B. Habitat
   C. Organism
   D. Population

4. Which is TRUE about the organization of an ecosystem?
   A. Communities make up species, which make up populations.
   B. Populations make up species, which make up communities.
   C. Species make up communities, which make up populations.
   D. Species make up populations, which make up communities.

5. Where does an animal lives and gets what it needs to survive?
   A. Community
   B. Environment
   C. Habitat
   D. Niche

6. We live in a certain barangay. Is barangay an example of a community?
   A. Yes, because different populations live together in that area.
   B. No, it is composed of biotic factors only.
   C. Yes, because it is a very small habitat.
   D. No, because it cannot support life.

7. The ecosystem is made up of living organisms. Which of the following is another component of the environment?
   A. Habitat
   B. Niche
   C. Nonliving
   D. Physical

8. What is called the interaction between living and non-living things?
   A. Community
   B. Development
   C. Ecosystem
   D. Evolution

9. Which of the following statements correctly describe an organism?

I. It is a biotic component of an ecosystem. II. It is an individual living thing. III. It is a nonliving thing. IV. It is either a plant, an animal or a microorganism.

   A. I,II,III,IV
   B. I,II,III only
   C. I,II,IV only
   D. II,III,IV only

10. Which of the following statements show ecological balance?

I. Organisms protect the resources.
II. Organism overharvested the resources.
III. Organism are outnumbered by its resources.
IV. Resources are outnumbered by its resources.

A. I and II only
B. I and IV only
C. I, II and IV only
D. II, III and IV only

11. Which describes several species living and interacting with other species in an ecosystem?
A. Community
B. Ecosystem
C. Environment
D. Population

12. What are aquatic ecosystems?
A. Air-based
B. Land-based
C. Space-based
D. Water-based

13. Which organization is in its correct order from smallest to largest?
A. Biosphere, ecosystem, community, population, organism
B. Biosphere, population, ecosystem, community, organism
C. Organism, population, community, ecosystem, biosphere
D. Organism, community, ecosystem, population, biosphere

14. Which of the following actions shows protection of the ecosystem?

I. Dynamite Fishing II. Tree-growing activities III. Clean-up drive of canals IV. Overharvesting of resources

A. I and II only
B. I and IV only
C. I,II and IV only
D. II,III and IV only

15. If two organisms rely on different resources, is there a competition?
A. Yes, because there are different resources.
B. No, because there are unlimited resources.
C. No, because the resources are different.
D. Yes, because the resources are limited.

Lesson 1 Ecological Level of Organizations in an Ecosystem

What's In

There you go! In our previous lesson we knew about the levels of organization which are arranged from cells, tissues, organs and organ systems in an organism. Through these, organisms like you and me are wonderfully made. Like us, our ecosystem has levels of organizations that we will find out too. Shall we?

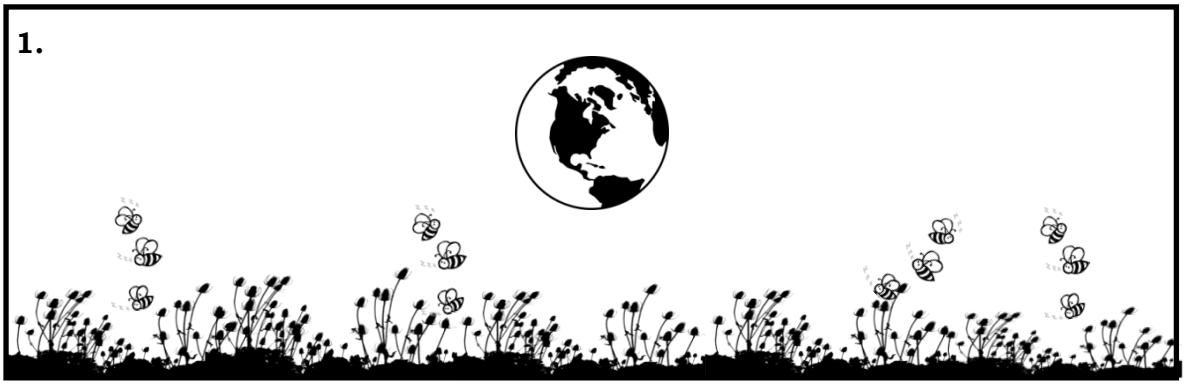
What's New

Hello there! I need your help. I want to find out the levels of organizations in the ecosystem. Can you help me? All we have to do is read and understand the activity below to find these. Are you ready? Let's start!

