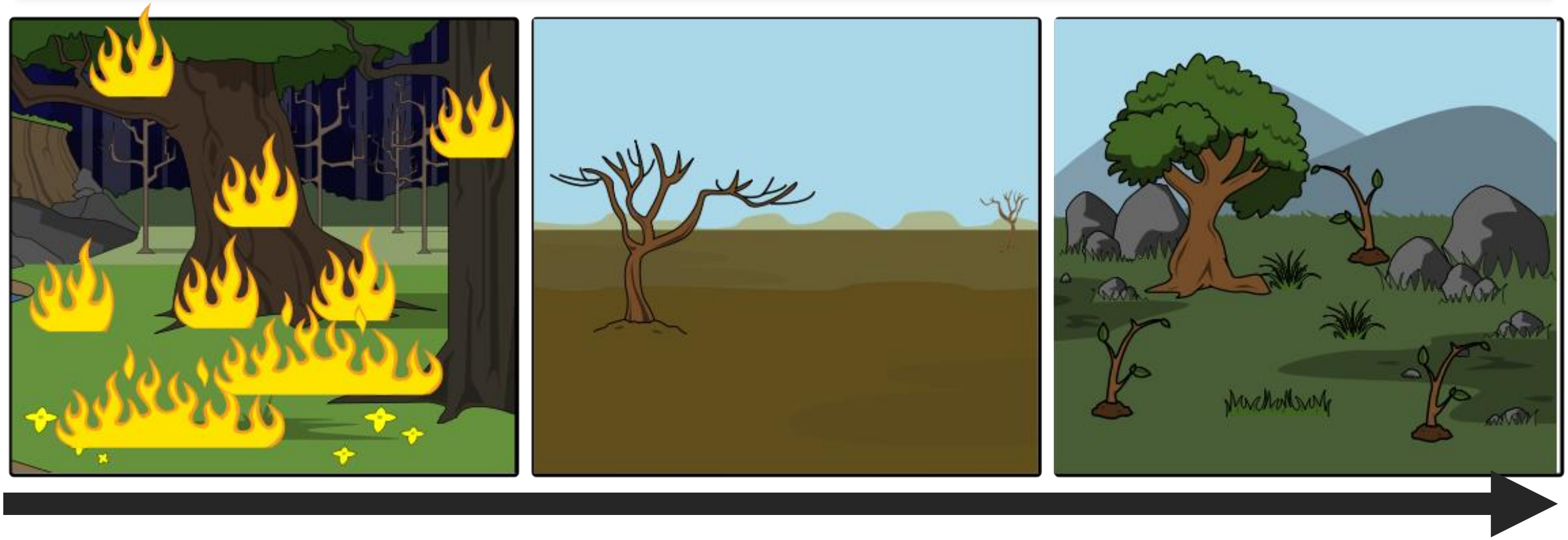
Ecological Succession

Standards: 6.3a, 6.3b, 6.3c

Objective: I can describe how ecosystems change over time.

Motivation/Activating Prior Knowledge

Answer the following Questions in your guided notes and discussion board. Respond to one classmate.



What is happening in these pictures?

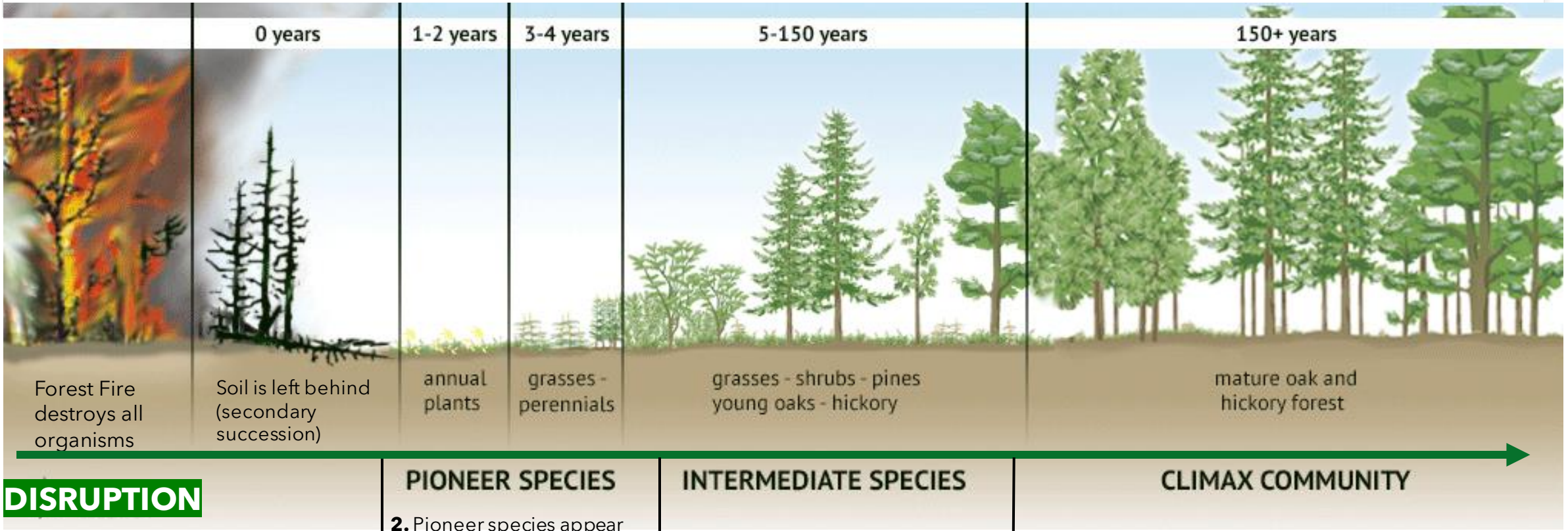
How do you think this happens?

