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Crash Course - ECOLOGY

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Crash Course Ecology #9: Nitrogen & Phosphorus Cycles

Name: _____ Date: _____

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1. The nitrogen in our atmosphere exists mostly as nitrogen gas, which is made of two nitrogen atoms joined by a _____ bond.
2. _____ are the organisms that convert atmospheric nitrogen into forms usable by plants.
3. Nitrogen-fixing bacteria use an enzyme called _____ to break nitrogen's triple bond.
4. _____ is formed when ammonia mixes with water, and it is a usable form of nitrogen for plants.
5. _____ bacteria convert ammonia into nitrites and nitrates, which are more easily absorbed by plants.
6. Animals obtain nitrogen by _____ plants or other animals that have eaten plants.
7. Nitrogen is returned to the atmosphere by _____ bacteria.
8. The enzyme used by denitrifying bacteria to convert nitrogen compounds back into nitrogen gas is called _____.
9. The nitrogen and phosphorus cycles both rely heavily on the work of _____ to break down organic material.
10. Phosphorus differs from nitrogen in that it is not found in the _____.
11. Rocks containing phosphorus are typically _____ rocks formed from old ocean floors and lake beds.
12. Once in a lake or ocean, a phosphorus atom can stay in the biological cycle for up to _____ years.
13. The main ingredients in most synthetic fertilizers are _____ and _____.
14. Humans have disrupted natural nutrient cycles by introducing large amounts of _____ into ecosystems.
15. _____ fertilizers have increased food production but also contributed to environmental damage.

Crash Course Ecology #9: Nitrogen & Phosphorus Cycles KEY

1. The nitrogen in our atmosphere exists mostly as nitrogen gas, which is made of two nitrogen atoms joined by a **triple** bond.
2. **Nitrogen-fixing bacteria** are the organisms that convert atmospheric nitrogen into forms usable by plants.
3. Nitrogen-fixing bacteria use an enzyme called **nitrogenase** to break nitrogen's triple bond.
4. **Ammonium** is formed when ammonia mixes with water, and it is a usable form of nitrogen for plants.
5. **Nitrifying** bacteria convert ammonia into nitrites and nitrates, which are more easily absorbed by plants.
6. Animals obtain nitrogen by **eating** plants or other animals that have eaten plants.
7. Nitrogen is returned to the atmosphere by **denitrifying** bacteria.
8. The enzyme used by denitrifying bacteria to convert nitrogen compounds back into nitrogen gas is called **nitrate reductase**.
9. The nitrogen and phosphorus cycles both rely heavily on the work of **decomposers** to break down organic material.
10. Phosphorus differs from nitrogen in that it is not found in the **atmosphere**.
11. Rocks containing phosphorus are typically **sedimentary** rocks formed from old ocean floors and lake beds.
12. Once in a lake or ocean, a phosphorus atom can stay in the biological cycle for up to **100,000** years.
13. The main ingredients in most synthetic fertilizers are **nitrogen** and **phosphorus**.
14. Humans have disrupted natural nutrient cycles by introducing large amounts of **fertilizers** into ecosystems.
15. **Synthetic** fertilizers have increased food production but also contributed to environmental damage.

15 Questions

Answer Key Included

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