Activity 1

Directions: Read and understand carefully. The following show different levels of organization in an ecosystem. Identify in what levels of organization these images below belong to? Write your answer in a separate sheet of paper.

1.



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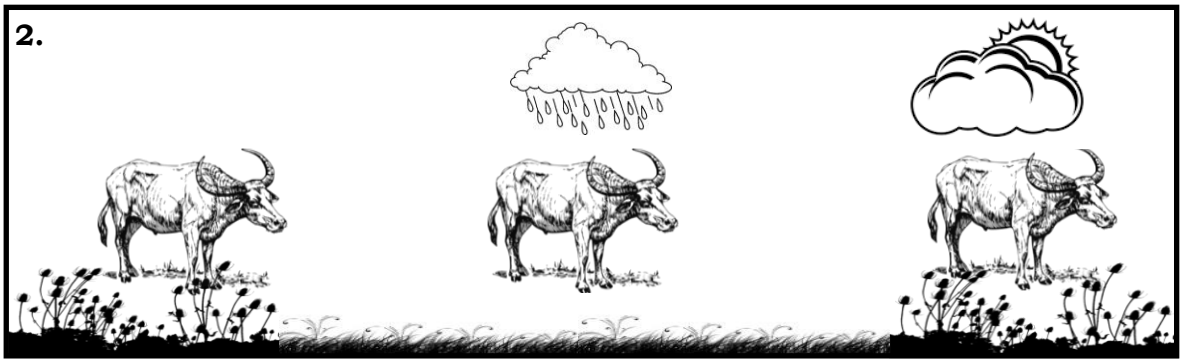
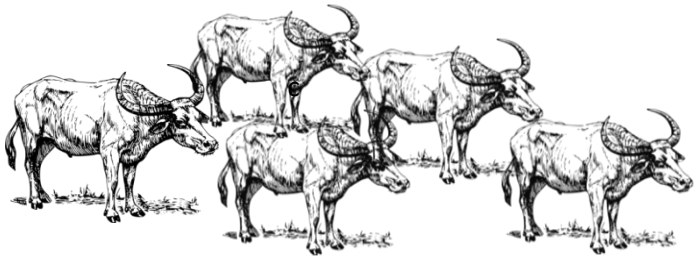


3.

4.



5.

What is It

Levels of Organization in an Ecosystem

Organism, Species, Individual

An individual is any living thing or organism. Individuals do not breed with individuals from other groups. Animals, unlike plants, tend to be very definite with this term because some plants can cross-breed with other fertile plants. For example, a carabao, interacts with its environment, and will only reproduce with other carabaos just like it.

Population

A group of individuals of a given species that lives in a specific geographic area at a given time. Note that populations include individuals of the same species but may have different genetic makeup such as hair/eye/skin color and size between themselves and other populations. For example, all the horses inside the ranch or all frogs in the fishpond.

Community

This includes all the populations in a specific area at a given time. A community includes populations of organisms of different species. In the images above, the populations of carabaos, grasses and insects interact in a defined location. A great community usually includes biodiversity.

Ecosystem

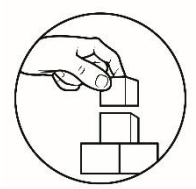
Ecosystems include more than a community of living organisms (biotic) interacting with the environment (abiotic). At this level note how carabaos and insects depend on other abiotic factors such as sunlight, water, air and temperature.

Biome

A biome, in simple terms, is a set of ecosystems sharing similar characteristics with their abiotic factors adapted to their environments. Examples of biomes are tropical rainforest, temperate forest, desert, tundra, taiga, grassland, savanna and freshwater.

Biosphere

The **biosphere** is a narrow zone of the earth where land, water, air interact with each other to support life. It is in this zone that life exists. There are several species of organisms that vary in size from microbes and bacteria to large mammals. Parts of the lithosphere (solid part), hydrosphere (liquid part), and atmosphere (gaseous part) make up the biosphere.



What's More

Directions: Find the words that are hidden in the grid. The words may be in horizontal, vertical or diagonal in directions. Copy and write your answer on a separate sheet of paper.

community	niche	organism	ecosystem	biotic
abiotic	habitat	biome	biosphere	population

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

What I Have Learned

Directions: Read and understand the paragraph carefully. Identify the correct words that fit in the given sentences in the box below. Write your answer on a separate sheet of paper.

Biome	Biosphere	Community	Ecosystem
	Organism	Population	

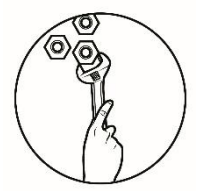
(1) _____ refers to a living thing that has an organized structure, can react to stimuli, reproduce, grow and adapt to its environment. (2) _____ is a group of organisms belonging to the same species that live in the same area and interact with one another.

