



Life Science

Plant Diversity

On Level

# Structures of Plants

To use Focus Curriculum materials  
with your students, please purchase  
a school license.

FOCUScurriculum

866-315-7880 • [www.focuscurriculum.com](http://www.focuscurriculum.com)

LOOK  
INSIDE  
FOR:

Core Curriculum  
Covered  
•  
Student Book  
•  
Assessments and  
Reading Activities

# Structures of Plants

How are plants alike and different?

## CORE CURRICULUM STATEMENTS

**Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.**

Some traits of living things have been inherited (e.g., color of flowers and number of limbs of animals).

Plants and animals closely resemble their parents and other individuals in their species.

Plants and animals can transfer specific traits to their offspring when they reproduce.

**Individual organisms and species change over time.**

Each plant has different structures that serve different functions in growth, survival, and reproduction.

- roots help support the plant and take in water and nutrients
- leaves help plants utilize sunlight to make food for the plant
- stems, stalks, trunks, and other similar structures provide support for the plant
- some plants have flowers
- flowers are reproductive structures of plants that produce fruit which contains seeds
- seeds contain stored food that aids in germination and the growth of young plants



LIFE SCIENCE

Plant Diversity

On Level

# Student Book

*Structures of Plants*

To use Focus Curriculum materials  
with your students, please purchase  
a school license.

To use FocusCurriculum materials  
with your students, please purchase  
a school license.

# Structures of Plants

How are plants alike and different?

OL

## CORE CURRICULUM STATEMENTS

**Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.**

Some traits of living things have been inherited (e.g., color of flowers and number of limbs of animals).

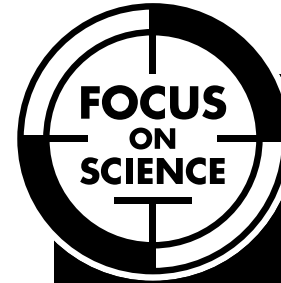
Plants and animals closely resemble their parents and other individuals in their species.

Plants and animals can transfer specific traits to their offspring when they reproduce.

**Individual organisms and species change over time.**

Each plant has different structures that serve different functions in growth, survival, and reproduction.

- roots help support the plant and take in water and nutrients
- leaves help plants utilize sunlight to make food for the plant
- stems, stalks, trunks, and other similar structures provide support for the plant
- some plants have flowers
- flowers are reproductive structures of plants that produce fruit which contains seeds
- seeds contain stored food that aids in germination and the growth of young plant



Life Science

Plant Diversity

# Structures of Plants

by Tom Sibila





Life Science

Plant Diversity

# Structures of Plants

by Tom Sibila

FOCUScurriculum

Curriculum materials for your content standards

## Table of Contents

### Introduction:

What Is a Plant? . . . . . 4

### Chapter 1:

Parts of a Plant . . . . . 5

    Roots . . . . . 6

    Leaves . . . . . 8

    Stems . . . . . 10

    Flowers . . . . . 12

    Seeds . . . . . 14

### Chapter 2:

    Plants Look Like Their Parents . 16

Glossary . . . . . 18

To Find Out More . . . . . 19

Index . . . . . 20

– Predict –

*What do you think you will  
learn from reading this book?*

## What Is a Plant?

Did you know that plants and animals share something in common? They are both **organisms**. That means that they are both living things. As living things, plants and animals grow up, **reproduce**, and die.

Plants are different from animals in other ways. Plants use energy from the sun to make their own food. Animals cannot make their own food. They must eat other plants and animals to survive.

Plants also look different than animals. They don't have feathers, fur, skin, or scales. They have roots, leaves, stems, and flowers.

**organism:** any living thing  
**reproduce:** to produce others of the same kind

## Parts of a Plant

Animals outside often look very busy. When you look at a plant, you might think that it is not doing much. However, plants are busy day and night.

During the day a plant's leaves collect the sun's energy and make food. At night, plants **transport** the food from the leaves to other parts of the plant that need the food. But that's not all. Plants also transport water and minerals from their roots at the same time.

Plants have special parts, or structures, that help them grow, survive, and reproduce.

