Amanda Diamond

SOL BIO.8 a-d.

Activity Outline: Nitrogen; Food for the World

I. Introduction to forestry and nitrogen (5 minutes total)

A. Introduce myself (2 minutes)

B. PINEMAP stands for: Pine Integrated Network: Education, Mitigation, and Adaptation Project. This is a very large research project funded in 2011 by the USDA. It involves 11 universities, several government agencies and dozens of scientists.

C. Introduce the Topic (1 minute)

II. The Nitrogen Cycle (20 minutes total)

A. Describe the motions of Nitrogen through the natural world (10 minutes)

B. Use a Nitrogen testing kit to show how much Nitrogen is actually in their school soil; this would be to physically show the amount of Nitrogen in the soil (10 minutes)

III. How Nitrogen is important in the Forestry Field of study (20 minutes total)

A. N-P-K rating

N – nitrogen: promotes the growth of leaves and vegetation

P – phosphorus: promotes root and shoot growth

K – potassium: regulation of water and nutrient movement in plant cells, purportedly promoting flowering and fruiting

B. I used Nitrogen Based Fertilizers over the summer, (10 minutes)

C. Management Practices for fertilizer runoff; putting a 50 t buffer between where fertilizer is used and bodys of water that can be contaminated for example farms should have a 50 ft buffer of vegetation and trees in order to reduce runoff.

- Or use less fertilizer or use it more efficiently
- Plant nitrogen fixing crops
- When fertilized with urea and DAP, one acre of managing loblolly pine can cost 100$
- 1 ac= 43560 ft2
- Side = 208 ft
- 1mi= 5280 ft
- 1 acres is about a 100^{th} of a square mile

IV. Conclusion (5 minutes total)

A. Nitrogen is important in the earth because it is one of the main limiting factors that will make plants grow