

Carbon and Nitrogen Cycle Test Study Sheet

Carbon Cycle Information:

Earth's 4 Main Spheres	Atmosphere(air), Lithosphere (Land), Hydrosphere (water) Biosphere (Life)
The 4 Earth Elements needed essential for life on this planet	Carbon (C), Oxygen (O), Hydrogen (H), and Nitrogen (N)
The steps of the water cycle	1. water 2. evaporation 3. condensation 4. precipitation 5. runoff
The steps of the Oxygen cycle	1.Plants give off O ₂ 2. Animals take in O ₂ 3. Animals give off CO ₂ 4. Plants take in CO ₂
What is a Carbon Pool	- A location where carbon is stored - Plants, atmosphere, litter and waste, oceans, animals, fossil fuels, bacteria, fungi
Process 1: Photosynthesis (atmosphere – biosphere)	- Plants take CO ₂ out of the atmosphere - Plants use the C to make food (sugars and carbohydrates) - Plants release oxygen
Process 2: Respiration (biosphere -- atmosphere)	- Animals eat carbon in food form plants or other animals. - Animals breathe in oxygen - Each cell in the body does work and creates CO ₂ - Animals breathe out CO ₂
Process 3: Decomposition (biosphere – atmosphere) (biosphere – lithosphere) (biosphere – biosphere)	- decomposers eat dead plant or animal material perform respiration and breathe out CO ₂) - decomposers eat dead plant or animal material then produce waste which takes carbon into the soil
Process 4: Deforestation	- Cutting or burning down trees or vegetation for human use - Removes plants that take CO ₂ out of the air. - Adds more CO ₂ to the air through combustion.
Process 5: Combustion	- Burning of plant or animal material which releases CO ₂ into the atmosphere
Process 6: Consumption	- When animals eat plant or other animal material
Fossil Fuels	- Plant or animal materials that have decomposed into the soil and after millions of years of pressure and heat have become coal, oil, and natural gas.

Nitrogen Cycle information:

Nitrogen Facts	-78% of the air is "Free Nitrogen" - All organisms on our planet need it
Nitrogen Fixation	- Bacteria take "free nitrogen" (N ₂) out of the air and FIX it so that plants can use it to create plant compounds. (Plant parts)
Legumes	- Plants that have bacteria attached to their roots that take in nitrogen easily and add nitrogen to the soil. (making it rich for farmers) Oats, peas, corn
Nitrates	- nitrogen rich soil after bacteria has brought into the ground
Process 1: Digestion	- animals eat the legumes or other plants and use the nitrogen to make their own nitrogen compounds.
Process 2: Decomposition	- when plants or animals die decomposers break down organic matter and return some nitrogen to the soil - Some nitrogen is released by bacteria as N ₂ back to the atmosphere.
Nitrogen releasing bacteria	- some bacteria release "free nitrogen" N ₂ into the atmosphere

Extra Stuff:

What are the greenhouse gases	Carbon Dioxide, methane, water vapor
What is the greenhouse effect	When too much carbon is being released into the atmosphere. The carbon dioxide acts like a blanket and warms the earth.