**transport:** to carry from one place to another

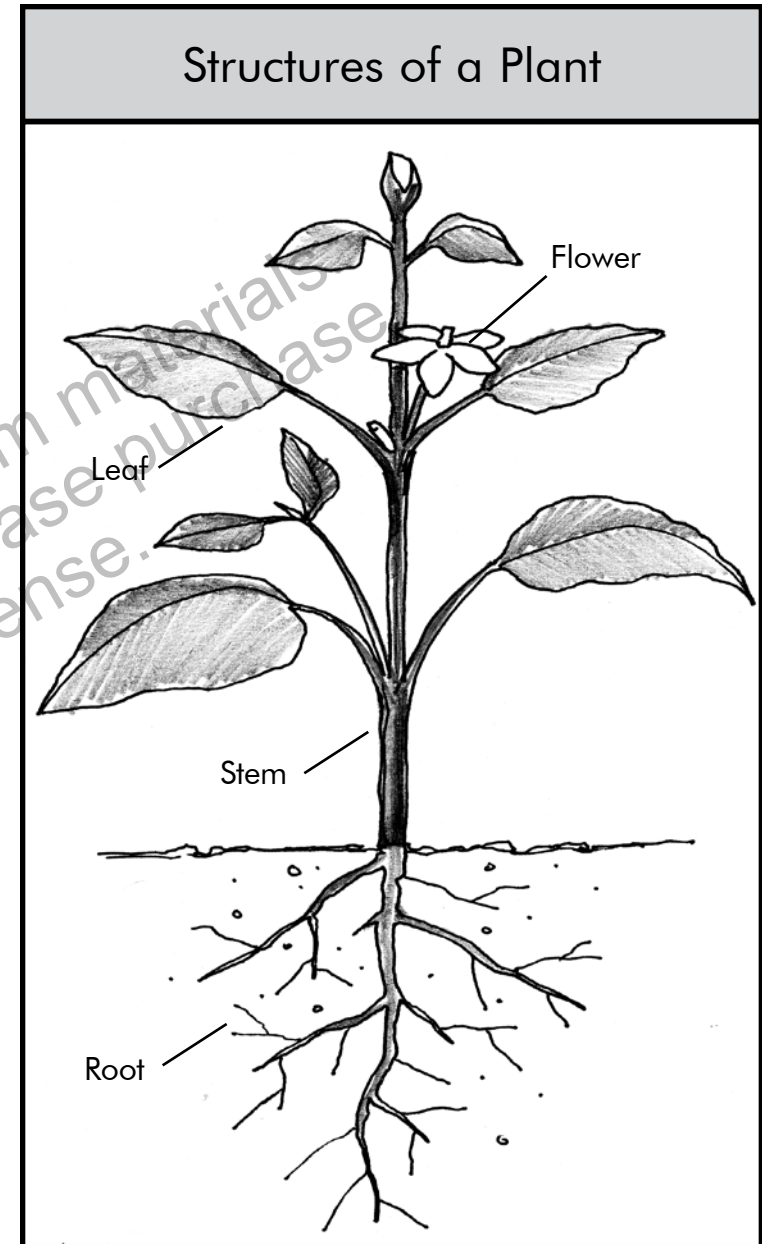
---

## Roots

Roots of a plant that grow beneath the ground. Roots help the plant in many ways. They hold the plant in the soil. The deeper the roots grow into the soil, the harder it is to pull a plant out of the soil. Without roots, a plant would blow away in the wind.

Roots collect water and minerals from the soil. They transport these **nutrients** up to the stem. A plant's main root is just below the surface of the soil. The main root then branches off into several smaller roots. They spread down and out to collect water and minerals. Roots can also store food for the plant.

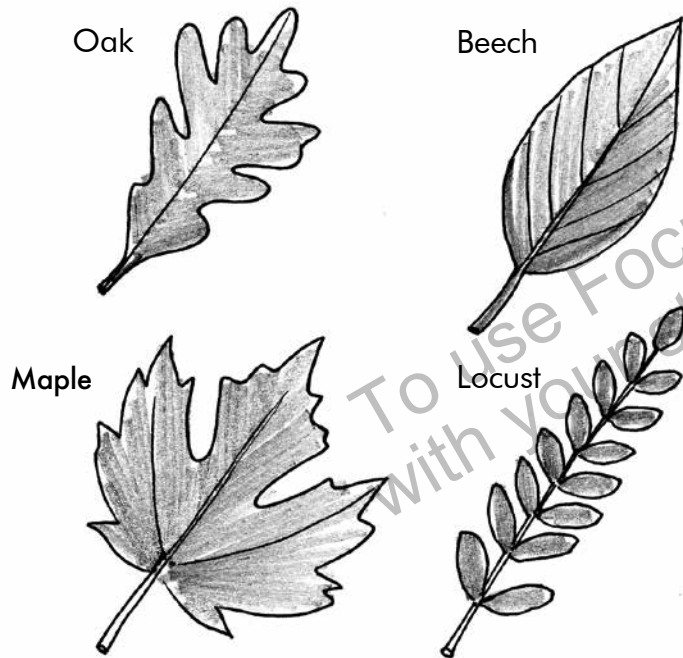
**nutrients:** things needed by people, plants, and animals to stay healthy





