تم تحميل هذا الملف من موقع المناهج الإماراتية

ملخص تجميعة صفحات الكتاب وفق الهيكل الوزاري منهج انسباير

موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف الخامس ⇦ علوم ⇦ الفصل الثالث ⇦ الملف

تاريخ إضافة الملف على موقع المناهج: 2024-05-19 09:52:06

إعداد: Ali Maysoon

التواصل الاجتماعي بحسب الصف الخامس

اضغط هنا للحصول على جميع روابط "الصف الخامس"

روابط مواد الصف الخامس على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الخامس والمادة علوم في الفصل الثالث

1	الهيكل الوزاري الجديد منهج انسباير المسار العام
2	الهيكل الوزاري الجديد منهج بريدج المسار العام
3	حل أوراق عمل الدرس الأول Systems Major‘Earth أنظمة الأرض
4	أوراق عمل الدرس الأول Systems Major‘Earth أنظمة الأرض

المزيد من الملفات بحسب الصف الخامس والمادة علوم في الفصل الثالث	
5	حل أوراق عمل الدرس الأول survival Plant بقاء النبات

FRQ الصفحات الخاصة بالأسئلة الكتابية

	Question* السؤال*	Learning Outcome/Performance Criteria** ناتج التعلم/ معايير الأداء**	Reference(s) in the Student Book (English Version) المرجع في كتاب الطالب (النسخة الانجليزية)	
			Example/Exercise مثال/تمرين	Page الصفحة
FRQ/ الأسئلة المقالية	1	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.	Figure page 10	U2M1L1 page 10
	2	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.	Figure page 10	U2M1L1 page 10
	3	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.		U2M1L1 page 11
	4	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.	Figure page 15	U2M1L1 page 15
	5	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.		U2M1L1 page 11

Teacher : Maysoon Ali

VOCABULARY

Look for these words as you read:

energy

phloem

stomata

transpiration

xylem

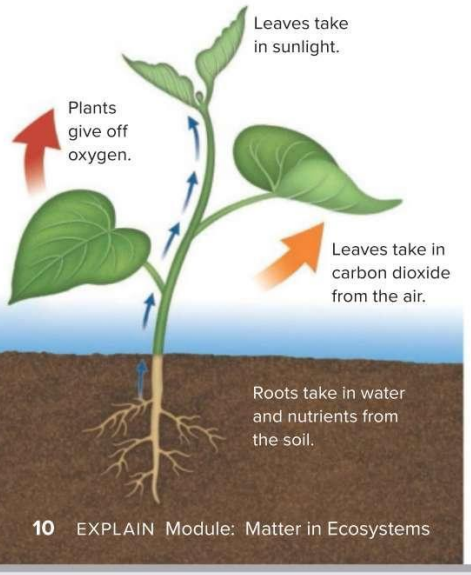
Plant Structures

The giant sequoia has the same needs as other plants: water, air, sunlight, space, and nutrients. Nutrients are substances that a living thing needs to stay healthy. Plants need energy to meet these needs. **Energy** is the ability to perform work or change something. Plants use structures such as leaves, stems, and roots to obtain energy.

Plants need carbon dioxide from the air to make their food. Tiny openings on the underside of most leaves allow air to enter. These openings—called **stomata**—can close and prevent water from escaping.

Other plant structures obtain the other materials that the plant needs. Water is absorbed by a plant's roots. It travels up the center of the stem through specialized tissues called **xylem**.

GO ONLINE Watch the video *Plant Structures* to see more examples of the different types of plants and their parts.



Explain how the diagram **provides evidence** of the major roles of the different plant parts and the **flow of energy**, water, and air.

