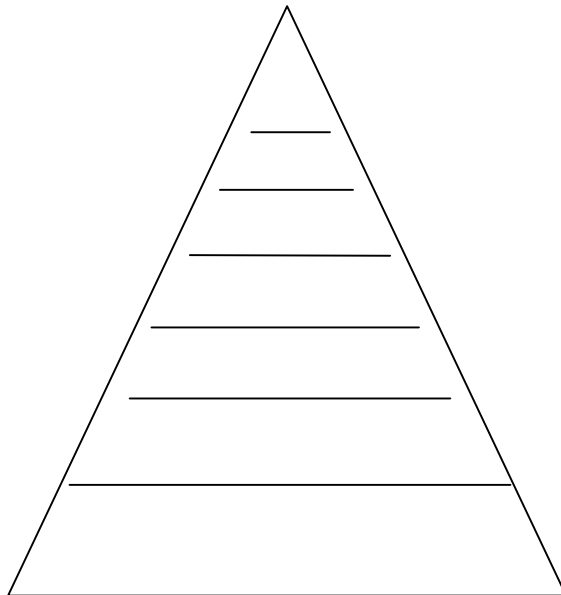


Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd: \_\_\_\_\_

## Unit 8 Formative Assessment – Biomes & Ecology

1. The following factors are **biotic** or **abiotic**. Create two categories and put each factor in the correct category and **EXPLAIN** why you categorized them the way you did: **water, food, microorganisms, air, plants, animals, soil, temperature, precipitation, sunlight**
  
2. What do we call the study of organisms and their interaction with the environment? (**hint: it is an ology**)  
**Then write the definition in your own words.**
  
3. Using the trophic (ecological) pyramid below, label each of the spaces with the following terms showing the flow from **ONE at the TOP to MANY at the BOTTOM**: *biosphere, community, population, biome, individual, ecosystem, species*



4. What is the process that allows a producer (autotroph) to make its own food/energy from the Sun?  
Write the **EQUATION** for this process.
  
5. What do we call the process where an organism takes in oxygen and releases carbon dioxide?  
Write the **EQUATION** for this process.

6. \* **TRUE or FALSE:** A group of individuals of the same species in a given area at the same time is called a genus.  
**Write correct answer if false.**

\* **TRUE or FALSE:** A population with low genetic diversity is more likely to survive major environmental changes.  
**Explain your answer if false.**

\* **TRUE or FALSE:** Mutations in DNA, natural selection pressures, and extinction level events over time create environments that are rich in variations of plant and animal species. We call this process

\_\_\_\_\_ . (**HINT:** what kind of diversity is this?)

7. Which kinds of changes are **most likely** to develop new species or to cause species to go extinct? Choose from **changes in the geosphere** (volcanic activity or plate tectonics, the Earth being hit by a meteor), **changes in the atmosphere** (daily weather pattern changes), or **changes in the environment**. **EXPLAIN YOUR ANSWER.**

8. Give an example of where a new species is introduced to an area by accident.

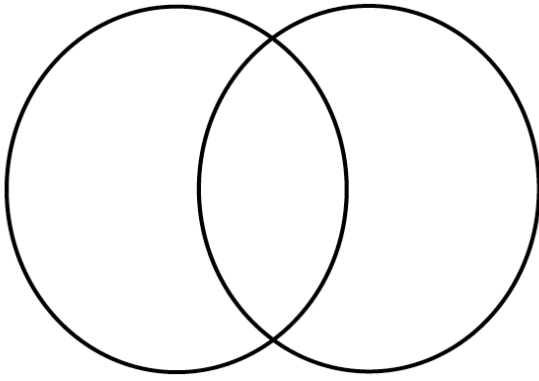
9. Identify the two (2) types of biodiversity **AND** give a description for each.