## Leaves

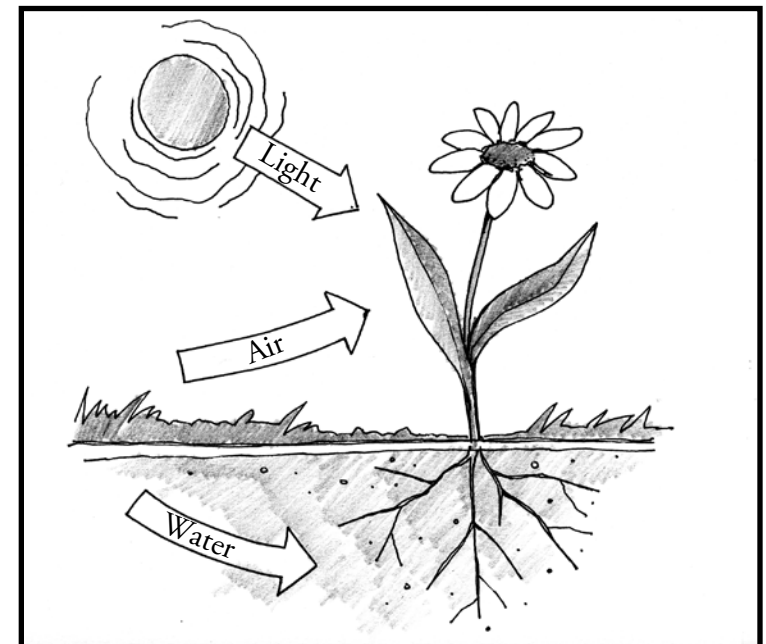
Leaves come in many sizes and shapes. They are often used to help identify plants. The job of leaves is to make food for the plant.



*—Categorize—  
How could you group the leaves shown above?*

## Photosynthesis

To make food, leaves need water, air, and sunlight. Leaves absorb the sun's light energy. Tiny openings in the leaves collect air. Leaves get most of their water from the plant's roots. The process of photosynthesis uses all three to make sugar. Tiny tubes in the leaves transport the sugar as food to the rest of the plant.



## Stems

The stem holds up the plant parts that are above the ground. For example, the stem holds up the leaves so they can capture sunlight to make food. The stem also holds up flowers.

Stems have another important job. They have tubes running through them. One type carries water and minerals from the roots up to the leaves. Another type of tube carries the food made by the leaves down through the stem to the roots. The stem is often called the highway of a plant. It transports important nutrients to help the plant survive.