(3) _____ is all of the populations of different species that live in the same area and interact with one another.

(4) _____ includes the living organisms in an area and the non-living aspects of the environment. Ecosystem is made up of the biotic and abiotic factors in an area.

(5)_____ is an area of the planet that can be classified according to the plants and animals that live in it.

(6)_____ includes most of Earth, including part of the oceans and the atmosphere.



What I Can Do

Directions: Using your locality (barangay, municipality, city), identify the levels of organization that you observe. Draw a simple illustration below on a separate sheet of paper.

_____

Name of barangay, municipality or city

Organism

Population

Community

Ecosystem

Biome

Biosphere

Performance Rubrics

Criteria	8 pts.	7 pts.	5 pts.
A. Drawing Technique and Understanding of Concepts	Drawing shows good technique and understanding of concept is clear.	Drawing shows some technique and understanding of concept is not so clear.	Drawing lacks technique and understanding of concept is vague.
B. Craftsmanship	Drawing is neat and shows very little evidence of marks, rips, tears, or folds. A few erasure lines showing.	Drawing is somewhat messy and shows marks rips, tears, or folds. Some erasure lines showing.	Drawing is messy and shows marks rips, tears, or folds. Many erasure lines showing.
C. Creativity	Art work reflects originality.	Art work shows some evidence of originality.	Art work shows little or no evidence of original thought.

Assessment

Directions: Read and understand carefully. Choose the correct answer. Write your answer on a separate sheet of paper.

1. If the levels of organization are arranged from the largest to the smallest, what is the third level?
   A. Biosphere
   B. Community
   C. Ecosystem
   D. Population

2. In what level of organization does a school of fish belong?
   A. Individual
   B. Organism
   C. Population
   D. Species

3. Which of the following statements correctly describes a biosphere?

I. It is the smallest ecological organization. II. It is the largest ecological relationship. III. It means sphere of life. IV. It is a group of biomes.

   A. I, II, III,IV
   B. I, II, III only
   C. I, II, IV only
   D. II, III, IV only

4. Which statements describe an organism?

I. Species of the kinds II. Any living thing except microorganisms III. Individuals that breed with individuals from different groups. IV. Individuals that do not breed with individuals from other groups.

   A. I and II only
   B. I and IV only
   C. I, II and III only
   D. I, II, III and IV

5. The pack of wolves, swarm of bees, and army of frogs are examples of what ecological level?
   A. Community
   B. Organisms
   C. Population
   D. Species

6. In which level of organization do tundra and taiga belong?
   A. Biome
   B. Community
   C. Ecosystem
   D. Population

7. What is TRUE about grasslands, rainforest, desert and tundra?

I. Group of biomes II. Abiotic places in the group of biosphere III. Set of population of organisms that interact with others IV. Biomes on earth that provide space and food for other organisms

   A. I and II only
   B. I and IV only
   C. I, II and III only
   D. I, II, III and IV

8. Which describes several species living and interacting with other species in an ecosystem?
   A. Community
   B. Ecosystem
   C. Environment
   D. Population

9. Which organization is in its correct order from smallest to largest?
   A. Biosphere, ecosystem, community, population, organism
   B. Biosphere, population, ecosystem, community, organism
   C. Organism, population, community, ecosystem, biosphere
   D. Organism, community, ecosystem, population, biosphere

10. Which of the following statements correctly describe a population?

I. It is a biotic component of ecosystem. II. It is a group of organisms. III. It is an abiotic component of ecosystem. IV. It is a similar species of organisms.

   A. I,II,III,IV
   B. I,II,III only
   C. I,II,IV only
   D. II,III,IV only

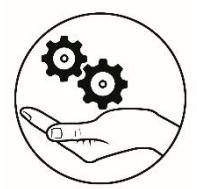
11. Lenie is on her way to her farm. While driving a car she comes across an injured eagle on the road. What is the BEST way that Lenie will do to help the injured eagle and promote care for such organism?
   A. Bury the eagle on the ground.
   B. Report to environmental bureau.
   C. Keep the eagle and release it in the forest.
   D. Keep the eagle as her pet and take it as souvenir.

