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S.Y. 2015 – 2016
SCIENCE 6
FIRST QUARTER

Activity Sheet No. 1

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TYPE OF ACTIVITY: Discussion of Concepts

Name_____Score_____

Grade & Section_____Date_____

TOPIC : Endocrine glands and their hormones

LEARNING OBJECTIVES :
- Identify the hormones of the endocrine glands and their functions in our body.
- Explain how hormones affect our body.
- Analyze how parts of a whole system work together to have healthy body system.
- Be aware of issues regarding health.

Reference : The New Science Links 6; pp. 106-109

Author/s : Evelyn C. Padpad

CONCEPT NOTES : Each of the Endocrine glands produces a specific hormone that starts, stop, or enhance certain body processes to maintain balance in our body and to respond in emergency situations.

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FIRST QUARTER Activity Sheet No. 2

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Endocrine system
LEARNING OBJECTIVES : Review the different parts of the endocrine system.
Explain how the hormonescontrols body processes
Answer the exercises carefully and honestly.
Reference : The New Science Links 6; pp. 32-59
Author/s : Evelyn C. Padpad
CONCEPT NOTES : Each of the Endocrine glands produces a specific hormone that starts, stop, or enhance certain body processes to maintain balance in our body and to respond in emergency situations.

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FIRST QUARTER Activity Sheet No. 3

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Endocrine System

LEARNING OBJECTIVES : Identify the different glands of the endocrine system.
Infer how endocrine system works even if the parts are far from each other
Locate the different glands using the model of the human body

Reference : The New Science Links 6; pp. 34-35

Author/s : Evelyn C. Padpad

CONCEPT NOTES : The Endocrine system consists of ductless glands that produce hormones or chemical messengers through which the body is controlled.

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Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

Activity Sheet No. 4

TOPIC : Endocrine disorders

LEARNING OBJECTIVES : Infer the disorders that may arise from the malfunction of each gland.
Identify the disorders in the endocrine system and their effects on the body systems.
Analyse how disorders can be treated or prevented.
Formulate suggestions that can keep the endocrine system healthy.

Reference : The New Science Links 6; pp. 113-119

Author/s : Evelyn C. Padpad

CONCEPT NOTES : Hormones that are produced excessively or produced at lower amounts can cause disorders in the body.

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FIRST QUARTER Activity Sheet No. 5

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Components of the ecosystem

LEARNING OBJECTIVES :
Describe an ecosystem
Explain the how biotic factors are dependent on the abiotic factors.
Identify the biotic and abiotic factors in an ecosystem.
Appreciate the importance of God's creations in the ecosystem.

Reference : The New Science Links 6; pp. 138-145

Author/s : Evelyn C. Padpad

CONCEPT NOTES :
An ecosystem is made up of two factors-biotic factors and abiotic factors. Biotic factors are the living organisms in an ecosystem which are supported by the abiotic factors or non living like sunlight, soil, water, and air.