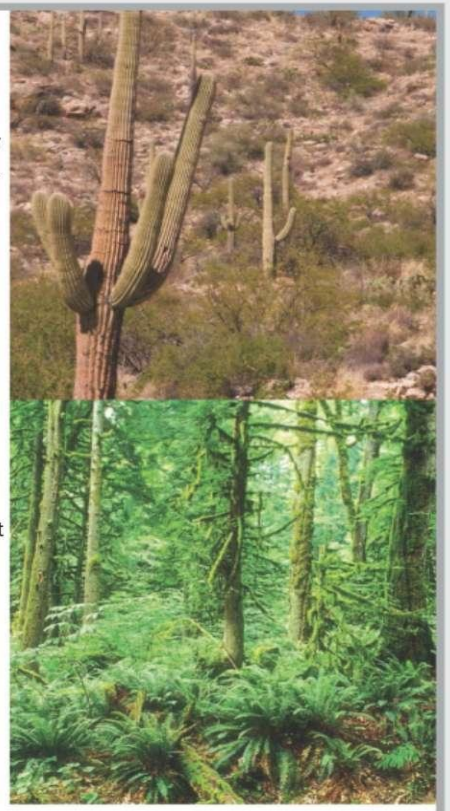
Sample answer: Plants give off oxygen and take in carbon dioxide from the air. Leaves capture energy from the Sun. Roots take in water and nutrients.

Plant Needs

Plants have basic needs to live and grow. You now know that plants use their structures to obtain what they need. Plants need enough space where they grow for their roots to spread out and absorb water and nutrients from the soil.

Water and carbon dioxide combine in the presence of light energy to produce sugar and oxygen. Energy from the sunlight is now contained in the sugars. The sugars are what the plant uses for food. The food is then available to the plant for growth, storage, and other life processes.

Phloem are tissues that transport sugars to all parts of the plant. It drives the movement of materials throughout a plant. **Transpiration** is the evaporation of water from a plant's leaves. As water evaporates from the leaves, more water is carried from the bottom of the plant to the top. Water moves into the leaf, replacing the water that has evaporated.



Some plants need more water than others. Cacti can survive in deserts with little rain, while the plants in a rain forest live in a very wet area.

1. Why would it be a disadvantage if plants grow too close together?

Sample answer: Plants that grow too close together compete for the same resources or need more space to grow bigger.

2. Some woody vines can grow on rainforest trees and climb high into the tree canopy. Why would this be an advantage?

Sample answer: Vines can access sunlight more by climbing the stem of taller plants.

INQUIRY ACTIVITY

Research

Soil-less Gardens

Agricultural and food science technicians might study how to grow food crops without soil. Research ways of growing plants without soil by reading the Investigator article *Soil-less Gardens*, going online to teacher-approved websites, or by finding books on hydroponics at your local library.

WRITING Connection Write a persuasive argument for why plants should be grown with or without soil by

Soil provides support, nutrients, and water to the plant's roots. Plants can grow without soil, but they will need structures to support them, the correct amount of water and air to their roots, and nutrients.

- الصفحات الخاصة بالأسئلة الموضوعيةMCQ

MCQ - الموضوعية

13	5-LS2-1 Students will develop and use models of how matter cycles through ecosystems. Students will also be able to explain how these cycles affect the ecosystem.		U2M2L2 page 83
14	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.		U2M1L1 page 11
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16	5-LS1-1 Students will support an argument that most of the mass of a plant is obtained from water and air and not from soil.	Figure page 9	U2M1L1 page 9
17	5-LS2-1 Students will use models to show the relationships between living things in an ecosystem.		U2M1L2 page 30
18	5-LS2-1 Students will use models to show the relationships between living things in an ecosystem.	Figure page 30	U2M1L2 page 30
19	5-ESS2-1 Students will use a model to identify matter on Earth as part of Earth's systems.		U2M2L1 page 66
20	5-LS2-1 Students will use models to show the relationships between living things in an ecosystem.		U2M1L2 page 27

الأسئلة الموضوعية -

6	5-LS2-1 Students will use models to show the relationships between living things in an ecosystem.		U2M1L2 page 28
7	5-LS2-1 Students will develop and use models of how matter cycles through ecosystems. Students will also be able to explain how these cycles affect the ecosystem.		U2M2L2 page 83
8	5-LS2-1 Students will develop and use models of how matter cycles through ecosystems. Students will also be able to explain how these cycles affect the ecosystem.	Figure page 82	U2M2L2 page 82
9	5-LS2-1 Students will develop and use models of how matter cycles through ecosystems. Students will also be able to explain how these cycles affect the ecosystem.	Figure page 83	U2M2L2 page 83
10	5-LS2-1 Students will use models to show the relationships between living things in an ecosystem.		U2M1L2 page 26
11	5-LS2-1 Students will use a model to identify matter on Earth as part of Earth's systems.		U2M2L1 page 82
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4. **MATH Connection** Parker investigated how the amount of sunlight affects plant growth. Using his data below, calculate the average growth of each plant. Assume that each plant was provided 20 mL of water per day.

