

Intermediate Science 7
Unit 1: Interactions In An Ecosystem
Topic 6: The Nutrient Cycle



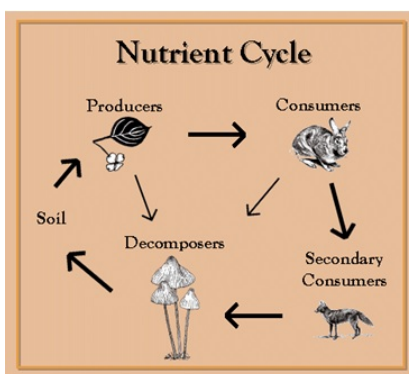
Student Name _____

Nutrients: are chemicals required for plant and animal growth and other life processes. For example:

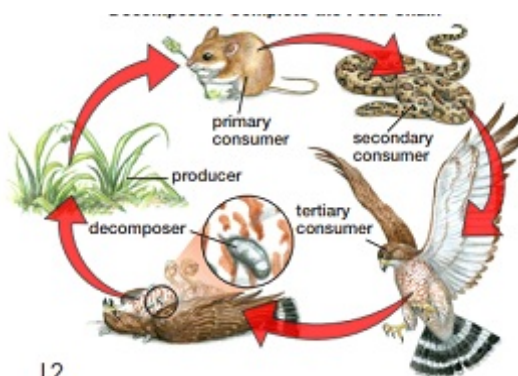
- | | | |
|-------------|-----------|-----------|
| -carbon | -nitrogen | -calcium |
| -phosphorus | -oxygen | -hydrogen |

So far we have considered food only as an energy source. Food also contains nutrient materials. Unlike energy, which comes from the continuous supply of sunlight, there is no such source of nutrients. Same pool of nutrients supports all life—past, present, and future.

Nutrient Cycle: refers to the process that keeps elements supporting life circulating. It moves nutrients between the living and the nonliving



Decomposers: The last link in any food chain. They are nature's recyclers: They ensure that nutrients are returned to the soil so producers can use them for the purpose of photosynthesis. Without decomposers the earth would be covered in waste and the flow of energy would be a one way street instead of a cycle.



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Decomposers feed by producing weak acids that break down dead tissue into smaller part chemical particles. This process releases nutrient materials gases into the soil, water, and air, where they can be used by producers. In this way, every organism that dies is recycled. The nutrient materials are never used up. Some examples of decomposers are:

- | | | |
|--------------------|-----------|--------------|
| -Worms | -Snails | -Slugs |
| -Fungi (Mushrooms) | -Bacteria | -Dung Beetle |
| -Flies | -Ants | |

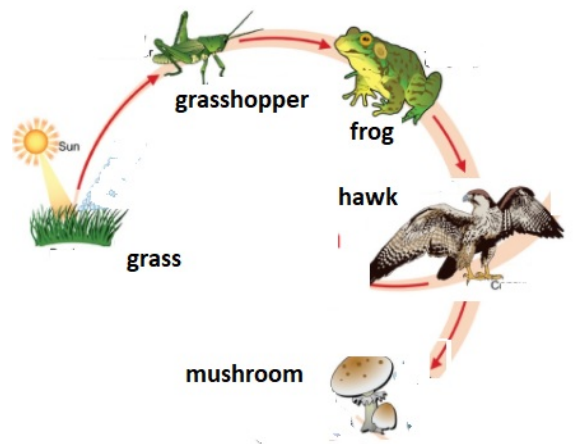
PART A: MULTIPLE CHOICE

Instructions: Shade the letter of the correct answer on the computer scorable answer sheet provided

