

Unit 2 Assessment Questions

1. Which statement is the best definition of pollution in a river?
 - a. Pollution is harmful chemicals that are created as part of the waste cycle.
 - b. Pollution is any substance added to the river that causes a harmful change.**
 - c. Pollution is organic waste that is created when aquatic plants and animals die.
 - d. Pollution is any trash that irresponsible fishermen or campers throw in the river.
2. How does a normal, healthy river remove harmful waste materials?
 - a. The river is always flowing, so the waste materials just wash away.
 - b. When there is a lot of rain, it washes the harmful substances away.
 - c. Waste materials are recycled by decomposers as part of the waste cycle.**
 - d. Decomposers break down waste to prevent the waste cycle from happening.
3. How do scientists test the quality of the water in a river?
 - a. Scientists measure the amount of dissolved oxygen and water insects.**
 - b. Scientists examine the color of the water to see if it is clear (healthy) or brown (unhealthy).
 - c. Scientists look for evidence of sick animals in the river or nearby.
 - d. Scientists look for litter or other garbage on the river bank.
4. Which statement is the best definition of organic waste in a river?
 - a. Organic waste is harmful chemicals like bleach or gasoline that people dump in the river.
 - b. Organic waste is any substance created as part of the waste cycle.
 - c. Organic waste is harmful pollution that kills water insects.
 - d. Organic waste is dead or decaying material that is left over from living things.**
5. Which statement is the best definition of the word “biodegradable?”
 - a. Biodegradable means that something is poisonous and can hurt the environment.
 - b. Biodegradable means that something can naturally break down and be absorbed back into the ecosystem.**
 - c. Biodegradable means that something is a living thing, such as plants, animals, and people.
 - d. Biodegradable means that something is nutrient that other organisms need.
6. How do water insects depend on the river for survival?
 - a. Water insects can only survive by drinking the river water.
 - b. Water insects lay their eggs in the water, and their offspring live in the water.**
 - c. Water insects survive by eating the organic waste dissolved in the water.
 - d. Water insects swim in the water to stay cool in hotter weather.

7. Which of the following is an example of a water insect in the river?

- a. Gnats
- b. Grasshoppers
- c. Mayflies
- d. Snails

8. Which statement is the best definition of a decomposer in the river ecosystem?

- a. Decomposers are organisms that break down decaying material left over by living things.
- b. Decomposers are organisms that cause pollution by releasing harmful substances.
- c. Decomposers are chemicals that harm the environment by killing insects and plants.
- d. Decomposers are chemicals that help to break down organic waste.

9. Which of the following is an example of a decomposer in the river ecosystem?

- a. Elodea
- b. Ammonia
- c. Caddisflies
- d. Fungi

10. Which statement is the best definition of fungi in a river ecosystem?

- a. Fungi are organisms that create organic waste and pollution.
- b. Fungi are parasites that grow on fish and insects, which kills the fish and insects.
- c. Fungi are organisms that break down organic waste and turn it into ammonia.
- d. Fungi are organisms that turn harmful ammonia into helpful nutrients.

11. Which statement is the best definition of bacteria in a river ecosystem?

- a. Bacteria are single-celled organisms that cause animals in the river to get sick.
- b. Bacteria are single-celled organisms that help to recycle waste materials in an ecosystem.
- c. Bacteria are many-celled organisms that produce oxygen through photosynthesis.
- d. Bacteria are many-celled organisms that are part of the waste cycle.

12. How does the normal waste cycle affect the health of the river ecosystem?

- a. The waste cycle removes harmful substances, which makes the ecosystem healthier.
- b. The waste cycle causes pollution to increase, which makes the ecosystem less healthy.
- c. The waste cycle creates lots of organic waste, which makes the ecosystem healthier.
- d. The waste cycle does not affect the ecosystem unless there is too much ammonia.

13. Which diagram correctly shows the overall process of the waste cycle?

- a. Diagram A.
- b. Diagram B.
- c. Diagram C.
- d. Diagram D.