12. What is a group of ecosystems that share similar climates and types of organisms called?
    A. Biome
    B. Biosphere
    C. Ecosystem
    D. Population

13. Which describes several species living and interacting with other species in an ecosystem?
    A. Community
    B. Ecosystem
    C. Environment
    D. Population

14. Respect and care for the environment is an important factor in maintaining ecological balance? Do burning dried woods and leaves help in maintaining ecological balance?
    A. Yes, because it can reduce garbage.
    B. Yes, because it helps trees bear more fruits.
    C. No, because it is the best way of decomposing garbage.
    D. No, because it produces harmful gas that can affect the ecosystem.

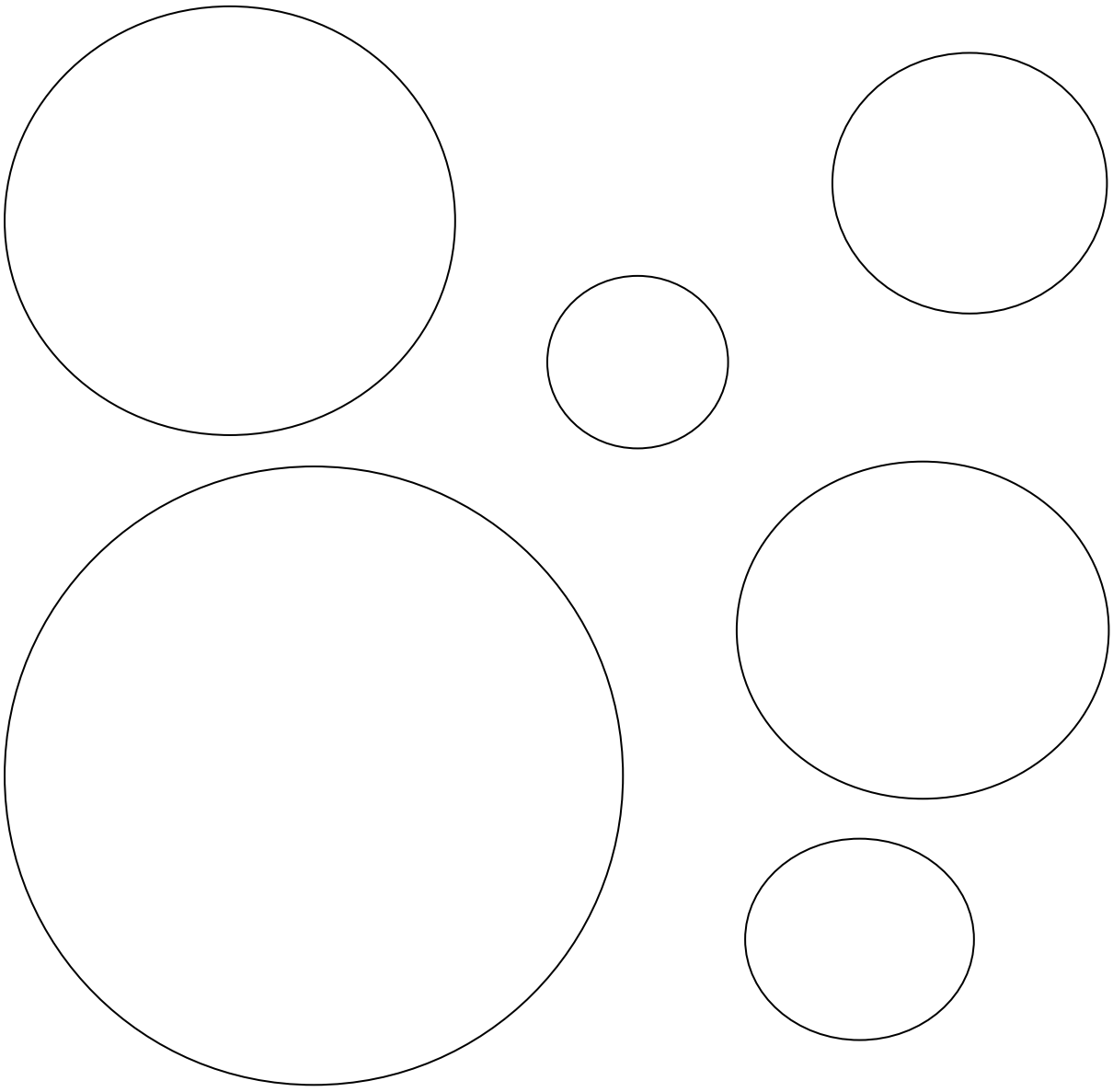
15. Which is true about the organization of an ecosystem?
    A. Communities make up species, which make up populations.
    B. Populations make up species, which make up communities.
    C. Species make up communities, which make up populations.
    D. Species make up populations, which make up communities.