	Amount of Sunlight Per Day	Height in Week 1	Height in Week 2	Height in Week 3	Average
Plant A	4 hours	1 cm	3 cm	6 cm	3.3 cm
Plant B	8 hours	1.5 cm	4 cm	8 cm	4.5 cm
Plant C	16 hours	1 cm	2 cm	3 cm	2.0 cm

Communicate Information

5. Which conditions favored the most growth?

Sample answer: The plant that was exposed to 8 hours of light showed the most growth.

6. Which plant had the least growth? What can you infer from those results?

Sample answer: Plant C showed the least growth. When exposed to more sunlight, plants might need more water to grow.

Talk About It

Compare your results with a partner's results. How do the results relate to what you observed about the needs of plants? What other factors could affect plant growth?

GO ONLINE Explore *Mass of a Tree* to learn about how glant sequoias get to be so big.

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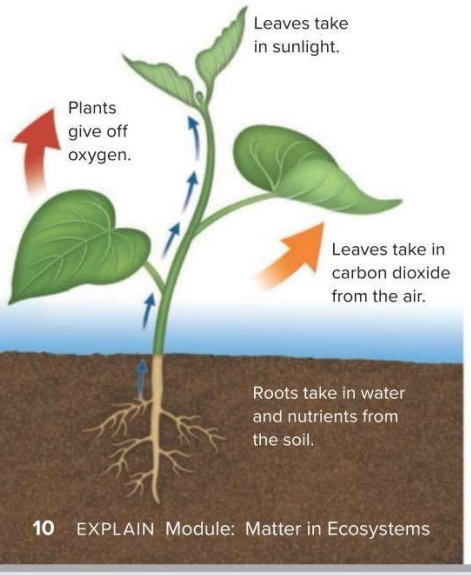

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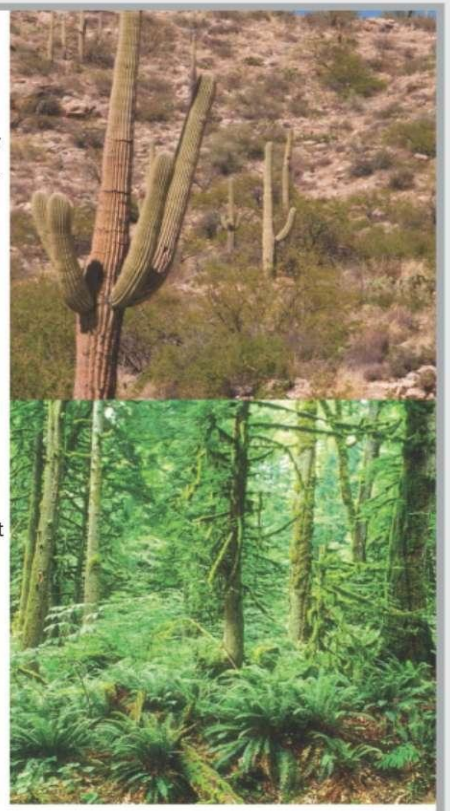

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VOCABULARY

Look for these words as you read:

abiotic factor
biotic factor
habitat
invasive species
predator
prey

Ecosystems

You investigated how the foxes and rabbits in a forest ecosystem interact and affect each other's populations. An ecosystem is made up of all living and nonliving things in an environment. All of the living things in an environment are called **biotic factors**. Plants, animals, fungi, and bacteria are biotic factors. **Abiotic factors** are the nonliving things in the environment. Air, water, soil, rocks, and light are abiotic factors. Both biotic and abiotic factors interact with one another.

Use information from models you see in the lesson to provide examples of biotic and abiotic factors in **ecosystems** and ways that they interact with each other.

