# مراجعة نهائية وفق الهيكل الوزاري منهج انسباير مع الإجابات


| تم تحميل هذا الملف من موقع المناهج الإماراتية | |
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| موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف السابع ⇦ علوم ⇦ الفصل الأول ⇦ ملفات متنوعة ⇦ الملف | |
| تاريخ إضافة الملف على موقع المناهج: 16-11-2025 21:36:39 | |
| ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس | المزيد من مادة علوم: |
| إعداد: SCHOOL ALSHIYAM | |

| التواصل الاجتماعي بحسب الصف السابع | | | | | |
|---|---|---|---|---|---|
| صفحة المناهج الإماراتية على فيسبوك |  |  |  |  |  |
| المواد على تلغرام | التربية الاسلامية | اللغة العربية | اللغة الانجليزية | الرياضيات | |

| المزيد من الملفات بحسب الصف السابع والمادة علوم في الفصل الأول | |
|---|---|
| أسئلة الامتحان النهائي القسم الورقي منهج بريدج بدون الحل | 1 |
| حل تجميعة أسئلة وفق الهيكل الوزاري الجديد القسم الالكتروني منهج بريدج | 2 |
| مراجعة نهائية للفصل وفق منهج انسباير | 3 |
| حل نموذج اختبار تجريبي وفق الهيكل الوزاري منهج انسباير القسم الكتابي | 4 |
| نموذج اختبار تجريبي وفق الهيكل الوزاري منهج انسباير القسم الكتابي | 5 |

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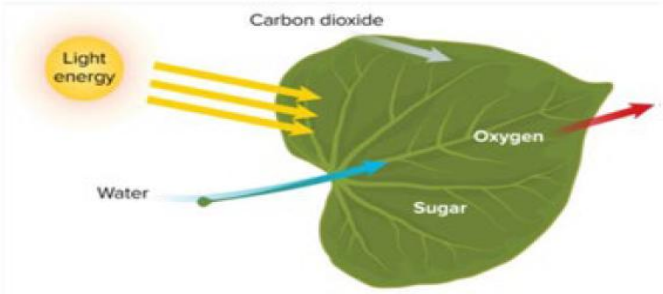
## Term 1 EOT Coverage

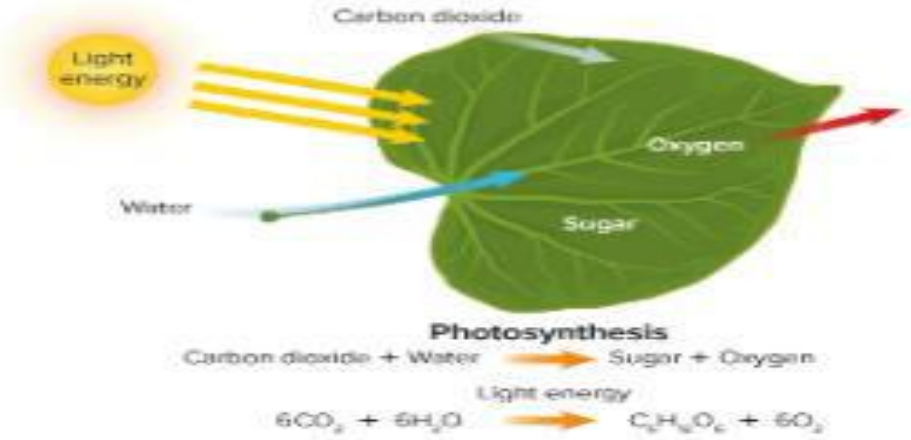
## ALSHIYAM SCHOOL CYCLE 2&3

1

**Which of the following is the correct equation for photosynthesis?**




| | |
|---|---|
| A | $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{energy}$ |
| B | $6CO_2 + 6H_2O + \text{light energy} \rightarrow C_6H_{12}O_6 + 6O_2$ |
| C | $C_6H_{12}O_6 + 6H_2O \rightarrow 6CO_2 + 6O_2$ |
| D | $6O_2 + \text{light energy} \rightarrow C_6H_{12}O_6 + 6CO_2$ |




. Which is the best explanation of the change in energy shown in the model?

A New energy is produced by plants during photosynthesis.

B Large amounts of energy are released into the environment during photosynthesis.

C Energy from sunlight is destroyed as it powers photosynthesis

D Energy input from the environment is stored in food molecules during photosynthesis.

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### ALSHIYAM SCHOOL CYCLE 2&3

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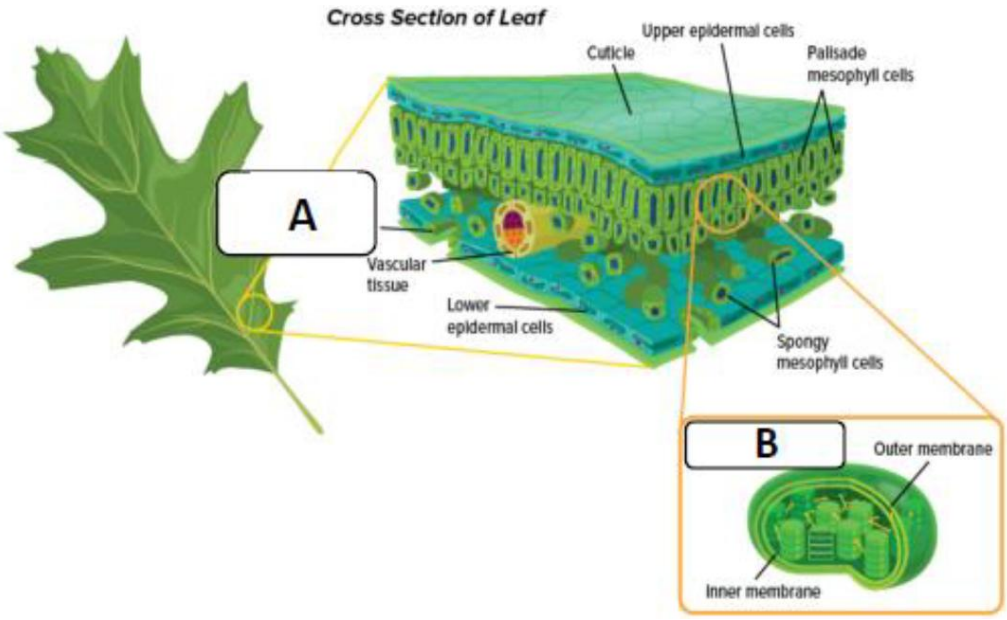
|---|---|
| 2 |  <br>**The labels A and B are**<br>a. Stomata and mitochondria respectively<br>b. Chloroplast and stomata respectively<br>c. Stomata and chloroplast respectively<br>d. Stomata and epidermis respectively |
| 3 | **Which organelle in plant cells where photosynthesis occurs?**<br>a)Nucleus<br>b)Mitochondria<br>c)Chloroplast<br>d)Ribosome |
| 4 | **Where in the leaf does most photosynthesis occur?**<br>a)Epidermal cells<br>b)Guard cells<br>c)Mesophyll cells<br>d)Phloem cells |
| 5 | **What are the tiny openings on the bottom layer of leaves that allow gas exchange called?**<br>a)Stomata<br>b)Chloroplasts<br>c)Cuticles<br>d)Trichomes |