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Activity Sheet No. 6

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

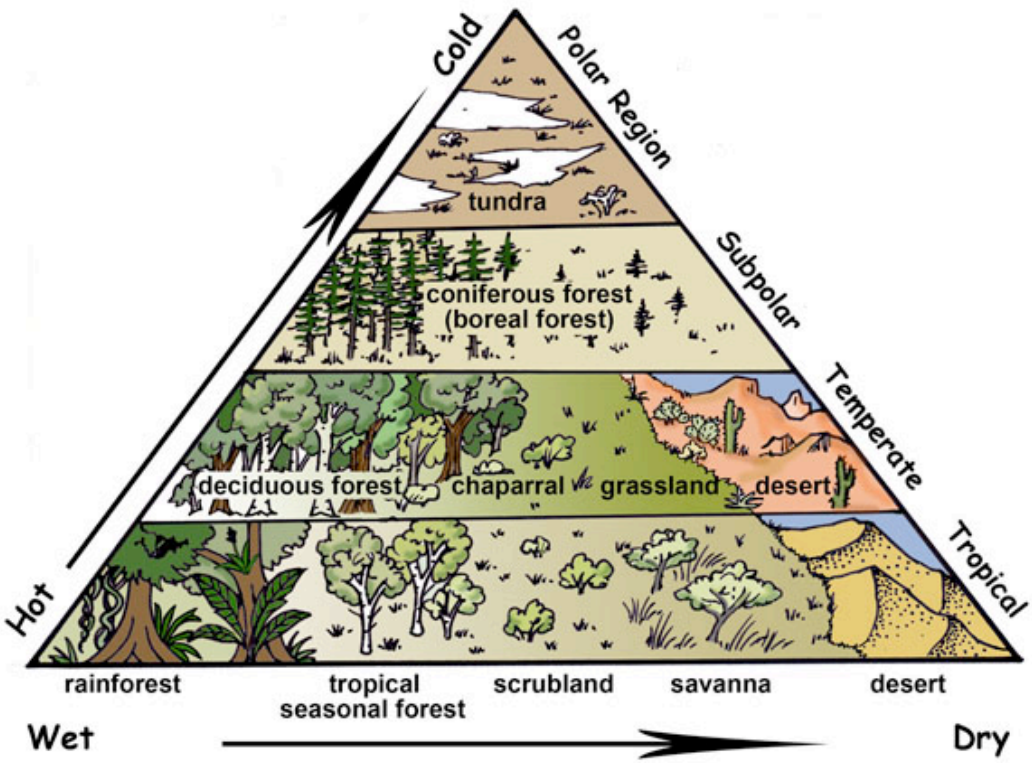
TOPIC : Biomes
LEARNING OBJECTIVES : Identify the different Biomes.
Explainwhy biomes are different from one another.
Identify the biotic and abiotic factors in each biomes.
Appreciate the importance of God's creations in the ecosystem.
Reference : The New Science Links 6; pp. 138-145
Author/s : Evelyn C. Padpad

CONCEPT NOTES : Biomes are ecosystems with specific abiotic and biotic factors that are different from other ecosystems. The abiotic factors such as temperature and amount of water determine the type of biome in an area. The different biomes are the following:

1. Tundra-an ecosystem with extremely cold climate. Where only small plants can survive.
2. Desert-the driest type of biome
3. Grassland-is dry that only grass and few trees survive.
4. Needle leaf forest-is found in places with cold climate.
5. Broadleaf forest is found only in places with four seasons (temperate Zones)
6. Tropical rain forest-the forest with most abundant life forms. It is found in hot and humid places mostly near the equator.

Biomes on Earth

Biomes were formed by climate (rain and temperature) and location on Earth (tropics to polar regions).
Can you see the pattern below?



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FIRST QUARTER Activity Sheet No. 7

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TYPES OF ACTIVITY: Discussion of Concepts

TOPIC : Components of the ecosystem
LEARNING OBJECTIVES : Identify the consumers and producers in an ecosystem.
Explain the roles of organisms in an ecosystem
Identify the biotic and abiotic factors in an ecosystem.
Appreciate the importance of feeding relationships in the ecosystem.
Reference : The New Science Links 6; pp. 138-145
Author/s : Evelyn C. Padpad
CONCEPT NOTES :

Types of organisms in an ecosystem:

1. Autotrophs-these are organisms that make their own food. These are plants.
2. Herbivores-organisms that eat plants only.
3. Carnivores-organisms that eat other organisms.
4. Omnivores-organisms that eat both plants and animals.
5. Detritivores- organisms that feed on other organisms waste or remains.

Roles in an ecosystem

1. Producers-organisms that can produce their own food through photosynthesis. These are mainly plants.
2. Primary consumers-organisms that feed on plants. These are mostly herbivores. Ex: sheep, goat
3. Secondary consumers-organisms that feed on the primary consumers. These are mostly carnivores. Ex: Lion, crocodile
4. Tertiary consumers-organisms that feed on secondary consumers. These are carnivores.
5. Decomposers-organisms that feed on animal waste or dead organisms.

