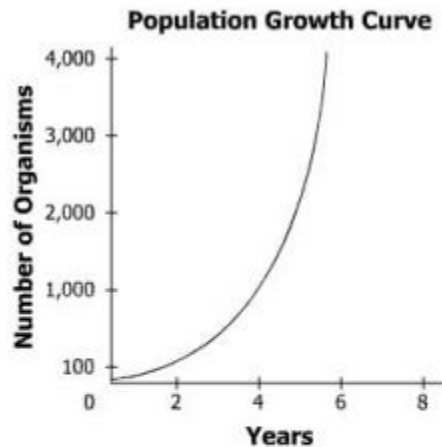


Ecology (Unit 9) Practice SOL Questions



For the growth curve to continue increasing, which of these must occur?

- A The organisms must adapt to a new habitat.
- B The organisms must migrate to a new environment.
- C The resources in the environment must be unlimited.
- D The environment must provide a habitat for a large variety of organisms.

Seaweeds occupy an important niche in the Chesapeake Bay ecosystem. Which question will best help a student identify the role of seaweeds in this ecosystem?

- A Which organisms depend on seaweeds as an energy source?
- B Which seaweed species produces the greatest amount of oxygen?
- C What wavelengths of light are photosynthesized by seaweed species?
- D What is the salinity in areas where seaweed is growing?

In a population of 120 oak trees, 25% of the population has oak wilt disease. What is the number of trees in this population that have oak wilt?

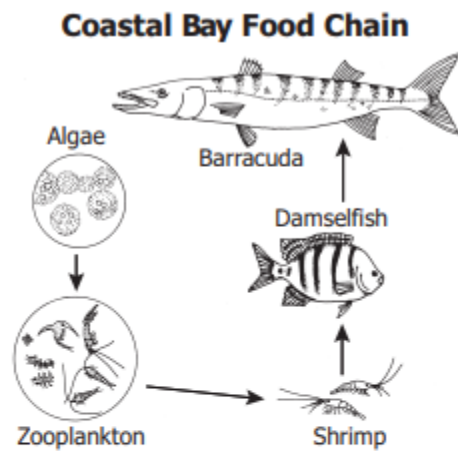
trees with oak wilt

An insect called the hemlock woolly adelgid was introduced to a Virginia forest ecosystem. This pest feeds on the nutrients stored inside a hemlock tree, resulting in the death of the tree. Which kind of data would best help a student evaluate the effect of this insect?

- A A comparison of the adelgid with native pest species
- B An account of how the adelgid was introduced into Virginia ecosystems
- C A list of the foreign ecosystems infiltrated by the hemlock woolly adelgid
- D Information about the ecosystem's characteristics before the adelgid infestation

In an ecosystem, a sudden decrease in the number of bacteria in the soil would most likely result in —

- A increased water pollution in the soil
- B increased precipitation and flooding of the soil
- C a reduction in the amount of nitrogen available to the ecosystem
- D a decrease in the number of fossils formed in the soil



This food chain can be found in the coastal waters of Virginia. The population of which organisms in the food chain would be the *first* to decline if commercial fishing over-harvested shrimp?

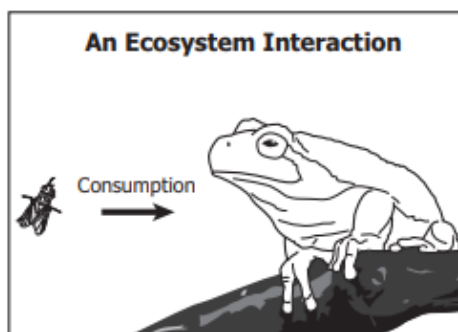
- F Algae
- G Zooplankton
- H Damselfish
- J Barracuda

Many Northern Hemisphere birds respond to seasonal environmental changes by —

- A hibernating
- B mutating
- C migrating
- D estivating

When a group of foxes moves to a new environment, a change in which of the following is *least* likely to be a selective pressure on the foxes?

- A Temperatures
- B Food sources
- C Decomposers
- D Predator populations



The interaction pictured represents —

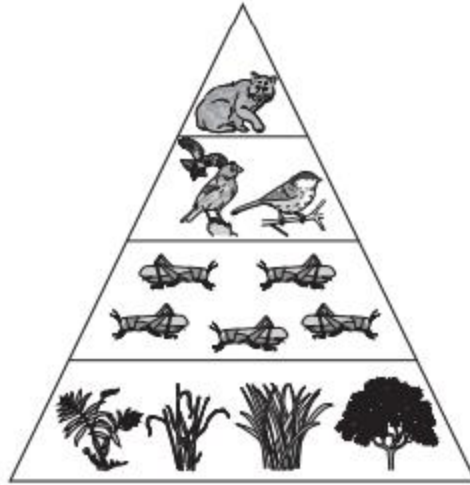
- F growth
- G respiration
- H energy and nutrient transfer
- J herbivory and decomposition

As the seasons change from summer to fall, there are fewer hours of daylight. Which is a typical response of a dogwood tree to this change?

