

# Nitrogen Cycle Worksheet Answer Key PDF

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## Part 1: Building a Foundation

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**What is the primary role of the nitrogen cycle in ecosystems?**

undefined. A) To convert carbon dioxide into oxygen

**undefined. B) To recycle nitrogen through different forms ✓**

undefined. C) To produce energy for plants

undefined. D) To eliminate nitrogen from the atmosphere

The nitrogen cycle primarily recycles nitrogen through different forms.

**Which of the following are processes involved in the nitrogen cycle? (Select all that apply)**

undefined. A) Photosynthesis

**undefined. B) Nitrogen Fixation ✓**

**undefined. C) Nitrification ✓**

**undefined. D) Denitrification ✓**

Processes involved in the nitrogen cycle include nitrogen fixation, nitrification, and denitrification.

**Describe the process of nitrogen fixation and its importance in the nitrogen cycle.**

**Nitrogen fixation is the process of converting atmospheric nitrogen into ammonia, which is essential for plant growth.**

**List two types of bacteria involved in the nitrogen cycle and their respective roles.**

1. Type of bacteria 1 and role

**Rhizobium - Nitrogen fixation**

2. Type of bacteria 2 and role

### Nitrosomonas - Nitrification

Examples include Rhizobium (nitrogen fixation) and Nitrosomonas (nitrification).

## Part 2: comprehension and Application

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**Which process converts ammonia into nitrite and then into nitrate?**

undefined. A) Nitrogen Fixation

**undefined. B) Nitrification ✓**

undefined. C) Assimilation

undefined. D) Denitrification

The process that converts ammonia into nitrite and then into nitrate is nitrification.

**How do human activities impact the nitrogen cycle? (Select all that apply)**

**undefined. A) Increasing nitrogen levels through fertilizers ✓**

undefined. B) Reducing nitrogen levels through deforestation

**undefined. C) Contributing to atmospheric pollution with nitrogen oxides ✓**

undefined. D) Enhancing soil fertility naturally

Human activities impact the nitrogen cycle by increasing nitrogen levels through fertilizers and contributing to atmospheric pollution.

**Propose a strategy to mitigate the negative impacts of synthetic fertilizers on the nitrogen cycle.**

**Strategies may include using organic fertilizers, crop rotation, and cover crops to enhance soil health.**

**A farmer wants to improve soil fertility using natural methods. Which process should they encourage in their fields?**

undefined. A) Denitrification

**undefined. B) Nitrogen Fixation ✓**

undefined. C) Ammonification

undefined. D) Combustions

The farmer should encourage nitrogen fixation to improve soil fertility naturally.

### Part 3: Analysis, Evaluation, and Creation

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**Which relationship is most directly affected by the process of nitrification?**

undefined. A) Plant and animal respiration

**undefined. B) Soil bacteria and plant nutrient uptake ✓**

undefined. C) Atmospheric nitrogen and soil nitrogen

undefined. D) Decomposition and soil organic matter

The relationship most directly affected by nitrification is between soil bacteria and plant nutrient uptake.

**Analyze the potential effects of a disrupted nitrogen cycle on an ecosystem. (Select all that apply)**

**undefined. A) Decreased biodiversity ✓**

undefined. B) Increased soil fertility

**undefined. C) Altered plant growth patterns ✓**

undefined. D) Enhanced atmospheric oxygen levels

A disrupted nitrogen cycle can lead to decreased biodiversity, altered plant growth patterns, and other negative effects.

**Discuss how changes in the nitrogen cycle can lead to soil acidification and its potential impacts on plant life.**

**Changes in the nitrogen cycle can lead to increased soil acidity, negatively affecting plant nutrient availability and growth.**

**Design a sustainable agricultural plan that incorporates natural nitrogen cycle processes to maintain soil health and productivity.**

**A sustainable agricultural plan may include crop rotation, cover cropping, and organic fertilization to enhance nitrogen availability.**