

Name: _____

Succession Online Interactive

Date: _____

Directions: Go to www.biologybynapiet.com and click on the Succession Interactive Link found on today's date on the Ecology Unit OR go to biomanbio.com and search for EcoGames and Succession page OR you can type in the following link: https://biomanbio.com/HTML5GamesandLabs/EcoGames/succession_interactive.html

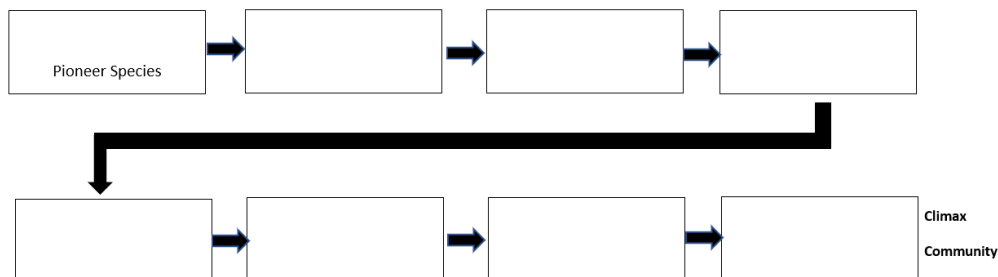
Click **Primary Succession**

1. What caused the disturbance of the ecosystem in this example of primary succession?
2. What does the environment consist of after the disturbance?
3. Define succession.
4. What is primary succession?
5. Click on "Grasses" and "Add Grasses to My Island." Why can grasses not survive on the island yet?
6. Click on "Lichens." Define a lichen.
7. Review Time. It says lichens are a "mutualistic symbiosis." What does this mean?
8. Review Time. What trophic level in a food chain would lichen occupy? How do you know?
9. Click "Add Lichens to My Island." Define pioneer species.
10. What role do lichens play in the environment during primary succession?
11. Click "Primary Consumers" and "Add Primary Consumers to my Island." Why do primary consumers not survive yet on the island?
12. Click "Mosses" and "Add Mosses to My Island." What role do mosses play in the environment during primary succession?
13. Click "Grasses." Why do grasses build up the soil quickly?
14. What happens to the mosses during the colonization of grasses? Why?
15. Click "Primary Consumers". Define primary consumer.
16. What role do primary consumers play in producing soil?
17. Is it now possible for primary consumers to occupy your island? Why?
18. Click "Tertiary Consumers" and "Add Tertiary Consumer to My Island." Describe what happens to the tertiary consumer?
19. Click on "Trees" and "Add Trees to My Island." Why do trees not yet colonize the island?
20. Click on "Flowers" and "Add Flowers to My Island." How do the seeds that grow flowers arrive on the island?

21. What type of animal do flowers need to continue to grow?
22. Click on "Pollinators" and "Add Pollinators to My Island" What type of relationship do flowers and bees have? Why?
23. Click on "Bushes" and "Add Bushes to My Island." What has built up the soil enough that allows the bushes to thrive on your island?
24. Click on "Secondary Consumers." What is a secondary consumer ecological niche?
25. Add secondary consumer to your island. How do these secondary consumers arrive on the island?
26. Click on "Tertiary Consumers" and "Add Tertiary Consumers to My Island." Describe what happens.
27. Click on "Trees." What resources to trees and other smaller plants compete for?
28. Click on "Tertiary Consumers" and "Add Tertiary Consumer to My Island." Why do tertiary consumers now thrive on your island?
29. Define Climax Community.
30. **Primary succession** starts with _____ with _____ soil and ends with a _____.

Click **Secondary Succession**

1. Secondary succession occurs in an area with _____ and _____.
2. What caused the disturbance in the ecosystem in this example of secondary succession?
3. What are some causes of environmental disturbances that lead to rebuilding by secondary succession?
4. What are the pioneer species for secondary succession?
5. Are the pioneer species for secondary succession the same as primary succession?
6. Continue to build your ecosystem as it progresses through secondary succession. Record the orderly progression of your ecosystem below starting with the pioneer species and ending with the climax community.



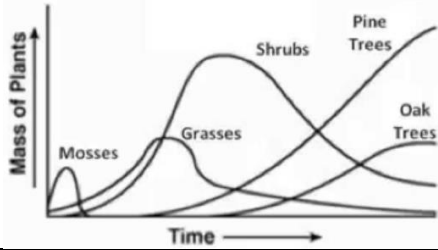
7. Which type of succession occurs quicker? Why?

