



# Ecological Succession WebQuest

Name: \_\_\_\_\_

Per. \_\_\_\_\_

**Objective:** In this webquest, you will discover and explore the process of primary and secondary ecological succession and apply your new knowledge through a series of interactive ecological succession activities.

## **TASK ONE – What Is Ecological Succession? Video**

Use the link below to watch the “Ecological Succession” video by Bozeman Science. As you watch, answer the questions.

<http://www.bozemanscience.com/ecological-succession>

TINY URL: <https://tinyurl.com/z3czdl6>



1. What is succession? \_\_\_\_\_
2. What are the two parts of ecological succession? \_\_\_\_\_
3. What three abiotic factors make it possible for soil to gather and build on rock landscapes?
  1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
4. What is the name of the new island off Iceland that has begun succession since 1963? \_\_\_\_\_
5. List three things that can bring life to a barren island.
  1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
6. Is soil necessary for secondary succession? \_\_\_\_\_
7. What is secondary succession? \_\_\_\_\_
8. What is the difference between primary and secondary succession? \_\_\_\_\_
9. What are some examples of disturbances that lead to secondary succession? \_\_\_\_\_
10. What are the first organisms that inhabit a barren landscape called? \_\_\_\_\_
11. Why are lupine important to primary succession? \_\_\_\_\_
12. What are climax species? \_\_\_\_\_
13. If your area experienced a severe disturbance, what type of pioneer species do you think would emerge in your area? \_\_\_\_\_



## **TASK TWO – Ecological Succession Interactive**

Use the following link to complete the Ecological Succession Interactive by BiomanBio. Answer the questions below as you interact with the simulation. [https://biomanbio.com/HTML5GamesandLabs/EcoGames/succession\\_interactive.html](https://biomanbio.com/HTML5GamesandLabs/EcoGames/succession_interactive.html)

TINY URL: <https://tinyurl.com/yc42zszl>

**A.** Click on *Start a New Game*. Then click the *Primary Succession* Tab. Press *Continue* to move through the activity.

14. Describe the features of the volcanic island after it cools. \_\_\_\_\_
15. The changes in species composition in an area over time is called what? \_\_\_\_\_
16. When succession happens in a place with no life or soil, is it primary or secondary succession? \_\_\_\_\_

**B.** Click on *each* organism and answer the following questions.

### *Lichen*

17. What do lichens consist of? \_\_\_\_\_
18. What type of mutualism do algae and fungi have? \_\_\_\_\_
19. Why can lichen grow on bare rock? \_\_\_\_\_
20. What is photosynthetic? \_\_\_\_\_
21. How does lichen arrive on the island? \_\_\_\_\_

### *Mosses*

22. Where can mosses live? \_\_\_\_\_
23. Do mosses have roots? \_\_\_\_\_
24. How do moss anchor onto things? \_\_\_\_\_
25. How does having little soil be beneficial to moss? \_\_\_\_\_



Grasses

- 26. Describe the roots of grasses. \_\_\_\_\_
- 27. What are grasses a good source for? \_\_\_\_\_

Bushes

- 28. What type of soil do bushes need to thrive? \_\_\_\_\_



Flowers

- 29. Why are flowering plants important? \_\_\_\_\_
- 30. What do flowering plants need in order to reproduce? \_\_\_\_\_

Trees

- 31. What do trees require in order to survive? \_\_\_\_\_
- 32. How do trees affect smaller plants? \_\_\_\_\_
- 33. What do trees provide habitat for? \_\_\_\_\_

Pollinators

- 34. What are pollinators critical to? \_\_\_\_\_

Primary Consumers

- 35. What do primary consumers eat? \_\_\_\_\_
- 36. How do primary consumers make the soil more fertile? \_\_\_\_\_



Secondary Consumers

- 37. What do secondary consumers eat? \_\_\_\_\_
- 38. How do secondary consumers help the ecosystem? \_\_\_\_\_

Tertiary Consumers

- 39. What do tertiary consumers eat? \_\_\_\_\_

C. Choose your pioneer species and try to build a successful climax ecosystem. Keep trying until you are successful. As you move through this part of the activity, answer the following questions.