10. List **three (3)** non-native (invasive) species in North Carolina. Indicate how each impacts the environment.

11. The most important factor in determining a biome found in a particular area is \_\_\_\_\_.

a. Magnetic fields	c. Climate
b. Plants and animals	d. Soil

12. Compare and contrast *native* and *non-native (invasive) species*.

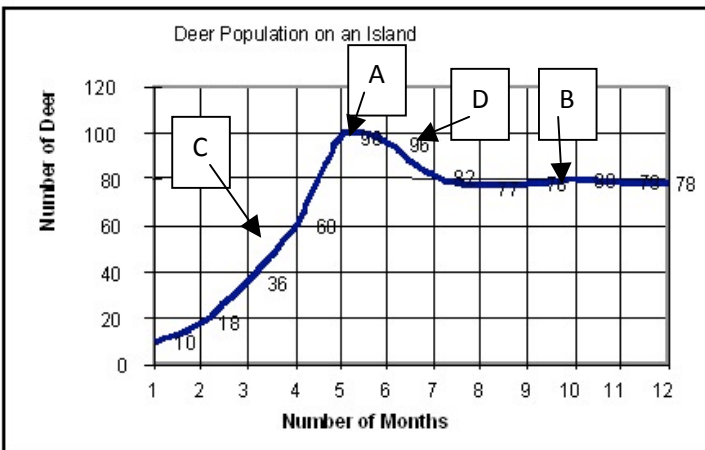


13. a. \_\_\_\_\_ is a complex system of interlocking food chains that show the transfer of food energy.
- b. \_\_\_\_\_ are able to make its own food energy with energy from the Sun through a process called \_\_\_\_\_.
- c. A \_\_\_\_\_ is where a species lives, whereas \_\_\_\_\_ is its ecological role in that environment.
- d. \_\_\_\_\_ describes the number (relative abundance) of species within a single ecosystem that contributes to its biodiversity.

14. Complete the following table:

<b>BIOME</b>	<b>LOCATION</b>	<b>CLIMATE (HOT, COLD, RAINY, DRY)</b>	<b>SOIL (RICH OR POOR)</b>	<b>PLANTS (GIVE EXAMPLES)</b>	<b>ANIMALS (GIVE EXAMPLES)</b>
Tropical Rain Forest	Near the equator				
Coniferous (Boreal) Forest	Northern latitudes				
Temperate Deciduous Forest	Mid latitudes				
Hot Desert	Mid latitudes				
Temperate Grassland (Prairie)	Mid latitudes, center of continents				
Savannah	Mid latitudes, center of continents				
Arctic Tundra (Frozen Desert)	High northern latitudes				

15. Label the points "A-D" with the following terms: **population stabilized at carrying capacity**, **exponential growth**, **exceeded carrying capacity** and **declining, peak population**



16. Explain what happens to a population with high genetic diversity when it encounters environmental changes.
17. Food webs are a more accurate depiction of feeding relationships compared to food chains because \_\_\_\_\_.  
 a. Many animals that comprise the links in a food chain are migratory  
 b. Organisms almost always eat, and are eaten by, many different organisms  
 c. Food chains always lose trophic levels over time  
 d. None of the above
18. Fill in the blanks with the following terms: **natural resources**, **minerals**, **limiting factor**, **plants/animals**, **abiotic**, **population**, **deaths**, **births**, **soil**, **resources**, **limits**, **carrying capacity**

A \_\_\_\_\_ grows when the number of births is greater than the number of deaths. It shrinks, if \_\_\_\_\_ exceed \_\_\_\_\_. For a population to grow there must be enough \_\_\_\_\_ and no major \_\_\_\_\_.

A population can shrink either because of biotic or \_\_\_\_\_ limits.

When number of births equals number of deaths, the population is at its \_\_\_\_\_ for that habitat. Every stable population has one or more factors that limit its growth. A \_\_\_\_\_ determines the carrying capacity for a species: nutrient, space, and water availability are examples.

A population uses natural resources. \_\_\_\_\_ are materials or substances such as \_\_\_\_\_, \_\_\_\_\_, water, and fertile \_\_\_\_\_ that occur in nature and can be used for economic gain.