**CLASS SET- WRITE ANSWERS IN NOTEBOOK**

**Succession POGIL**

1. Refer to Model 1
2. On what type of land does primary succession first begin to occur?
3. Why would most plants such as shrubs and trees find it difficult to grow in diagram A?
4. Refer to diagram B in Model 1.
5. What are the first organisms (colonizers) on this land?
6. Suggest how the first colonizers may have arrived on the land.

Read This!

The first colonizers are referred to as the pioneer community. These can include lichens, mosses, ferns and bacteria- all organisms with low nutrient requirements. As they colonize, they break the weathered rock surface, which helps to create the first thin layer of soil. Without soil other plant life cannot be sustained and without plants no animal life can exist.

1. Refer to Model 1.
2. Which diagram illustrates a pioneer community?
3. What are some of the features of the pioneer community?’
4. Notice the colonizers in diagram C and D are taller and require more nutrients than those in the pioneer community. Considering what you know about plants and photosynthesis, why might it be a competitive advantage for a plant to be taller?
5. What happens to the pioneer organisms once the new colonizers become established?

Read This!

As the newer colonizers begin to take over, animals will also begin to appear as they can feed on the more diverse food sources. The pioneer plants die and decompose and the animals leave behind manure. Both add to the thin soil layer.

1. What effect will the addition of animal waste and decayed plant matter have on the soil quality?
2. Using the diagrams in Model 1 as a guide, develop a definition with your group for the term **primary succession**, as it relates to the colonization of barren land.

Read This!

As soil quality and quantity improves, the life forms present in the area undergo a series of changes, each referred to as a **seral stage**. Eventually a biologically diverse mature **climax community** is formed.

1. Label the pictures in Model 1 as pioneer community, seral stages and climax community.
2. Most climax communities are biologically diverse forests. Why might a climax community have a larger diversity of species than a pioneer community?
3. Refer to Model 2.
4. What stage of development does diagram A represent?
5. What appears to have happened in diagrams B through C?
6. What process will begin again after this event occurred?
7. Can the ecosystem totally recover from this set-back? What evidence is given in Model 2?
8. What effect does having pre-existing soil have on the amount of time it takes to return to climax community compared to the process in primary succession? Give your answer in complete sentences and give reasoning for your answer.
9. Why is the title of Model 2 Secondary Succession rather than Primary Succession?
10. Consider each event below and determine if the recovery process for the environment will happen by primary or secondary succession.
11. Melting, receding glaciers
12. Logging a wooded area
13. Major flooding of a creek area
14. Volcanic eruption with lava flow