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FIRST QUARTER Activity Sheet No. 8

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Food Web and Energy Flow in an Ecosystem

LEARNING OBJECTIVES : Identify the relationships between the consumers and producers in an ecosystem.
Illustrate the feeding relationships between the organisms in an ecosystem.
Describe the flow of energy in the ecosystem.
Appreciate the importance of feeding relationships in the ecosystem.

Reference : The New Science Links 6; pp. 148-153

Author/s : Evelyn C. Padpad

CONCEPT NOTES : Several food chains can be linked together to for food web. The sun is the source of energy in an ecosystem. The energy captured by the plants in the ecosystem decreases as it is passed on to different organisms.

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FIRST QUARTER Activity Sheet No. 9

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Food web and energy flow in an ecosystem

LEARNING OBJECTIVES : Identify the relationships between the consumers and producers in an ecosystem.
Construct a miniature diorama to illustrate the feeding relationships between the organisms in an ecosystem.
Work with other group members to produce quality work.

Reference : The New Science Links 6; pp. 148-153

Author/s : Evelyn C. Padpad

CONCEPT NOTES : Several food chains can be linked together in a food web. The sun is the source of energy in an ecosystem. The energy captured by the plants in the ecosystem decreases as it is passed on to different organisms.

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FIRST QUARTER Activity Sheet No. 10

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Relationships of organisms

LEARNING OBJECTIVES : Identify the relationships among organisms in an ecosystem.
Differentiate each relationship.
Describe how beneficial each relationships to organisms in order to survive.
Select a type of relationship that one should have with other people.

Reference : The New Science Links 6; pp. 135-159

Author/s : Evelyn C. Padpad

CONCEPT NOTES : Relationships of organisms in an ecosystem can be classified under symbiotic or non-symbiotic relationships.

Symbiotic relationship is when an organism lives together with another organism in order to survive. The following relationships are symbiotic relationships:

1. Mutualism-is a relationship in which two organisms are benefiting from each other. E.g. the bees and flowering plants. The plants provide nectar for the bees then bees pollinate the flowers which enables the plants to reproduce.
2. Commensalism- one organism benefits from another organism which in turn is neither harmed or gets benefits from the relationship. E.g. tree and orchids. The orchid gets benefits from the tree like having something to cling on while the tree although not harmed in the relationship, doesn't get anything from the orchids.
3. Parasitism- is a relationship where only one benefits at the expense of another organism. E.g. tick and the dog. The ticks get its food from the dog by sucking its blood while the dog gets irritated.

Non-symbiotic relationships include the following:

1. Predation- is a relationship where one organism (predator) hunts and eats another for food (prey).
2. Competition- is where organisms compete against another organism for resources in order to have better chances of survival. E.g. grasses and other plants. The grass competes with the plants for nutrients and space. If the grass outgrows the other plant, the grass will get most of the nutrients and sunlight, the other plant may die.
3. Cooperation-is where organisms cooperate with each other for survival. E.g. colony of ants.

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FIRST QUARTER Activity Sheet No. 11

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Relationships in an ecosystem

LEARNING OBJECTIVES : Review the components of the ecosystem and relationships of organisms in it.
Explain the feeding relationships of organisms.
Answer the exercises carefully and honestly.

Reference : The New Science Links 6; pp. 32-59

Author/s : Evelyn C. Padpad

CONCEPT NOTES : Several food chains can be linked together to for food web. The sun is the source of energy in an ecosystem. The energy captured by the plants in the ecosystem decreases as it is passed on to different organisms.