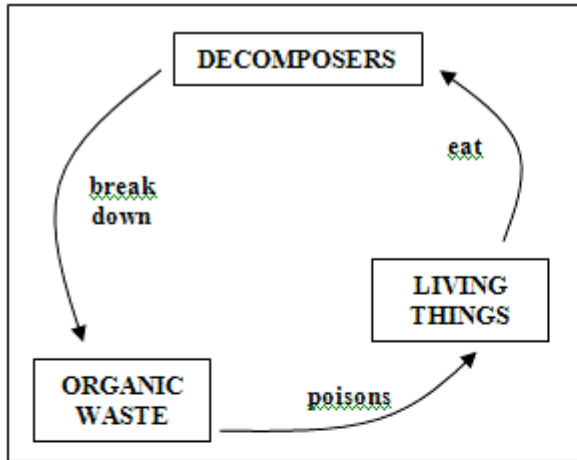


DIAGRAM A

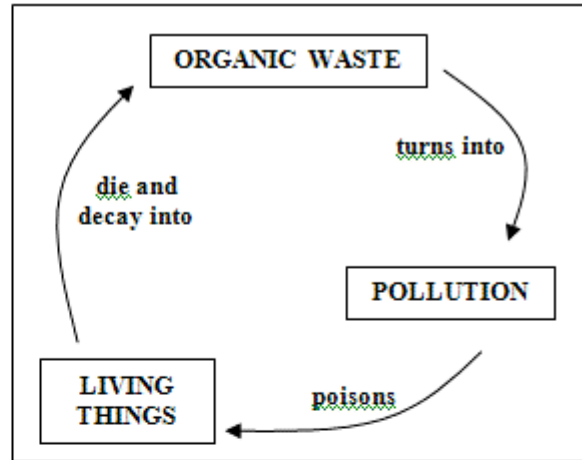


DIAGRAM B

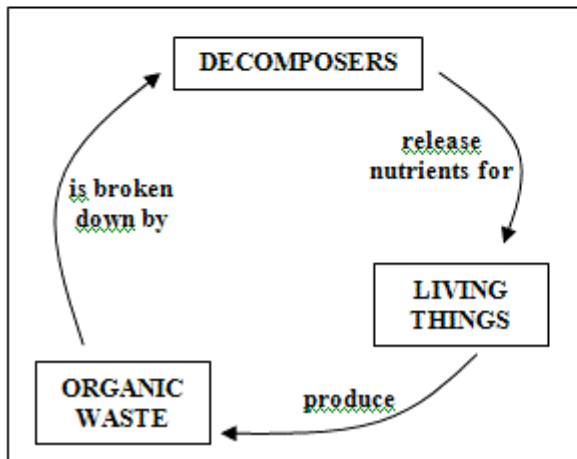


DIAGRAM C

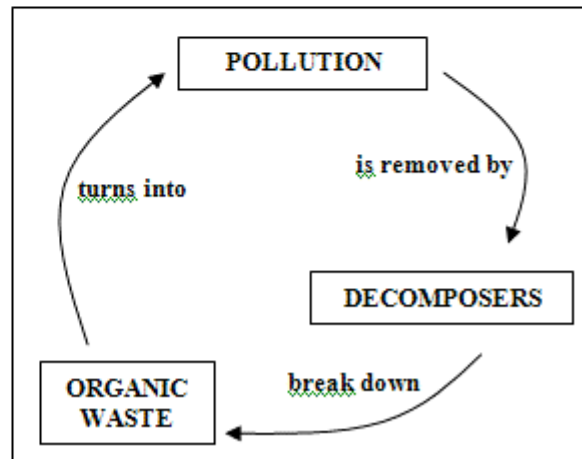


DIAGRAM D

14. What is the main source of ammonia in a river ecosystem?

- a. The ammonia is produced when bacteria consume nitrates.
- b. The ammonia is a pollutant dumped into the water by irresponsible people.
- c. The ammonia is released when elodea absorb nitrates.
- d. The ammonia is released when fungi break down organic waste.

15. How is ammonia normally removed from the river ecosystem?

- a. Ammonia is dissolved in the water. So ammonia is washed out of the river when it rains.
- b. Ammonia is absorbed by the organic waste, which is then broken down by decomposers.
- c. Ammonia is a nutrient for bacteria. Bacteria turn ammonia into nitrates.
- d. Ammonia is a nutrient for elodea. Elodea absorbs the ammonia.