Biotic Factors	Abiotic Factors
Sample answer: • biotic factors are all of the living things in an environment • foxes and rabbits are living things in the forest; rabbits rely on plants for food and foxes rely on rabbits for food	Sample answer: • abiotic factors are all of the nonliving things in an environment • foxes, rabbits, and plants also rely on water, air, and sunlight; without these, they would not survive

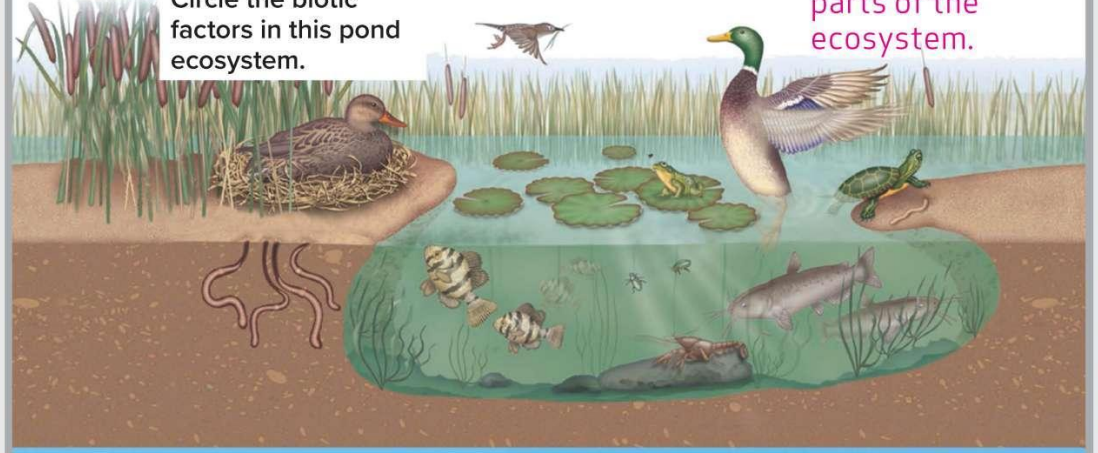
Habitats

GO ONLINE Watch the video *The Movement of Matter in an Ecosystem.* Record examples of biotic and abiotic factors from the video in your table.

Ecosystems can be small, like a single log or a pond, or very large, like a forest or a desert. Each organism must have its own space. The place in an ecosystem where an organism lives is its **habitat**. Habitats vary depending on the type of ecosystem, such as freshwater habitats like ponds and rivers. Each living thing has its own niche, or special role that an organism plays in the ecosystem. For example, an earthworm's niche in a forest ecosystem is to break down plant matter in the soil.

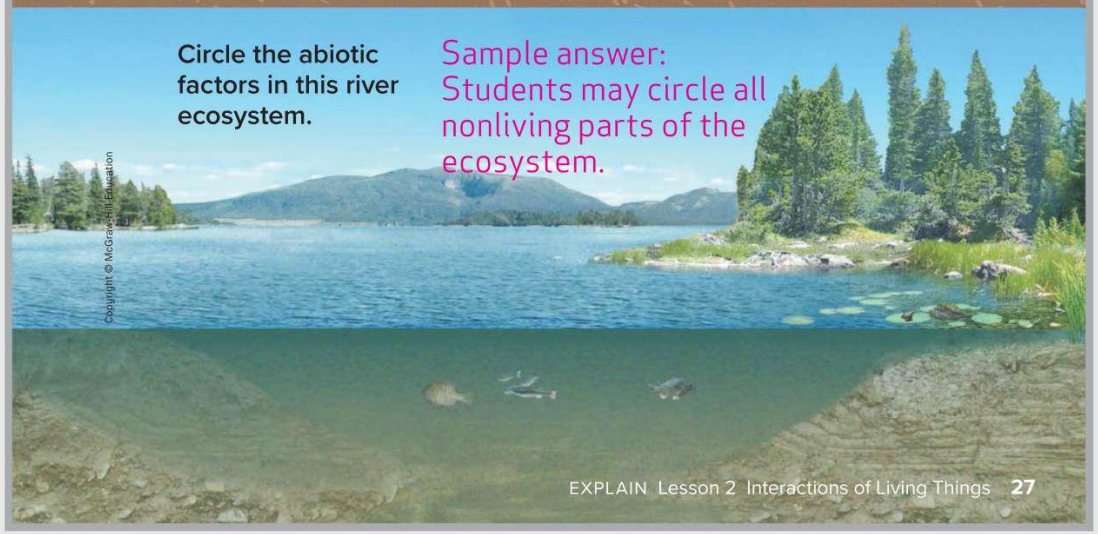
Circle the biotic factors in this pond ecosystem.