*–Explain–*

*What is the function of the stem in a plant?*



---

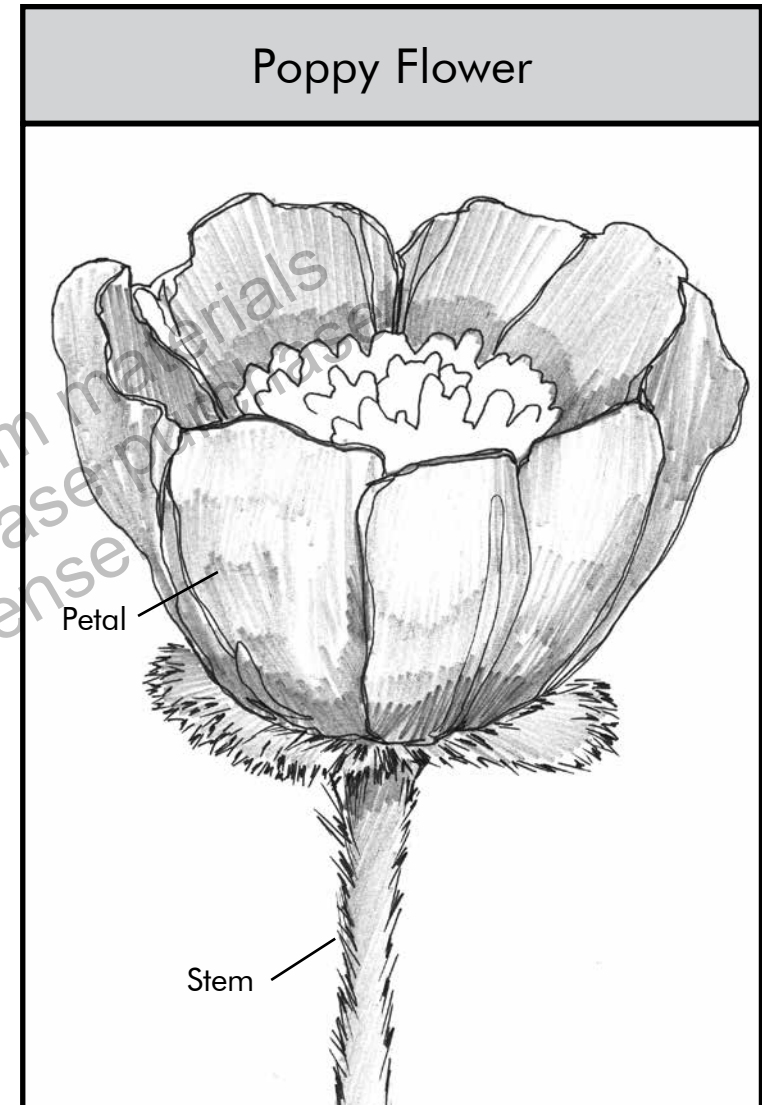
## Flowers

The leaves, stems, and roots help a plant survive. The flowers help a plant **species** survive. Flowers help plants reproduce by making seeds. A poppy is a good example.

A poppy flower is attached to a stem. The stem provides nutrients to the flower. Each flower has brightly colored petals. The colors of the petals attract bees and other insects.

Inside the flower are pads covered with pollen. Bees and other insects pick up pollen from one flower and take it to another. This movement of pollen from one flower to another is necessary to make seeds.

**species:** a group of plants or animals that are alike in certain ways



*A poppy flower is attached to a stem. The stem provides nutrients to the flower. Each flower has brightly colored petals. The colors of the petals attract insects and bees.*

## Seeds

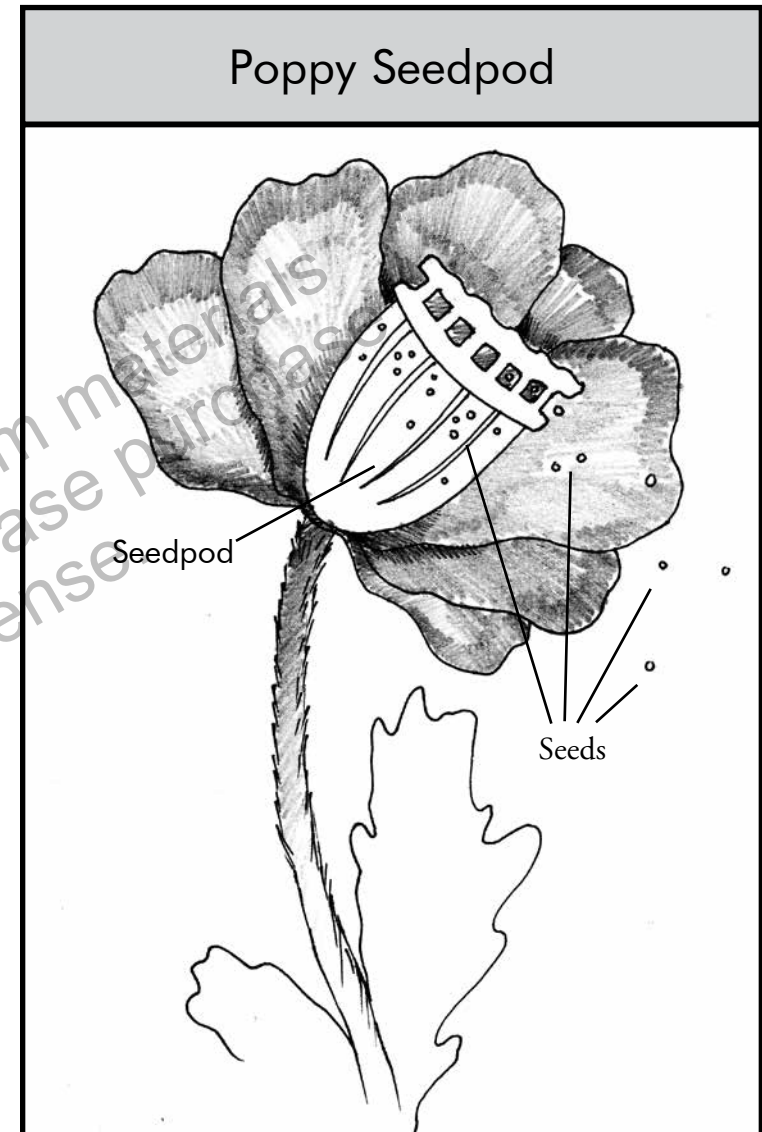
Also inside the flower is a seedpod. Inside the seedpod are seeds waiting to grow. When bees or other insects bring pollen from another flower, the pollen joins the seeds. They begin to grow.