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## Term 1 EOT Coverage

**ALSHIYAM SCHOOL CYCLE 2&3**

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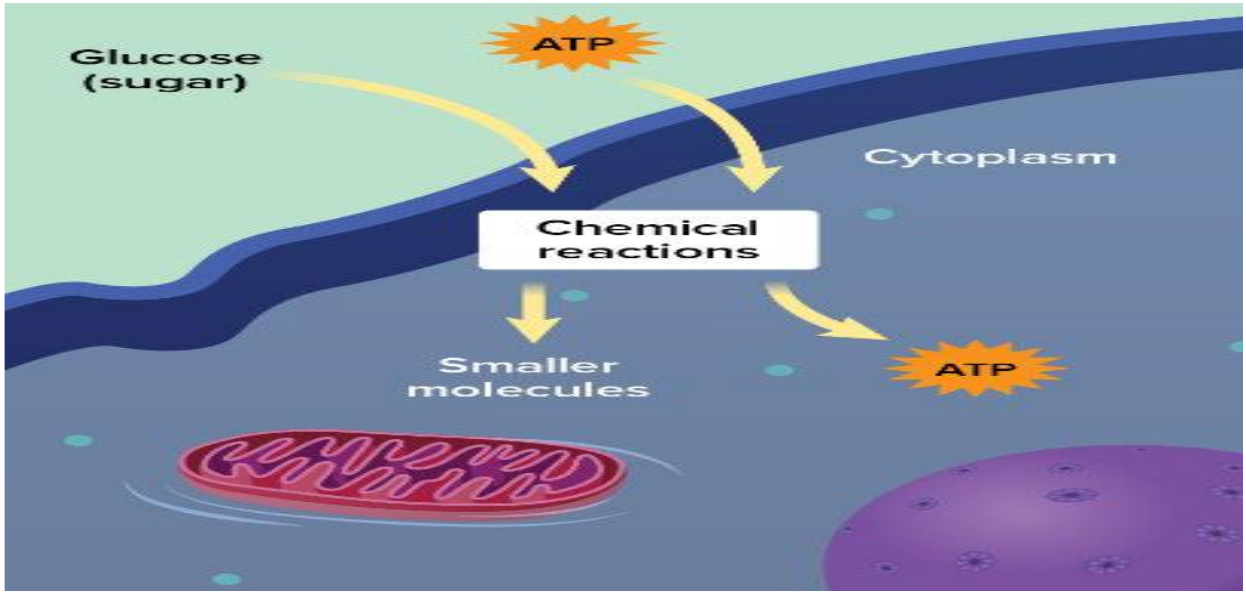
|---|---|
| 6 | **What gas do plants take in through their stomata for photosynthesis?**<br>a)Oxygen<br>b)Nitrogen<br>c)Carbon dioxide<br>d)Methane |
| 7 | **Which of the following organisms also perform photosynthesis besides plants?**<br>**a)**Animals<br>b)Fungi<br>c)Algae and phytoplankton<br>d)Bacteria |
| 8 |  <br>**What is the main purpose of cellular respiration?**<br>a)To produce glucose<br>b)To convert energy in food molecules into ATP<br>c)To release carbon dioxide<br>d)To absorb oxygen |
| 9 | **In which part of the cell does glycolysis occur?**<br>a)Mitochondria<br>b)Nucleus |

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**ALSHIYAM SCHOOL CYCLE 2&3**

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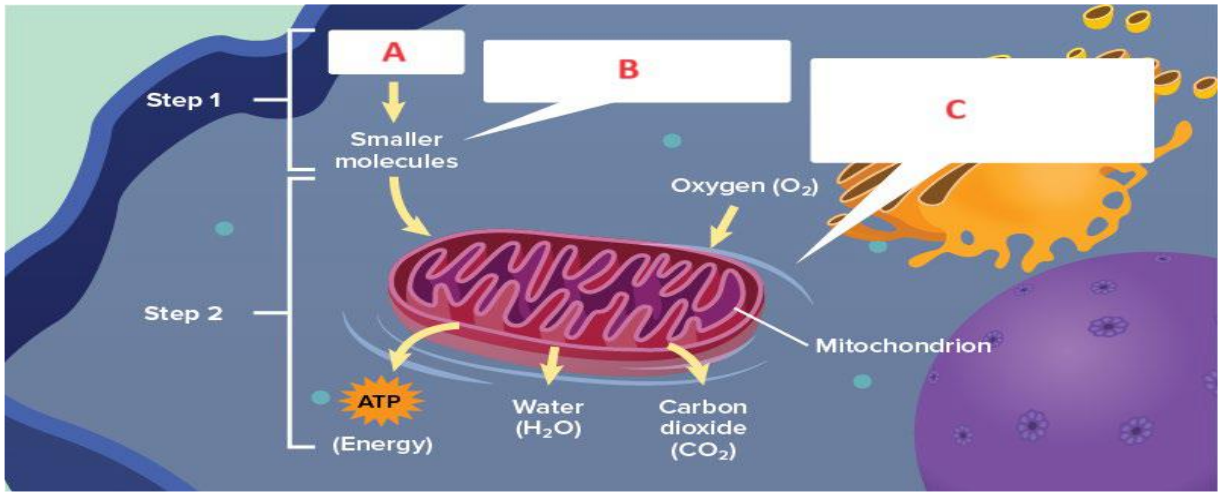
|---|---|
| | c)Cytoplasm<br>d)Endoplasmic reticulum |
| 10 | **What is produced during glycolysis?**<br>a)Large amounts of ATP<br>b)Oxygen<br>c)Smaller molecules from glucose<br>d)Water and carbon dioxide |
| 11 | **Which organelle is primarily involved in the second step of cellular respiration?**<br>a)Chloroplast<br>b)Mitochondria<br>c)Ribosome<br>d)Golgi apparatus |
| 12 | **What gas is required for the second step of cellular respiration?**<br>a)Nitrogen<br>b)Hydrogen<br>c)Oxygen<br>d)Carbon dioxide |
| 13 |  <br>**What is the first step of cellular respiration A called?**<br>a) a)Krebs cycle<br>b)Electron transport chain<br>c)Glycolysis |

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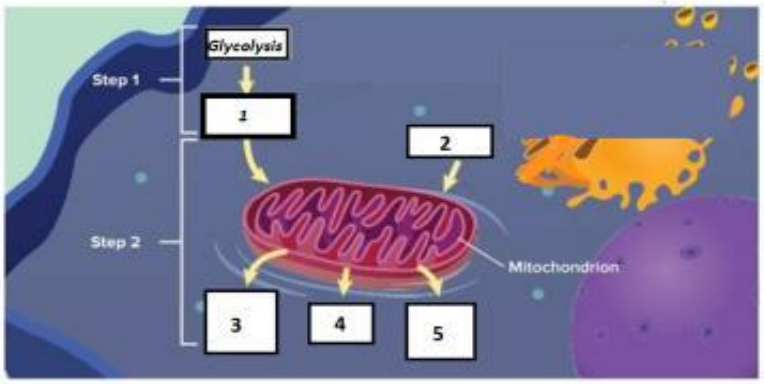
## Term 1 EOT Coverage

**ALSHIYAM SCHOOL CYCLE 2&3**

| | |
|---|---|
| | d)Photosynthesis |
| 14 | **What are the waste products of cellular respiration?**<br>a)Glucose and oxygen<br>b)Water and carbon dioxide<br>c)ATP and glucose<br>d)Oxygen and water |
| 15 | **How is the energy in food molecules made usable for cellular processes?**<br>a)By converting it into glucose<br>b)By storing it as fat<br>c)By converting it into ATP<br>d)By breaking it down into water |
| 16 | Which of the following chemical equation correctly completes the below reaction that occurs in the mitochondria as shown in the figure?<br>  <br>.....1..... + .....2..... → .....3..... + .....4..... + .....5..... |

| | |
|---|---|
| 1 | $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + ATP$ |
| 2 | $6H_2O + ATP \rightarrow C_6H_{12}O_6 + 6O_2 + 6CO_2$ |
| 3 | $6CO_2 + ATP \rightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$ |
| 4 | $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2 + ATP$ |

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## Term 1 EOT Coverage

### ALSHIYAM SCHOOL CYCLE 2&3

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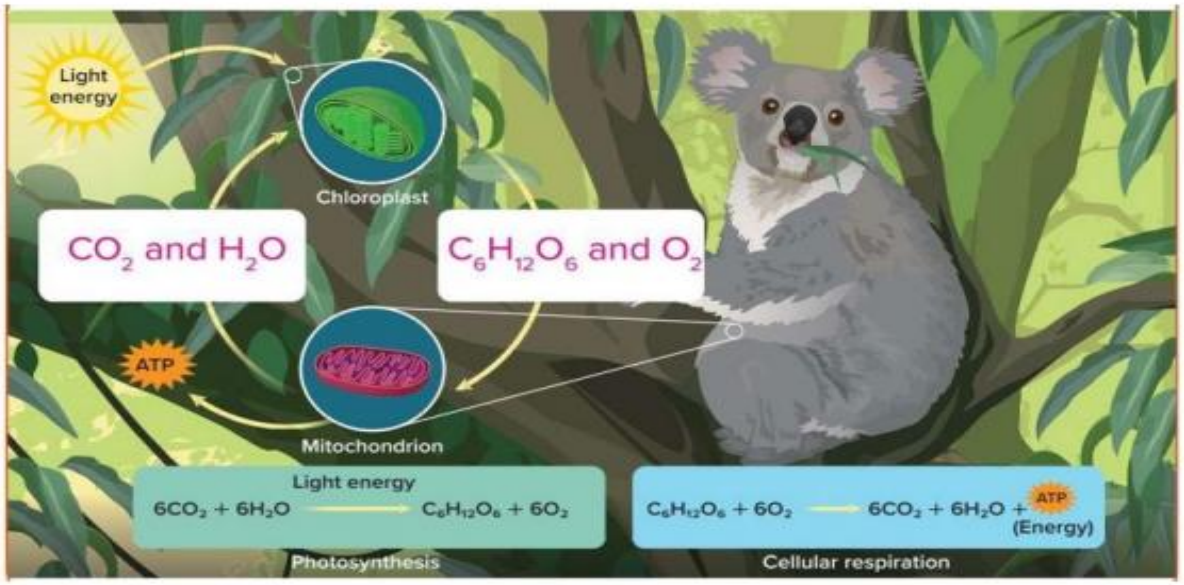
$$6CO_2 + 6H_2O \xrightarrow{\text{Sunlight}} C_6H_{12}O_6 + 6O_2$$