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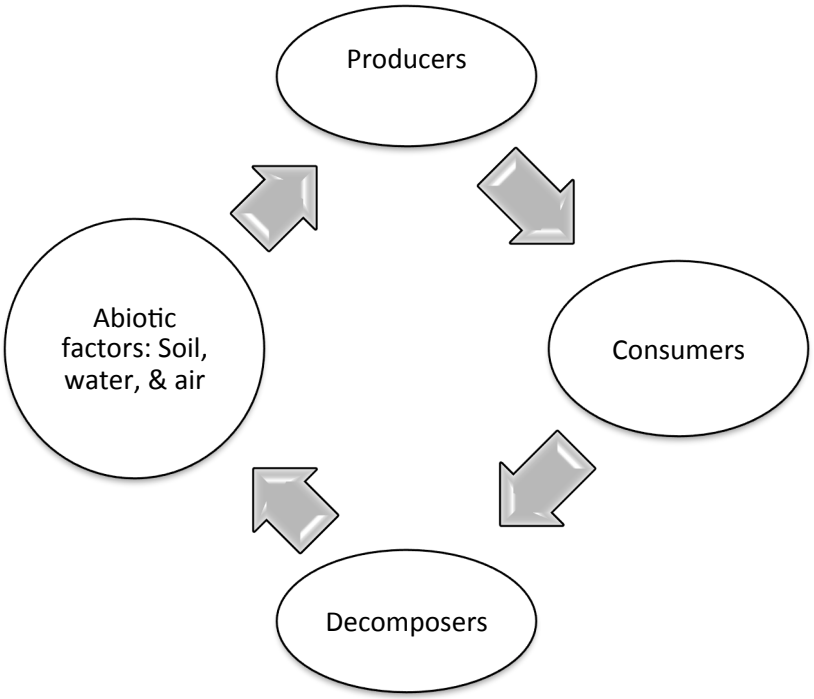
FIRST QUARTER Activity Sheet No. 12

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Nutrient Cycle
LEARNING OBJECTIVES : Explain how nutrients are recycled in an ecosystem
Illustrate the cycling of nutrients in an ecosystem.
Appreciate the importance disposing materials properly
Reference : The New Science Links 6; pp. 162-164
Author/s : Evelyn C. Padpad
CONCEPT NOTES : Nutrients used by the organisms comes from the abiotic factors. The producers absorb them first and pass it on the next trophic levels until they are returned to the abiotic factors such as soil, water and air through the action of decomposers. The pattern of the nutrient cycling is illustrated below.



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FIRST QUARTER Activity Sheet No. 13