Click **Quiz**

<p>1. Which of the following best describes succession?</p>	<p>The creation of new life from nothing in an ecosystem.</p> <p>The reduction in biodiversity of an ecosystem over time.</p> <p>The evolution of species through natural selection to become different species over time.</p> <p>The changes in species composition in a community over time as species colonize an area.</p> <p>All of these are good descriptions of succession.</p>
<p>2. Which of the following are true?</p>	<p>Primary succession begins in an area that did not have life before.</p> <p>Secondary succession occurs in an area that already had life and soil.</p> <p>Primary succession begins in an area that does not have soil.</p> <p>All of these are true (besides the one that says that none are true...).</p> <p>None of these are true.</p>
<p>3. Place the following types of organisms in the order in which they would appear during primary succession. NUMBER the choices.</p>	<p>mosses</p> <p>trees</p> <p>lichens</p> <p>grasses and annual flowers</p> <p>bushes and shrubs</p>
<p>4. Lichens are often the first species to colonize an environment during primary succession. In general, the first species to colonize an environment is called . . .</p>	<p>a first order consumer</p> <p>primary succession</p> <p>a pioneer species</p> <p>unwise</p> <p>secondary succession</p>
<p>5. How do lichens alter the abiotic environment to favor the establishment of other species of plants?</p>	<p>They break down rock and form soil.</p> <p>They reflect sunlight to help them to grow.</p> <p>They provide energy for other plants.</p> <p>They are a good food source for pollinators.</p> <p>They do not help other plants to grow at all.</p>

<p>6. Why do lichens and mosses get mostly replaced by larger plant species during succession?</p>	<p>Larger plants are autotrophs but lichens and mosses are heterotrophs.</p> <p>Larger plants compete for resources like space, sunlight, and soil nutrients more successfully.</p> <p>Larger plants do not use as many resources as lichens and mosses.</p> <p>Larger plants are not edible so they are more likely to avoid predation.</p> <p>None of these.</p>
<p>7. Do animals or plants come first in succession? Why?</p>	<p>Animals come first because animals are needed to regulate plant populations.</p> <p>Animals come first because all plants require pollinators.</p> <p>Plants come first because plants are more mobile than animals.</p> <p>Plants come first because animals rely on them for food production.</p> <p>Plants and animals colonize the environment simultaneously.</p>
<p>8. What would be a correct sequence for the events of secondary succession? Number the sequences.</p>	<p>An intact ecosystem is disrupted by a natural disaster.</p> <p>Trees become common and outcompete other plants for sunlight.</p> <p>Bushes begin to dominate.</p> <p>The climax community for the area is established once again.</p> <p>Pioneer species like grasses and flowers grow.</p>
<p>9. Place the following types of organisms in order from first to last to successfully colonize an area. Number the sequences.</p>	<p>tertiary consumers</p> <p>producers (plants)</p> <p>secondary consumers</p> <p>primary consumers</p>
<p>10. How do living things alter the biotic and abiotic environment to cause the process of succession?</p> <p>I. Lichens and small plants produce soil that allow larger plants to grow.</p> <p>II. Large trees produce shade and compete for resources with smaller plants, causing a reduction in their populations.</p> <p>III. Animals replace plants due to their superior intelligence.</p>	<p>II only</p> <p>I only</p> <p>I and II only</p> <p>I, II and III</p> <p>II and III only</p>
<p>11. Biodiversity is the variety of life in an area. Think about the process of succession. How does biodiversity change during succession?</p>	<p>Biodiversity decreases through the process of succession.</p> <p>Biodiversity increases through the process of succession.</p> <p>Biodiversity does not change during the process of succession.</p>

12. The graph below illustrates the mass of different types of plants during succession. Which of the following best describes what occurs to the amount of grasses in the graph?



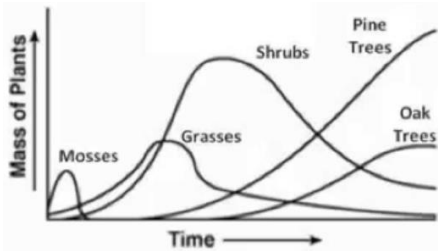
It increases continuously.

It increases for a while and then decreases.

It decreases continuously.

It does not change.

13. The graph below illustrates the mass of different types of plants during succession. Which best explains the decrease in the mass of mosses?



Competition for light and resources with grasses

Competition for light and resources with pine trees

Competition for light and resources with oak trees

A lack of soil nutrients in the environment

14. What is the difference between primary and secondary succession?

Primary succession occurs in an area that is disrupted by a fire or other natural disaster but secondary succession does not.

Primary succession occurs after secondary succession.

Primary succession involves only plants but secondary succession involves animals too.

Primary succession occurs in an area with no life and no soil but secondary succession happens in an area where an existing community was disrupted.