At this time, flower petals dry up and fall off. Their work of attracting bees or other insects is over. The seedpod is left behind.

Each seedpod has holes around the top. When the wind blows, or the plant is knocked down, the seeds fall out. Now new plants can grow from these new seeds. This species of plant continues to survive year after year in this way.

–Summarize–

Tell a friend how a flower helps plants reproduce.



Each seedpod has holes around the top. When the wind blows, or the plant is knocked down, the seeds fall out.

## Plants Look Like Their Parents

Have you ever noticed that most people who are tall, have at least one parent who is tall? This happens because parents pass **traits** on to their children. A trait is any characteristic that can be used to identify or describe an organism.

Every person in your class **inherited** traits that he or she got from their parents. If your parents are short, you probably will be short. If your parents have thick hair, you will probably have thick hair.

All animals pass on traits to their **offspring**. So do plants!

**trait:** a special quality or characteristic  
**inherited:** to have passed on a trait to another  
**offspring:** a human or animal's child

Remember the pictures of leaves you saw on page 8. There were many different sizes and shapes. However, the maple leaf will always have the same shape. It will never look like the leaf of an oak tree, for example. That's because the maple tree passes its traits on to its offspring—the shape of its leaf.

### Sum It Up

You have read that plants have structures that allow them to reproduce, grow, and survive as a species. Be sure to remember the most important structures—roots, stems, leaves, flowers, and seeds. Also remember that plants and animals pass on traits from one to another. This is what makes each plant species unique.

---

## Glossary

**inherited**—to have passed on a trait to another

**nutrients**—things needed by people, plants, and animals to stay healthy

**offspring**—a human or animal's child

**organism**—any living thing

**reproduce**—to produce others of the same kind

**species**—a group of plants or animals that are alike in certain ways

**trait**—a special quality or characteristic

**transport**—to carry from one place to another

---

## To Find Out More . . .

Want to learn more about plants?

### Try these books

*From Seed to Plant* by Allan Fowler.  
Children's Press, 2001.

*Read and Learn: Plants—Seeds* (Plants)  
by Patricia Whitehouse. Raintree, 2004.

*A Seed Is Sleepy* by Dianna Hutts Aston.  
Chronicle, 2007.

*Seeds* (Plant Parts) by Vijaya Bodach.  
Capstone, 2006.

*Seeds* by Ken Robbins. Atheneum, 2005.

### Access these Web sites

The Great Plant Escape  
[www.urbanext.uiuc.edu/gpel/index.html](http://www.urbanext.uiuc.edu/gpel/index.html)

Biology of Plants: Missouri Botanical  
Garden  
[www.mbgnet.net/bioplants/main.html](http://www.mbgnet.net/bioplants/main.html)

---

# Index

offspring, 16, 17

organisms, 4

photosynthesis, 4, 9

poppy flower, 12–17

reproduction, 12

traits, 16, 17

---

Published by FOCUScurriculum

866-315-7880

[www.focuscurriculum.com](http://www.focuscurriculum.com)

Copyright © 2019 FOCUScurriculum

Order Number: LS-110L

Created by Kent Publishing Services, Inc.

Designed by Signature Design Group, Inc.

No part of the book may be reproduced without purchasing a license from the publisher. To purchase a license to reproduce this book, contact FOCUScurriculum. The publisher takes no responsibility for the use of any of the materials or methods described in this book, nor for the products thereof.

To use FocusCurriculum materials  
with your students, please purchase  
a school license.



