**Ecology Unit Guide Answers**

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| **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| 24- Intro and Review Lab Safety | 25-Unit Guide, Vocab and Choose & Research Country | 26-**Test #1- Lab Safety**  Part 2 Climate Experiment | 27-Part 2 Climate Experiment  **UG-Questions 1-7** | 28-Part 3 Biodiversity |
| 31-Part 4 Environmental Change | 1-Part 5 Natural Disaster  **UG-Questions 8-14** | 2-Part 6 Microorganisms | 3-Part 7 Relationships  **UG-Questions 15-20** | 4-Part 8 Biogeochemical Cycles |
| 7-Holiday | 8-Part 9 Food Chains  **QUIZ+ Vocab Exercises Due** | 9-Finish and complete Poster | 10- **Unit Guide Due**  Part 10 Travel the world | 11- Finish Part 10  UG- Correction |
| 14-**Test #2- Ecology** | 15-Test Correction | 16-Start Biochemistry | 17-Biochem | 18-Biochem |

**Read**:Chapters 13, 14, 15, and 16 **Unit Test**: September 14th

**Watch (Supplemental Resource):** <https://www.youtube.com/watch?v=Gu2EzAIsVQU>

Biology – The Science of Life – Ecology – Organisms in Their Environment

**Book Online at**: <http://my.hrw.com>

Use your username and password to get to the biology book -or-

* Username: bscience42 Password: eagles
* Mrs. Lamkin’s website: [www.lakeridgesciencelamkin.weebly.com](http://www.lakeridgesciencelamkin.weebly.com) Password: swim@h2o

**What the state of Texas wants you to know!**

* TEKS 11B-Investigate and analyze how organisms, populations and communities respond to external factors.
* TEKS 11C-Summerize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems
* TEKS 11D-Describe how events and processes that occur during ecological succession can change populations and species diversity.
* TEKS 12A-Interpret relationships, including predation, parasitism, commensalism, mutualism and competition among organisms.
* TEKS 12B-Compare variations and adaptations of organisms in different ecosystems.
* TEKS 12C-Analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs and ecological pyramids.
* TEKS 12D-Recognize that long term survival of species is dependent of changing resource bases that are limited
* TEKS 12E-Describe the flow of matter through the carbon and nitrogen cycles and explain the consequences of disrupting these cycles.
* TEKS 12 F-Describe how environmental change can impact ecosystem stability.

**Listen and Look**

Here is a list of key terms you will hear and see during the reading and video. Get to know them!

**Directions:** Your objective in this activity is to earn 100 points. Choose any activities you wish and complete by the due date assigned.

|  |  |
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| **Activity** | **Points** |
| 1. Complete a Frayer diagram for each word. Divide your diagram into the following categories: definition, Sentence, Diagram, and Example. (Diagram is a labeled picture.) | 100 |
| 2. Create a Vocabulary Booklet. Each page must have the term at the top, the definition at the bottom, an example and an illustration in the middle with a sentence or description using the term. | 100 |
| 3. Word Detective for all words. Use your textbook and a dictionary…Do they provide the same definitions? (Make a chart that has the word, definition from book and page #, definition from dictionary, name of dictionary and page #, and sentence using word.) | 100 |
| 4. Complete a Vocabulary Log with all vocab words: (word, definition, and example or illustration). | 50 |
| 5. Create a rap, song, riddle, or poem including words and meanings. (25 points extra if you perform it for the class) | 50 |
| 6. Diagram representation of each word. Needs to be no more than 4 on a page (A diagram is a labeled picture) | 25 |
| 7. Create and complete a crossword puzzle including all words. You MUST give clues or definitions for the Across and Down Sections. You may not use the same clues or definitions as word search. | 50 |
| 8. Create and complete a word search including all words. You MUST give clues or definitions. DO NOT list the actual key word. You may not use same clues or definitions as the crossword puzzle. | 50 |
| 9. Write an essay or story including all words. Only one word per sentence. Words must be used correctly. Spelling and grammar will be considered. Essay/story must be at least 3 paragraphs long. | 50 |
| 10. Write a sentence for each word that shows the meaning of the vocabulary. This is NOT simply writing the definition. | 25 |
| 11. Create a detailed and logical concept or word map. Use linking words on the lines or arrows. Must show relationship between words. | 50 |
| 12. Create a set of flashcards. | 25 |

Visit: <http://bit.ly/1umMyTO> or

<http://lakeridgesciencelamkin.weebly.com/biology-vocab-templates.html>

to obtain templates and link to websites to help with your assignment.

