

محاضرات اللغة الانجليزية السنة الثانية للفصل الدراسي الثاني




Lecture (1)

Lesson
8

What Is a Botanist?

Before You Read

 **Think about what you know.** Do you know what a botanist does? If not, read the title and the first line of the article on the opposite page to help you figure out what a botanist may do.

Vocabulary

The content-area and academic English words below appear in "What Is a Botanist?" Read the definitions and the example sentences.

Content-Area Words

taxonomy (tak son'ə mē) the organization of animals and plants into groups according to their features
Example: Taxonomy helps us understand differences between classes of plants and animals.

characteristics (kar'ik tə ris'tiks) features, such as size and color, that identify someone or something
Example: Green skin and black spots are characteristics of some frogs.

bred (bred) caused to reproduce or grow
Example: The woman bred roses to sell at a local market.

environment (en vī'rən mēnt) surroundings that affect life and growth
Example: Dirty water is not a healthful environment for fish.


ecology (ē kol'ə jē) the study of the relationship between a living thing and the world around it
Example: Ecology explores how changes in weather and air quality affect animals and plants.

Academic English

transport (trans pôrt') carry from one place to another
Example: My job is to transport boxes of books to the library by truck.

research (rē'surch') careful search or examination
Example: His long hours of research resulted in an accurate and detailed paper.

Read again the example sentences that follow the content-area and academic English word definitions. With a partner, discuss the meanings of the words and sentences. Then make up a sentence of your own for each word.

 **Dictionary** Now skim the article and look for other words that are new to you. Write each new word and its definition in the Personal Dictionary.

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While You Read



Think about why you read. A botanist is a scientist who studies plants. What *else* do botanists do? As you read, try to find the answer to this question.

What Is a Botanist?

1 **B**otany is the science of plants. A plant is a living thing that cannot move by itself. A plant also has no nervous system. This means that it has no brain or nerves.

A botanist is a scientist who studies plants. Some botanists identify plants and place them into groups. Their work is called plant **taxonomy**. Botanists classify plants into groups according to the parts of the plants. There are two main groups, or *phyla*, of plants. One *phylum* is made up of plants that are more complex than other plants. These are called vascular plants. They have parts that **transport** water and food through the plant. Some examples of vascular plants are trees, herbs, and shrubs.

10 The second group, or phylum, is made up of simpler plants that do not have true roots, stems, or leaves. They are called nonvascular plants because they do not have special parts to move water and food. Two examples of nonvascular plants are mosses and liverworts. The two plant phyla are divided into many smaller groups of plants.

Throughout history botanists have learned about plants by studying them, or doing **research**. They have learned how green plants make their own food, how the tiny cells inside a plant work, and how plants reproduce. In the 1600s, a British scientist named Robert Hooke used one of the first microscopes to look closely at plant parts. He learned that plants have cells. Later, people learned that all living things have cells. An Austrian monk named Gregor Mendel, who lived 20 in the 1800s, studied how plants pass on **characteristics** to other plants. He **bred** pea plants that looked different from one another. When the new plants grew, he carefully recorded what they looked like. He noticed how they were like or unlike the plants that they were bred from. Then he wrote down his ideas.

Some botanists study plant fossils to learn about what our planet was like many years ago. A fossil is an outline or a shape left in rock by a dead plant or animal. Plants appeared on Earth before animals did, so the oldest fossils are plant fossils. Knowing what kinds of plants lived in an area can tell scientists what the **environment** was like. If scientists find fossils of ocean plants in an area that is now a desert, they know that there was once an ocean in that place.

30 Botanists do many other kinds of work. Some teach at schools. Some study how plants can be used to make medicines. Others work to grow new types of crops, or plants that can be useful to people or animals. A botanist might develop a strain of corn that insects do not like to eat. Botanists also work in forests, where they help develop new trees. Botanists work in the field of **ecology** to study how 35 plants are affected by environment.

CONTENT CONNECTION

The main idea of this article is that botanists study plants in different ways. The second paragraph tells readers how botanists use plant taxonomy to classify plants. The fifth paragraph shows how studying fossils helps botanists reach conclusions. What kinds of research are described in the fourth paragraph?

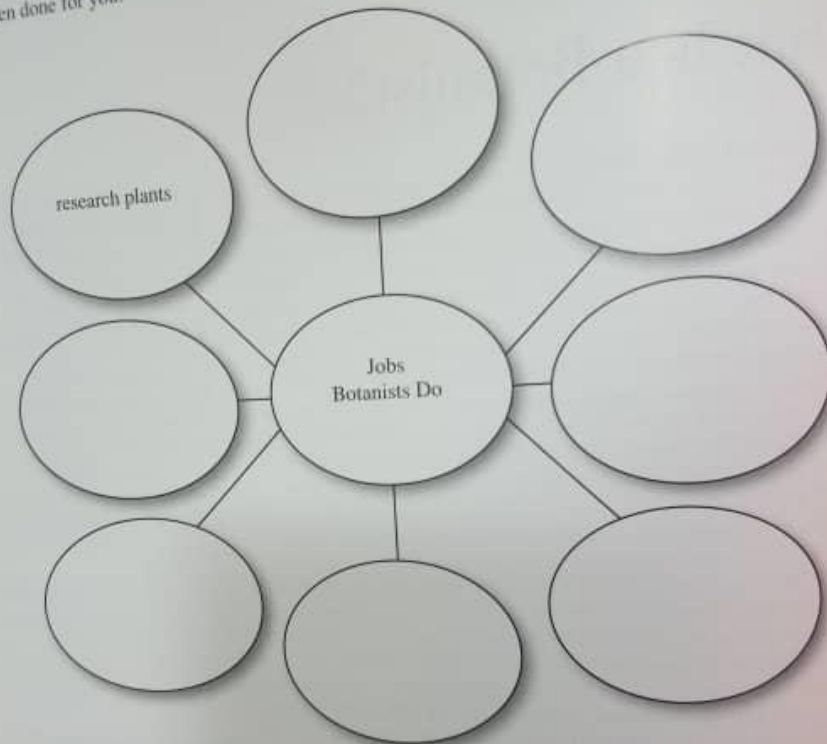
LANGUAGE CONNECTION

The noun *strain* (in line 33) refers to a group of animals or plants that have certain characteristics. A *strain* of corn means a "kind" of corn. Why would a new strain of virus be a problem?