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Carbon-oxygen cycle

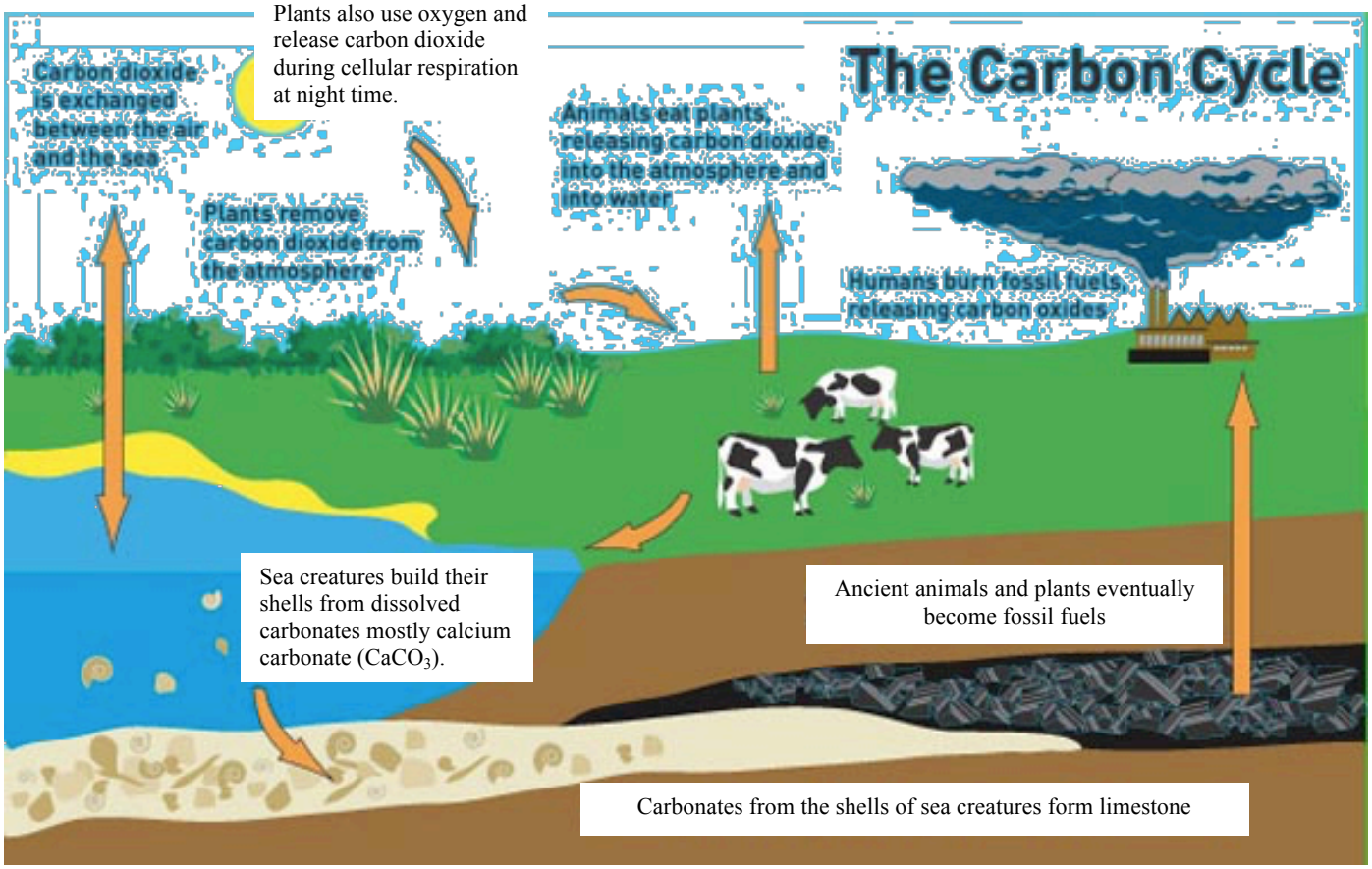
LEARNING OBJECTIVES :
- Describe the carbon-oxygen cycle.
- Illustrate the cycling of carbon and oxygen between the organisms in an ecosystem.
- Explain how excess carbon is stored in the ecosystem.
- Infer how excess carbon can go back to the atmosphere as CO_2.

Reference : The New Science Links 6; pp. 164-167

Author/s : Evelyn C. Padpad

CONCEPT NOTES :

Carbon is a chemical element captured by plants in the ecosystem as CO_2 to be used in photosynthesis. This CO_2 comes from animals (through respiration), decaying organisms, or from combustion. During photosynthesis, plants synthesize sugar from CO_2 and H_2O. Carbon in sugar (which is a component of starch) and in plant tissues is passed on to the consumers through food chain and is returned to the ecosystem by the action of decomposers. Animal or plant remains that are submerged and covered with silt will become fossil fuels.