VOCABULARY EXERCISES: due September 8th

VOCAB QUIZ: September 8th

* **Abiotic**: nonliving factor in an ecosystem, such as moisture, temperature, wind, sunlight, soil and minerals.
* **Biotic**: living things, such as plants, animals, fungi and bacteria.
* **Habitat**: combined biotic and abiotic factors found in the area where an organism lives.
* **Biodiversity**: variety of life within an area
* **Detritivore**: organisms that eats dead matter.
* **Commensalism**: ecological relationship in which on species receives a benefit but the other species is not affected one way or another.
* **Consumer**: organism that obtains its energy and nutrients by eating other organisms.
* **Decomposer**: Detritivore that breaks down organic matter into simpler compounds, returning nutrients back into an ecosystem.
* **Ecology**: study of the interactions among living things and their surroundings.
* **Ecological Niche**: all of the physical, chemical and biological factors that a species needs to survive, stay healthy, and reproduce in an ecosystem.
* **Biomass**: total dry mass of all organisms in a given area
* **Competition**: ecological relationship in which two organisms attempt to obtain the same resource.
* **Carrying Capacity**: number of individuals that the resources of an environment can normally and persistently support.
* **Keystone Species**: organism that has an unusually large effect on its ecosystem.
* **Ecosystem**: collection of organisms and nonliving things such as climate, soil, water, and rock in an area.
* **Pioneer Species**: organism that is the first to live in a previously uninhabited area.
* **Generalist**: species that does not rely on a single source of prey.
* **Limiting Factors**: environmental factor that limits the growth and size of a population.
* **Community**: collection of all the different populations that live in one area.
* **Mutualism**: ecological relationship between two species in which each species gets a benefit from the interaction.
* **Predation**: process by which one organism hunts and kills another organism for food.
* **Symbiosis**: ecological relationship between members of at least two different species that live in direct contact with one another.
* **Specialist**: consumer that eats only one type of organism.
* **Parasitism**: ecological relationship in which one organism benefits by harming another organism.
* **Biosphere**: all organisms and the part of Earth where they exist.
* **Biogeochemical Cycle**: movement of a chemical through the biological and geological, or living and nonliving, parts of an ecosystem.
* **Secondary Succession**: reestablishment of a damaged ecosystem in an area where the soil was left intact.
* **Energy Pyramid**: diagram that compares energy used by producers, primary consumers and other trophic levels.
* **Primary Succession**: establishment and development of an ecosystem in an area that was previously uninhabited.
* **Trophic Level**: level of nourishment in a food chain.
* **Climate**: average long-term weather pattern of a region.
* **Scavenger**- organism that feeds on dead or decaying matter.

**Recall and Review: ANSWER ALL THE QUESTIONS IN COMPLETE SENTENCES.**

Use the video and your textbook to help you answer the following questions in your binder.

**A. Chapter 13**

1. **State** the difference between abiotic and biotic factors. **List** two abiotic and two biotic factors found in your habitat.

Abiotic: non living things ( sunlight, water, rocks)

Biotic: living things (plants and animals)

1. **Distinguish** between autotrophs and heterotrophs. **State** another name for each.

Autotrophs: organisms that get their energy from sunlight or chemicals (Producers)

Heterotrophs: organisms that get their energy by eating other organisms (Consumers)

1. **Describe** the connection between food chains and trophic levels.