16. What is the main source of nitrates in the river ecosystem?

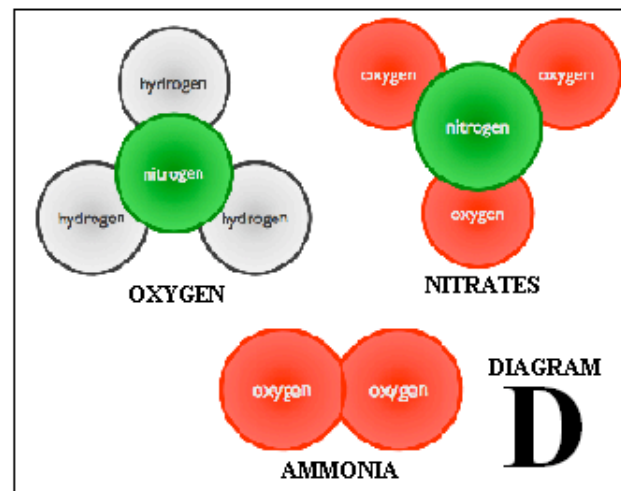
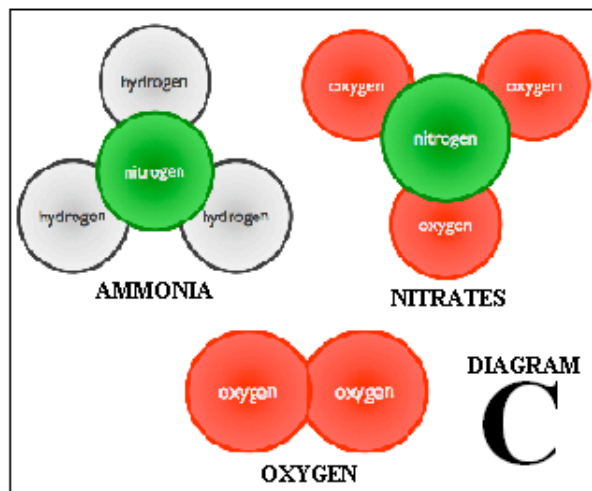
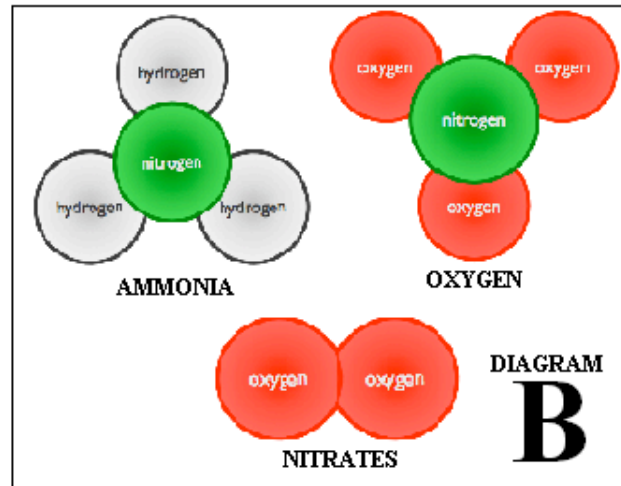
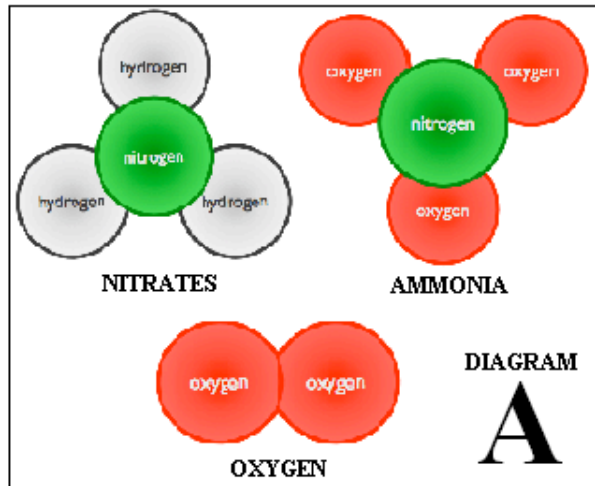
- a. The nitrates are produced when ammonia dissolves in the water.
- b. The nitrates are produced when bacteria break down the ammonia.
- c. The nitrates are released by the elodea and other plants.
- d. The nitrates are released by water insects when they die and decay.

17. How are nitrates normally removed from the river ecosystem?

- a. Nitrates are nutrients for elodea. Elodea absorbs the nitrates.
- b. Nitrates are a nutrient for water insects. The insects eat the nitrates.
- c. Nitrates are broken down by bacteria and fungi as part of the waste cycle.
- d. Nitrates are dissolved in the water. So nitrates are washed out of the river when it rains.

18. Which diagram correctly labels the ammonia, nitrates, and oxygen molecules?

- a. Diagram A.
- b. Diagram B.
- c. Diagram C.
- d. Diagram D.