After You Read

A. Organizing Ideas

What jobs do botanists do? Complete the web below. In each circle, record something that botanists do. Refer to the article to help you. The first circle has been done for you.



What does this web show you about the work botanists do? Write two or more sentences that describe the job that is most interesting to you. When you learn about something new, how do you like to organize the new information? Explain your answer.

B. Comprehension Skills



Tip! Think about how to find answers. Think about what each sentence means. Try to say it to yourself in your own words before you complete it.

Mark box **a**, **b**, or **c** with an **X** before the choice that best completes each sentence.

Recalling Facts

- All plants are living things that
 - ☐ a. have parts that move water and food.
 - ☐ b. are unable to move around by themselves.
 - ☐ c. leave fossils in layers of rock.
- The science of classifying plants into groups is called
 - ☐ a. ecology.
 - ☐ b. heredity.
 - ☐ c. taxonomy.
- Botanists organize plants into groups according to the plants'
 - ☐ a. height.
 - ☐ b. color.
 - ☐ c. parts.
- The oldest fossils are from
 - ☐ a. plants.
 - ☐ b. humans.
 - ☐ c. dinosaurs.
- Robert Hooke discovered that plants have
 - ☐ a. tissues.
 - ☐ b. seeds.
 - ☐ c. cells.

Understanding Ideas

- The topic that a botanist would be least likely to study is
 - ☐ a. the age of fossils.
 - ☐ b. the properties of electricity.
 - ☐ c. the breeding of fruit trees.
- An apple tree is a
 - ☐ a. nonvascular plant.
 - ☐ b. vascular plant.
 - ☐ c. simple plant.
- Plants that belong to the same phylum are
 - ☐ a. a rosebush and a moss.
 - ☐ b. a rosebush and a pine tree.
 - ☐ c. a rosebush and a liverwort.
- From the article, you can conclude that
 - ☐ a. *phylum* is singular, and *phyla* is plural.
 - ☐ b. *phylum* is plural, and *phyla* is singular.
 - ☐ c. *phyla* refers only to nonvascular plants.
- The most likely place to find a plant fossil is
 - ☐ a. on a sandy beach.
 - ☐ b. on the bark of a tree.
 - ☐ c. along the banks of a rocky stream.

C. Reading Strategies

1. Recognizing Words in Context

Find the word *identify* in the article. One definition below is closest to the meaning of that word. One definition has the opposite or nearly the opposite meaning. The remaining definition has a meaning that has nothing to do with the other two words. Label the definitions **C** for *closest*, **O** for *opposite* or *nearly opposite*, and **U** for *unrelated*.

- ___ a. eat
- ___ b. overlook
- ___ c. name

2. Distinguishing Fact from Opinion

Two of the statements below present *facts*, which can be proved. The *other* statement is an *opinion*, which expresses someone's thoughts or beliefs. Label the statements **F** for *fact* and **O** for *opinion*.

- ___ a. Botanist Gregor Mendel studied the characteristics of pea plants.
- ___ b. Nonvascular plants are simpler than vascular plants.
- ___ c. Fossils of animals are more important than fossils of plants.

3. Making Correct Inferences

Two of the statements below are correct *inferences*, or reasonable guesses, that are based on information in the article. The other statement is an *incorrect*, or faulty, inference. Label the statements **C** for *correct* inference and **I** for *incorrect* inference.

- ___ a. The invention of the microscope helped botanists learn about plants.
- ___ b. Plant phyla split plants into groups according to size.
- ___ c. Botanists work to find new ways plants can be useful to people.

4. Understanding Main Ideas

One of the statements below expresses the main idea of the article. Another statement is too general, or too broad. The other explains only part of the article; it is too narrow. Label the statements **M** for *main idea*, **B** for *too broad*, and **N** for *too narrow*.

- ___ a. Botanists have studied plants, their parts, and the environment for hundreds of years.
- ___ b. Vascular plants have parts that move water and food through the plant.
- ___ c. Botanists are scientists who study plants.

5. Responding to the Article

Complete the following sentence in your own words:
Before I read "What Is a Botanist?" I already knew

D. Expanding Vocabulary

Content-Area Words

Cross out one word or phrase in each row that is not related to the word in dark type.

- | | | | | |
|--------------------|-------------|-----------|-----------|-------------|
| 1. taxonomy | groups | parts | botanists | food |
| 2. characteristics | color | size | fossils | Mendel |
| 3. bred | organize | reproduce | plants | grow |
| 4. environment | taxonomy | health | weather | temperature |
| 5. ecology | environment | plant | phyla | fossils |

Academic English

In the article "What Is a Botanist?" you learned that *transport* is a verb that means "carry from one place to another." *Transport* can also be a noun that means "a vehicle that carries something from one place to another," as in the following sentence.

My transport from home to school is a bus.

Complete the sentence below.

1. Ships are a common *transport* across the _____

Now use the word *transport* in a sentence of your own.

2. _____

You also learned that *research* is a noun that means "careful search or examination." *Research* can also be used as a verb meaning "to study or examine carefully," as in the following sentence.

I plan to research my subject well before I make my speech.

Complete the sentence below.

3. Their book shows that the authors *researched* _____

Now use the word *research* in two sentences of your own.

4. _____
5. _____




Share your new sentences with a partner.

Lecture (2)

Lesson
9

The Parts of a Flowering Plant

Before You Read
 **Think about what you know.** Read the lesson title above. What do you predict the article will be about? What parts of plants and flowers do you already know?


Vocabulary
The content-area and academic English words below appear in "The Parts of a Flowering Plant." Read the definitions and the example sentences.