Slide 2: Mini Lesson

Ecological Succession: A gradual (slow) process where ecosystems change and develop over time.

2 Types

Primary Succession: Ecosystem develops from rock.
Secondary Succession: Ecosystem *develops from soil.*



1. Disruption to the ecosystem occurs. Disruptions could be any form of natural disaster, including forest fires, hurricanes, tornadoes, volcano eruptions, etc. Most of the organisms living in the ecosystem are killed.

2. Pioneer species appear first. Such species are typically small/simple. When volcanic eruptions leave nothing but rock, the pioneer species named "Lichens" turn rock into soil.

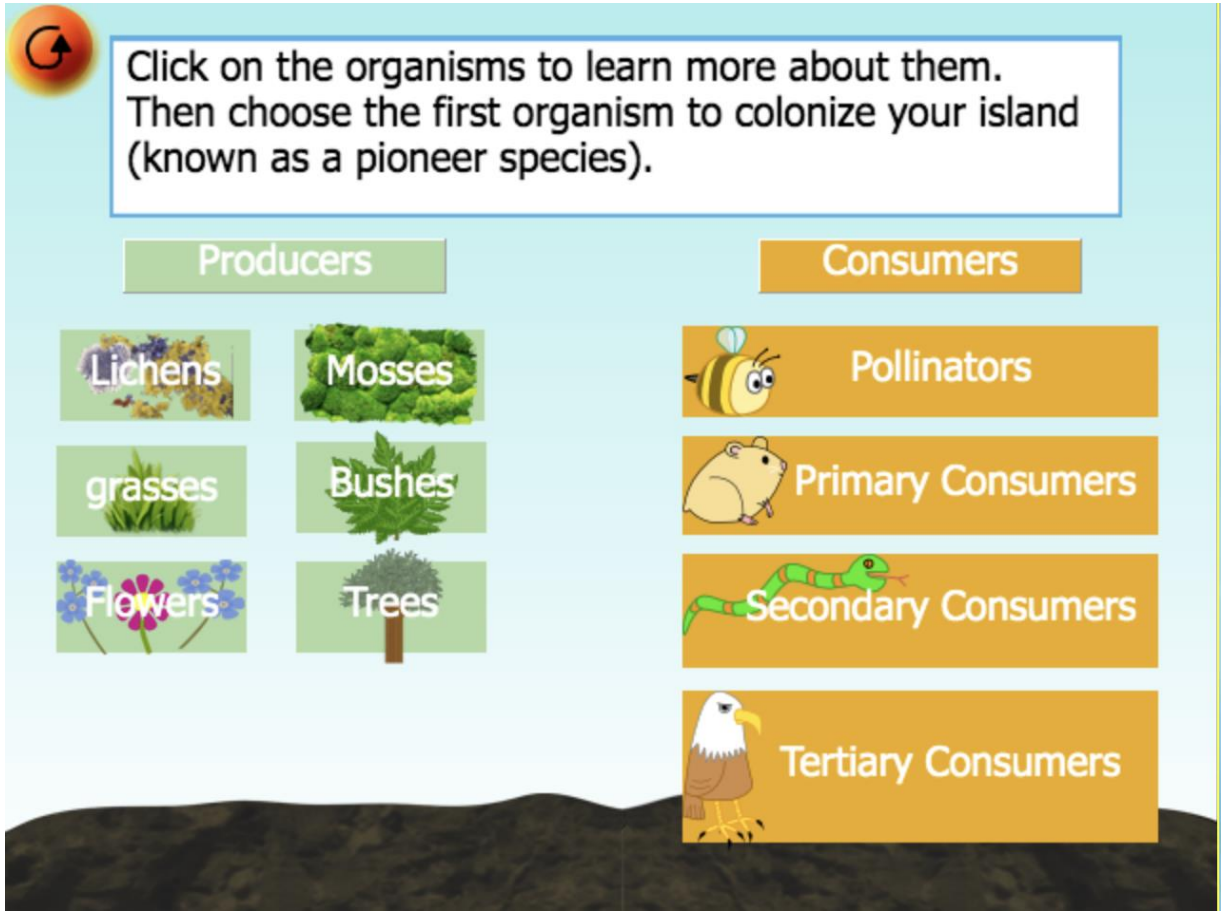
3. Over time, bigger, more complex organisms begin to grow.

