

Nitrogen Cycle Lesson Plan

Teacher

Date

School

SLE # LS.4.5.6: Describe and diagram the

nitrogen cycle in ecosystems

Objectives:

Content: I will describe and diagram the nitrogen cycle in ecosystems.

Language: I will use the terms nitrogen and nitrogen cycle during the activity.

Assessment: The teacher will be able to assess the students throughout the activity based on their participation and also on their finished writing assignment based on the activity.

Technology/Materials: 11 stamps and ink pads, Nitrogen Cycle Passports, Key to Passports, number cube codes, number cubes, activity sheet, Windows to the Universe selection on Nitrogen Cycle. Materials can be printed from http://www.windows.ucar.edu/tour/link=teacher_resources/teach_nitrogen.html

Vocabulary: nitrogen, nitrogen cycle

Bloom's: ☐ Remembering ☐ Understanding ☐ Applying ☐ Analyzing ☐ Evaluation ☐ Creating

Questions: Describe the nitrogen cycle. Which way does nitrogen move through the cycle? How is the nitrogen cycle important for an ecosystem? Is any one part of the nitrogen cycle more important than the others? Predict what would happen to an ecosystem if the nitrogen cycle broke down.

High Yield Strategies: ☐ Identifying similarities & Differences ☐ Summarizing & Note Taking ☐ Cooperative Learning
☐ Reinforcing Effort & Providing Recognition ☐ Setting Objectives & Providing Feedback ☐ Generating & Testing Hypotheses
☐ Cues, Questions & Advanced Organizers ☐ Homework & Practice ☐ Nonlinguistic Representations

Instructional Strategies:

Set: Activate prior knowledge by asking questions from above. Have students read Windows to the Universe selection on Nitrogen Cycle. Ask the students the questions again after reading selection to see if any answers have changed. Tell students that they will be entering into the nitrogen cycle and traveling through it.

Model: Show the students their Nitrogen Cycle Passports and the Key to the Cycle. Explain to the students how they will be moving around within the Nitrogen Cycle exploring the various stations. Model how the students should move from station to station and stamp their passport whenever they get to a new station.

Guided Practice/Strategies: Walk the students through a round of the activity and show how the students should stamp their passport and then roll the number cube to determine the next station that they will visit.

Intervention Strategies: Teacher will walk throughout the room asking students to explain their journey and why they believe they are traveling from the previous station.

Accommodations & Modifications (IEPs) Group students as needed. Allow students to draw/diagram their journey rather than write about it.

Independent Practice/Activities: Students will go through the activity and fill in their passports.

Enrichment Activities: Allow students to create a comic strip about the nitrogen cycle.

Closure: When the students are done with the activity, have them write a paragraph about their trip through the nitrogen cycle. Include information about (1) where they went, and (2) how they got to each destination.

- Show students a diagram of the nitrogen cycle. Ask them to create a similar diagram specifically documenting their journey through the nitrogen cycle.

Students could also write about the following:

- Was everyone's journey the same? Why not?
- What would happen if a farmer used too much fertilizer? (In this game, that would mean that everyone started from the fertilizer station at the same time.)
- What would happen if we burnt too many fossil fuels?
- Livestock farming creates a large amount of animal waste. How would this affect the nitrogen cycle?

Homework: Students can finish their writing assignment and look at home for examples of how the nitrogen cycle affects their home life.