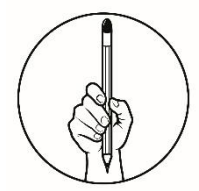


Additional Activities

Directions: Using the circles with different sizes below, arrange and label the levels of organization from the biggest to the smallest. Choose among the phrases inside the box provided that describes a specific level. Write your answer on a separate sheet of paper.

group of ecosystems	group of populations
individual species	group of biomes
group of communities	group of organisms





What I Know

Directions: Read and understand carefully. Choose the letter of the correct answer. Write your answer on a separate sheet of paper.

1. What is a feeding relationship where one organism hunts and one is hunted?
   A. Commensalism
   B. Competition
   C. Decomposition
   D. Predation

2. Which of the following statements describes a predator?

I. It is the hunter. II. It is bigger and stronger than the prey. III. It usually harms or kills the prey. IV. It is benefited during prey – predator relationship.

   A. I, II, III, IV
   B. I, II, III only
   C. I, II, IV only
   D. II, III, IV only

3. What organism lives in or out of the host?
   A. Commensal
   B. Decomposer
   C. Parasite
   D. Predator

4. Which one is hunted and eaten in a particular feeding relationship?
   A. Commensal
   B. Competitor
   C. Host
   D. Prey

5. What relationship describes a close interaction between two different species?
   A. Commensalism
   B. Mutualism
   C. Parasitism
   D. Predation

6. Which relationship that an organism benefits and the other is unaffected?
   A. Commensalism
   B. Mutualism
   C. Parasitism
   D. Predation

7. A clownfish uses a sea anemone as a safe place to live. While living there, the clownfish provides food for the anemone. This is an example of what type of relationship?
    A. Competition
    B. Commensalism
    C. Internal parasitism
    D. External parasitism

8. A mosquito feeds on the blood of different organisms. This usually causes discomfort to the organism and sometimes disease and death. What relationship do they have?
    A. Mutualism
    B. Competition
    C. Internal parasitism
    D. External Parasitism

9. Which of the following statements describes commensalism?

I. One organism benefits the other is unaffected. II. Orchid finds space and shelter on a tree. III. It is a prey –predator relationship IV. Commensal benefits from the relationship.

    A. I, II, III, IV
    B. I, II, III only
    C. I, II, IV only
    D. II, III, IV only

10. A feeder fish usually follows behind sharks to pick up food scraps that they leave behind. The fish gets food and the shark is unaffected. What relationship do feeder fish and shark have?
    A. Hosting
    B. Mutualism
    C. Commensalism
    D. Internal Parasitism

11. Between two organisms where one benefits while the other is harmed or killed, the relationship can be called predation.
    A. Yes, because a prey is bigger and stronger than the predator.
    B. Yes, because the predator is bigger and stronger than the prey.
    C. No, because the prey and predator have give and take relationship.
    D. No, because both prey and predator are not affected.

12. Which one is **NOT** correctly matched?
    A. Orchid - Epiphyte
    B. Mosquito - Ectoparasite
    C. Mosquito - Endoparasite
    D. Intestinal worm – Endoparasite

13. What is the study of interactions between organisms and the interactions that organisms have with their environment?
    A. Biology
    B. Ecology
    C. Ecosystem
    D. Zoology

14. Is the relationship between a host and parasite called mutualism?
    A. Yes, because both are benefited.
    B. Yes, because it is a give and take relationship.
    C. No, because the host depends on the parasite.
    D. No, because the parasite depends on the host.

15. Which of the following statements best describes competition?

I. Organisms compete for different resources. II. Organisms compete for similar resources. III. Lions and hyenas compete for the same prey. IV. Organisms also compete for space and territory.

    A. I, II, III, IV
    B. I, II, III only
    C. I, II, IV only
    D. II, III, IV only

Lesson 2 Ecological Relationships in an Ecosystem

What's In

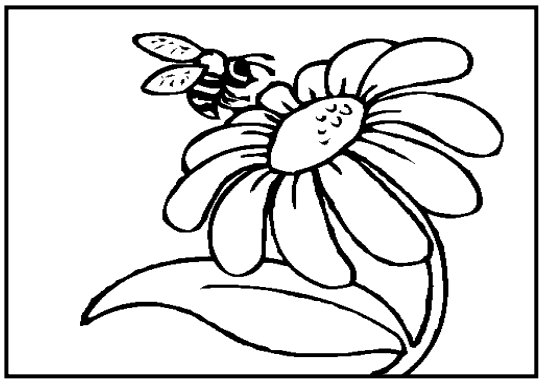
There you go! We learned from the previous lesson about the ecological levels of organization. These ecological levels of organization are properly arranged from the simplest called organism to the most complex known as biosphere. From these levels of organization different ecological interactions can possibly exist. These interactions are characterized into ecological relationships. We will find out these several ecological relationships through this module.