Carbon Dioxide  Water  Glucose (Energy)  Oxygen

**This equation represents the process of _____.**

A. photosynthesis
B. cellular respiration
C. ecological succession
D. glycolysis

18



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## Term 1 EOT Coverage

**ALSHIYAM SCHOOL CYCLE 2&3**

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|---|---|
| | **What are the main *reactants* in photosynthesis?**<br>**A)** Glucose and oxygen<br>**B)** Carbon dioxide and water<br>**C)** Oxygen and water<br>**D)** Carbon dioxide and glucose<br><br>**What are the *products* of cellular respiration?**<br>**A)** Oxygen and glucose<br>**B)** Carbon dioxide, water, and energy<br>**C)** Water and oxygen<br>**D)** Carbon dioxide and glucose |
| 19 | **Why is cellular respiration essential for plants even though they produce their own food?**<br>a)To absorb sunlight<br>b)To grow, reproduce, and repair tissues<br>c)To produce carbon dioxide<br>d)To create water |
| 20 | **Why is cellular respiration essential for most organisms?**<br>a)It stores energy in the form of glucose<br>b)It converts carbon dioxide and water into oxygen<br>c)It breaks down and rearranges food to release energy<br>d)It absorbs energy from sunlight |
| 21 | **Cellular respiration is the process in which organisms break down food to release _____.**<br>A)energy<br>B)nutrients<br>C)sugar<br>D)oxygen |
| 22 | **Which organisms use cellular respiration as a way to convert energy into usable form?**<br>A)seedless plants only<br>B)only photosynthetic organisms |

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**ALSHIYAM SCHOOL CYCLE 2&3**

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| | C)only mammals<br>D)all organisms |
| 23 | **Photosynthesis uses all of the following except _____ to make food.**<br>A)carbon dioxide<br>B)chemical energy<br>C)light energy<br>D)water |
| 24 | **How do photosynthesis and cellular respiration relate to each other in plants?**<br>**A)** Photosynthesis provides the energy directly used by plants.<br>**B)** Cellular respiration allows plants to use the energy stored in the glucose made during photosynthesis.<br>**C)** Photosynthesis and cellular respiration are completely separate processes with no interaction.<br>**D)** Cellular respiration produces oxygen, which plants use for photosynthesis. |
| 25 | **What is a detritivore?**<br>  <br>a)An organism that produces its own food<br>b)An organism that eats the remains of other organisms<br>c)An organism that consumes living plants<br>d)An organism that only eats other animals |
| 26 | **Which of the following is an example of a detritivore?**<br>a)Eagle<br>b)Grass<br>c)Mushroom<br>d)Fish |

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### ALSHIYAM SCHOOL CYCLE 2&3

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| 27 | **What role do decomposers play in an ecosystem?**<br>a)They produce oxygen<br>b)They recycle nutrients by breaking down dead organisms<br>c)They consume living plants<br>d)They store energy in the form of fat |
| 28 | **What gas do decomposers produce during the process of decomposition?**<br>a)Oxygen<br>b)Methane<br>c)Nitrogen<br>d)Carbon dioxide |
| 29 | **How do detritivores help maintain a clean ecosystem?**<br>a) By consuming living plants and animals<br>b) By breaking down dead organisms, preventing them from piling up<br>c) By producing their own food<br>d) By releasing oxygen into the atmosphere |

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**ALSHIYAM SCHOOL CYCLE 2&3**

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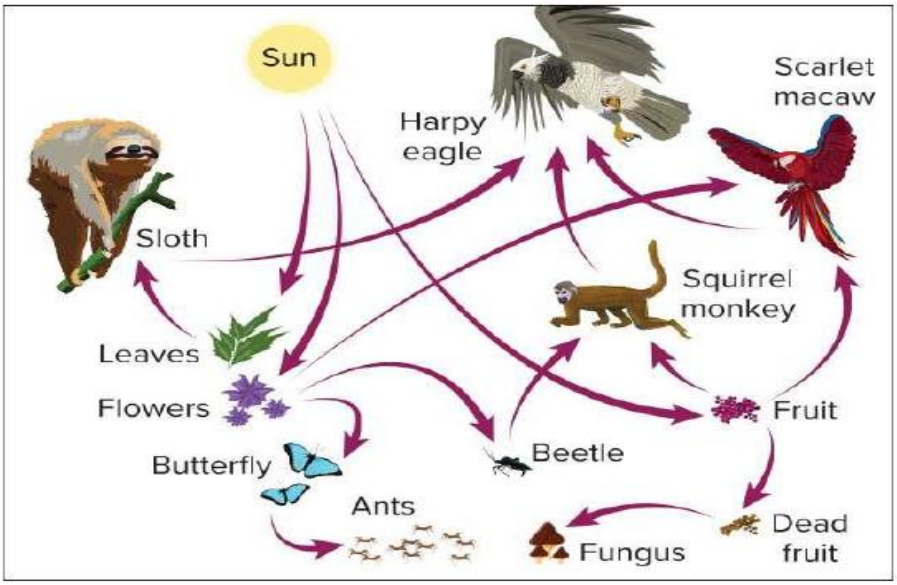
**2.** Analyze the food web. Which statement is correct?




**A** The model tracks the transfer of energy as energy flows in this ecosystem.

**B** The transfer of matter back into the environment occurs only at the detritivore level.

**C** The model shows the transfer of matter only.

**D** The decomposers in the model use matter but not energy for their life processes.

31

In an energy pyramid, approximately 10 percent of the energy available in one trophic level is transferred to the next level. Which statement helps explain why this occurs?

**A** Consumers eat both producers and other consumers.

**B** Organisms use most of the available energy to fuel their own life processes.

**C** Predators eat more organisms in their own level than organisms in other levels.

**D** Producers exist in only the lowest level of the pyramid.

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**ALSHIYAM SCHOOL CYCLE 2&3**

