

The Nitrogen Cycle

9th Grade

Why the most abundant gas in the air is useless to almost everything.

Air is 78% nitrogen, but almost no organism can use it directly. Bacteria make it available.

FIXATION

1

Bacteria convert nitrogen gas into ammonia. Lightning does a little too.

NITRIFICATION

2

Other bacteria convert ammonia into nitrites, then nitrates.

ASSIMILATION

3

Plants absorb nitrates through their roots to build proteins.

AMMONIFICATION

4

Decomposers return nitrogen from dead matter as ammonia.

DENITRIFICATION

5

Bacteria return nitrogen gas to the atmosphere.

Legumes host nitrogen-fixing bacteria in their roots. That is why crop rotation works.