What's New

Hello there! I need your help. I want you to find out the ecological relationships in an ecosystem. Can you help me? All we have to do is read and understand the context below to find these. Are you ready? Let's start!

Directions: Identify the ecological relationships that exist between these organisms in the images below. Write your answer on a separate sheet of paper.

1.



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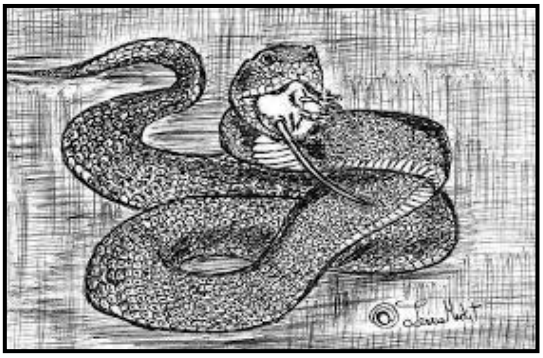

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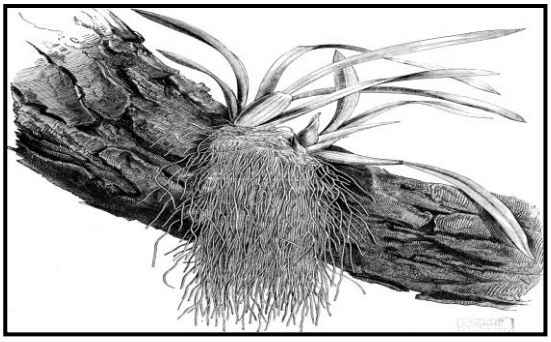

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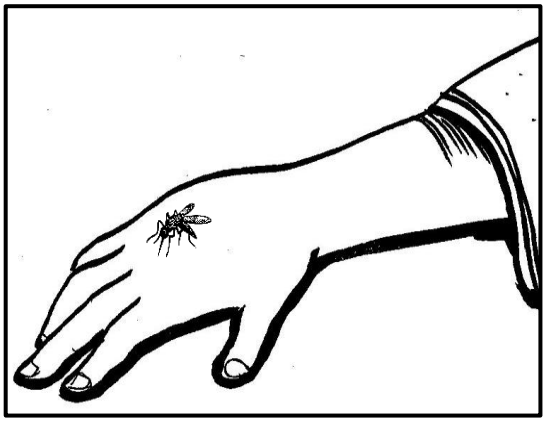

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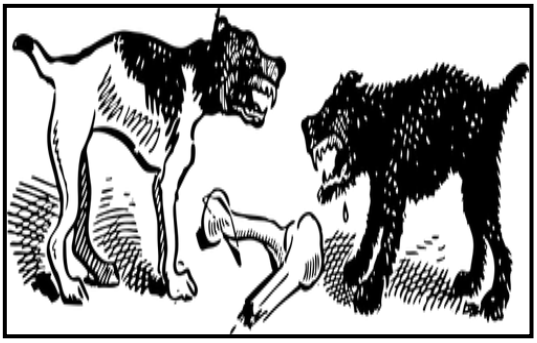


What is It

Ecological Relationships in an Ecosystem

Predation

Predation is when one organism eats another organism for food. The organism that is eaten is called the prey. Examples of predation are snakes that eat rat, and lions that eat deer. Lions and snakes are called predator.

Competition

Competition is when individuals or populations compete for the same resource, and can occur within or between species. When organisms compete for a resource such as food, space or territory. An example is lions and hyenas that compete for prey.

Commensalism

Commensalism is a relationship in which one organism benefits while the other is neither helped nor harmed. Examples are orchids that grow on the bark of a tree. The tree gains no benefit from the barnacle, but the orchids get shelter and space.
Commensal is the one that benefits from the relationship. Orchid is an example.

Parasitism

Parasitism is a relationship in which one organism benefits and the other organism is harmed, but not always killed. The organism that benefits is called the parasite, and the one that is harmed is the host. Parasites can be ectoparasites -- such as mosquitoes, ticks, fleas, and leeches -- that live on the surface of the host. Parasites can also be endoparasites -- such as intestinal worms – that live inside the host.