1. What does food provide?
 - (A) Energy
 - (B) Nutrients
 - (C) Nutrients and Energy
 - (D) None are correct
2. Which of the following is true concerning nutrients?
 - I) It is provided by sunlight
 - II) There is only a certain amount of nutrients available
 - III) Nutrients must be recycled
 - (A) I and II
 - (B) I and III
 - (C) II and III
 - (D) I, II and III
3. Which of the following is not a nutrient?
 - (A) Carbon
 - (B) Energy
 - (C) Nitrogen
 - (D) Oxygen
4. Why are nutrients important?
 - (A) Producers use them to carry out photosynthesis
 - (B) Required for living things to grow
 - (C) Organisms require them for repair
 - (D) All are correct
5. Why are decomposers important?
 - (A) Produce their own food using light from the sun
 - (B) Stop the flow of energy from one organism to another
 - (C) Break down dead organism and recycle nutrients into the soil
 - (D) Are microscopic and other organisms can not consume them
6. Which of the following is a decomposer?
 - (A) Fir Tree
 - (B) Moose
 - (C) Rabbit
 - (D) Worm

7. Which of the following describes the mushroom in the food chain below?

- (A) Consumer
- (B) Decomposer
- (C) Producer
- (D) Omnivore

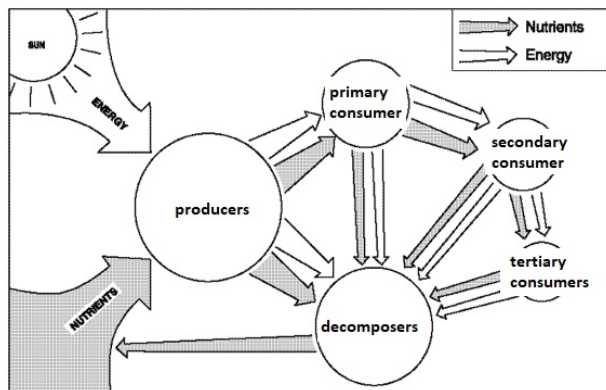


8. What is the correct order of the levels in a food chain?

- (A) Consumer → Producer → Decomposer
- (B) Decomposer → Producer → Consumer
- (C) Decomposer → Consumer → Producer
- (D) Producer → Consumer → Decomposer

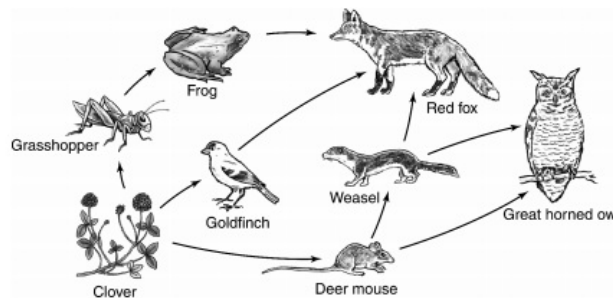
9. According to the diagram, which of the following releases nutrients from dead organisms back into the soil?

- (A) Decomposer
- (B) Primary consumers
- (C) Producers
- (D) Secondary Consumers



10. Using the food below, which group is not represented?

- (A) Decomposer
- (B) Primary consumers
- (C) Producers
- (D) Secondary Consumers



11. Which of the following statements is true about nutrient cycles?

- (A) Decomposers play a key role in nutrient cycles.
- (B) Nutrients are only cycled between abiotic parts of the environment.
- (C) There is an unlimited supply of nutrients available.
- (D) Without the continuous recycling of nutrients, life on Earth would still be possible.

12. Which of the following is true for the amount of nutrients that makeup Earth?

- (A) Increasing
- (B) Sometimes increasing and sometimes decreasing
- (C) Decreasing
- (D) Constant

PART B: WRITTEN RESPONSE

1. Name two examples of nutrients.

2. What do organisms use nutrients for?

3. What is a nutrient cycle?

4. How do producers obtain nutrients?

5. How do consumers obtain nutrients?

6. What is the role of decomposers in a nutrient cycle?

7. There is only a limited supply of nutrients on Earth. Why doesn't this supply run out?

8. Draw an example of a nutrient cycle including all of the following organisms:
mussels, algae, cod, bacteria, and orcas