

Use with textbook pages 8-28.

## Biomes

Match each Term on the left with the best Descriptor on the right. Each Descriptor may only be used once.

Term	Descriptor
1. <u>C</u> abiotic	<u>A</u> the distance measured in degrees north or south from the equator
2. <u>B</u> adaptations *	<u>B</u> characteristics that enable organisms to better survive and reproduce
3. <u>E</u> biome	<u>C</u> relating to non-living parts of an environment, such as sunlight, soil, moisture, and temperature
4. <u>D</u> biotic	<u>D</u> relating to the living organisms, such as plants, animals, fungi, and bacteria
5. <u>F</u> climate *	<u>E</u> the largest division of the biosphere
6. <u>A</u> latitude *	<u>F</u> the average conditions of the atmosphere in a large region over 30 years

Circle the letter of the best answer.

7. A biome is best represented by a:

- A. river
- B. city
- C. latitude
- D. desert

8. Which of the following is an abiotic component of an environment?

- A. algae
- B. sunlight
- C. fungi
- D. plants

9. Which of the following is a biotic component of an ecosystem?

- A. moisture
- B. sand
- C. bacteria
- D. temperature

10. Which of the following is a characteristic of the boreal forest biome?

- A. below freezing half the year
- B. long, hot summers
- C. polar land masses
- D. lots of precipitation

11. Which world biome is represented by a climatograph that illustrates an average precipitation of 300 cm in the month of January?

- A. grassland
- B. tropical rainforest
- C. permanent ice
- D. temperate deciduous forest

12. Which world biome is represented by a climatograph that illustrates an average temperature of  $-25^{\circ}\text{C}$  in the month of July?

- A. boreal forest
- B. tropical rainforest
- C. permanent ice
- D. tundra

Use with textbook pages 56-64.

# Energy flow in ecosystems

Match each Term on the left with the best Descriptor on the right. Each Descriptor may only be used once.

Term	Descriptor
1. <u>C</u> biodegradation	<u>A</u> . a model that shows the flow of energy from plant to animal and from animal to animal
2. <u>F</u> consumers	<u>B</u> . organisms that produce food in the form of carbohydrates during photosynthesis
3. <u>H</u> decomposers	<u>C</u> . the breaking down of dead organic matter by organisms, such as bacteria
4. <u>A</u> food chain	<u>D</u> . steps in a food chain that show feeding and niche relationships among organisms
5. <u>E</u> food pyramid	<u>E</u> . a model that shows the loss of energy from one trophic level to another
6. <u>G</u> food web	<u>F</u> . an organism that eats other organisms
7. <u>B</u> producers	<u>G</u> . a model of the feeding relationships within an ecosystem
8. <u>D</u> trophic levels	<u>H</u> . organisms that break down wastes and dead organisms and change them into usable nutrients

Circle the letter of the best answer.

9. In a food chain, primary producers are usually:

- A. amphibians
- B. bacteria
- C. mammals
- D. plants

10. What product of photosynthesis supplies energy for life forms?

- A. carbohydrates
- B. carbon dioxide
- C. oxygen
- D. water

11. Which of the following organisms are likely to be found in the third trophic level of a food chain?

- A. algae
- B. frog
- C. grasshopper
- D. hawk

12. Which of the following describes the process of biodegradation?

- A. plants using photosynthesis to create food
- B. primary consumers eating plants
- C. bacteria breaking down organic matter
- D. omnivores eating plants and animals

13. In a food pyramid, how much energy is lost from trophic level to trophic level?

- A. 20 %
- B. 50 %
- C. 70%
- D. 90%

14. In a food pyramid:

- A. as the trophic level decreases, the number of organisms supported by the ecosystem decreases
- B. as the trophic level increases, the number of organisms supported by the ecosystem increases
- C. as the trophic level increases, the number of organisms supported by the ecosystem decreases
- D. as the trophic level decreases, the number of organisms supported by the ecosystem increases

# Nutrient cycles in ecosystems

Use with textbook pages 68-87.

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

Term	Descriptor
1. <u>F</u> cellular respiration	<u>A</u> . the process in which nitrogen is released into the atmosphere
2. <u>A</u> denitrification *	<u>B</u> . substances, such as nitrogen and phosphorus, that are required by plants and animals for energy, growth, development, repair, and maintenance
3. <u>A</u> <u>E</u> nitrification	<u>C</u> . the process in which rock is broken into smaller fragments
4. <u>B</u> nutrients	<u>D</u> . a process in which carbon dioxide enters plants and reacts with water in the presence of sunlight to produce carbohydrates and oxygen
5. <u>D</u> photosynthesis	<u>E</u> . the process in which ammonium is converted into nitrate
6. <u>G</u> sedimentation *	<u>F</u> . the process in which plants and animals release carbon dioxide back into the atmosphere by converting carbohydrates and oxygen into carbon dioxide and water.
7. <u>C</u> weathering	<u>G</u> . the process in which soil particles and decaying organic matter accumulate in layer on the ground or at the bottom of large bodies of water

Circle the letter of the best answer.