Sample answer: Students may circle all living parts of the ecosystem.



Circle the abiotic factors in this river ecosystem.

Sample answer: Students may circle all nonliving parts of the ecosystem.



CLOSE READING

Inspect

Read the passage *Invasive Species*. Underline text evidence that tells how invasive species affect an ecosystem.

Find Evidence

Reread the passage. Highlight the words that helped you determine the meaning of the words *invasive species*.

Notes

Invasive Species

Humans may move an organism from its natural ecosystem to another. If the organism lives and reproduces in the new ecosystem, it can cause harm to that area. An organism that is introduced to a new ecosystem and causes harm is an **invasive species**. Invasive species can harm the environment, the economy, and even human health. Species that grow and reproduce without other animals that hunt it are likely to spread quickly and become invasive.

Sometimes, an invasive species is accidentally introduced to an environment. Other times, it is introduced on purpose. The cane toad was introduced to Australia in the 1930s. A type of beetle in Australia was eating sugar cane crops. Cane toads are known to eat large amounts of beetles. So, farmers moved the cane toad from their natural habitat in South America to the sugar cane fields in Australia. These toads have a toxic skin and have no animal that hunts it for food in Australia. The population is now in the millions! These toads are both poisoning and competing with native species.

Predator and Prey

In an ecosystem, there are many relationships and interactions of biotic and abiotic factors that overlap. All living things need water, air, and space. Plants are producers and make their own food. Animals are consumers and need food from other sources. Herbivores eat plants, carnivores eat other animals, and omnivores eat both plants and animals.

Organisms that hunt for their food are **predators**. The organisms they hunt are **prey**. Predators are important in ecosystems because they help control the size of prey populations. When the populations of prey are controlled, producers and other resources are less likely to run out.

VOCABULARY

Look for these words as you read:

atmosphere

biosphere

geosphere

hydrosphere

Earth's Systems

The parts that make up Earth can be organized into four main systems. Systems are a collection of different components that all work together.

The **atmosphere** is a layer of gases surrounding Earth. Made up mostly of nitrogen and oxygen, the atmosphere also contains water vapor, carbon dioxide, and other gases.

The **geosphere** includes the solid and molten rock inside Earth. It also includes the soil, rock pieces, and land features at Earth's surface. Hills, mountains, erupting volcanoes, and other landforms are all part of the geosphere.

All of Earth's liquid and solid water, including oceans, lakes, rivers, glaciers, and ice caps, makes up the **hydrosphere**. The hydrosphere covers more than 70 percent of Earth's surface. It exists in two forms: salt water and fresh water. Most of Earth's fresh water exists as ice. Most of Earth's salt water is in the ocean.

The **biosphere** is all of Earth's living things. Organisms that make up the biosphere are found from the lower atmosphere to the depths of the ocean floor. All living things are part of the biosphere.

GO ONLINE Watch the video *Four Earth Systems* to see some ways that these systems affect each other.

REVISIT PAGE KEELEY SCIENCE PROBES Revisit the Page Keeley Science Probe on page 61.

VOCABULARY

Look for these words as you read:

- condensation
- evaporation
- nitrogen cycle
- oxygen-carbon cycle
- precipitation
- runoff
- water cycle

Water Cycle

The **water cycle** is the continuous movement of water between Earth's surface and the air, changing forms among the three states of matter.

