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|  | **Topic: Forest Ecology- Primary vs. Secondary Succession*****Objective:*** *I can explain how ecosystems change over time.* ***HOM:*** *Curiosity* |
| **Essential Question:** How do forests change over time after disturbances, natural or otherwise?  |
| Questions:  | **Succession*** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, gradual changes in the types of species that live in an area; can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ replacement of one plant community by another through natural processes over time.

**Definitions:** **Primary succession:** beginning from an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ environment following a catastrophic disturbance**Secondary succession:** beginning from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ disturbance, but all forms of life are not destroyed1. **Primary Succession**
* Begins in a place without any \_\_\_\_\_\_\_\_\_\_\_\_.
	+ Sides of volcanoes
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Flooding
1. Starts with the arrival of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ things such as lichens that do not need soil to survive
	1. Called PIONEER SPECIES like \_\_\_\_\_\_\_\_\_\_\_

What is lichen? * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ relationship between fungus and algae
	+ Fungus = \_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Algae= photosynthesizing \_\_\_\_\_\_\_\_\_\_\_ producer
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| **Summary:** Directions: Use sentence frames below to draft a summary for your Cornell Notes. Choose **one frame** to use for each of the four sentences. Your finished summary should be written as a complete paragraph, with correct spelling and punctuation. Sentence #1 (Introduction of topic)* In this lesson, I learned \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The notes / powerpoint explained that\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Sentence #2 (Important detail)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is important information about the topic of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* A key detail from the notes is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Sentence #3 (Important detail)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ helped me understand how / that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Another important point from the notes is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Sentence #4 (Conclusion)* By studying \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, I realized / discovered \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* As a result of learning about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, I now understand \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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| 1. Soil starts to form as lichens and the forces of weather and erosion help \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ rocks into smaller pieces.
	1. When lichens die, they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, adding small amounts of organic matter to the rock to make soil.
2. Simple plants like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can grow in the new soil
3. The simple plants die, adding more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ material
	1. The soil layer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and grasses, wildflowers, and other plants begin to take over.
4. These plants die, and they add more \_\_\_\_\_\_\_\_\_\_\_\_\_ to the soil.
	1. Shrubs and trees can survive now.
5. Insects, small birds, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have begun to move in.
	1. What was once bare rock now supports a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of life.
6. **Secondary Succession**
* Begins in a place that already has \_\_\_\_\_\_\_\_\_\_\_\_ and was once the home of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organisms.
1. Occurs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Similar steps to primary succession, but has different pioneer species like \_\_\_\_\_\_\_\_\_\_\_
3. Example: After forest fires, \_\_\_\_\_\_\_\_\_\_\_\_\_\_,

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