Content-Area Words
carpel (kär'pal) the part of the plant that contains the seeds
Example: When the pollen entered the *carpel*, seeds began to grow.
pollen (pol'ən) the powdery material that makes seeds develop
Example: The yellow dust on my fingers was *pollen* from the flowers I picked.
pollination (pol'a nā'shan) the process by which pollen is transferred to the *carpel* of a flower
Example: The process of *pollination* is helped by bees and other insects.
attract (ə trakt') to make something come closer because of interest or feeling
Example: Lights may *attract* insects such as moths.
photosynthesis (fō'ta sin'thə sis) a process through which plant cells use sunlight to make food for the plant
Example: The process of *photosynthesis* causes plants to be green.

Academic English
job (job) work that is supposed to be done
Example: For some animals, it is the *job* of both parents to feed their young.
secure (si kyoor') kept or held firmly
Example: People make their homes *secure* by locking their doors.

Complete the sentences below that contain the content-area and academic English words above. Use the spaces provided. The first one has been done for you.

1. The *carpel*, deep inside a blossom, produces seeds
2. *Photosynthesis* is the process plants use to _____
3. Water in the desert will *attract* _____
4. The *job* of a student is _____
5. A bank must be made *secure* because _____
6. *Pollination* is the process of transferring pollen to a _____
7. *Pollen* from the stamens is carried from flower to flower by wind and _____


 **Dictionary** Now skim the article and look for other words that are new to you. Write each new word and its definition in the Personal Dictionary.

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Lesson 9

The Parts of a Flowering Plant

Before You Read

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Vocabulary

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7. *Pollen* from the stamens is carried from flower to flower by wind and _____



Now skim the article and look for other words that are new to you. Write each new word and its definition in the Personal Dictionary.

While You Read

Tip! Think about why you read. Each part of a plant has a job that helps the plant live. Do you grow plants inside your home or in a garden? As you read, think about plants you have seen. Try to remember the different parts.

The Parts of a Flowering Plant

Plants that grow flowers are called angiosperms. About 80 percent (or eight out of ten) of all green plants are angiosperms. Parts of angiosperms are eaten by many animals that live on land. These plants also give us medicine, paper, hardwood, and other useful things. Flowering plants have four main parts: flowers, leaves, stems, and roots. Each part has an important job.

Flowers come in many colors, shapes, and sizes. The **job** of the flower is to make seeds that can grow into new plants. Seeds are formed in the middle of a flower, in the **carpel** (some plants have more than one). Next to the carpel are the **stamens**. These are thin plant parts that produce pollen. For seeds to grow, **pollen** from the stamens must enter the carpels. This process is called **pollination**. Pollination takes place when the wind, birds, or insects move pollen from stamen to carpel inside the same plant or from plant to plant. It is usually better for a flower to get pollen from a different plant. Around the stamens are the petals. Petals give flowers their color and smell. The color and smell help **attract** insects and birds to the plants, which helps pollination take place.

Leaves come in many shapes and sizes. They make food for angiosperms through a process called **photosynthesis**. Inside leaves are tiny cells called chloroplasts, which are filled with a green chemical called chlorophyll. The chloroplasts take in energy from sunlight and turn it into food energy for the plant. Leaves have tiny holes called stomata that allow gases such as carbon dioxide to come in and gases such as oxygen to get out. If a plant takes in too much water, the plant can push it out through the stomata.

Stems hold up the leaves and flowers. They also carry food and water to other parts of the plant. Stems have small bumps, called buds, growing on their sides. Buds turn into leaves and flowers. In some plants, large buds called bulbs grow under the ground and hold food that feeds a plant through the winter. Tulips and daffodils are examples of flowering plants that have bulbs. The stems of flowering trees are made of wood and are called trunks.

A plant's roots keep the plant **secure** in the dirt. They also take in the water and tiny pieces of minerals that the plant needs to live. Almost all roots grow underground. Some angiosperms have a taproot, which is a thick main root that grows downward and has smaller roots branching from it. Others have fibrous roots. Fibrous roots are thinner and spread out closer to the surface than taproots do. These tiny hairlike roots also take in more water and minerals.

CONTENT CONNECTION

The carpel is a seed pod formed when the petals of a blossom dry up and fall off a plant. Trees produce fruit in the same way. Can you think of fruits that have seeds?