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Activity Sheet No. 16

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Nitrogen Cycle

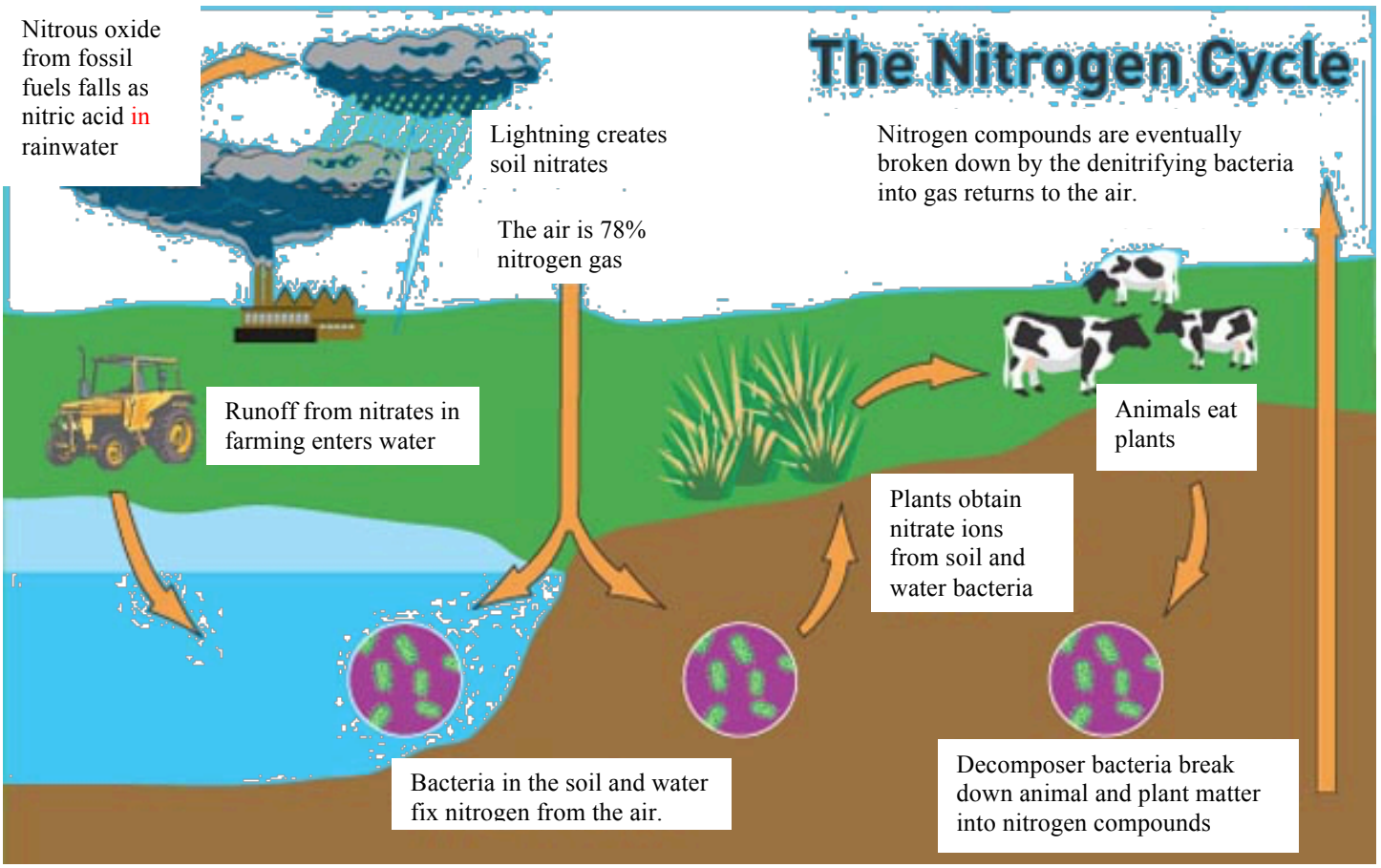
LEARNING OBJECTIVES :
- Explain how nitrogen is recycled in an ecosystem
- Illustrate the cycling of nitrogen in an ecosystem.
- Appreciate the importance of disposing materials properly

Reference : The New Science Links 6; pp. 148-153

Author/s : Evelyn C. Padpad

CONCEPT NOTES :

Nitrogen is a gaseous element that can't be harnessed by plants directly. To be harnessed by plants, nitrogen must combine first with oxygen to form nitrates ($^{-}NO_3$). This comes during thunderstorms in which lightning charges the Nitrogen in order for it to combine with oxygen. These nitrates go to the soil through the help of rainwater to be absorbed by plants. Nitrogen can also form nitrates through the action of the bacteria in the soil. Living organisms use nitrogen in making amino acids which are the building blocks of protein.



