Ecosystems are constantly changing.

**Ecological succession** is a gradual process of change and replacement of the types of species in a community.

Each new community that arises often makes it harder for the previous community to survive.
Ecological Succession

Ecological Succession Video
Ecological Succession

- **Primary succession** is a type of succession that occurs on a surface where no ecosystem existed before.
- It begins in an area that previously did not support life.
- Primary succession can occur on rocks, cliffs, or sand dunes.
Ecological Succession

• **Secondary succession** occurs on a surface where an ecosystem has previously existed.

• It is the process by which one community replaces another community that has been partially or totally destroyed.

• Secondary succession can occur in ecosystems that have been disturbed or disrupted by humans, animals, or by natural process such as storms, floods, earthquakes, or volcanic eruptions.
Ecological Succession

• A **pioneer species** is a species that colonizes an **uninhabited area** and that starts an ecological cycle in which many other species become established.

• Over time, a pioneer species will make the new area habitable for other species.

• A **climax community** is the final, stable community in equilibrium with the environment.

• Even though a climax community may change in small ways, this type of community may remain the same through time if it is not disturbed.
Climax Community
Ecological Succession

- **Natural fires** caused by lightning are a necessary part of secondary succession in some communities.
- Minor forest fires remove *accumulations of brush and deadwood* that would otherwise contribute to major fires that burn out of control.
- Some animal species also depend on occasional fires because they feed on the vegetation that sprouts after a fire has cleared the land.
Video on why fires are important

Old-field succession is a type of secondary succession that occurs when farmland is abandoned.

When a farmer stops cultivating a field, grasses and weeds quickly grow and cover the abandoned land.

Over time, taller plants, such as perennial grasses, shrubs, and trees take over the area.
Ecological Succession

• **Primary succession** can occur on new islands created by *volcanic eruptions*.

• Primary succession is much slower than secondary succession. This is because it begins where there is no soil.
Ecological Succession

- The first pioneer species to colonize bare rock will probably be bacteria and lichens, which can live without soil.

- The growth of lichens breaks down the rock, which with the action of water, begins to form soil.
Graphic Organizer

Create the **Graphic Organizer** entitled “Chain-of-Events Chart” described in the Appendix. Then, fill in the chart with details about each step of ecological succession.