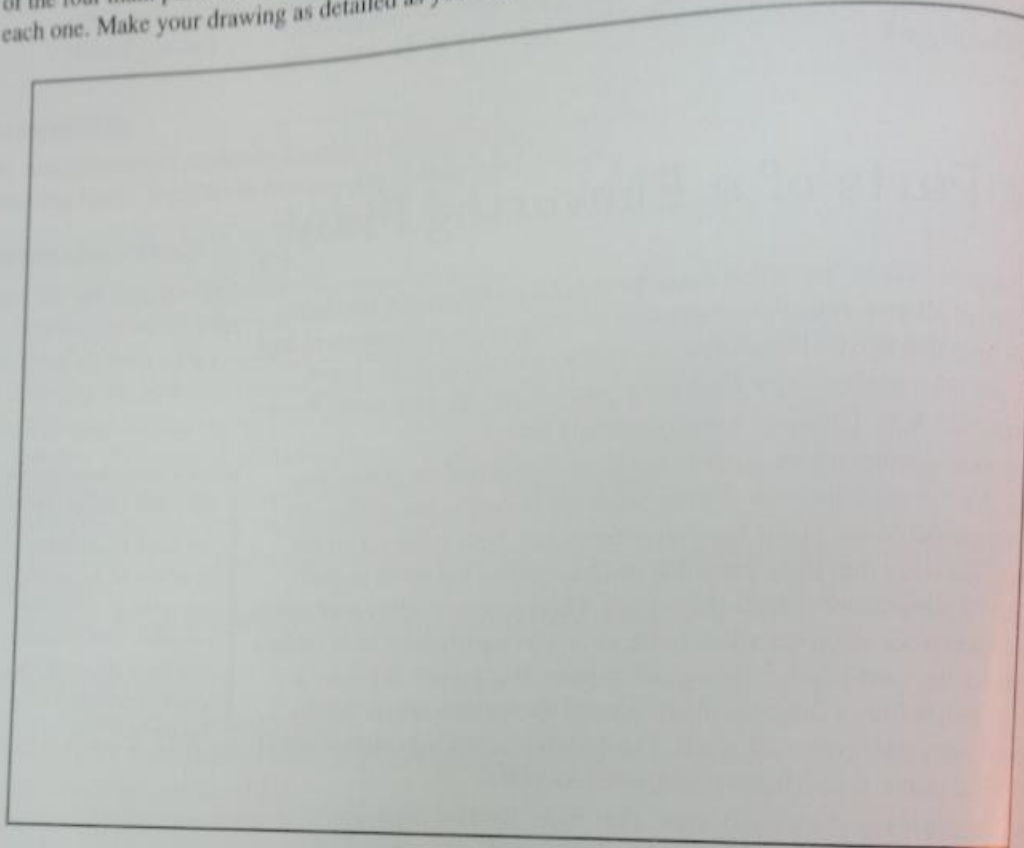
LANGUAGE CONNECTION

The suffix **-ward** means "in the direction of." What does **downward** mean?

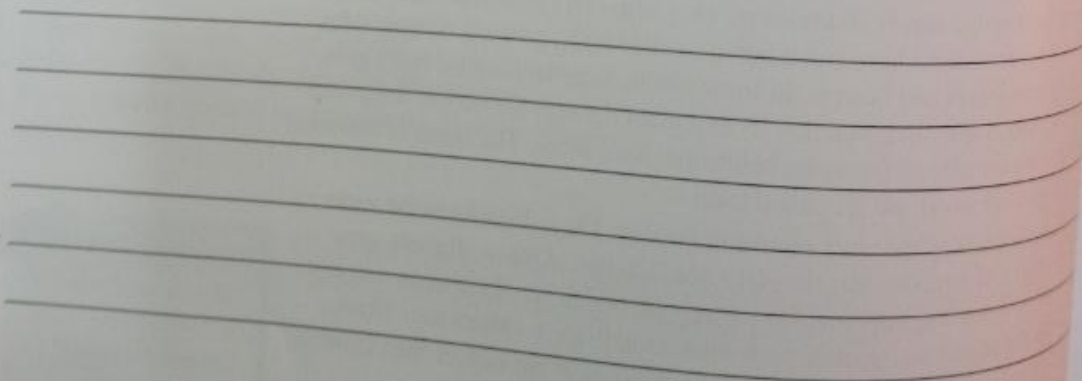
After You Read

A. Organizing Ideas

What are the parts of a flowering plant? Use the space provided to draw a diagram of the four main parts of a flowering plant. Label the parts and write a definition for each one. Make your drawing as detailed as you can.



What did you learn from drawing the diagram about how flowering plants work? Are flowering plants more complex living things than you thought they were? Write two or more sentences about what you learned. How did the diagram help you answer these questions?



B. Comprehension Skills



Tip! Think about how to find answers. Look back at different parts of the text. What facts help you figure out how to complete the sentences?

Mark box **a**, **b**, or **c** with *at* if *he* are the choice that best completes each sentence.

Recalling Facts

1. The four most important parts of flowering plants are
 - ☐ a. flowers, leaves, stems, and roots.
 - ☐ b. flowers, leaves, buds, and petals.
 - ☐ c. flowers, stems, sepals, and carpels.
2. Flowering plants are also called
 - ☐ a. angiosperms.
 - ☐ b. gymnosperms.
 - ☐ c. angiosperms.
3. The job of a flower is to
 - ☐ a. protect the plant from being eaten.
 - ☐ b. support the plant.
 - ☐ c. produce seeds.
4. Stems
 - ☐ a. make food for plants.
 - ☐ b. carry food and water.
 - ☐ c. keep the plant in one place.
5. A taproot is
 - ☐ a. a main root that grows downward.
 - ☐ b. thin and threadlike.
 - ☐ c. a bulb.

Understanding Ideas

1. From the article, you can conclude that
 - ☐ a. the flower is the most important part of a flowering plant.
 - ☐ b. the stem is not so important as the other parts of a plant.
 - ☐ c. all parts of the plant work together to help the plant survive.
2. You can also conclude that
 - ☐ a. pollen can travel from flower to flower in several ways.
 - ☐ b. pollination could never take place without wind.
 - ☐ c. only insects can pollinate flowers.
3. If a flowering plant had no chloroplasts, the plant would probably
 - ☐ a. not be able to take in any water.
 - ☐ b. immediately dry up and die.
 - ☐ c. not be able to make its own food.
4. Trees can probably survive without leaves in winter because
 - ☐ a. photosynthesis also takes place in the roots.
 - ☐ b. trees store food during the seasons in which they have leaves.
 - ☐ c. trees hibernate, or sleep, during the winter.
5. If you put a potted flowering plant in a dark cupboard, it would probably die because
 - ☐ a. the roots could not grow.
 - ☐ b. photosynthesis could not take place.
 - ☐ c. there would be no insects or wind to spread pollen.

C. Reading Strategies

1. Recognizing Words in Context

Find the word *enter* in the article. One definition below is closest to the meaning of that word. One definition has the opposite or nearly the opposite meaning. The remaining definition has a meaning that has nothing to do with the other two words. Label the definitions **C** for *closest*, **O** for *opposite* or *nearly opposite*, and **U** for *unrelated*.

- ☐ a. go into
- ☐ b. go out
- ☐ c. walk quickly

2. Distinguishing Fact from Opinion

Two of the statements below present *facts*, which can be proved. The other statement is an *opinion*, which expresses someone's thoughts or beliefs. Label the statements **F** for *fact* and **O** for *opinion*.

- ☐ a. Birds, insects, and wind help pollination occur.
- ☐ b. Stomata let water and gases in and out of a plant.
- ☐ c. Roots look like snakes or worms.

3. Making Correct Inferences

Two of the statements below are correct *inferences*, or reasonable guesses, that are based on information in the article. The other statement is an incorrect, or faulty, inference. Label the statements **C** for *correct* inference and **I** for *incorrect* inference.

- ☐ a. Tulips and daffodils could not survive without bulbs.
- ☐ b. Plants that have bulbs do not need roots.
- ☐ c. Without angiosperms, many animals would not have food to eat.

