Ecological Succession

Stage 1: The start of the succession
Bare Rock

The beginning of ecological succession happens when a disaster occurs and wipes an entire **ecosystem** to bare rock.

Ecosystem: An area where non-living and living organisms create a habitable area for animals.

Stage 2

Once rain has washed up enough dirt into the cracks of the bare rock, lichens are the first **biotic element** to make it their home. They use **photosynthesis** to create food, which lets them grow further. They'll eventually produce acids to break down the rock and absorb new nutrients. Once enough soil has built up it'll allow mosses to grow. Before mosses the next organism to move in is bacteria.

Photosynthesis: The process where plants use sunlight to create food and nutrients.
Biotic element: A living thing found inside an environment.

Stage 3

- Moss will only start to grow once the lichens have built up enough soil from **photosynthesis**. The moss has a life cycle which helps to create the base for the **ecosystem** so other plants can grow. The cycle of life for moss is a four-step process which is grow, die and get decomposed by **decomposers**. An example of **decomposers** are bacteria. They'll continue to repeat this cycle and once decomposed the moss will leave soil.

Decomposer: An organism that eats and breaks down dead organisms or waste to soil.

Stage 4

- With all the soil that was left behind by the moss, slightly larger plants will grow such as: succulents, grasses and clovers. Clovers add nitrogen into the soil which help the growth and processing food for plants.

Stage 5

Nitrogen is very good for the soil. Nitrogen helps the growth and processing of food for plants. The plants will be healthy with the nitrogen from the clovers, and they'll grow large enough where small organisms such as: nematodes. This organism is a **decomposer** who eats decaying plants and leaves behind nutrients in its waste. These organisms only come in once the plants grow larger. Another way plants grow is through **pollination.**

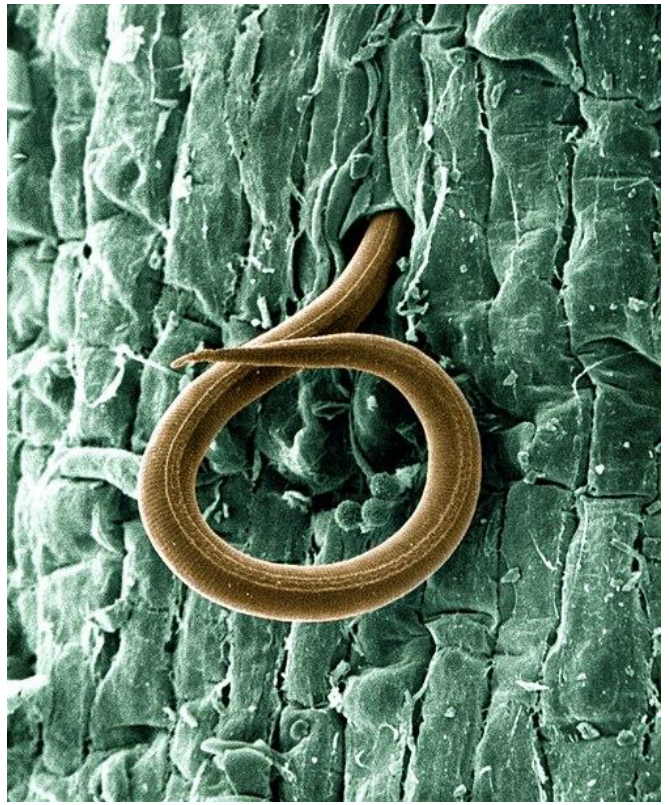
Pollination: When pollinators fly around from one plant to another dropping pollen while getting food.

- Pollination is an example of **mutualism**. **Pollination** is where a pollinator such as: bees, wasps, monarch butterflies and so on. The **mutualism** is the pollinator gets food, and the plants gets pollen which helps them reproduce.

Mutualism: A relationship where both organism benefit from

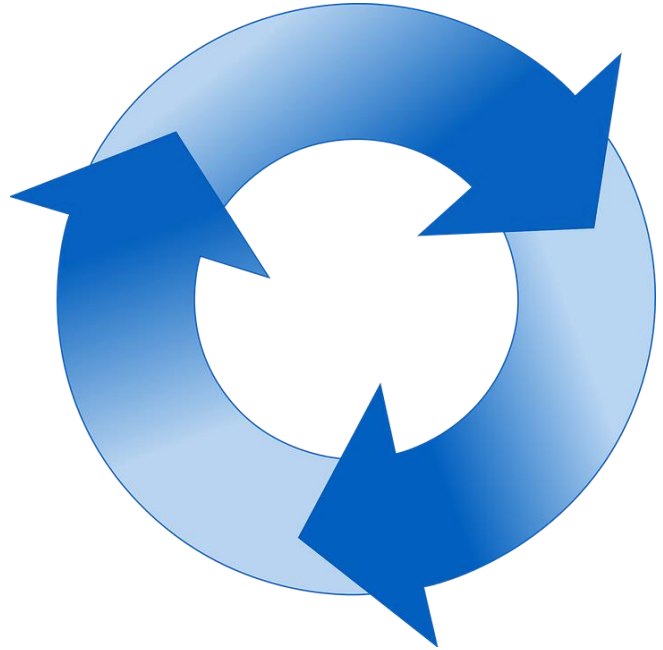
Stage 6

- When the **ecosystem** has producers, smaller animals start to move into the area such as: nematodes. Both these animals are **decomposers**.



Stage 7

- All these living **consumers** live through a cycle which increases the amount of soil in the area. The cycle is grow, reproduce, die, decompose. Once enough soil has accumulated larger plants can begin to grow. They



Consumers: An organism that eats other organisms.

Stage 8

- The soil will continue to build up and thicken until the larger plants begin to grow such as daisies, mints, sumac, ivies and ferns. These plants can only grow once the soil has given enough room for the roots.

Stage 9

- Since larger plants have grown, small herbivores and omnivores will begin to move into the habitat. The plants will give enough food to let the animals survive, some of those herbivores are rabbits, white footed mice, starling, chickadees etc.

Stage 10

- As the plants grow larger and healthier, the herbivores and omnivores grow Aswell. Once the consumers grow big enough some smaller carnivores will move into the habitat. Some of these animals are hawks, coyotes, foxes. These predators will compete over prey species such as rabbits, mice, birds etc. The two relationships are called **competition** and **predator prey**.

Competition: When two different species compete for food
Predator-prey: A relationship where one animal hunts another for food.

Stage 11

- Once the predators move in, they'll lure in other carnivores and further grow the ecosystem. The larger carnivores such as wolves, bears. These animals will move in once the ecosystem has fully matured.

- Finally, the ecosystem has fully developed. Once from bare rock to a diverse habitat where plants and animals can survive. These are the steps of succession in an ecosystem.