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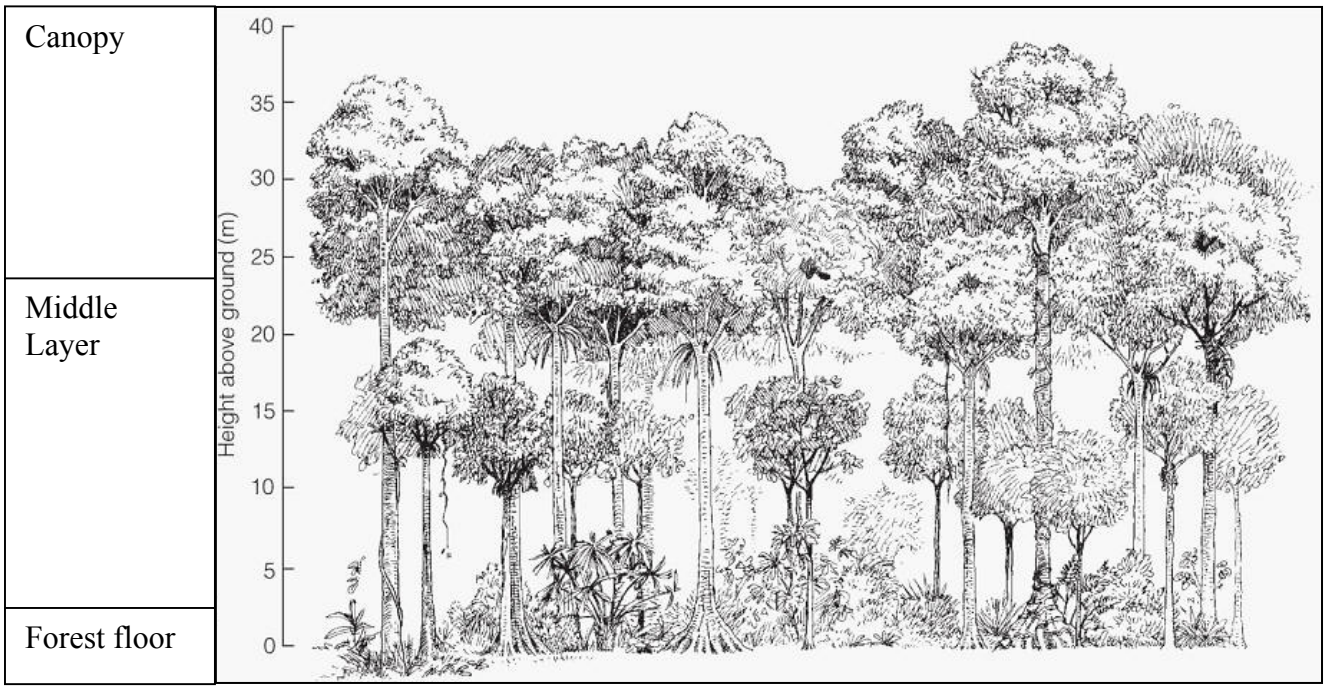
Activity Sheet No. 18

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Forest Ecosystem
LEARNING OBJECTIVES : Identify the layers of the forest ecosystem.
Differentiate each forest layer.
Describe the benefits from the forest ecosystem.
Cite ways on how to help in conserving the forest ecosystem.
Reference : Exploring and Protecting our World pp. 104-106
Author/s : Carmelita C. Coronel
CONCEPT NOTES : Forest ecosystem is made up of various species of plants mostly competing for resources. These forests can only exist where the amount of water is enough. Because of the sheer amount of plant life, the forest ecosystem contains the most number of species of animals. The forest ecosystem can be divided into several layers:

1. Forest floor-is the layer closest to the soil. This layer contains most of the detritus of organisms in the forest, hence most decomposers are found here.
2. Middle layer- is the layer consists of branches of tall trees, small trees, shrubs, vines, and epiphytes. Most climbing animals such as snakes and other reptiles can be found here.
3. Canopy- is a layer consists of the topmost parts of tall trees.



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FIRST QUARTER Activity Sheet No. 20

Concept Notes
Completeness (3 pts.)___
Neatness (2 pts.) _____
Activity No. 1:_____
Activity No. 2: _____
Synthesis:_____
Reflection:_____
Total : _____

TOPIC : Ecological succession

LEARNING OBJECTIVES :
- Explain how ecosystem can change.
- Explain the importance of ecological succession in newly formed islands or forests that are destroyed by natural events.
- Describe the stages of the changes in the ecosystem.
- Appreciate the importance of coping up in our lives.