19. Which of these is **NOT** a source of organic waste in a river ecosystem?

- a. Cleaning products dumped in the water
- b. Elodea living in the water
- c. Human sewage dumped in the water
- d. Water insects living in the water

20. Which of these would be a sign that a river might be polluted?

- a. A huge number of water insects living in the water.
- b. A lack of nitrates dissolved in the water.
- c. A lack of oxygen dissolved in the water.
- d. A lack of elodea growing in the water.

21 (part A). What would happen to water insects if the amount of oxygen increased?

- a. Water insects would grow and reproduce more.
- b. Water insects would get sick and die.
- c. Water insects would not be affected.
- d. Water insects would become sick, but they would not die.

21 (part B). Think about your answer to part A. Why would that happen to the water insects?

- a. Water insects need some oxygen to survive, but too much oxygen would poison them.
- b. Water insects breathe oxygen. So if they have more oxygen they will be healthier.
- c. Water insects eat organic waste in the river. They do not need oxygen.
- d. Bacteria and fungi would consume the oxygen before the water insects could breathe it.

22 (part A). What would happen to elodea if the amount of ammonia increased?

- a. Elodea would die.
- b. Elodea would continue growing and reproducing as normal.
- c. Elodea would grow and reproduce much faster than normal.
- d. Elodea would not be affected that much.

22 (part B). Think about your answer to part A. Why would that happen to the elodea?

- a. Ammonia is a nutrient for elodea. The elodea would have more food to grow.
- b. Ammonia is poisonous. The ammonia would poison and kill the elodea.
- c. Ammonia is turned into nitrates by bacteria, and nitrates are a nutrient for elodea.
- d. Ammonia is only a nutrient for bacteria. Elodea plants do not need ammonia.

23 (part A). Imagine there is an aquatic ecosystem called Forest River. A factory near Forest River recently began dumping a huge amount of organic waste into the water. What might happen to the fungi when the factory dumps organic waste?

- a. The fungi would get sick and die.
- b. The fungi would start to grow and reproduce very quickly.
- c. The fungi would not be affected by the organic waste.
- d. The fungi would continue to live and grow as usual.

23 (part B). Think about your answer to part A. Why would this happen to the fungi?

- a. Fungi eat organic waste. The fungi would have more food to grow.
- b. Organic waste causes the water to become polluted. The pollution kills living things like fungi.
- c. Fungi eat organic waste. The fungi would quickly remove all of the organic waste so that the ecosystem would stay healthy.
- d. Fungi absorb ammonia and oxygen. So extra organic waste does not affect fungi very much.

24 (part A). Think about the Forest River ecosystem from the previous question. After the factory dumps a huge amount of organic waste into the water, what would happen to the water insects?

- a. The water insects would get sick and many of them would die.
- b. The water insects would grow and reproduce very quickly.
- c. The water insects would not be affected by the organic waste.
- d. The water insects would get sick, but they would all survive.

24 (part B). Think about your answer to part A. Why would this happen to the water insects?

- a. Water insects eat organic waste. Water insects would have a lot more food.
- b. Water insects eat organic waste. However, the organic waste from the factory is pollution and the insects will get sick.
- c. Organic waste is turned into ammonia by the waste cycle. Ammonia is poisonous to water insects.
- d. Organic waste is turned into helpful nutrients by the waste cycle. The nutrients help the water insects grow.

25 (part A). What would happen to dissolved oxygen in a river ecosystem if pollution caused fungi and bacteria to increase a lot?

- a. The amount of dissolved oxygen would decrease a lot.
- b. The amount of dissolved oxygen would stay the same.
- c. The amount of dissolved oxygen would increase a lot.
- d. The amount of dissolved oxygen would decrease a little, and then go back up.

25 (part B). Think about your answer to part A. Why would that happen to dissolved oxygen?

- a. Fungi create oxygen through photosynthesis. However, the bacteria consume the oxygen.
- b. Fungi eat organic waste and do not need oxygen. The bacteria absorb ammonia and oxygen.
- c. Fungi consume oxygen and organic waste. However, bacteria only need ammonia.
- d. Fungi and bacteria both consume oxygen as part of the waste cycle.

26 (part A). Imagine there is an aquatic ecosystem named Blue River. A truck that was carrying a shipment of fertilizer (a chemical that feeds plants) crashed in the river and spilled the fertilizer. The amount of elodea in the river increased a lot. What would immediately happen to the nitrates in the water?

- a. The amount of nitrates would not change very much.
- b. The amount of nitrates would increase a lot.
- c. The amount of nitrates would decrease a lot.
- d. The amount of nitrates would decrease quickly and then would increase.