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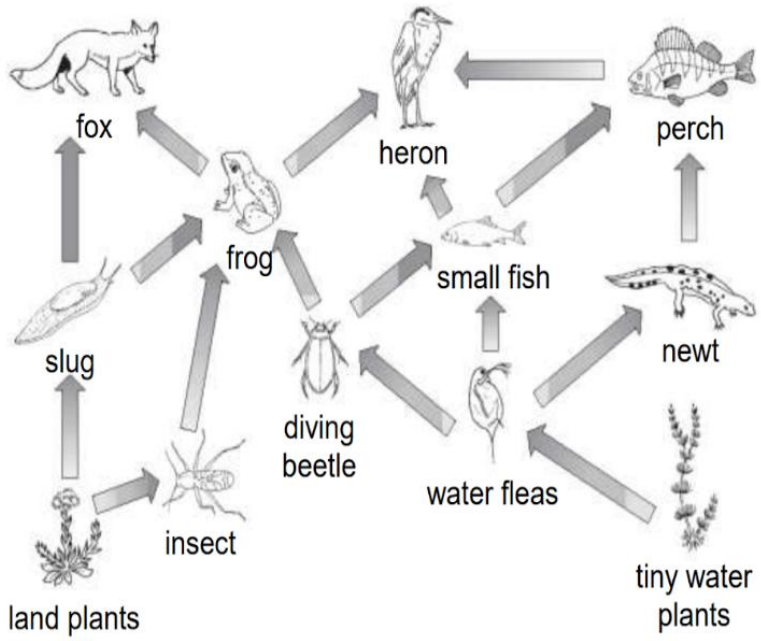
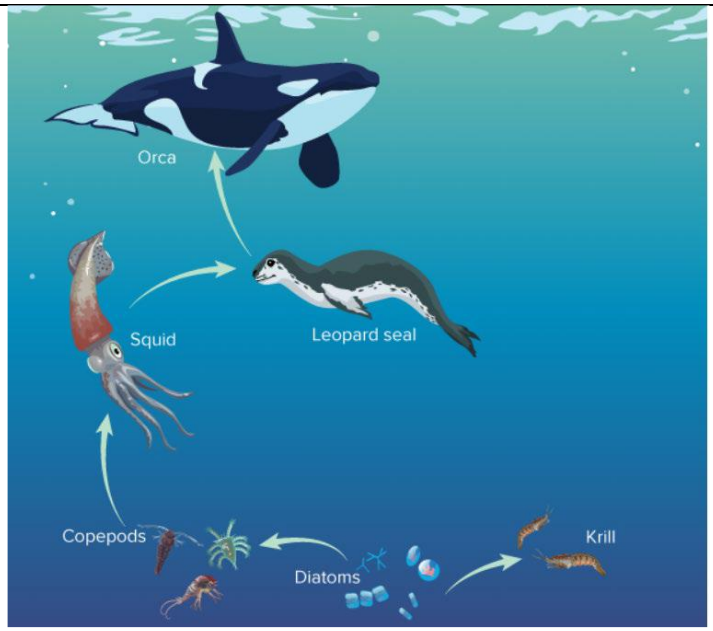



**Which organism has the largest available energy in this ecosystem?**

A.Frog
B.Perch
C.Land Plants
D.Thrush

33




**What does a food web model show?**

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**ALSHIYAM SCHOOL CYCLE 2&3**

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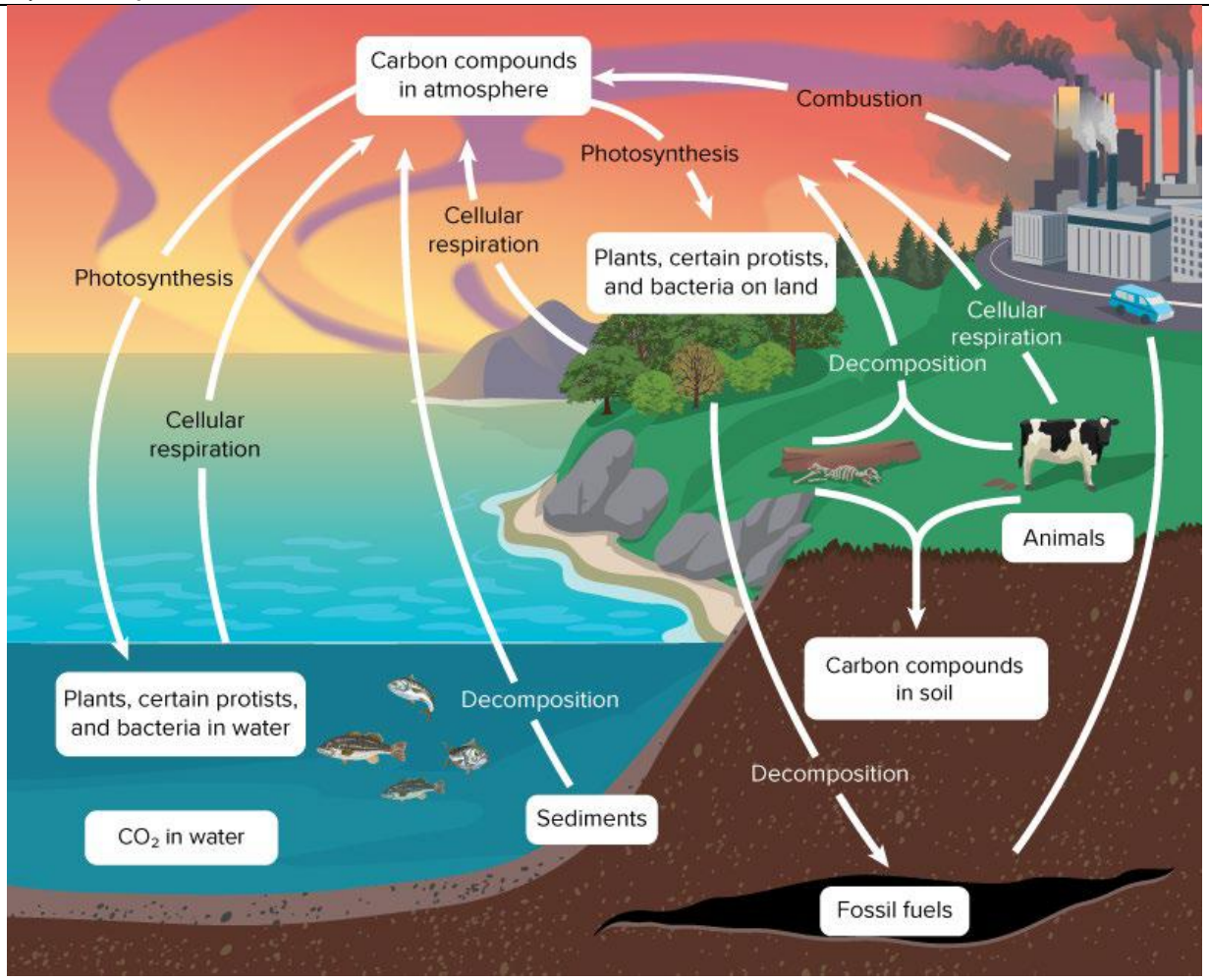
|---|---|
| | a)The physical structure of ecosystems<br>b)The movement of energy through a community<br>c)The chemical composition of food<br>d)The reproduction of organisms |
| 34 | **What do the arrows in a food web represent?**<br>a)The size of the organisms<br>b)The direction of energy flow<br>c)The lifespan of the organisms<br>d)The reproduction rate |
| 35 |  <br>**What process removes carbon dioxide from the atmosphere?**<br>a. Combustion<br>b.Decomposition |

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**ALSHIYAM SCHOOL CYCLE 2&3**

| | |
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| | c. Photosynthesis<br>d. Cellular respiration |
| 36 | **Which process releases carbon dioxide back into the atmosphere?**<br>a. Photosynthesis<br>b. Decomposition<br>c. Carbon fixation<br>d. Sedimentation |
| 37 | **What is the main source of carbon for plants?**<br>A. Fossil fuels<br>B. Soil carbon compounds<br>C. Carbon dioxide in the atmosphere<br>D. Organic matter from animals |
| 38 | **What happens when organisms die and decompose?**<br>A. Carbon is permanently removed from the cycle<br>B. Carbon compounds enter the soil and $CO_2$ is released<br>C. Carbon becomes water vapor<br>D. No carbon exchange occurs |
| 39 | **What is formed when decomposing organisms are exposed to pressure and heat over millions of years?**<br>A. Carbon dioxide<br>B. Fossil fuels<br>C. Carbonates<br>D. Minerals |
| 40 | **What role do animals play in the carbon cycle?**<br>A. They perform photosynthesis<br>B. They take in carbon dioxide directly from the air<br>C. They release carbon dioxide through cellular respiration<br>D. They form fossil fuels |
| 41 | **Which of the following processes adds carbon dioxide to the atmosphere?**<br>A. Combustion<br>B. Photosynthesis<br>C. Sedimentation<br>D. Absorption |

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### ALSHIYAM SCHOOL CYCLE 2&3

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|---|---|
| 42 | **Which organisms help decompose dead plants and animals?**<br>A. Animals<br>B. Bacteria and fungi<br>C. Protists only<br>D. Herbivores |
| 43 | **In what form is carbon found in the atmosphere?**<br>A. Carbon monoxide (CO)<br>B. Carbon dioxide ($CO_2$)<br>C. Methane ($CH_4$)<br>D. Solid carbon |
| 44 | **What process converts fossil fuels into carbon dioxide?**<br>A. Photosynthesis<br>B. Respiration<br>C. Combustion<br>D. Decomposition |
| 45 | **Which process transfers carbon from living organisms to the soil?**<br>A. Photosynthesis<br>B. Decomposition<br>C. Cellular respiration<br>D. Sedimentation |
| 46 | **Why is the carbon cycle important for living organisms?**<br>A. It produces water for plants<br>B. It regulates nitrogen levels<br>C. It provides carbon needed to make energy-rich molecules<br>D. It increases oxygen in the air |