4. Understanding Main Ideas

One of the statements below expresses the main idea of the article. Another statement is too general, or too broad. The other explains only part of the article; it is too narrow. Label the statements **M** for *main idea*, **B** for *too broad*, and **N** for *too narrow*.

- ☐ a. Angiosperms have many parts.
- ☐ b. Leaf cells contain chloroplasts.
- ☐ c. Angiosperms have flowers, leaves, stems, and roots; each part has its own important job.

5. Responding to the Article

Complete the following sentence in your own words:

One thing in "The Parts of a Flowering Plant" that I cannot understand is

D. Expanding Vocabulary

Content-Area Words

Read each item carefully. Write on the line the word or phrase that best completes each sentence.

1. The bright color and the _____ of a flower attract insects.
feel taste smell
2. During photosynthesis, plants use energy from the _____.
Sun sky Moon
3. Insects, birds, and wind can help _____ to occur.
pollination carpels photosynthesis
4. A plant's _____ are found inside the carpel.
petals roots seeds
5. The stamen is the part of the plant that produces _____.
carbon dioxide pollen buds

Academic English

In the article "The Parts of a Flowering Plant," you learned that *job* means "work that is supposed to be done." *Job* can also mean "the work a person is paid to do," as in the following sentence.

Going to college can help you get a good job.

Complete the sentence below.

1. Someone who wants a *job* as a football coach must be good at _____

Now use the word *job* in a sentence of your own.

2. _____

You also learned that *secure* means "kept or held firmly." *Secure* can also mean "safe," as in the following sentence.

Locking your doors at home will help keep you secure.

Complete the sentence below.

3. Wearing a seatbelt and driving carefully are ways to make you *secure* in a _____

Now use the word *secure* in two sentences of your own.

4. _____
5. _____



Share your new sentences with a partner.

Lecture (3)

Lesson 10

Herbs: Plants of Many Uses

Before You Read



Tip! Think about what you know. Read the title and the first two sentences of the article on the opposite page. Can you name an herb that your family uses in cooking?

Vocabulary

The content-area and academic English words below appear in “Herbs: Plants of Many Uses.” Read the definitions and the example sentences.

Content-Area Words

fragrances (frā'grāns iz) sweet or pleasing smells

Example: The flowers in the garden gave off wonderful *fragrances*.

illnesses (il'nīs iz) diseases or sicknesses

Example: Doctors help people with *illnesses* to get better.

rotting (rot'ing) the decaying or spoiling of a once-living thing

Example: The *rotting* apples were soft and brown.

climate (klī'mit) weather conditions in a certain area over time

Example: The island has a warm *climate* with very little rainfall.

laboratories (lab'rā tōr'ēz) places where scientific experiments or tests are done

Example: The scientist performs experiments in his *laboratories*.

Academic English

chemicals (kem'i kälz) substances that cause and experience changes

Example: Scientists add *chemicals* to some foods to make them last longer.

aid (ād) to provide help

Example: My job at the large park is to *aid* people who are lost.

Complete the sentences below that contain the content-area and academic English words above. Use the spaces provided. The first one has been done for you.

1. The *fragrances* of the oranges and lemons made us want to eat them.
2. The *rotting* tree had to be _____.
3. The *chemicals* affected the water by _____.
4. We studied the *climate* of Antarctica, including its _____.
5. The organization will *aid* homeless people by _____.
6. *Laboratories* are not good places to play because _____.
7. People with *illnesses* may need medicine to _____.



Now skim the article and look for other words that are new to you. Write each new word and its definition in the Personal Dictionary.

While You Read

Fig. Think about why you read. People use herbs to help treat diseases and illnesses. Do you think it would be useful to know which herbs help to cure certain illnesses? As you read, think about how you might use this information.

Herbs: Plants of Many Uses

For thousands of years, people have used plants in many ways. Herbs are plants that were often used to flavor food and to treat, or cure, people who were sick. Herbs have also been used as beauty products, **fragrances**, and dyes, or colors. People also ate herbs for good health. Herbs can come from many kinds of plants, including trees, shrubs, grasses, and flowering plants. Herbs can also come from different plant parts. They can come from roots, stems, leaves, or flowers.

Old Chinese and Egyptian writings tell how people used herbs thousands of years ago. Egyptians used herbs in many ways. Herbs were used in food, on the body, and for religious reasons. In China the emperors, or rulers, Shen Nung and Huang Ti made medicine from herbs. They were two of the first people to use and study Chinese herbal medicine, or medicine made from herbs. Today, people in many parts of the world use Chinese herbal medicine for many kinds of **illnesses**.

People in India have been using herbs as medicine for nearly 5,000 years. Also, in India, many sweet-smelling perfumes and beauty products are made with herbs. And herbs are used in cooking to season, or add flavor to, Indian food.

Hundreds of years ago, European people also had important reasons for putting herbs in their food. They used herbs to help the body break down, or digest, food and to hide the taste of **rotting** meat and fish. Native Americans also have been eating and using herbs for hundreds of years. Some of the ways they use herbs to treat diseases are used now by people all over the world.

In the 19th century, the ways people used herbs as medicines began to change in Europe and in the United States. Scientists began to study the **chemicals** found in plants that **aid** people in staying healthy. Using herbs to treat illnesses can be difficult. Each plant produces a different dose, or amount, of medicine. The season, **climate**, and soil all affect the strength of an herb. If people take too much of an herbal medicine, they can get sick—or even die.

Today scientists and workers make medicines from plants in **laboratories**. Doctors can give exact doses of these medicines. People can be sure that the dose is a safe amount to use. Other useful substances, or products, are also made from herbs. Chamomile shampoo, verbena tea, and aloe vera skin lotion are herbal products. People all over the world use herbal products such as these every day.

CONTENT CONNECTION

The Egyptians used herbs on their bodies. How do people today use herbs on their bodies?