4. Over a long period of time, many complex organisms are fully developed. Biodiversity is highest at the climax community, therefore, this is the most STABLE time period.

Simulation = https://biomanbio.com/HTML5GamesandLabs/EcoGames/succession_interactive.html

Complete the simulation and record your results in the guided notes

Note the correct order of introduced organisms in primary succession. Play around on the simulation until you get the correct order!

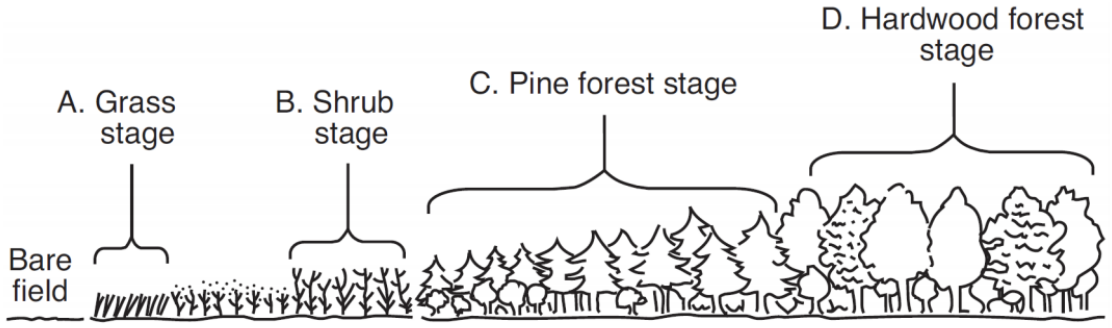


Mini Lesson - Regents Must Know Facts

1. Ecological Succession is when ecosystems develop and become more complex over time!
2. The LAST stage of ecological succession is called the Climax Community and it is the most STABLE because it has the most biodiversity.
3. Lichens are indicative of ecological succession due to their ability to turn rock into soil!
4. Ecological succession is how ecosystems recover from disturbances (natural disasters, human interference, etc.)

Guided Practice – Regents Questions

1. The diagram below represents the various stages of ecological succession in New York State.



If the ecosystem is not altered, which stage would be the most stable?

A) pine forest
B) grass
C) shrub
D) hardwood forest

2. In New York State, small farms that were abandoned many years ago have become hardwood forests. This is an example of

A) local deforestation
B) ecological succession
C) habitat loss
D) biotechnology

3. What is a characteristic of a stable environment?

A) It usually contains a great diversity of species.
B) It usually contains only one type of producer.
C) It contains simple food chains that have more consumers than producers.
D) It contains complex food webs that have more heterotrophs than autotrophs.

4. If the grass in the front yard of an abandoned house is not cut for several years, the yard may become overgrown with taller grasses, bushes, and shrubs. This is an example of the process of

A) homeostasis
B) evolution
C) ecological succession
D) direct harvesting

Closure

Post your responses to the following question on both your guided notes and your discussion board. Be sure to respond to at least one classmate!

1. What factors contribute to an ecosystems ability to recover from a natural disaster the fastest? Use what you have learned to identify a list of factors that would make an ecosystem recover from a disturbance quickly and easily.

2. On the contrary, what would make an ecosystem recovery very slowly?

EXIT ASSESSMENT

Complete your exit assessment either on CastleLearning or via the exit assessment attached pdf

Supplemental Video

https://www.youtube.com/watch?v=uqEUzgVAF6g