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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 destroyed   1. **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 |
| **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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 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, \_\_\_\_\_\_\_\_\_\_\_\_\_\_,   cultivation­­­ |