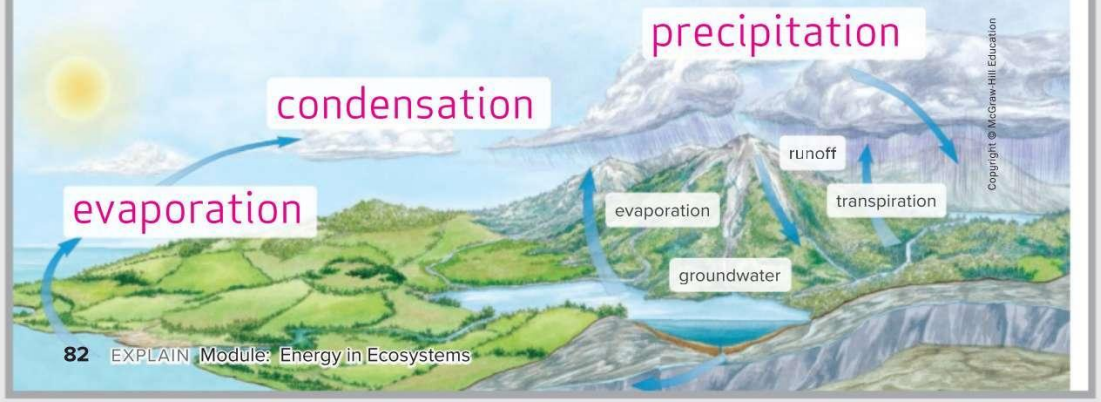
The Sun is the energy source for the water cycle. The Sun's energy causes water to evaporate. When water **evaporates,** it changes from a liquid to a gas in the form of water vapor. Water is constantly evaporating from the leaves of plants. This process is called transpiration. Transpiration is one way water vapor returns to the atmosphere.

As it rises in the air, the water vapor cools and condenses. **Condensation** occurs when a gas changes to a liquid. Water vapor can condense on dust particles in the air, forming clouds. Inside a cloud, small water droplets may combine and form larger ones. Some droplets freeze into ice if conditions allow it. During **precipitation,** water falls from clouds over land and water. Precipitation can fall as rain, sleet, snow, or hail.

When it rains, water flows over Earth's surface as **runoff**. Runoff gathers in lakes, oceans, and streams. Water that soaks into the ground moves downward through small cracks and spaces and is called groundwater. Plants take in groundwater from the soil through their roots.

GO ONLINE Watch the video *Water Cycle* to learn more about precipitation, condensation, and evaporation.

Label evaporation, condensation, and precipitation in the diagram below.



Nitrogen Cycle

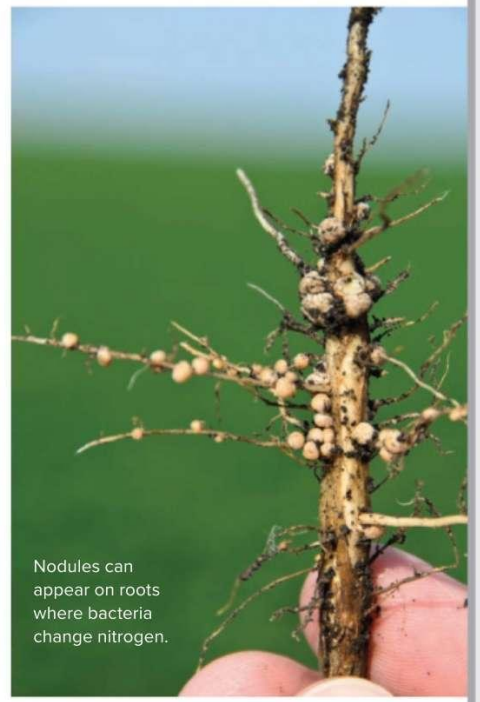
GO ONLINE Explore *Nitrogen in Ecosystems* to see the nitrogen cycle within an ecosystem.

Air is made up of 78 percent nitrogen, but few living things can use nitrogen gas. First, nitrogen must be fixed, or changed into a form that living things can use. The **nitrogen cycle** is the continuous circulation of nitrogen from air to soil to organisms and back to air or soil.

Some bacteria that live on roots of plants can change nitrogen gas into a form plants can use. Nitrogen can come from fertilizers that are added to soil. Nitrogen can also be fixed by volcanic activity and lightning.

As plants grow, they absorb this form of nitrogen to make proteins. When animals eat plants or other plant-eating animals, they take in the stored nitrogen.

Nitrogen is eventually released into the soil through animal waste and decayed plants and animals. Decomposers and bacteria help return nitrogen into the atmosphere, and the cycle repeats.



Nodules can appear on roots where bacteria change nitrogen.

How does nitrogen flow through an ecosystem? Draw a diagram of the process in the box below.

Sample answer: Students may draw a diagram of how plants release and absorb nitrogen.