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### ALSHIYAM SCHOOL CYCLE 2&3

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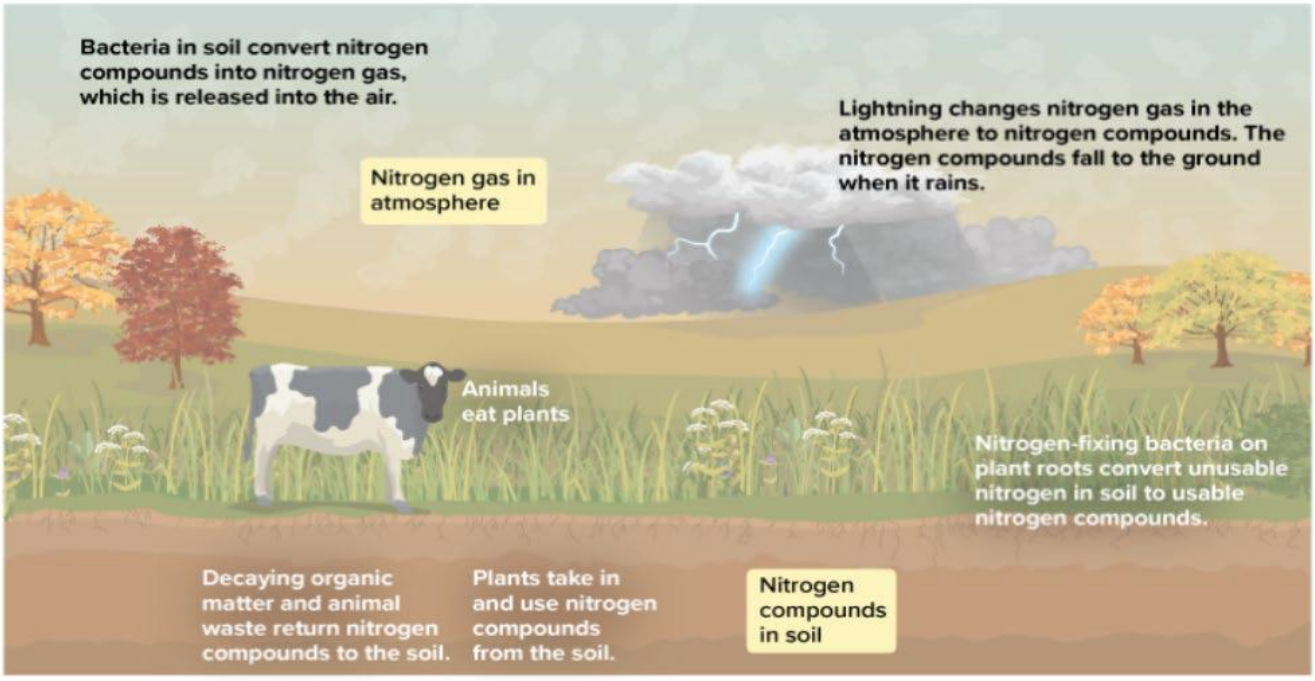
| 47 |  <br>**What is the main component of Earth's atmosphere?**<br>A. Oxygen<br>B. Nitrogen<br>C. Carbon dioxide<br>D. Hydrogen |
| 48 | **Why can most plants and animals not use atmospheric nitrogen directly?**<br>A. It is too cold<br>B. It is chemically unreactive<br>C. It is in solid form<br>D. It is already used by bacteria |
| 49 | **What is the process called that converts atmospheric nitrogen into usable nitrogen compounds?**<br>A. Photosynthesis<br>B. Nitrogen fixation<br>C. Denitrification<br>D. Nitrification |
| 50 | **What type of organisms perform nitrogen fixation in the soil?**<br>A. Animals<br>B. Fungi |

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## Term 1 EOT Coverage

### ALSHIYAM SCHOOL CYCLE 2&3

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|---|---|
| | C. Nitrogen-fixing bacteria<br>D. Protists |
| 51 | **Where do nitrogen-fixing bacteria often live?**<br>A. In the roots of plants<br>B. In the atmosphere<br>C. In animal intestines<br>D. In the ocean floor |
| 52 | **How do animals obtain nitrogen?**<br>A. By absorbing it from the air<br>B. By drinking water containing nitrogen<br>C. By eating plants or other organisms<br>D. By decomposing waste |
| 53 | **What happens to nitrogen when plants and animals die?**<br>A. It disappears from the cycle<br>B. It turns into oxygen<br>C. It is released into the soil through decomposition<br>D. It becomes water vapor |
| 54 | **What do decomposers do in the nitrogen cycle?**<br>A. Convert nitrogen gas into nitrates<br>B. Break down dead matter and return nitrogen to the soil<br>C. Release nitrogen into the atmosphere<br>D. Fix nitrogen into roots |
| 55 | **What do bacteria in the soil do during denitrification?**<br>A. Convert nitrogen compounds back into nitrogen gas<br>B. Produce ammonia<br>C. Create proteins<br>D. Fix nitrogen in roots |
| 56 | **Which statement best describes the nitrogen cycle?**<br>A. Nitrogen moves from the air to living things and back again<br>B. Nitrogen remains only in the atmosphere<br>C. Nitrogen is used only by animals<br>D. Nitrogen is stored in fossil fuels |
| 57 | **In what form is nitrogen most abundant in the atmosphere?**<br>a) Ammonia (NH3) |

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## Term 1 EOT Coverage

**ALSHIYAM SCHOOL CYCLE 2&3**

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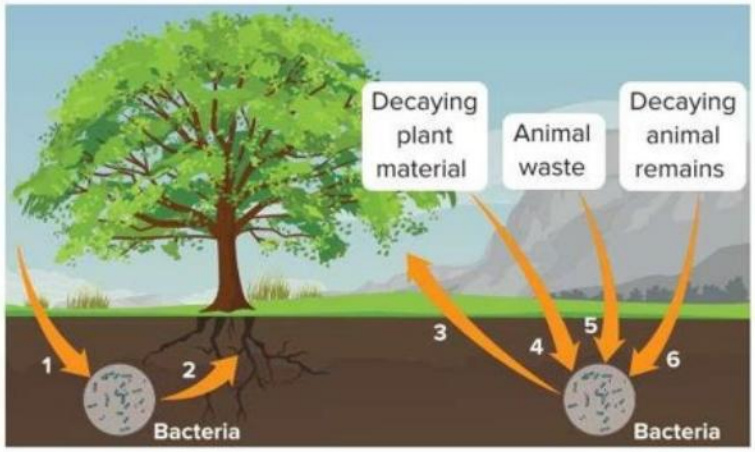
|---|---|
| | b) Nitrate (NO3-)<br>c) Nitrite (NO2-)<br>d) Nitrogen gas (N2) |
| 58 | Keisha and her classmates created a model of the nitrogen cycle. Their diagram is shown below.<br>  <br>**2.** What is the function of the bacteria shown in the model?<br>**A** They prevent the nitrogen from harming the plants.<br>**B** They remove the nitrogen from the soil.<br>**C** They remove the oxygen from the soil.<br>**D** They return the nitrogen to the system. |
| 58 | **How do animals obtain the nitrogen they need?**<br>a)By breathing in nitrogen gas<br>b)By eating plants or other organisms<br>c)By drinking water<br>d)By absorbing nitrogen through their skin |
| 59 | **What is manure, and how does it contribute to the nitrogen cycle?**<br>a)Decomposed plant matter; provides carbon to plants<br>b)Animal waste; provides nitrogen to plants<br>c)Mineral fertilizer; provides phosphorus to plants<br>d)A type of soil; provides water to plants |
| 60 | **Which component of proteins is essential for all organisms and is cycled through the environment?** |

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## Term 1 EOT Coverage

**ALSHIYAM SCHOOL CYCLE 2&3**

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|---|---|
| | a)Oxygen<br>b)Hydrogen<br>c)Carbon<br>d)Nitrogen |
| 61 | **Which process returns nitrogen to the environment from the waste products of organisms?**<br>a)Photosynthesis<br>b)Respiration<br>c)Decomposition<br>d)Transpiration |
| 62 | New Zealand was once home to a large, flightless bird called giant moa. When humans first settled in the island they hunted the moa for food within 200 years, all the giant moas had been killed.<br>How the giant moa species can be classified?<br>  <br>Extinct species<br>Endangered species<br>Threatened species<br>Limited species |

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**ALSHIYAM SCHOOL CYCLE 2&3**

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**Population Size Decrease** Population size can increase, but it also can decrease. For example, a population of field mice might decrease in size in the winter because there is less food. Natural disasters such as floods, fires, or volcanic eruptions also affect population size. Sometimes, a population's size can decrease to such an extent that it may threaten the entire species. Examine the table to learn about what happens to species that see large decreases in population size.

