Successful Succession

Pre-Eastman Classroom Activities

Before Class Begins:
1. Label the four corners of the room with one of the following signs: Strongly Agree, Agree, Strongly Disagree, and Disagree.
2. Make four copies of the Forest Fire Information Cards, one for each corner.
3. Copy the Cloze Procedure for Succession, one per student.
4. Copy the Flow Chart, one per student.

Lesson:

1. The teacher should make the statement, “All forest fires are bad.” Students will then go stand in the corner that best represents their feelings about this statement. Allow students time to share their thoughts in each corner and then have a spokesperson defend each position.

2. Give each group a Forest Fire Information Card to read and discuss. Students will then be allowed to move to a new corner if their views have changed. Allow them to defend their new choice using specific examples or facts from the cards.

3. Explain to students that there are times when an environment will change drastically and that ecological succession is the orderly replacement of native species over time.

4. Students will complete the Cloze Procedure Activity on Succession in pairs. They will use pre-existing knowledge to predict the reasons for and stages of ecological succession.

5. As a class, go over and discuss the Cloze Procedure Activity. Have students create a flow chart of the Stages of Succession to use in the forest.
Successful Succession

In The Field

Prior to leaving the school, make sure you have:

- Digital cameras
- Journals
- Pens or pencils
- First Aid Kit

In the forest, students will be observing different stages of succession. Guide students to a variety of locations within the forest that are examples of different stages of succession. In each area, allow students enough time to observe and record data regarding the plants and animals in that location. They should take pictures of each area and record observations in their journals.
Post-Eastman Classroom Activities

Students will use the pictures and recorded data made in the forest to create an oral presentation on ecological succession. This presentation should include examples of the stages of succession as well as information regarding the role of succession in the forest environment. A sample rubric for grading follows:

### RUBRIC

**VISUAL ELEMENTS**

- Minimum of 10 slides  
  - 20 points
- Pictures of 4 stages of succession  
  - 20 points

**NARRATIVE ELEMENTS**

- Evidence to support the four stages  
  - 20 points
- Discussion of the role of succession  
  - 20 points

**PRESENTATION STYLE**  

- 20 points

**TOTAL**  

- 100 POINTS
Forest fires:

- clear the way for new growth by opening the forest canopy for sunlight.
- cost over $600 million per year.
- cover the ground with ash that is rich in calcium, phosphorus, and other minerals.
- can enhance natural wildlife habitats.
- can control insect population and disease.
- clear undergrowth reducing the probability of future fires.
- allow some trees to get the intense heat needed to open their cones and release seeds.
- endanger homes, property, and human life.
- are used to clear a logged area for planting of new trees.
- can destroy natural wildlife habitats.
FOUR STAGES OF SUCCESSION

STAGE ONE

STAGE TWO

STAGE THREE

STAGE FOUR
FOUR STAGES OF SUCCESSION

STAGE ONE
Grasses and weeds grow and scatter seeds.
Insects, worms, and birds return.
Lasts about 5 years

STAGE TWO
Dense shrubs, vines, and non-woody short plants
Rabbits, snakes, skunks
Lasts about 10 years

STAGE THREE
Pine and other fast-growing trees
Owl, squirrels, foxes

STAGE FOUR
Hardwood trees
Climax community
Many species of plants and animals
Occasionally a forest environment can be destroyed by natural disasters such as fires, diseases, floods, or the actions of humans. When the plants are destroyed, many animals lose their habitat. However, some animals are able to survive by leaving the area or burrowing underground. Succession is a term used to describe a type of natural regrowth that occurs in these situations.

In the first stage of succession, grasses and weeds begin to grow and scatter seeds. Insects, worms, and birds begin to return. This stage lasts about five years.

As these plants begin to die and decay, valuable nutrients are added to the soil. This fertile ground enables the shrubs, vines, and other non-woody plants to flourish. Animals such as rabbits, snakes, and skunks find shelter in this ground cover. This simple environment continues for about ten years.

As the soil deepens, pine and other fast-growing trees spring up, providing habitat for animals such as owls and squirrels. The trees also block sunlight to the shrubs and vines below. The decay of those plants further deepens the soil.

In the last stage, hardwood trees such as oak and hickory grow. They eventually replace the pine trees. The dead pine trees provide homes for many animals as well as mosses and mushrooms. Unless it is destroyed by another natural disaster or human intervention, there will be no more changes in this habitat. A community that does not undergo further succession is called a climax community.
Occasionally a forest environment can be destroyed by natural ________________ such as fires, ________________, ________________, or the actions of ________________. When the ________________ are destroyed, many animals lose their _________________. However, some animals are able to survive by ________________ the area or ________________ underground. ________________ is a term used to describe a type of natural regrowth that occurs in these situations.

In the first stage of succession, ________________ and __________ begin to grow and scatter ________________. ________________, ________________, and __________ begin to return. This stage lasts about ________________ years.

As these plants begin to die and ________________, valuable ________________ are added to the soil. This fertile ground enables the ________________, ________________, and other ________________ plants to flourish. Animals such as ________________, ________________, and __________ find shelter in this ground cover. This simple environment continues for about ________________ years.

As the soil deepens, ________________ and other fast-growing trees spring up, providing ________________ for animals such as __________ and _____________. The trees also block ________________ to the shrubs and vines below. The ________________ of those plants further deepens the _________________.

In the last stage, ________________ trees such as oak and hickory grow. They eventually replace the pine trees. The dead pine trees provide ________________ for many animals as well as ________________ and _________________. Unless it is destroyed by another ________________ or human intervention, there will be no more ________________ in this habitat. A community that does not undergo further ________________ is called a climax community.