Mutualism

Mutualism is a relationship in which both species benefit. It is a give and take relationship. When one species receives food in return for transporting the pollen of the other organism, which occurs between bees and flowers.

Symbiotic Relationship

Symbiosis is a type of relationship which describes two different species that live near each other and both derive benefit from the relationship. Non-symbiotic relationship means both species benefit when together, but they don't live close together and they don't depend on each other for survival. This relationship happens when two species come across each other.

One example is a bird Heron at the back of a carabao. It eats ticks and other harmful insects off the carabao. Have you ever heard the phrase, 'I'll scratch your

back if you scratch mine'? This idea of helping someone to get some help in return is the essence of a symbiotic relationship.

Symbiosis describes close interactions between two or more different species. It is different from regular interactions between species, because in a symbiotic relationship, the two species in the relationship live together. Many organisms are involved in symbiotic relationships because this interaction provides benefits to both species.

Non-Symbiotic Relationship

It means free living and independent. It is a type of interaction in which individuals of two different species or two population function in very close association but do not affect one another adversely and beneficially. It is also called neutralism.

What's More

Directions: Identify the ecological relationships that exist between organisms. Write your answer on a separate sheet of paper.

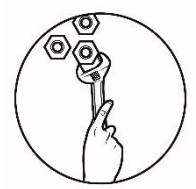
1. Heron and carabao
2. Intestinal worms on human
3. Lion and tiger on the same prey
4. Bee and flower
5. Mango trees and grasses
6. Leeches and water buffalo
7. Birds that live in the hollows of trees
8. Orchids on the bark of a tree
9. Nitrogen fixing bacteria and legumes
10. Hawk and snake
11. Playing basketball among humans
12. Lice and ticks on the fur and hair animals
13. Clownfish and sea anemones
14. Grizzly bear and salmon
15. Barnacles on body of whales
16. Sharks and Remora fish
17. Bacteria and human
18. Ants and aphids
19. Lichens on the bark of a tree
20. Dogs over a bone

What I Have Learned

Directions: Read and understand the paragraph carefully. Identify the correct words that fit in the given sentences in the box below. Write your answer on a separate sheet of paper.

Competition	Prey	Same	Ectoparasites
Predation	Different	Commensal	Endoparasites
Predator	Commensalism	Host	Mutualism
Non-symbiotic	Orchid on tree bark	bees and flowers	Symbiotic

Organisms occupy what are called ecological levels of organization. Each level has interactions among organisms that can be characterized into types of ecological relationships: competition, predation, commensalism, mutualism and parasitism.(1) _____ is when one organism eats another organism for food. The organism that is eaten is called the (2) _____. Lions and snakes are called predator. Competition is when individuals or populations compete for the (3)_____ resources, and can occur within or between species. (4) _____ is a relationship in which one organism benefits while the other is neither helped nor harmed. Examples are orchids that grow on the bark of a tree. Orchid is a (5) _____. Parasitism is a relationship in which one organism benefits and the other organism is harmed, but not always killed. Parasites can also be (6)_____ such as intestinal worms – that live inside the host. (7)_____ is a relationship in which both species benefit. When one species receives food in return for transporting the pollen of the other organism, which occurs between (8)_____ and (9) _____. Mutualism is a (10)_____ relationship.



What I Can Do

Directions: Look around you. Observe the lawn or backyard of your house. Identify an ecological relationship that exists. Draw a simple illustration of this ecological relationship. Give a brief explanation of its importance and suggest ways towards its care. Write your answer on a separate sheet of paper.

Performance Rubrics

Criteria	8 pts.	7 pts.	5 pts.
A. Drawing Technique and understanding of Concepts	Drawing shows good technique and understanding of concept is clear.	Drawing shows some technique and understanding of concept is not so clear.	Drawing lacks technique and understanding of concept is vague.
B. Craftsmanship	Drawing is neat and shows very little evidence of marks, rips, tears, or folds. A few erasure lines showing.	Drawing is somewhat messy and shows marks rips, tears, or folds. Some erasure lines showing.	Drawing is messy and shows marks rips, tears, or folds. Many erasure lines showing.
C. Creativity	Art work reflects originality.	Art work shows some evidence of originality.	Art work shows little or no evidence of original thought.

Assessment

Directions: Read and understand carefully. Choose the letter of the correct answer. Write your answer on a separate sheet of paper.