- 40. What is a pioneer species? \_\_\_\_\_
- 41. How does lichen arrive to the island? \_\_\_\_\_
- 42. Why are lichen a great pioneer species? \_\_\_\_\_
- 43. How does moss arrive to the island? \_\_\_\_\_
- 44. How do mosses help succession? \_\_\_\_\_

- 45. How do grass seeds come to the island? \_\_\_\_\_
- 46. Why do grasses spread rapidly? \_\_\_\_\_
- 47. What are grasses a productive food source for? \_\_\_\_\_
- 48. What do the grasses outcompete the mosses for? \_\_\_\_\_



- 49. How do flowering plants come to the island? \_\_\_\_\_
- 50. What do flowering plants need to be pollinated by? \_\_\_\_\_
- 51. How do the seeds for bushes enter the island? \_\_\_\_\_
- 52. What type of soil do bushes need? Why? \_\_\_\_\_
- 53. How do trees enter the island? \_\_\_\_\_
- 54. What two organisms have a mutualistic relationship? \_\_\_\_\_
- 55. How do primary consumers benefit plants? \_\_\_\_\_
- 56. What do secondary consumers help to control? \_\_\_\_\_
- 57. What is the stable community that will remain on your island for a very long time called? \_\_\_\_\_
- 58. What does primary succession start with? \_\_\_\_\_
- 59. What does primary succession end with? \_\_\_\_\_

60. List the organisms in the order that you placed them from pioneer species to climax community on the lines below.

- 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_
- 4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_
- 7. \_\_\_\_\_ 8. \_\_\_\_\_ 9. \_\_\_\_\_
- 10. \_\_\_\_\_



D. Click on *Return to Main Menu* and then click on the *Secondary Succession* tab.

- 61. What triggers secondary succession on the island? \_\_\_\_\_
- 62. What is the process of rebuilding a community that is disrupted called? \_\_\_\_\_
- 63. Why can your pioneer species be different in secondary succession? \_\_\_\_\_
- 64. What was the perfect pioneer species for your island? \_\_\_\_\_
- 65. Why can flowers rapidly germinate? \_\_\_\_\_
- 66. Why do bushes populate the island after grasses and flowering plants? \_\_\_\_\_
- 67. Why are tree seeds already on the island? \_\_\_\_\_
- 68. What is secondary succession? \_\_\_\_\_

E. Click on *Return to Main Menu* and then click on the *Quiz* tab. Write the correct answers in the space below as you complete the quiz.

- 69. Which of the following best describes succession? \_\_\_\_\_
- 70. Which of the statements is true? \_\_\_\_\_

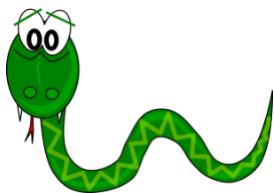
71. Fill in the boxes to show which order organisms would appear during primary succession.



First To Appear	
Last to Appear	



- 72. Lichens are often the first species to colonize an environment during primary succession. In general, the first species to colonize an environment is call... \_\_\_\_\_
- 73. How do lichen alter the abiotic environment to favor the establishment of other species of plants? \_\_\_\_\_
- 74. Why do lichens and mosses get replaced by larger plant species during succession? \_\_\_\_\_
- 75. Do plants or animals come first in succession? Why? \_\_\_\_\_

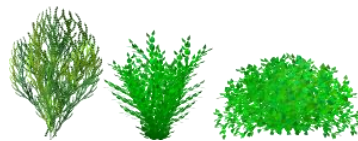


76. Fill in the boxes to show the sequence for the events of secondary succession.

First	
Last	

77. Fill in the boxes below to show the sequence from first to last organism to successfully colonize an area.

First	
Last	



- 78. How do living things alter the biotic and abiotic environment to cause the process of succession? \_\_\_\_\_
- 79. Biodiversity is the variety of life in an area. Think about the process of succession. How does biodiversity change during succession? \_\_\_\_\_
- 80. According to the graph, what best describes what occurs to the amount of grasses in the graph? \_\_\_\_\_
- 81. According to the graph, what best explains the decrease in the mass of mosses? \_\_\_\_\_
- 82. What is the difference between primary and secondary succession? \_\_\_\_\_