Inspiring Greatness

ISD

INDEPENDENCE SCHOOL DISTRICT

High School Science Virtual Learning

College Biology

April 28, 2020

High School College Biology
Lesson: April 28, 2020

Objective/Learning Target:

Students will be able to discuss and identify the flow of energy through ecosystems and how ecosystems change through succession.

Let’s Get Started:

1. People find most bitter-tasting foods ojectionable. Why do you suppose we have taste receptors for bitter-tasting chemicals?

2. You’re eating a pizza. At what trophic level(s) are you feeding?

Answers:

1. Taste receptors sensitive to bitter chemicals presumably enabled identification of potentially toxic plants by the ancestors of humans when they foraged for food, thus allowing them to survive longer.

2. You're a primary consumer when you eat flour (in the crust) and tomato sauce, and you're a secondary consumer when you eat cheese or meat on the pizza.

Lesson Activity:

1. Read over pages 15-26 of the Chapter 20 Notes. (Linked Here)

2. Watch this Crash Course videos on
   Energy Transfer
   Succession

Practice:

1. What does the trophic structure determine in an ecosystem?

2. What two factors determine species diversity in a community?

3. What is ecological succession?

Practice Answers:

1. It determines the pathways that transform energy and matter as they move from photosynthetic organisms, to herbivores and then to predators. Essentially establishing the food chain and major portions of the nutrient cycles.
2. Species richness, the number of different species, and relative abundance of the different species; the proportional representation of each species
3. Ecological succession starts after a disturbance. Species are gradually replaced by others as the area returns to its normal state.

More Practice:

1. The concept of trophic structure emphasizes the
   a. prevalent form of vegetation.
   b. keystone species concept.
   c. feeding relationships within a community.
   d. species richness of the community.

2. Why are the top predators in food chains most severely affected by pesticides such as DDT?

More Practice:

3. Match each organism with its trophic level (you may choose a level more than once).

a. alga	1. decomposer
b. grasshopper	2. producer
c. zooplankton	3. tertiary consumer
d. eagle	4. secondary consumer
e. fungus	5. primary consumer

4. Over a period of many years, grass rows on a sand dune, then shrubs grow, and then eventually trees grow. This is an example of ecological _____.

More Practice Answers:

1. C
2. Because the pesticides become concentrated in their prey
3. a2, b5, c5, d3 or d4, e1
4. succession

Review Tools:

-Kahoot 2
- Mr. Anderson videos about energy flow and succession: Video 1, Video 2.