**Extinction** If populations continue to decrease in numbers, they disappear. An extinct species is a species that has died out and no individuals are left. Extinctions can be caused by predation, natural disasters, or damage to the environment. For example, New Zealand was once home to a large, flightless bird called the giant moa. Humans first settled these islands about 700 years ago. They hunted the moa for food. As the size of the human population increased, the size of the moa population decreased. Within 200 years, all the giant moas had been killed and the species became extinct.

**Endangered Species** Mountain gorillas are an example of a species that is endangered. An endangered species is a species whose population is at risk of extinction. There are currently over 16,000 species that are categorized as endangered. Species that are considered critically endangered face an even higher risk of extinction.

**Threatened Species** California sea otters almost became extinct in the early 1900s due to overhunting. In 1977, California sea otters were classified as a threatened species—a species at risk, but not yet endangered. Laws were passed to protect the otters and by 2016 there were about 3,200 sea otters. Worldwide, approximately 7,000 species are classified as threatened.

**What is the distinction between an "endangered species" and a "threatened species" as described in the text?**

A. An endangered species is not yet at risk of extinction, while a threatened species is.

B. An endangered species is at risk of extinction, while a threatened species is at risk but not yet endangered.

C. An endangered species has no individuals left, while a threatened species has a few.

D. A threatened species only exists in captivity, while an endangered species is found in the wild.

64 **Which of the following is NOT given in the text as a natural factor that can affect population size?**

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**Term 1 EOT Coverage**

**ALSHIYAM SCHOOL CYCLE 2&3**

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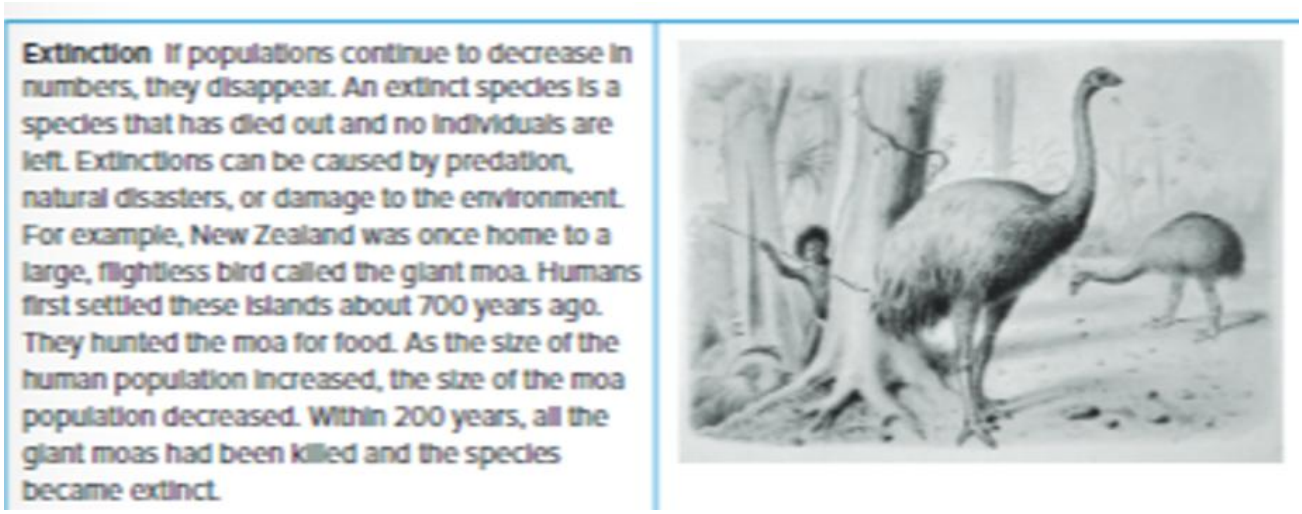
|---|---|
| | A. Floods<br>B. Volcanic eruptions<br>C. Wildfires<br>**D.** Disease spreading in dense populations |
| 65 | **What ultimate consequence can occur if a population's size decreases to 'such an extent' that it threatens to wipe out the entire species?**<br>A.Evolution<br>B.Extinction<br>C.Migration<br>D.Hibernation |
| 66 |  <br>**Extinction** If populations continue to decrease in numbers, they disappear. An extinct species is a species that has died out and no individuals are left. Extinctions can be caused by predation, natural disasters, or damage to the environment. For example, New Zealand was once home to a large, flightless bird called the giant moa. Humans first settled these islands about 700 years ago. They hunted the moa for food. As the size of the human population increased, the size of the moa population decreased. Within 200 years, all the giant moas had been killed and the species became extinct.<br>**Which of the following is NOT listed in the text as a general cause of extinctions?**<br>A. Natural disasters<br>B. Predation<br>C. Introduction of non-native species<br>D. Damage to the environment<br>**What was the primary factor that directly led to the extinction of the giant moa in New Zealand?**<br>A. An increase in natural disasters that destroyed their habitat.<br>B. The moa's inability to reproduce quickly enough.<br>C. Overhunting by the human population for food.<br>D. Increased predation by native New Zealand animals |

# Grade 7 Inspire Science
## Term 1 EOT Coverage

**ALSHIYAM SCHOOL CYCLE 2&3**

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| | **Approximately how long did it take for the giant moa to become extinct after humans first settled the islands and began hunting them?**<br>A. About 700 years<br>B. Less than 200 years<br>C. More than 700 years<br>D. Exactly 50 years |
| 67 |  <br>**Threatened Species** California sea otters almost became extinct in the early 1900s due to overhunting. In 1977, California sea otters were classified as a threatened species—a species at risk, but not yet endangered. Laws were passed to protect the otters and by 2016 there were about 3,200 sea otters. Worldwide, approximately 7,000 species are classified as threatened.<br>**what was the initial reason the California sea otter population nearly became extinct in the early 1900s?**<br>A. Floods and fires that destroyed their coastal habitat.<br>B. Excessive predation by other marine animals.<br>C. Overhunting by humans.<br>D. A viral disease outbreak.<br>**What caused the California sea otters to nearly become extinct in the early 1900s?**<br>A. Damage to the environment from natural disasters.<br>B. A lack of food due to environmental changes.<br>C. Overhunting by humans.<br>D. The spread of disease among the population.<br>**What measure was taken to specifically protect the California sea otters and prevent their extinction?**<br>A. They were moved to protected island habitats.<br>B. Research was started to study their diet.<br>C. **Laws were passed** to protect them.<br>D. Their natural predators were removed. |
| 68 | |

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**Endangered Species** Mountain gorillas are an example of a species that is endangered. An endangered species is a species whose population is at risk of extinction. There are currently over 16,000 species that are categorized as endangered. Species that are considered critically endangered face an even higher risk of extinction.

**Which species is given in the text as an example of an endangered species?**
A. Giant Moa B. California Sea Otter C. Field Mouse D. Mountain Gorilla
**Approximately how many species are currently categorized as endangered worldwide, according to the text?**
A. Exactly 7,000 B. Over 16,000 C. About 3,200 D. Less than 200

69

**Which term describes a species that no longer has any living individuals?**

- A) Threatened species
- B) Endangered species
- C) Extinct species
- D) Overpopulated species

70

**Why did the population of the giant moa bird in New Zealand become extinct?**

- A) They were overhunted by humans.
- B) A natural disaster wiped them out.
- C) They migrated to a different area.
- D) They lost their food supply due to climate change.

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**What is an endangered species?**

- A) A species whose population is stable and thriving.
- B) A species that is at risk of extinction.
- C) A species that is overpopulated.
- D) A species that faces no environmental threats.

72

**Which statement accurately describes the outcome of a Predator-prey relationship?**

A. Both populations benefit by obtaining resources more easily.
B. One population benefits by hunting and consuming the other population, which is harmed.
C. Both populations are harmed as they compete for a limited resource.
D. One population benefits while the other is neither harmed nor helped.