26 (part B). Think about your answer to part A. Why would that happen to the nitrates?

- a. Nitrates are a nutrient for elodea. The elodea would absorb a large amount of nitrates.
- b. The elodea would die and turn into organic waste. The organic waste would be turned into nitrates by the waste cycle.
- c. The elodea would absorb the fertilizer instead of the nitrates.
- d. Nitrates are a nutrient for bacteria. Elodea does not have any effect on nitrates.

27 (part A). Which of these diagrams shows how the amount of organic waste in a **normal** river ecosystem changes over time?

- a. Diagram A.
- b. Diagram B.
- c. Diagram C.
- d. Diagram D.

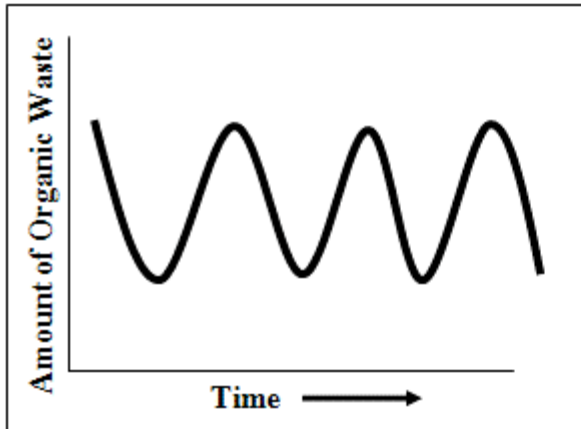


DIAGRAM A

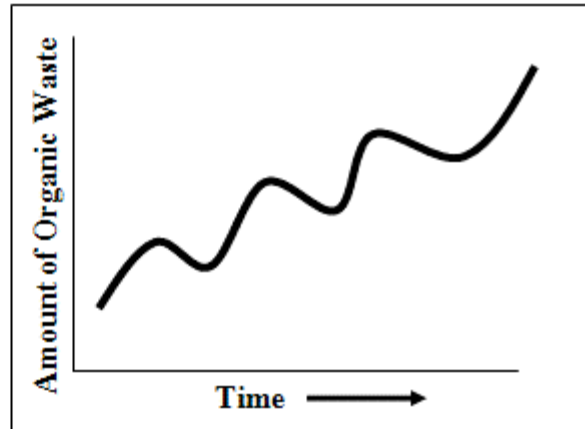


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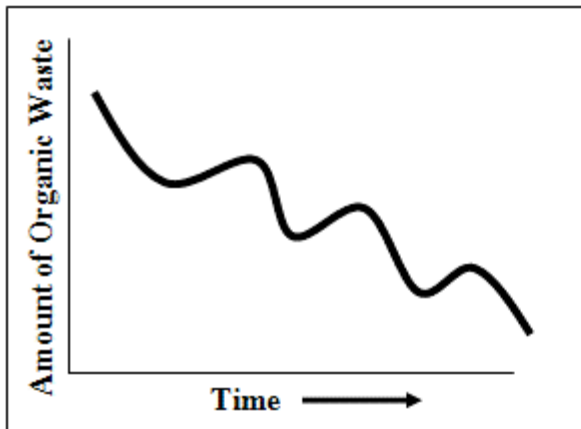


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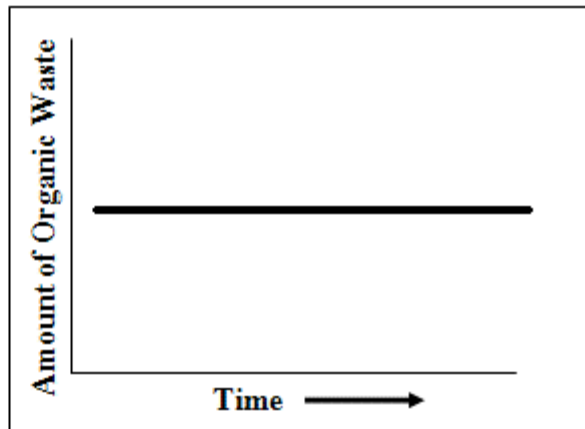


DIAGRAM D

27 (part B). Think about your answer to part A. Why is that the correct diagram for organic waste in a normal river ecosystem?

- a. Water insects and elodea are constantly dying, which produces a lot of organic waste.
- b. Fungi and other decomposers remove most of the organic waste through the waste cycle.
- c. Organic waste builds up as organisms die. However, the waste cycle then removes some of the waste.
- d. Unless there is a source of pollution, organic waste does not change much in the ecosystem.