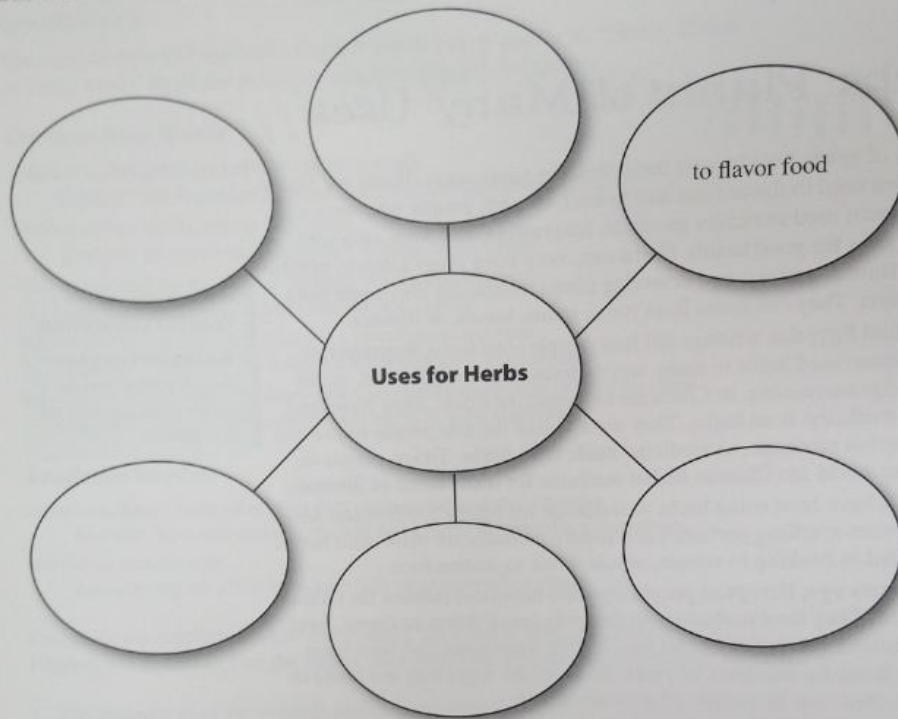
LANGUAGE CONNECTION

Labs is the short form of *laboratories*. An animal doctor is a *veterinarian* or *vet*. What other words have short forms?

After You Read

A. Organizing Ideas

How are herbs used? Complete the web below. In each circle, write down one way herbs are used today or have been used in the past. Refer to the article to help you. One circle has been done for you.



What did you learn about the uses of herbs by completing this web? Write two or more sentences about how herbs have been useful to people. How helpful was this chart as you learned about herbs? Explain your answer.

B. Comprehension Skills



Tip! Think about how to find answers. Look back at different parts of the text. What facts help you figure out how to complete the sentences?

Mark box **a**, **b**, or **c** with an **X** before the choice that best completes each sentence.

Recalling Facts

1. Herbs have been used to flavor food.
 - ☐ a. from time to time.
 - ☐ b. for thousands of years.
 - ☐ c. during the last 200 years.
2. Herbs are often used to
 - ☐ a. treat illnesses.
 - ☐ b. make food rot.
 - ☐ c. fertilize gardens.
3. Herbs come from
 - ☐ a. mainly flowers.
 - ☐ b. many kinds of plants.
 - ☐ c. only leaves and stems.
4. Something new in herbal medicine is
 - ☐ a. the use of chamomile to ease pain.
 - ☐ b. the scientific study of the chemicals in herbs.
 - ☐ c. the use of chemical drugs instead of herbal medicine.
5. Emperors Shen Nung and Huang Ti were two of the first people to study
 - ☐ a. herbs in Indian cooking.
 - ☐ b. Chinese herbal medicine.
 - ☐ c. chemicals found in plants.

Understanding Ideas

1. From the article, you can conclude that the use of herbs as medicine is
 - ☐ a. a new idea.
 - ☐ b. an idea with a long history.
 - ☐ c. an idea that was never popular.
2. People use herbs
 - ☐ a. only in China and Egypt.
 - ☐ b. in few parts of the world.
 - ☐ c. in many parts of the world.
3. Workers in laboratories can make exact doses of herbal medicines because
 - ☐ a. they care more about sick people than those of long ago did.
 - ☐ b. they are smarter than other people who work with herbal medicines.
 - ☐ c. they can take the medicine out of the herbs and measure its strength.
4. From the article, you can conclude that herbs are
 - ☐ a. never harmful.
 - ☐ b. often flavorful.
 - ☐ c. rarely used in cooking.
5. Adding herbs to beauty products is
 - ☐ a. a new idea.
 - ☐ b. something we do not do anymore.
 - ☐ c. something that has been done throughout history.

C. Reading Strategies

1. Recognizing Words in Context

Find the word *exact* in the article. One definition below is closest to the meaning of that word. One definition has the opposite or nearly the opposite meaning. The remaining definition has a meaning that has nothing to do with the other two words. Label the definitions **C** for *closest*, **O** for *opposite* or *nearly opposite*, and **U** for *unrelated*.

- ___ a. correct or accurate
- ___ b. confused
- ___ c. incorrect or indefinite

2. Distinguishing Fact from Opinion

Two of the statements below present *facts*, which can be proved. The other statement is an *opinion*, which expresses someone's thoughts or beliefs. Label the statements **F** for *fact* and **O** for *opinion*.

- ___ a. Too much of an herbal medicine can harm us.
- ___ b. People in India have found the best ways to use herbs in cooking.
- ___ c. The first people to use and study herbal medicine were from China.

3. Making Correct Inferences

Two of the statements below are correct *inferences*, or reasonable guesses, that are based on information in the article. The other statement is an incorrect, or faulty, inference. Label the statements **C** for *correct* inference and **I** for *incorrect* inference.

- ___ a. Rainfall or hot weather can affect the strength of an herb.
- ___ b. Herbs are produced only in the leaves of a plant.
- ___ c. Many of the products we use every day contain herbs.

4. Understanding Main Ideas

One of the statements below expresses the main idea of the article. Another statement is too general, or too broad. The other explains only part of the article; it is too narrow. Label the statements **M** for *main idea*, **B** for *too broad*, and **N** for *too narrow*.