73

**What type of symbiotic relationship exists between the Barbell fish and the hippos?**

- A) Commensalism
- B) Parasitism
- C) Mutualism
- D) Predation

74

**Which of the following best describes mutualism?**

- A) One species benefits while the other is harmed.
- B) Both species benefit from the relationship.
- C) One species benefits while the other is unaffected.
- D) Both species are harmed in the relationship

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| 75 | **In the relationship between clownfish and sea anemones, how does :he sea anemone benefit?**<br>• A) It receives protection from predators.<br>• B) It receives energy from the clownfish's waste.<br>• C) It is unaffected by the clownfish's presence.<br>• D) It uses the clownfish as food. |
| 76 | **Which of the following is an example of commensalism?**<br>• A) A hunting wasp laying eggs in a spider's body.<br>• B) Epiphytes growing on tree trunks for more space and sunlight.<br>• C) Barbel fish cleaning hippos' mouths.<br>• D) Clownfish living among sea anemone tentacles. |
| 77 | **How does parasitism differ from mutualism?**<br>• A) Both species are harmed in parasitism, while both benefit in mutualism.<br>• B) One species benefits and the other is harmed in parasitism, while both benefit in mutualism.<br>• C) One species is unaffected in parasitism, while both are unaffected in mutualism.<br>• D) Both species benefit in parasitism, while one benefits and the other is harmed in mutualism. |

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| 78 | **Which of the following describes a parasitic relationship?**<br>• A) A bird building its nest in a tree.<br>• B) A wasp laying eggs inside a paralyzed spider.<br>• C) Barbel fish following and grooming hippos.<br>• D) A clownfish living among sea anemone tentacles. |
| 79 | **Which type of symbiotic relationship is characterized by an interaction where both participating populations receive a benefit?**<br>A. Parasitism B. Commensalism C. Mutualism D. Competitive |
| 80 | **In a Cooperative relationship, how do individuals within the same population interact?**<br>A. They struggle for the same food source, harming each other.<br>B. They hunt each other to control population size.<br>C. They work together, such as hunting in packs or raising young communally, to increase their collective survival.<br>D. They live physically attached to one another for all or part of their lives. |
| 81 | **The change from Community A (open water) to Community B (water with plants and animals) is an example of which fundamental ecological process?**<br>A. Speciation B. Evolution C. Extinction D. Ecological Succession |
| 82 | **Community A primarily represents an aquatic environment. What characteristic suggests it is an earlier stage in the development of the ecosystem compared to Community B?**<br>A. It has a high density of animals.<br>B. It is surrounded by large trees.<br>C. It is deep, open water with little or no emergent vegetation.<br>D. It has completely dried up. |
| 83 | **What change in the community is evident in Community B compared to Community A?**<br>A. The surrounding forest has been cut down.<br>B. The water has become deeper and clearer.<br>C. There is an increase in biodiversity, including ducks and frogs.<br>D. The pond has been artificially drained. |

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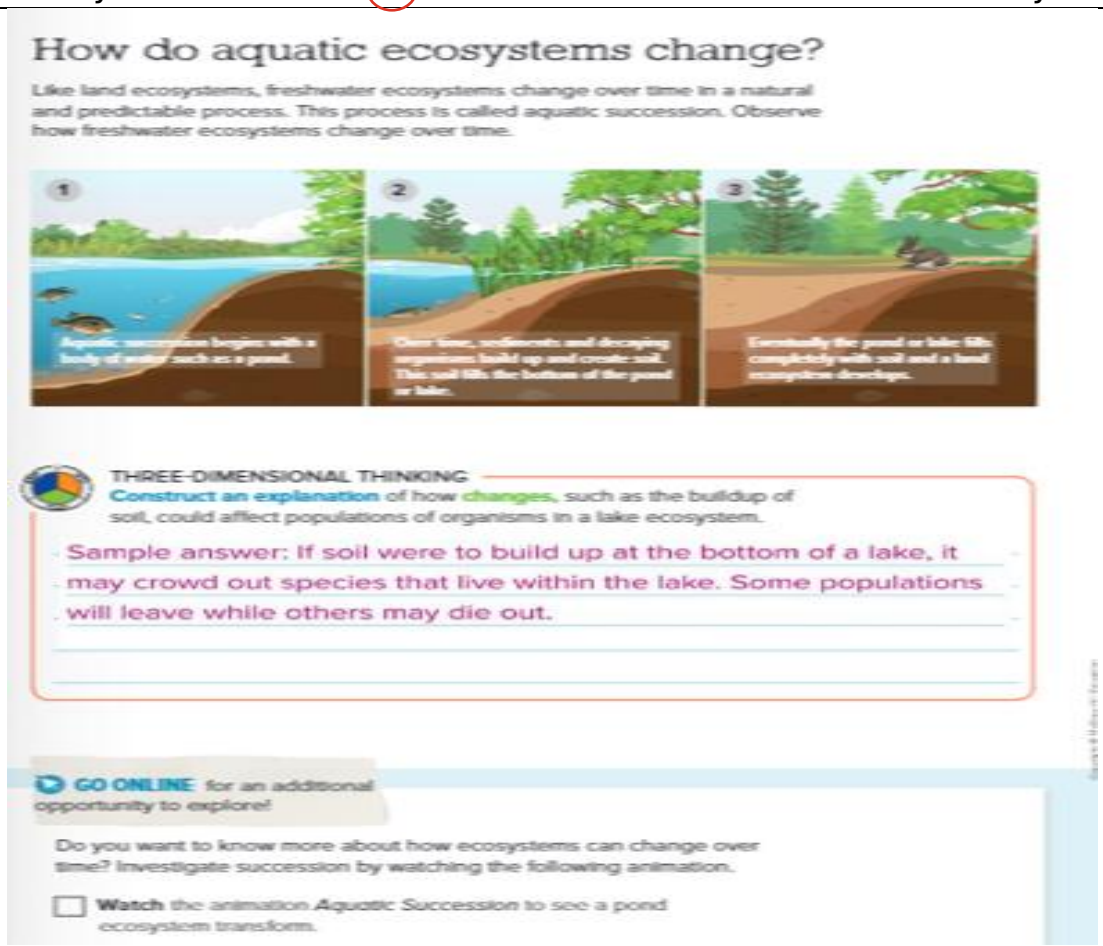
| 84 | **What is the most likely physical change that allows the vegetation (like cattails) to grow in the water in Community B?**<br>A. The addition of new water from a river.<br>B. A sudden drop in air temperature.<br>C. Accumulation of sediment and decaying organic matter on the bottom.<br>D. A decrease in sunlight due to cloud cover. |
| 85 | **How long would it typically take for a large, deep pond like Community A to naturally transition to the shallower, plant-filled state of Community B? (The time relates to question 1 in the image.)**<br>A. Days to a few weeks B. Decades to centuries C. Thousands of years D. A single season |
| 86 |  <br>**What term is used in the text to describe the natural and predictable process by which freshwater ecosystems change over time?**<br>A. Land Ecosystem Development B. Aquatic Succession C. Sedimentation D. Terrestrial Evolution |

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| 87 | **According to the description for image 1, aquatic succession begins with:**<br>A. The formation of a dense forest. B. A body of water such as a pond or lake. C. The complete drying up of a water body. D. The appearance of animals like rabbits. |
| 88 | **What two materials build up over time to create soil and fill the bottom of the pond or lake, driving the process of succession?**<br>A. Rock and sand B. Water and plants C. Sediments and decaying organisms D. Clay and silt |
| 89 | **The buildup of soil in a lake ecosystem directly affects populations of organisms by:**<br>A. Increasing the overall water volume, allowing for deeper-water fish.<br>B. Making the water shallower, allowing new emergent plants to grow and replacing deep-water habitats.<br>C. Stopping all plant growth, turning the area into a desert.<br>D. Increasing the number of fish species that prefer deep, cold water. |
| 90 | **What is the eventual result when the pond or lake fills completely with soil, as shown in image 3?**<br>A. The area remains a large, deep lake indefinitely.<br>B. The water becomes extremely salty.<br>C. A land ecosystem develops.<br>D. Aquatic animal populations decrease to zero. |
| 91 | **According to the primary definition in the text, what process describes a body of water becoming nutrient rich?**<br>  |