28. Which of these diagrams correctly shows the main steps of a waste cycle in a **river ecosystem**? How are the organisms, waste, and nutrients connected in the waste cycle?

- a. Diagram A.
- b. Diagram B.
- c. Diagram C.
- d. Diagram D.

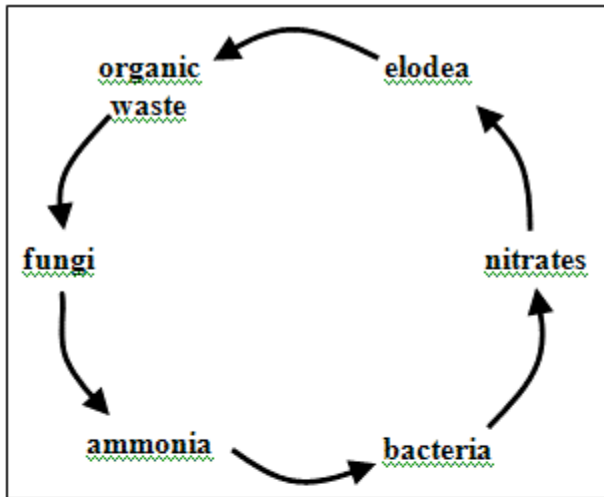


DIAGRAM A

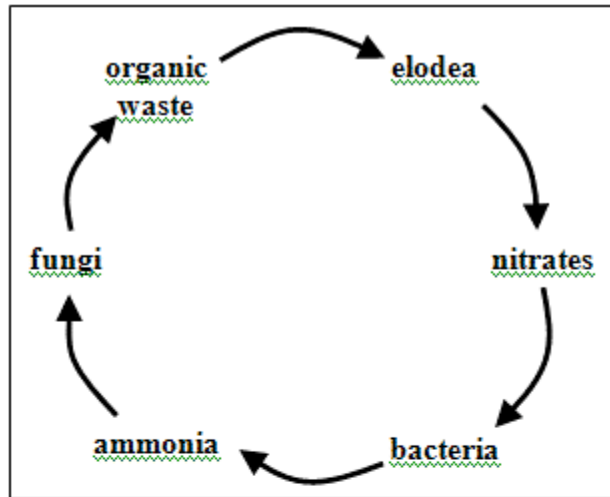


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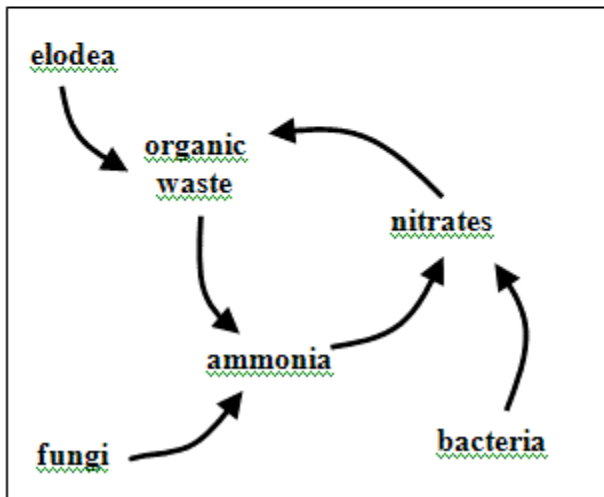


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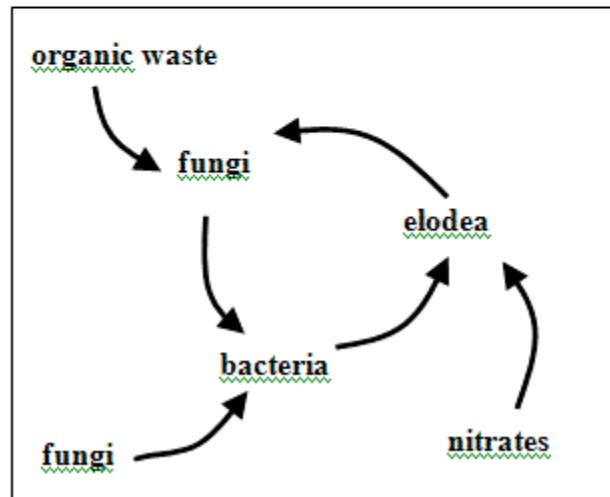


DIAGRAM D