- ___ a. You may have herbal shampoo in your bathroom.
- ___ b. People have used plants for thousands of years.
- ___ c. Herbs have helped people in many ways for thousands of years.

5. Responding to the Article

Complete the following sentences in your own words:

Reading "Herbs: Plants of Many Uses" makes me wonder

I will try to learn more about this by _____

D. Expanding Vocabulary

Content-Area Words

Complete each analogy with a word from the box. Write in the missing word.

illnesses fragrances rotting climate laboratories

1. sounds : bell :: _____ : perfume
2. fresh : healthy :: _____ : unhealthy
3. toothaches : dentist :: _____ : doctor
4. population : people :: _____ : weather
5. classrooms : teachers :: _____ : scientists

Academic English

In the article "Herbs: Plants of Many Uses," you learned that *chemicals* means "substances that cause and experience changes." *Chemicals* can describe the substances found in plants that can be used to help people stay healthy. *Chemicals* can also describe other substances that cause and experience changes, as in the following sentence.

Liquid cleaners have chemicals that remove dirt and dust.

Complete the sentence below.

1. Gasoline contains *chemicals* that help make it good fuel for _____

Now use the word *chemicals* in a sentence of your own.

2. _____

You also learned that *aid* is a verb that means "to provide help." *Aid* can also be a noun that means "help or assistance," as in the following sentence.

Police and firefighters provide aid for people when there are accidents.

Complete the sentence below.

3. If you need emergency *aid* after an accident, you might call for _____

Now use the word *aid* in two sentences of your own.

4. _____
5. _____



Share your new sentences with a partner.

Lecture(4)

Lesson 11

Vitamins and Minerals: Diet Basics

Before You Read

Tip! Think about what you know. Read the first and last sentences of the article on the opposite page. What do you think the article might be about?

Vocabulary

The content-area and academic English words below appear in "Vitamins and Minerals: Diet Basics." Read the definitions and the example sentences.

Content-Area Words

antioxidants (an'tē ōk'sə dānts) substances that work against the harm that oxygen can do to the body

Example: The antioxidants found in strawberries protect our bodies from dangerous substances.

compounds (kom'poundz') mixtures or combinations of two or more ingredients

Example: The scientist mixed chemicals to form compounds.

vessels (ves'alz) tubes, such as veins, that carry blood or other body fluids

Example: The doctor fixed her torn vessels so blood could flow through her arm again.

infections (in fek'shānz) illnesses or problems that result when harmful living things, such as germs, enter the body

Example: When we wash our hands, we remove harmful germs that may cause infections.

osteoporosis (os'tē ō pā rō'sās) a disease that causes weak bones

Example: I eat foods that contain calcium to avoid bone diseases like osteoporosis.

Academic English

function (funk'shān) to work properly

Example: The car cannot function without gasoline and oil.

adequate (ad'ə kwət) enough to meet a specific need or goal

Example: On summer mornings, a sweater is adequate to keep a person warm.

Complete the sentences below that contain the content-area and academic English words above. Use the spaces provided. The first one has been done for you.

1. Antioxidants help our bodies by preventing oxygen from harming us _____.
2. When a television set functions, it _____.
3. Chemical compounds are mixtures of _____.
4. Our food was adequate for our camping trip because _____.
5. Germs can cause infections when they _____.
6. Blood vessels work by carrying _____.
7. Osteoporosis affects our bones by _____.



Now skim the article and look for other words that are new to you. Write each new word and its definition in the Personal Dictionary.

While You Read



Think about why you read. Everyone should eat foods that are full of vitamins and minerals. As you read, look for the names of foods that contain important vitamins and minerals.

Vitamins and Minerals: Diet Basics

Vitamins and minerals are important parts of the human diet, or the foods we eat. The body needs vitamins and minerals to grow and work well. Vitamins help control the chemicals that make energy and living groups of cells, known as tissues. Minerals help parts of the body grow and **function** properly. They also help make some important liquids, such as digestive juices, which help the body break down food. Many vitamins and minerals cannot be made by the body. So humans must get them from the food they eat.

Some foods give us more vitamins and minerals than others do. Fruits and vegetables, for example, are full of vitamins. People who think they are not getting enough vitamins may take vitamin pills. Taking vitamin pills is usually not dangerous, but the best way to get vitamins into your body is by eating a diet that includes many different healthful foods.

Two of the best vitamins are vitamins C and E. These two vitamins are sometimes called **antioxidants** because they protect our tissues from harm that can be caused by some oxygen **compounds**. Vitamin C also helps build strong bones and healthy blood **vessels**. Foods that are good sources of vitamin C include citrus fruits like oranges and grapefruit, strawberries, and tomatoes. Foods made with whole grains such as wheat and oats have a great deal of vitamin E and several of the B vitamins.

Another important vitamin is vitamin A. This vitamin keeps skin healthy, helps bones grow, and works to fight **infections**. Eggs and milk have a lot of vitamin A. Orange and dark green vegetables provide beta carotene, which the body can change into vitamin A. You should not eat really big amounts of vitamins A and E.

One of the most important minerals is calcium. Calcium is a mineral that people need for strong bones. If the body does not get **adequate** calcium, it might get a bone disease called **osteoporosis**. Milk and other dairy products have a lot of calcium.

Other important minerals include magnesium, phosphorus, and potassium. Like calcium, magnesium and phosphorus help build strong bones. Whole-grain cereals have a lot of both magnesium and phosphorus. Potassium helps the body hold the right amount of water, and it helps muscles work well. Bananas and oranges are rich in potassium.

There are many other vitamins and minerals that are important for good health. Eating fresh foods rather than foods that are made ahead of time is the best way to get the vitamins and minerals your body needs. Eating unhealthful foods can cause you to become very sick and unhealthy.

CONTENT CONNECTION

Too much of some vitamins and minerals can damage the body. Too much vitamin A can weaken bones. Too much iron can cause liver problems. Most people get enough vitamin A and iron from the foods they eat. What vitamins and minerals do you think you get enough of? Which do you need more of?

LANGUAGE CONNECTION

What may it mean to say that a certain food is **rich** in vitamins or minerals?

