**Name: Date:**

**Succession Webquest**

**Part 1 - Succession Background Knowledge**

The purpose of this part of the webquest is for you to gain more background knowledge about ecological succession. Please respond to questions below in your notes, you will not need to turn them in, but you are expected to use the knowledge from this part for the actual assignment.

**Introductory Activity**

Work through the activity about "[Primary and Secondary Succession](http://www.mrphome.net/mrp/succession.swf)" to get your brain started! If you have headphones, use them!

What is the impact of temperature and rainfall on the rate of primary succession?

Is the “pioneer species” in the primary and secondary succession examples the same?

**Online Reading about Succession**

Read the online textbook to learn more about succession. Click the section called "[**Change in Communities Over**](http://www.emc.maricopa.edu/faculty/farabee/biobk/BioBookcommecosys.html#Table%20of%20Contents)

[**Time**,](http://www.emc.maricopa.edu/faculty/farabee/biobk/BioBookcommecosys.html#Table%20of%20Contents)" and answer the following questions.

1. Define **succession** briefly.

2. What is **primary succession?**

3. What type of disturbances would create a primary succession situation in an ecosystem?

4. What is **secondary succession?**

5. What type of disturbances would create a secondary succession situation in an ecosystem?

6. Is the **climax community** always the same for a given ecosystem? Explain!

7. Continue reading the next section, "Disturbance of a community." How do humans affect an ecosystem?

Watch the slides about succession in the [Pacific Northwest](http://ecoplexity.org/node/496), and make note of the following:

i. Are there any pioneer species that are surprising to you?

ii. How long does it take to reach a climax community?

iii. What is one question you have about succession?

**Part 2 – Changes in productivity and biodiversity**

Use the following links to answer the questions below:

[Graph succession productivity over time](http://isabellaacostabioportfolio.weebly.com/uploads/3/9/1/3/39133991/4686695_orig.png)

[Succession Productivity and Diversity](http://sciencebitz.com/?page_id=42)

[Succession Changes Slides 20-23](http://www.slideshare.net/MichaelSmith62/summary-of-topic-26)

1. How does ecosystem productivity change over time as succession progresses? (Include reason)

2. How does ecosystem biodiversity change over time as succession progresses? (Include reason)

**Part 3 - Apply What You Learned**

Choose ONE of the succession simulations below to investigate thoroughly. If the resources I have provided are not sufficient, feel free to do an internet search to find more information!

**Mount Saint Helens**

Mount Saint Helens erupted in 1980, and while it devastated the surrounding land and property, it was a unique opportunity for ecologists to study primary succession. Use the two links to answer the questions below.

1. Describe the plant/animal community that was present before the eruption.

2. Describe the pioneer species that helped start the succession process after the eruption of Mt. St. Helens.

3. How long do you think it will take for Mt. St. Helens to reach a climax community - explain your answer.

[Mount Saint Helens Video](https://www.youtube.com/watch?v=4RsMyVavT2Q)

[Mount Saint Helens report.pdf](http://mshallarvadahs.pbworks.com/f/Mount%2BSaint%2BHelens%2Breport.pdf)

[Mount Saint Helens Timelapse](http://earthobservatory.nasa.gov/Features/WorldOfChange/sthelens.php)

**The Yellowstone Fire**

The Yellowstone fire occurred in September 1988. It was highly controversial. National Park policy says that natural fires should be allowed to burn themselves out as long as human life and property are not threatened. Over 1,000,000 acres burned in one of America’s favorite national parks. The fire did provides an opportunity for scientists to study succession and fire regimes of the Ponderosa/Lodgepole Pine ecosystem. Use the resources below to answer the questions below.

1. Describe the plant/animal community that was present before the fire.

2. Describe the pioneer species that helped start the succession process after the Yellowstone Fire.

3. Is fire a normal part of the ecosystem where the Yellowstone Fire occurred? Explain your answer.

4. How long do you think it will take for the Yellowstone Fire area to reach a climax community? Explain your answer.

[Yellowstone Video](https://www.youtube.com/watch?v=jJ0zqo1opv8)

[Another Yellowstone Video](https://www.youtube.com/watch?v=AQQupOYonRo)

[Yellowstone Fire Story](http://www.x98ruhf.net/yellowstone/fire.htm)

[Yellowstone Timelapse](http://earthobservatory.nasa.gov/Features/WorldOfChange/yellowstone.php)