Reference : The New Science Links 6; pp. 142-143

Author/s : Evelyn C. Padpad

CONCEPT NOTES :

Ecological succession is the process by which community of organisms in an ecosystem gradually replaces another. The first group of organisms to live in a certain ecosystem is what we call pioneer community. The final stage of the change is the climax community. At this stage the ecosystem is more complex and stable. Primary succession takes place for a long period of time. This occurs on barred rocks. The ecosystem builds on weathering rocks. Secondary succession occurs when the environment is disturbed by natural calamities or human activities. Secondary succession takes place faster than primary succession because the ecosystem doesn't need to build up soil.

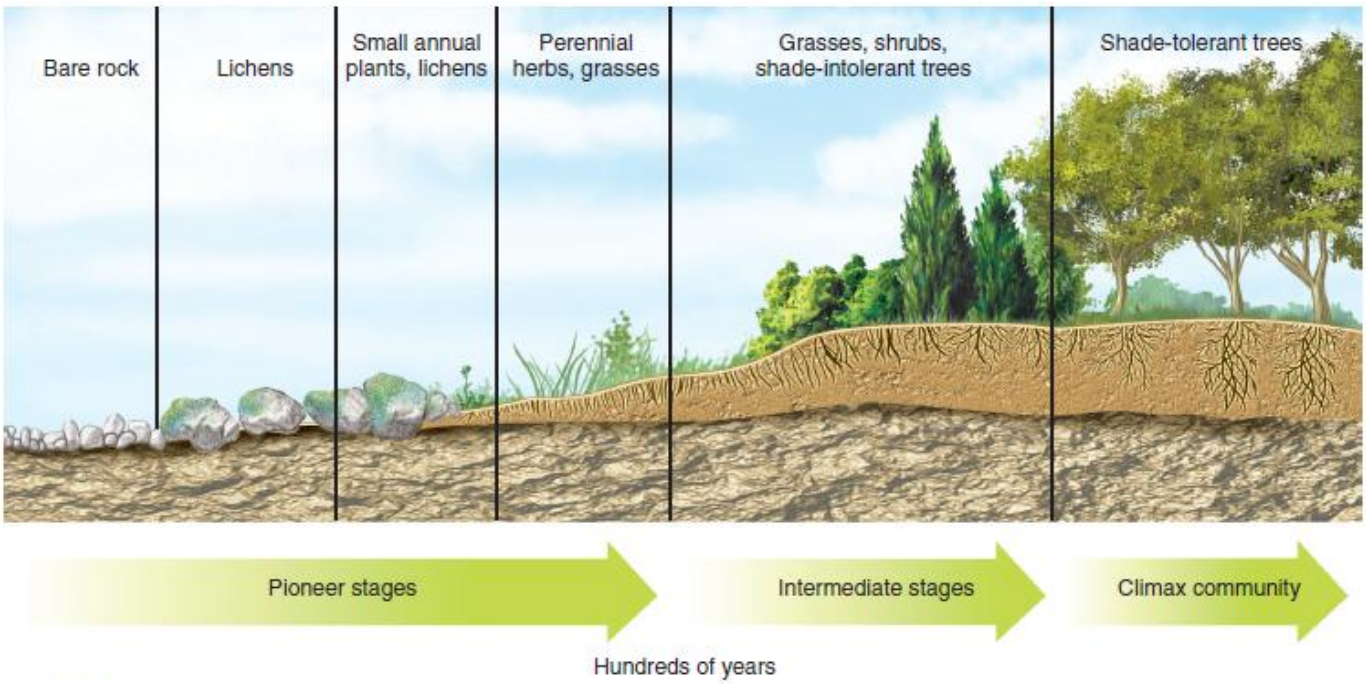

FIGURE 16.31 Primary Succession
The formation of soil is a major step in primary succession. Until soil is formed, the area is unable to support large amounts of vegetation. The vegetation modifies the harsh environment and increases the amount of organic matter that can build up in the area. As the kinds of plants change, so do the animals. The presence of plants eliminates the earlier pioneer stages of succession. If given enough time, a climax community may develop.