- F Producing flowers
- G Increasing its growth rate
- H Dropping its leaves
- J Shedding bark

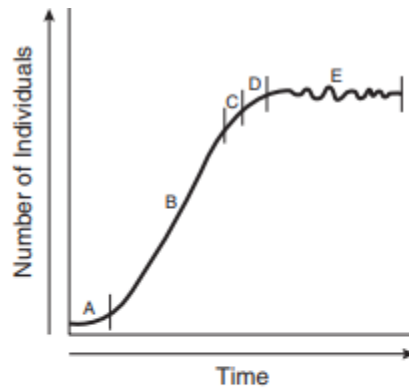
Virginia's Great Dismal Swamp is largely a red maple forest. Previously, there were more bald cypress and white cedar trees in the area. Tree cutting, extensive draining, and the prevention of natural forest fires have changed the balance of tree species. The balance has shifted because these actions have —

- F preserved the amount of soil in the swamp
- G decreased the amount of sunlight needed by cypress
- H increased the rate of cellular respiration in cedar
- J altered the pattern of succession in the swamp



According to the energy pyramid, the *most* energy is present in organisms living at the same level as the —

- A bobcat
- B birds
- C grasshoppers
- D grass

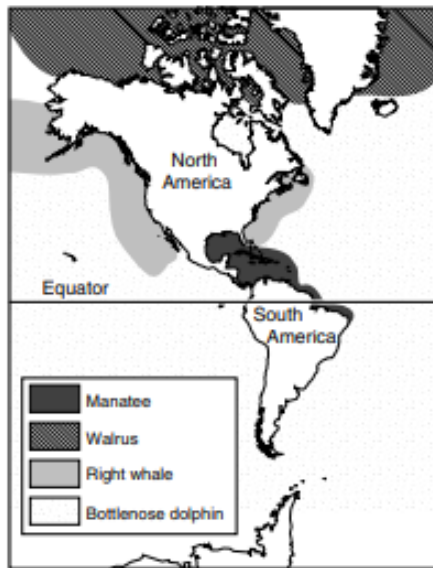


Most populations introduced to a new ecosystem grow until factors such as lack of food and overcrowding limit their growth, as illustrated above. What does the portion of the graph labeled B represent?

- A Exponential growth
- B Slowing growth
- C Birthrate decrease
- D Death rate increase

The organisms at the beginning of a food chain are —

- A producers
- B consumers
- C decomposers
- D omnivores



In an aquatic habitat, an example of organisms from the pioneer community would be —

- A water reeds
- B water lilies
- C grass
- D algae

According to this map, which animal would *most likely* avoid cold waters?

- A Manatee
- B Walrus
- C Right whale
- D Bottlenose dolphin

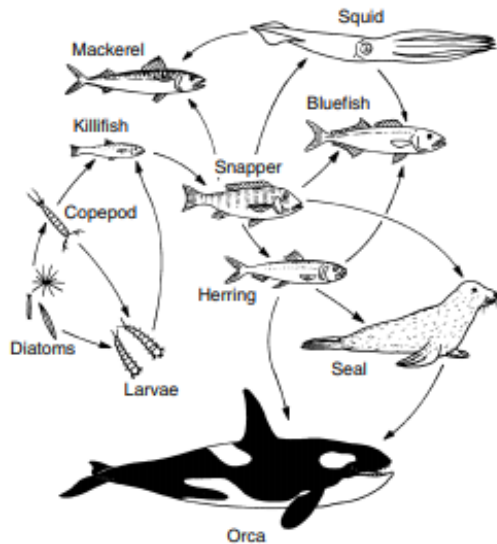
Representative Animals from a Local Ecosystem	
Type of Organism	Number of Individual Species Collected
Grasses	11
Trees	1
Fish	16
Amphibians	12
Reptiles	8
Mammals	3

The chart shows the types of organisms and the numbers of species collected from a local ecosystem. According to these data, this ecosystem was most likely a —

- A tundra
- B marsh
- C desert
- D savanna

Some plant roots grow with mycorrhizal fungi. The fungi absorb water and minerals and pass them on to the plant and receive carbohydrates from the plant. This is an example of —

- A predation
- B mutualism
- C competition
- D parasitism



In the diagram, which organism provides nutrients for the largest number of other organisms?

- F Herring
- G Snapper
- H Bluefish
- J Seal

Which of these would be measured to determine the density of the polar bear population in Canada?

- A The number of bears per square kilometer
- B The total number of bears seen per day
- C The mass of the bears at the Arctic Circle
- D The total number of bears minus the juvenile bears