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| | |
|---|---|
| | A. Sedimentation B. Eutrophication C. Biogeochemistry D. Aquatic Succession |
| 92 | **High nutrient levels in an aquatic ecosystem support large populations of algae and microscopic organisms, which then negatively affect fish and other aquatic organisms by:**<br>A. Making the water too cold for them.<br>B. Using most of the dissolved oxygen in the water.<br>C. Increasing the overall amount of water.<br>D. Making the water too clear for them to hide. |
| 93 | **Which human activity is highlighted in the text as the main way nitrogen is added to the environment, leading to excessive eutrophication?**<br>A. Runoff from roads and pavement.<br>B. Use of fertilizers in farming.<br>C. Increased ocean temperatures.<br>D. Building up of sediments in the water body. |
| 94 | **According to the text, what environmental consequence can occur when excess nitrogen contributed by human activities pollutes fresh waters and coastal zones?**<br>A. A decrease in global average temperature.<br>B. Contribution to climate change.<br>C. A significant increase in soil stability.<br>D. A decrease in industrial fuel usage. |
| 95 | **Approximately what percentage of nitrogen contained in applied fertilizer is NOT incorporated into plants and is free to pollute rivers, lakes, and oceans?**<br>A. About 20 percent B. About 60 percent C. About 10 percent D. About 90 percent |

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## Term 1 EOT Coverage

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| 96 | **What is eutrophication?**<br><br>A) The process by which soil erosion decreases water quality in rivers and lakes<br>B) The introduction of non-native species into an ecosystem<br>C) The excessive growth of algae in water bodies due to high nutrient levels, often leading to oxygen depletion<br>D) The natural buildup of nutrients in soil from decaying organic matter |
| 97 | **3.** How might a lake suffering from eutrophication affect a population of fish?<br><br>**A** The population will grow because of the extra nutrients.<br>**B** The population will suffer due to decreases in oxygen and habitat loss.<br>**C** The fish population will not be affected.<br>**D** The size of the population will waver. |

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Which of the following can cause **eutrophication** as shown in the lake below?

| No. | Reason |
|---|---|
| 1 | Decaying organisms fall to the bottom of the lake |
| 2 | Runoff from fertilizers used in farming |
| 3 | High rate of fish reproduction (population increase) |

- 1 & 2
- 2 & 3
- 1 & 3
- 1, 2, & 3

99

**Canopy Fogging** Scientists use canopy fogging to collect data about the biodiversity of insects. It is often used in forests. A low dose of insecticide is sprayed up into the top of a tree or trees. The insecticide kills the insects, causing them to fall from the trees. When the insects fall, they are collected in a large screen, a large sheet, or several large funnels. To learn more about biodiversity, scientists study the insects, identify them, and count them.

**What is the specific goal of using Canopy Fogging as a method for collecting biodiversity data?**

**A**. To collect data on fish living in coral reefs.

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| | |
|---|---|
| | B. To study bats and other mammals at night.<br>C. To study the biodiversity of insects at the tops of trees in forests.<br>D. To collect soil samples for microbial analysis. |
| 100 | **In the canopy fogging method, what causes the insects to fall from the trees to be collected?**<br>A. The loud noise from the machine frightens them.<br>B. The use of a low dose of insecticide sprayed onto the treetop.<br>C. A blast of cold air that paralyzes them.<br>D. They are shaken loose by strong winds. |
| 101 | **Why must scientists use different methods and technologies to collect biodiversity data in different locations?**<br>A. They prefer to change methods often to keep records fresh.<br>B. The method used depends on the types of organisms being counted and the habitat.<br>C. Funding is usually only available for one method per year.<br>D. Only one scientist is trained to use each technology. |

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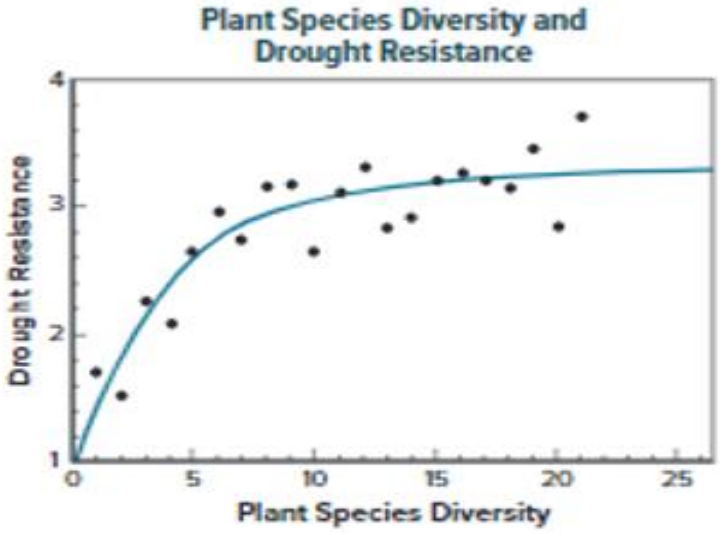
The graph below shows more data from the second experiment described in the Investigation *Plant Productivity*. During the course of the experiment, the region experienced an extended drought. The researchers tracked the relationship between plant species diversity and the ecosystem's resilience to the drought. Values closer to one on the vertical axis imply less resilience to the drought.




2. What conclusion can be made by analyzing the data from the graph?

A As plant biodiversity increases, resistance to drought decreases.

B As plant biodiversity increases, resistance to drought increases.

C Ecosystems with lower biodiversity are better able to respond to changes.

D Ecosystems with higher biodiversity are less able to respond to changes.

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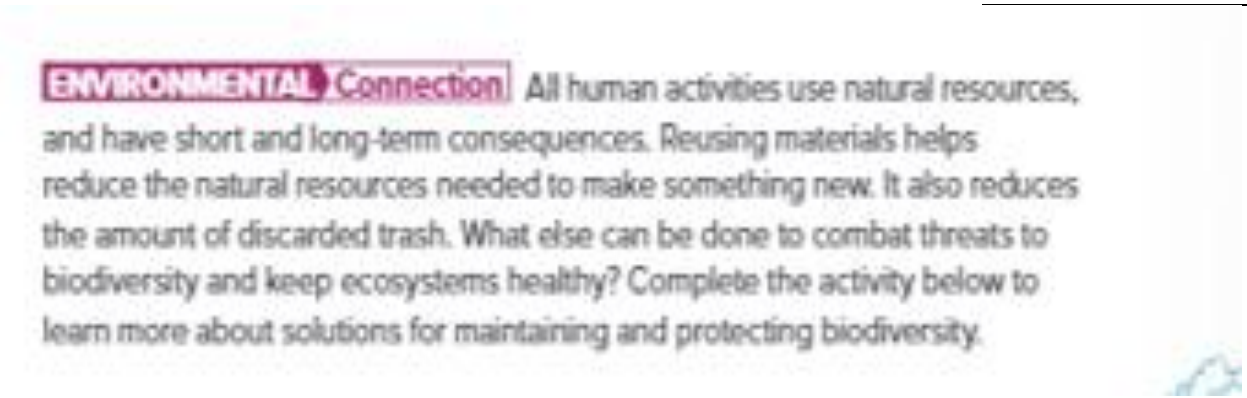
3. What would happen to the biodiversity index of an ecosystem if a change in the ecosystem caused the number of species to stay the same and the total number of individuals to increase?

A The biodiversity index would increase.
B The biodiversity index would decrease.
C The biodiversity index would stay the same.
D The biodiversity index would increase, and then decrease.

104


ENVIRONMENTAL Connection All human activities use natural resources, and have short and long-term consequences. Reusing materials helps reduce the natural resources needed to make something new. It also reduces the amount of discarded trash. What else can be done to combat threats to biodiversity and keep ecosystems healthy? Complete the activity below to learn more about solutions for maintaining and protecting biodiversity.

**According to the sample answer in the "Save the Earth" investigation, which of the following is a solution for protecting and maintaining biodiversity?**

A. Decreasing the use of all digital sources.
B. Allowing unregulated fishing in all areas.
C. Setting up designated "protected areas."
D. Increasing the amount of trash in landfills.

109

**The "Environmental Connection" section suggests that reducing the amount of trash by reusing materials helps protect biodiversity by:**

A. Making new products less expensive to buy.
B. Decreasing the amount of natural resources used.
C. Reducing trash in landfills that would damage habitats.
D. Allowing ecosystems to be classified as endangered.

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