A trophic level is a step in the food chain

1. **Compare and contrast** a food chain and a food web in a T-Chart.

|  |  |  |
| --- | --- | --- |
| Food Chain | Both | Food Web |
| ONE energy path is represented | Both have producers and consumers  Both have arrows to show the energy path. | Several food chains are in the food web. Several energy paths are represented in the food web |

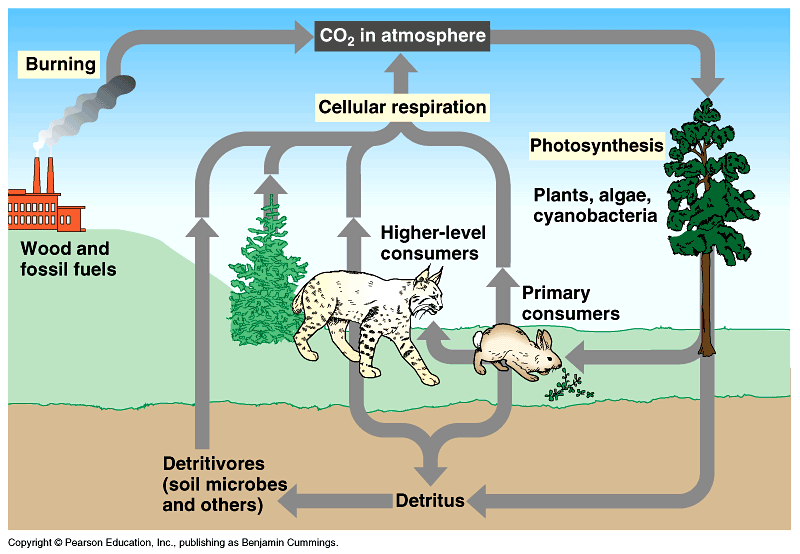
1. **Explain** what happens to energy as if flows through a food web.

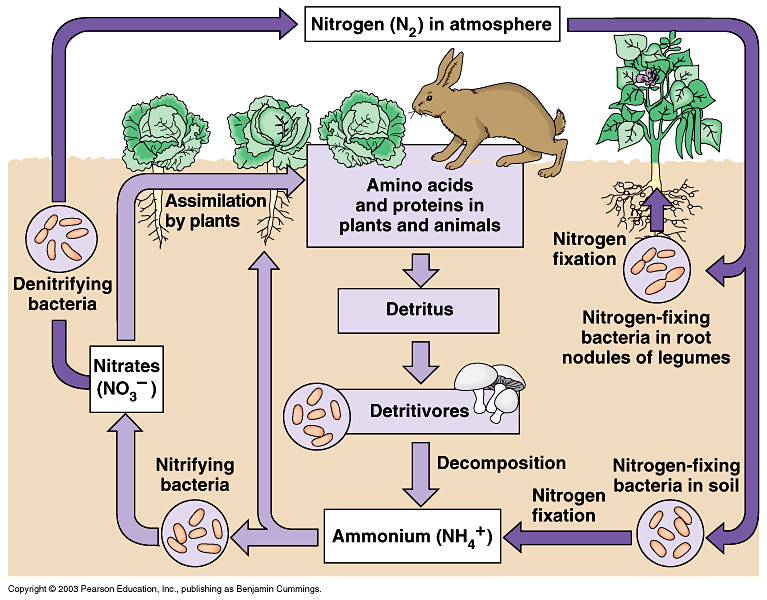
Only 10% of the energy is transferred from one level to the next. Most of the energy is lost in the form of heat energy.

1. **Describe** how microorganisms affect the health of an ecosystem.

Some microorganisms (bacteria and fungi) are decomposer, breaking down waste and dead organic matter. They return nutrients to the soil. Bacteria, Protists and Virus can cause diseases. Bacteria, Fungi and Protists can be food for other organisms.

1. **Draw** either the carbon or the nitrogen cycle and list the key processes involved in the cycling of the element.





1. **Describe** a human activity that disrupts the carbon cycle and the consequences of that disruption.

Deforestation- reduce the amount of Carbon processed by plants

Burning of fossil fuel- increase the amount of carbon in the atmosphere

Both increase the amount of carbon dioxide leading to global climate change ( global warming).