1. In a predation relationship between snake and mice, what organism is the hunter?
    A. Decomposer
    B. Mice
    C. Prey
    D. Snake

2. Between a lion and a deer, which one is killed and eventually eaten by the predator?
    A. Deer
    B. Host
    C. Lion
    D. Parasite

3. Which of the following is **NOT** an external parasite?
    A. Fleas
    B. Intestinal worms
    C. Leech
    D. Ticks

4. Which one is hunted and eaten in a particular feeding relationship?
    A. Commensal
    B. Decomposer
    C. Predator
    D. Prey

5. What relationship describes a close interaction between two different species?
    A. Competition
    B. Non-symbiotic
    C. Predation
    D. Symbiotic

6. Which relationship that an organism benefits, while the other is unaffected?
    A. Bee and flower
    B. Hawk and snake
    C. Lichens on a bark of a tree
    D. Dogs fighting over a piece of bone

7. An orchid uses a bark of a tree as a safe place to live. While living there, the tree provides space and shelter for the orchid. This is an example of what type of relationship?
    A. Commensalism
    B. Competition
    C. Decomposition
    D. Parasitism

8. A leech feeds on the blood of different organisms. This usually causes discomfort to the organism and sometimes disease and death. What relationship is being displayed between leech and the organisms?
    A. Commensalism
    B. Competition
    C. Decomposition
    D. Parasitism

9. Which relationship shows that both organisms benefit each other?
    A. Intestinal worms and human
    B. Leech and carabao
    C. Bee and flower
    D. Tiger and deer

10. During commensalism, Remora fish usually follows behind whale to pick up food scraps that they leave behind. Which one is the commensal, and why?
    A. Remora fish, because it is eaten or harmed by the whale.
    B. Remora fish, because it gets its food behind whale.
    C. Whale, because it gets its food from Remora fish.
    D. Whale, because it is affected or harmed.

11. Is the relationship that exists between a flower and a bee called mutualism?
    A. Yes, because the bee gets the pollen and the flower is affected.
    B. Yes, because the flower is pollinated through the bee.
    C. No, because both do not benefit from one another.
    D. No, because the bee harms the flower.

12. Are intestinal worms called endoparasites?
    A. Yes, because they suck nutrients inside of the host.
    B. No, because they affect the host from the outside.
    C. No, because they suck blood from the skin.
    D. Yes, because they live outside of the host.

13. Ecology is to ecosystem, as ecosystem is to _____.
    A. living things
    B. nonliving things
    C. ecological relationships
    D. living things and physical environment

14. Which of the following statements best describes parasitism?

I. It is a host and parasite relationship. II. Parasite sucks nutrients from the host. III. The host is either affected or harmed. IV. The host benefits while the parasite is affected.

A. I,II,III,IV
B. I,II,IV only
C. I,II,III only
D. II,III,IV only

15. What happens if two organisms rely on the same limited resource?
A. Competition
B. Decomposition
C. Extinction
D. Photosynthesis

Additional Activities

Directions: Given an illustration below, Name five (5) ecological relationships that can exist between organisms. Write your answer on a separate sheet of paper.

(Source: www.creativecommons.com)

Answer Key

Lesson 1

What's More

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

What I Know

1. C
2. B
3. B
4. D
5. C
6. A
7. C
8. C
9. C
10. B
11. A
12. D
13. C
14. D
15. C

Assessment

1. B
2. C
3. D
4. B
5. C
6. A
7. B
8.
9. C
10. C
11. B
12. A
13. A
14. D
15. D

What's New

1. Biome
2. Ecosystem
3. Community
4. Population
5. Organism/ Species/Individual

WhatHave I Learned

1. Organism
2. Population
3. Community
4. Ecosystem
5. Biome
6. Biosphere

Lesson 2

What I Know

1. D
2. A
3. C
4. D
5. B
6. A
7. B
8. D
9. C
10. C
11. B
12. C
13. B
14. D
15. D

Assessment

1. D
2. A
3. B
4. D
5. D
6. C
7. A
8. D
9. C
10. B
11. B
12. A
13. D
14. C
15. A

What's New

1. Mutualism
2. Predation
3. Commensalism
4. Parasitism
5. Competition

What's More

1. Commensalism
2. Parasitism
3. Competition
4. Mutualism
5. Competition
6. Parasitism
7. Commensalism
8. Commensalism
9. Mutualism
10. Predation
11. Competition
12. Parasitism
13. Commensalism
14. Predation
15. Commensalism
16. Commensalism
17. Parasitism/ Mutualism
18. Commensalism
19. Commensalism
20. Competition

What have I Learned

1. Predation
2. prey
3. same
4. Commensalism
5. community
6. commensal
7. endoparasite
8. Mutualism
9. bees and flowers
10. symbiotic

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