Life Science

Plant Diversity

On Level

# Assessments

## *Structures of Plants*

Print pages 18–20 of this PDF for the assessments.

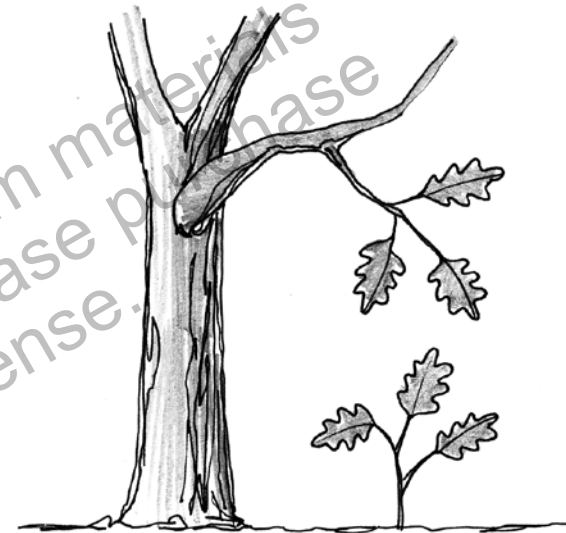


# Check Understanding

Shade the circle next to the correct answer.

1. Which part of a plant converts the sun's energy to make food?  
 (A) root  
 (B) stem  
 (C) flower  
 (D) leaf
2. Which two life processes occur in both plants and animals?  
 (A) making food and seeds  
 (B) growing and reproducing  
 (C) growing and making food  
 (D) growing and eating food

3. The diagram below shows an old and young oak tree.



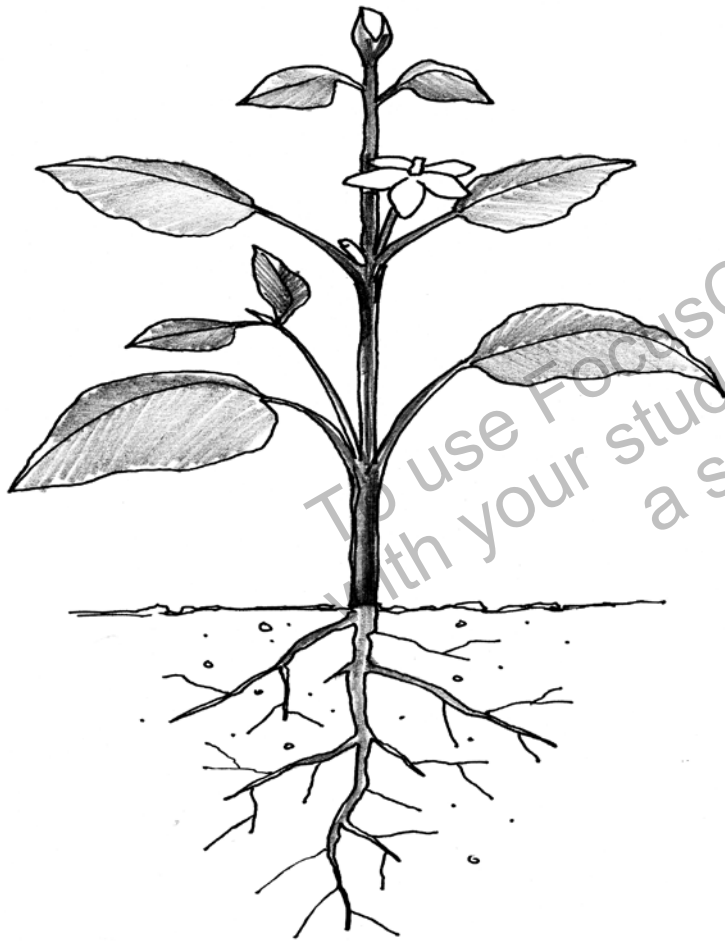
The shape of the leaf on both trees is

- (A) a learned trait
- (B) an inherited trait
- (C) an adaptation
- (D) an offspring

# Check Understanding

Write your answers on the space provided.

4. The diagram below shows four plant structures.



Complete the chart below by identifying the plant structure that performs each function. The first one is done for you.

Function	Plant Structure
makes food for the plant	leaf
takes in water and minerals	
produces fruit and seeds	
supports the plant	

# Assessment Scoring Guidelines

1. Answer D is correct.
2. Answer B is correct.
3. Answer B is correct.
- 4.

Function	Plant Structure
makes food for the plant	leaf
takes in water and minerals	root
produces fruit and seeds	flower
supports the plant	stem

To use FocusCurriculum materials with your students, please purchase a school license.