1. **Draw** an energy pyramid for the desert food chain introduced in Section 4. Use arrows to illustrate the flow of energy.

Quaternary Consumer- 4th level consumer .01%

Tertiary Consumer- 3rd level consumer .1%

Secondary Consumer- 2nd level consumer 1%

Primary Consumer- First level consumer 10%

Producer- 100%

**B. Chapter 14**

1. **Describe and give examples of the three types of symbiosis.**

Mutualism: both organism benefit ( crab get protection from the sea animones, the sea anemones get food particles from the carb’s food).

Commensalism : One organism benefit the other is unaffected (the barnacles on the back of the sea turtle have a place to live, the turtle is unaffected)

Parasitism: one organism benefits, the other (the host) is harmed ( the tapeworm get the nutrients in the intestine of a human host)

1. **Compare and contrast** predation and parasitism in a Venn Diagram

Predation Parasitism

Both

One organism (the prey) is killed by the predator.

One organism benefits.

One organism (the host) is harmed by the parasite. The host is not killed.

1. **Explain** the difference between primary succession and secondary succession.

Primary Succession is the establishment of an ecosystem, and it starts on bare rocks where no life was present.

Secondary Succession is the reestablishment of a damaged ecosystem (the damaged can be caused by a natural disaster such as fire, flood, drought, tsunami…)

NOTICE: Secondary Succession has soil already present and formed.

1. **Describe** how pioneer species are important for primary succession.

Pioneer species (Lichens) are the first organisms to live in an uninhabited area. They are the organisms that will start forming soil by breaking rocks into smaller pieces.

**C. Chapter 15**

1. **List** **and describe** the six major biome types.

Tropical rainforest: hot and humid

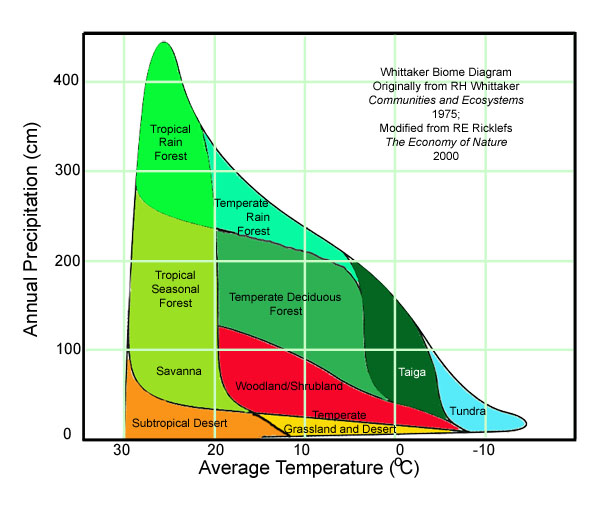
Desert: hot and dry

Tundra: cold and dry

Temperate forest: warm and moist

Grassland: warm and dry

Coniferous forest: cold and moist



1. Polar bears have white fur but black skin underneath. Consider the climate in which the bears live.  **Predict** what might be the adaptive advantage of the bear’s black skin.

The black skin allows them to absorb and keep the heat from the sun. The skin is also made with a thick layer of lipids and can be used for insulation.

**D. Chapter 16**

1. **Name** and **describe** two ways in which pollution affects ecosystems.

Air pollution: can increase respiratory systems problems or create global climate change

Water pollution: can change the pH of the water which can kill fish and amphibians

Soil pollution: can prevent plants from growing.

1. **List** three factors that can limit the growth of the human population.

Disease, Migration and reaching the carrying capacity.

1. **Explain** why biodiversity is highest in tropical rain forests.

The climatic conditions in the tropical rainforest can support a wide range of organisms.

1. **Predict** the types of damage that introduced species can cause.

* Competition between species
* Causing a species to die in the area
* Economic damage by replacing a species we may need

1. **Provide** one example of how you could reduce the amount of waste produced by Lake Ridge.

* Recycle
* Use material that can be used more than once instead of throwing things away and getting a new on for every use.

EOC sample Questions:

1-a

2-d

3-c

4-d