- In the carbon cycle, where are the highest stores of carbon found?
  - A. terrestrial vegetation
  - B. marine sediments and sedimentary rocks
  - C. oil and gas deposits
  - D. soil and organic matter
9. Calcium carbonate is a structural component of:
  - A. marine organisms
  - B. terrestrial organisms
  - C. algae
  - D. volcanic ash
10. Which of the following is not stored in the atmosphere as a gas?
  - A. carbon
  - B. oxygen
  - C. nitrogen
  - D. phosphorus
11. Nitrogen fixation results in:
  - A. ammonium being converted into nitrates
  - B. nitrates being consumed by bacteria
  - C. nitrogen gas being converted into nitrate or ammonium
  - D. ammonia being converted into carbohydrates
12. Lightning provides energy that:
  - A. absorbs energy into land masses
  - B. fixes nitrogen in the atmosphere
  - C. fixes carbon dioxide in the atmosphere
  - D. releases nitrogen into the soil

## Effects of bioaccumulation on ecosystems

Use with textbook pages 92–99.

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

Term	Descriptor
1. <u>F</u> bioaccumulation	<input checked="" type="checkbox"/> A. synthetic chemicals containing chlorine that are used in the manufacture of plastics and other industrial products
2. <u>D</u> bioremediation	<input checked="" type="checkbox"/> B. species that can greatly affect population numbers and the health of an ecosystem
3. <u>E</u> heavy metals	<input checked="" type="checkbox"/> C. a measurement of chemical accumulation
4. <u>B</u> keystone species	<input checked="" type="checkbox"/> D. the use organisms to break down chemical pollutants in water or soil to reverse or lessen environmental damage
5. <u>C</u> parts per million	<input checked="" type="checkbox"/> E. metallic elements with a high density that are toxic to organisms at low concentrations
6. <u>A</u> PCBs	<input checked="" type="checkbox"/> F. the gradual build-up of synthetic and organic chemicals in living organisms

Circle the letter of the best answer.

7. Over the last century, which human activity has caused the greatest change to the environment?

- A. recycling
- B. forest fires
- C. introduction of synthetic chemicals
- D. building of hydro plants

8. Which of the following would be identified as a keystone species in the BC forest ecosystem?

- A. bacteria
- B. fungi
- C. pine trees
- D. salmon

9. POPs, or persistent organic pollutants, are compounds that contain:

- A. oxygen
- B. carbon
- C. phosphorus
- D. nitrogen

10. For humans, the most serious source of cadmium poisoning is exposure to:

- A. air pollution
- B. water pollution
- C. tobacco smoke
- D. pesticides

11. Within the biosphere, heavy metals:

- A. do not degrade and cannot be destroyed
- B. do not degrade and can be destroyed
- C. do degrade and can be recycled
- D. do degrade and can not be recycled

12. The process by which microorganisms break down chemical pollutants to lessen environmental damage is known as:

- A. bioaccumulation
- B. biodiversity
- C. biomagnification
- D. bioremediation

Use with textbook pages 122–134.

## How humans influence ecosystems

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

Term	Descriptor
1. <u>B</u> deforestation	A. the ability of an ecosystem to sustain ecological processes and maintain biodiversity over time
2. <u>D</u> extinction	B. the clearing or logging of forests without replanting
3. <u>G</u> habitat loss	C. ecological information passed down from generation to generation, which reflects human experience with nature
4. <u>E</u> soil compaction	D. the dying out of a species
5. <u>F</u> soil degradation	E. the squeezing together of soil particles so that the air spaces between them are reduced
6. <u>A</u> sustainability	F. damage to soil
7. <u>C</u> traditional ecological knowledge	G. the destruction of habitats that usually results from human activities

Circle the letter of the best answer.

8. Which of the following illustrates a sustainable practice?

- A. conversion of grassland into ranchland
- B. urban expansion of cities
- C. restoration of a streambeds
- D. extraction of gold in mining

9. Which of the following factors has led to the giant panda in China being considered an endangered species?

- A. soil degradation
- B. overexploitation
- C. contamination of ecosystem
- D. deforestation

10. In the Pacific Ocean, the food web, including kelp, whales, sea otters, and sea urchins, has been altered by human activities. What factor has been linked to the explosion in the sea urchin population?

- A. decrease in the sea otter population
- B. increase in kelp beds
- C. change in migration pattern of orcas
- D. increase in fur seal population

11. Which of the following is an example of traditional ecological knowledge practices?

- A. habitat fragmentation by urbanization
- B. grassland management by controlled burning
- C. resource exploitation by mining industry
- D. clear-cutting practices by forestry industry