Life Science

Plant Diversity

On Level

# English Language Arts Activities

*Structures of Plants*

Print pages 22–26 of this PDF for the reading activities.

# Main Idea

## TRY THE SKILL

Paragraphs include a main idea with details that support the main idea. The main idea can be stated anywhere in the paragraph—at the beginning, in the middle, or at the end.

**Read these passages. Circle the number next to the sentence that states the main idea? The first one has been done for you.**

(1) The stem holds up the plant parts that are above ground. (2) For example, the stem holds up the leaves so they can capture sunlight to make food. (3) The stem also holds up flowers.

1. The main idea of this paragraph is found in sentence:

Circle one:       1      2      3

(1) Did you know that plants and animals share something in common? (2) They are both organisms. (3) That means that they are both living things. (4) As living things, plants and animals grow up, reproduce, and then die.

2. The main idea of this paragraph is found in sentence:

Circle one:      1      2      3      4

(1) Inside the flower are pads covered with pollen. (2) Bees and other insects pick up pollen from one flower and take it to another. (3) This movement of pollen from one flower to another is necessary to make seeds.

3. The main idea of this paragraph is found in sentence:

Circle one:      1      2      3

# Using a Table of Contents

## TRY THE SKILL

The table of contents tells the reader what is in the book. It also tells the page number.

**Read the beginning of the table of contents from *Structures of Plants*.**

### **Introduction:**

What Is a Plant? . . . . . 4

### **Chapter 1:**

Parts of a Plant . . . . . 5

    Roots . . . . . 6

    Leaves . . . . . 8

    Stems . . . . . 10

    Flowers . . . . . 12

    Seeds . . . . . 14

### **Chapter 2:**

Plants Look Like Their Parents . . . 16

**Glossary** . . . . . 18

**To Find Out More** . . . . . 19

**Index** . . . . . 20

**What page has information about the seeds of a plant?**

*Page 14, because the subheading on page 14 is "Seeds."*

**Read the beginning of the table of contents from *Structures of Plants*. Answer the questions.**

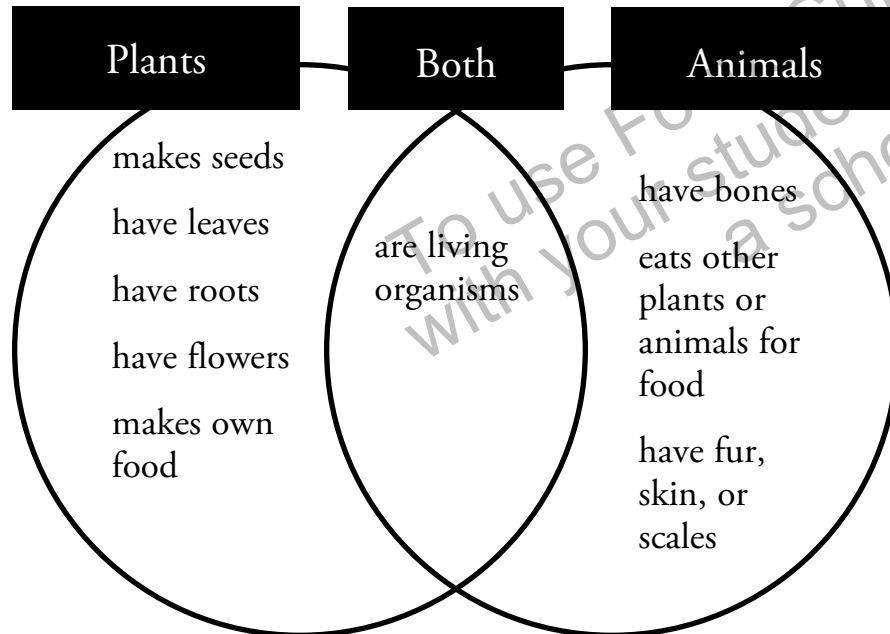
1. What page would you begin reading to find information about leaves?  
Ⓐ page 8  
Ⓑ page 14  
Ⓒ page 18
2. Which page would you find definitions of words used in the book?  
Ⓐ page 4  
Ⓑ page 10  
Ⓒ page 18
3. What page would help you locate the topic of traits in the book?  
Ⓐ page 6  
Ⓑ page 14  
Ⓒ page 20

