Floristic Relay

5th Grade

Meghan Knapp

References:

Pictures:
http://www.thenewlifelink.com/GrowthGroups.htm
http://snrs.unl.edu/wedin/wedinlab/images/shrubland.jpg
http://www.mit.edu/people/tere/Photos/colorado.html
http://www.uga.edu/srel/ESSite/Picture05.html
http://www.bolivianbeauty.com/EBB/MainPage.htm

Game:
http://gk12.asu.edu/curriculum/life_science/floristic_relay/

Benchmarks:

SLC 17A: Students will identify how plant and animal species are affected by changes in an ecosystem over time (succession, change and maintenance of habitats, interrelationships).

Objectives:

Students should appreciate that succession is a long process that can take 100 years or more to go from a pioneer community to a climax community. Students should be able to identify pioneer and climax species and order habitats in succession. Students should recognize that different characteristics of species make them more suitable to early or late succession.

Materials

For Each group:

- One set of succession photos
- One succession game kit:
    - Board, character cards, event cards, rules, moving pieces, worksheet and rules (see relevant .pdf files)

Initial Demonstration:

Show the students a picture of a forest after a forest fire. How has the habitat changes? How has life changed for the species that live there?

Target Observations:

- There appear to be no living plants
- The trees are all dead
- Animals will have no homes and no food.

Target Model:

- After a destructive event, such as a forest fire, the habitat changes dramatically and the species that once lived there cannot anymore.

Procedure:

Ask the students how the habitat will change now. What changes will happen first? Provide each group with the succession photos. Have the groups put the photos in order for how they think the habitat will change over time.

What did the students put first and why? (The correct order is **field, shrubland, pine forest, hardwood forest**). How long would it take for the burnt forest to turn into a field? (several years). How long would it take for shrubs to grow in? What about trees? Remind students that first only a few trees will grow, and as their seeds are spread, more will grow in. Putting all these numbers together, how long would it take for the hardwood forest to fill in? (Around a century, though 80 or so years is reasonable).

Target Revised Model:

- After a destructive event, such as a forest fire, the habitat changes dramatically and the species that once lived there cannot anymore.
- First small plants and grasses will grow in. This will take several years.
- Gradually larger plants such as shrubs and trees will grow in. It may take close to 100 years for the forest to rebuild itself.

Procedure:

Have the students write down the words **succession, pioneer community, climax community.** They should identify the pioneer species (weeds and grass) and climax species (hardwood trees).

Pass out the board game and instruct students on how to play. It may take a few times to get the hang of it, so let them play the first day just to try it out, and then the second day keep a record of how their game went.

Some hints: If an interaction card says that the species tolerate each other, you can have two characters on the same space at the end of the turn.

It is not entirely clear in the rules how the number of each species is determined. Two suggestions: either count the number of spaces from the start, or use which place the character is in. The first place character has 6, the second 5, and so on.

Ask what species were dominant at the beginning of the game. Were these pioneer species or climax species? What about at the end of the game? Did the populations of the species continue to grow throughout the game? Did the pioneer species die off completely?

Target Revised Model:

- Pioneer species are the first to grow after an event like a fire
- Pioneer species tend to be things that grow quickly
- As the ecosystem gets older, new "climax" species begin to take over
- Climax species take longer to develop
- The pioneer species become more rare as the climax species increase their numbers

Summary:

After a destructive event, a habitat is changed so much that the species that were living there before cannot survive. New "pioneer" species will replace them initially. As time goes on, these organisms will be replaced by newer "climax" species. Pioneer species tend to be things that grow quickly, like weeds and grasses, while climax species tend to be slower growing organisms, like trees.

Succession Pictures