

Carbon and Nitrogen Cycles

1. Photosynthesis.
 - (a) In what kind of organism does photosynthesis occur?

 - (b) Write the chemical equation for photosynthesis. You may use words or chemical formulas.

 - (c) Where does the energy needed to drive photosynthesis come from?

2. Cellular Respiration
 - (a) Where does cellular respiration occur?

 - (b) Write the chemical equation for cellular respiration. You may use words or chemical formulas.

3. Nitrogen Fixation and Nitrification
 - (a) What is meant by “nitrogen fixation?”

 - (b) Bacteria convert nitrogen from the air into what compound?

 - (c) What do nitrifying bacteria do?

4. Denitrification

(a) How does nitrogen gas return to the atmosphere?

(b) Does nitrogen need to return to the atmosphere to be reused by plants? Explain.

5. Industrial Fixation

(a) If natural nitrogen fixation processes are not sufficient, a farmer may put fertilizer on the plants. Suggest a way that nitrogen from a farmer's field could end up in a lake.