# Compare and Contrast

## TRY THE SKILL

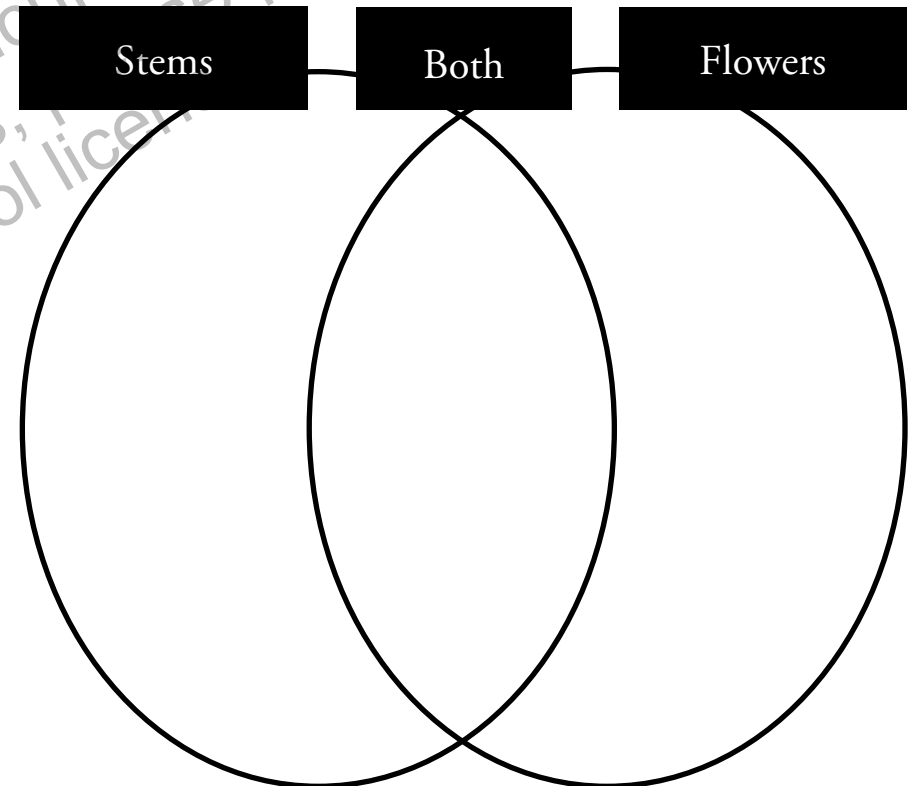
When you compare two things, you tell how they are alike. When you contrast them, you tell how they are different.

**This Venn diagram compares and contrasts the structures of plants and animals.**



**Read the phrases in the box. Put the phrases in the correct circle.**

needed for survival • contains pollen • carries nutrients  
supports plant • structures of plants • makes seeds



# Steps in a Process

## TRY THE SKILL

Understanding the steps in a process helps you understand what you read. Look for key words such as, *first*, *then*, *next*, and *finally* to help you.

**What are the steps in the process in this passage?**

Each flower has brightly colored petals. The colors of the petals attract bees and other insects. Inside the flower are pads covered with pollen. Insects and bees pick up pollen from one flower and take it to another.

<b>Step 1</b>	The colors of the petals attract insects and bees
<b>Step 2</b>	The insects and bees pick up the pollen.
<b>Step 3</b>	They take the pollen from one flower to another.

**Read this passage. What are the steps in the process?**

Inside the seedpod are seeds waiting to grow. When insects or bees bring pollen from another flower, the pollen joins the seeds. They begin to grow. At this time, flower petals dry up and fall off. Their work of attracting bees and other insects is over. The seedpod is left behind.

<b>Step 1</b>	
<b>Step 2</b>	
<b>Step 3</b>	
<b>Step 4</b>	
<b>Step 5</b>	



# Answer Key

## Main Idea

1. 1
2. 4
3. 3

## Using a Table of Contents

1. A
2. C
3. C

## Compare and Contrast

**Stems:** supports plant, carries nutrients

**Both:** structures of plants, needed for survival

**Flowers:** contains pollen, makes seeds

## Steps in a Process

1. The insects and bees take the pollen from one flower to another.
2. The pollen joins the seeds.
3. The seeds begin to grow.
4. The flowers petals dry up and fall off.
5. The seedpod is left behind