After You Read

A. Organizing Ideas

What have you learned about vitamins and minerals? Complete the chart below. In the *What?* column, write the name of an important vitamin or mineral. In the *How?* column, write one or two sentences about how the vitamin or mineral helps our bodies. In the *Where?* column, write where we can find these vitamins or minerals. Use the article to help you. Some boxes have been done for you.

| What? | How? | Where? |
|-----------|--|---|
| vitamin C | It works as an antioxidant to protect our bodies from oxygen compounds. It helps build healthy blood vessels and strong bones. | oranges grapefruit strawberries tomatoes |
| | It works as an antioxidant to protect our bodies from oxygen compounds. | |
| vitamin A | | |
| | | milk dairy products |
| magnesium | | |
| | It helps build strong bones. | |
| | | oranges bananas |

Did completing this chart help you understand the information? Write one or more sentences to explain how the chart helped you. Besides this chart, what other means could you use to organize this information?

B. Comprehension Skills



Think about how to find answers. Look back at what you read. The information is in the text, but you may have to look in several sentences to find it.

Mark box **a**, **b**, or **c** with an **X** before the choice that best completes each sentence.

Recalling Facts

1. The best way to get enough vitamins and minerals is to
 - ☐ a. take vitamin pills.
 - ☐ b. eat a balanced diet.
 - ☐ c. eat plenty of meat.
2. Some of the most important vitamins are
 - ☐ a. A, C, and E.
 - ☐ b. C, K, and M.
 - ☐ c. A, E, and G.
3. One mineral that the body uses is
 - ☐ a. vitamin C.
 - ☐ b. potassium.
 - ☐ c. gold.
4. A food that contains a lot of vitamin C is
 - ☐ a. chicken.
 - ☐ b. carrots.
 - ☐ c. strawberries.
5. A food that contains a lot of calcium is
 - ☐ a. potatoes.
 - ☐ b. pork.
 - ☐ c. milk.

Understanding Ideas

1. From the article, you can conclude that vitamins and minerals are needed
 - ☐ a. mainly for strong bones.
 - ☐ b. for all parts of the body.
 - ☐ c. for skin and bones.
2. You can also conclude that some of the most nutritious foods are
 - ☐ a. dark green vegetables.
 - ☐ b. white breads and rolls.
 - ☐ c. french fries and soft drinks.
3. A person who does not like to go to the dentist should have lots of
 - ☐ a. milk.
 - ☐ b. meat.
 - ☐ c. potatoes.
4. From the article, you can conclude that strong and healthy bodies need
 - ☐ a. vitamins only.
 - ☐ b. minerals only.
 - ☐ c. both vitamins and minerals.
5. You can also conclude that, to stay healthy, people should eat
 - ☐ a. more vegetables than fruits.
 - ☐ b. both fruits and vegetables.
 - ☐ c. more fruits than vegetables.

C. Reading Strategies

1. Recognizing Words in Context

Find the word *healthful* in the article. One definition below is closest to the meaning of that word. One definition has the opposite or nearly the opposite meaning. The remaining definition has a meaning that has nothing to do with the other two words. Label the definitions **C** for *closest*, **O** for *opposite or nearly opposite*, and **U** for *unrelated*.

- ☐ a. colorful
- ☐ b. bad for the body
- ☐ c. good for the body

2. Distinguishing Fact from Opinion

Two of the statements below present *facts*, which can be proved. The other statement is an *opinion*, which expresses someone's thoughts or beliefs. Label the statements **F** for *fact* and **O** for *opinion*.

- ☐ a. Vitamin C is found in some of the most delicious foods.
- ☐ b. Eating healthful food is the best way to get vitamins and minerals.
- ☐ c. Without enough calcium, bones can develop osteoporosis.

3. Making Correct Inferences

Two of the statements below are correct *inferences*, or reasonable guesses, that are based on information in the article. The other statement is an incorrect, or faulty, inference. Label the statements **C** for *correct inference* and **I** for *incorrect inference*.

- ☐ a. Many vitamins protect the body and help it heal itself.
- ☐ b. Taking a vitamin pill is easier than eating a balanced diet and is just as healthful.
- ☐ c. Too much vitamin A is not healthful.

4. Understanding Main Ideas

One of the statements below expresses the main idea of the article. Another statement is too general, or too broad. The other explains only part of the article; it is too narrow. Label the statements **M** for *main idea*, **B** for *too broad*, and **N** for *too narrow*.

- ☐ a. Potassium helps muscles work well.
- ☐ b. The body needs vitamins and minerals.
- ☐ c. Vitamins and minerals, found in many healthful foods, are necessary to keep the body working well.

5. Responding to the Article

Complete the following sentences in your own words:

One thing I did best while reading "Vitamins and Minerals: Diet Basics" was

I think that I did this well because

D. Expanding Vocabulary

Content-Area Words

Read each item carefully. Write on the line the word or phrase that best completes each sentence.

1. Antioxidants help protect our tissues from damage caused by too much _____.
carbon oxygen hydrogen
2. _____ moves through your body in vessels such as veins and arteries.
Water Juice Blood
3. The vitamin _____ in eggs and milk helps your body fight infections.
C M A
4. To prevent osteoporosis, eat foods high in calcium, such as _____.
milk and cheese chocolate and nuts oranges and lemons
5. Vitamins C and E protect us from _____ compounds that contain too much oxygen.
harmful easy beautiful

Academic English

In the article "Vitamins and Minerals: Diet Basics," you learned that *function* is a verb that means "to work properly." *Function* can also be a noun that means "purpose or reason that a job is done," as in the following sentence.

The function of a fan is to move air and keep people cool.

Complete the sentence below.

1. The *function* of a chair is to provide a place to _____

Now use the word *function* in a sentence of your own.

2. _____

You also learned that *adequate* means "enough to meet a specific need or goal." *Adequate* can also mean "barely enough," as in the following sentence.

His grades were adequate, but they were not what he had hoped for.

Complete the sentence below.

3. The money they had was *adequate* to live on, but it was not enough to pay for _____

Now use the word *adequate* in two sentences of your own.

4. _____
5. _____



Share your new sentences with a partner.