

Plants

Life Science-Second Grade

By

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Unit Description:

Students will be able to identify plant parts and their functions. They will be able to identify the difference between living and nonliving things while using a picture sort. They will observe the structural differences between flowering plants and trees. Students will also understand how the environment affects plants and what a plant needs to grow. They will understand the important role plants play to the environment. They will learn key vocabulary associated with this unit. They will learn the reproductive cycle of the flower and know that plant seeds from a certain species of plant will produce the same plant species.

Content Standards:

SCIENCE: Students know/will

- 1a. the position of an object can be described by locating it in relation to another object or to the background.
- 2a. that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.
- 2b. the sequential stages of life cycles are different for different *organisms*.
- 2c. many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.
- 2d. there is variation among individuals of one kind within a population.
- 2e. light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.
- 2f. flowers and fruits are associated with reproduction in plants.
- 3e. rock, water, plants, and soil provide many resources, including food, fuel, and building materials, that humans use.
- 4a. make predictions based on observed patterns and not random guessing.
- 4d. write or draw descriptions of a sequence of steps, events, and observations.

GLAD Strategies:

Observation Charts (pictures of plants)
Cognitive Content Dictionary
Read Aloud (Important Book)
Pictorial Input Chart(s)
Chants
Learning Logs
Input Narrative
Picture Sorts
Process Grid
Super Science Awards

Key Vocabulary:

living	nonliving	nutrients	seed coat
germinate	seedling	flower	flower stalk
petal	ovary	leaf	lateral shoot
pistil	stamen	trunk	outer bark
terminal bud	root cap	root	branches
stem	minerals	environment	fruit
change	soil	grow	insects
light	water	photosynthesis	category

Day 1

Focus/Motivation

- **Read Aloud “Most Important Thing About Plants” book.**
- **Start Cognitive Content Dictionary (Choose 4-6 words)**

Input

- **Pictorial of plant parts**

Guided Oral Practice

- **Use picture file cards do an open sort**

Reading/Writing Activities

- **Students use journals to draw a plant and label the parts**

Extensions/Activities for Integration

- **Students use vocabulary cards and pictorial at a center.**

Closure/Evaluation

- **Review pictorial/ pass out cards with key vocabulary on them. Have students bring up the cards and tape them on the pictorial while teacher retells the information.**

Day 2

Focus/Motivation

- **Cognitive Content Dictionary Flower parts**

Input

- **Pictorial of flower parts**

Guided Oral Practice

- **Process grid**
- **Sing "Plant Song" to the tune of Yankee Doodle**

Reading/Writing Activities

- **Students work in journals to copy the flower and it's parts**

Extensions/Activities for Integration

- **Work in cooperative groups to create a (brace map) of the flower parts**

Closure/Evaluation

- **Share brace maps with rest of class**

Day 3

Focus/Motivation

- **Cognitive Content Dictionary**

Input

- **Tree Pictorial**

Guided Oral Practice

- **Do the “Plant” Chant**
- **Complete the process grid**

Reading/Writing Activities

- **Students work in cooperative groups. Choose a pictorial to recreate. Each student uses a different colored marker.**

Extensions/Activities for Integration

- **Compare and contrast the parts of a plant to parts of a tree**

Closure/Evaluation

- **Students share recreated pictorials with the group**

Day 4

Focus/Motivation

- **Cognitive content dictionary**
- **Repeat plant chant**

Input

- **Review of all the pictorials**
- **Narrative Input Story “Grandpas Garden”**

Guided Oral Practice

- **Give picture cards have students do a picture sort of living and nonliving things.**

Reading/Writing Activities

- **Each table is given 2 vocabulary words to write a sentence about on sentence strips.**

Extensions/Activities for Integration

- **Class writes a paragraph together using the sentences the students generated from the vocabulary words.**

Closure/Evaluation

- **Repeat Plant Song and Chant**

The Most Important Plant Book

The most important thing about plants is that they are photosynthetic.
Plants are living things that need nutrients, air, sunlight and water.
The stem of plants carries these nutrients to the leaves. The leaves of the
plant make food for the plant from the nutrients.
But most important thing about plants is that they are photosynthetic.

Plants grow from seeds covered with a seed coat. . The seed coat
protects the seed. The seed has stored food in it that it can use as it grows.
When a seed starts to grow it is said to be germinating.
But the most important thing about plants is that they are photosynthetic.

Seeds sprout roots that grow down. Then they split open and a tiny
stem grows up. This young plant is called a seedling. The seedling grows
leaves and soon becomes thicker and fuller.
But the most important thing about plants is that they are photosynthetic.

At the top of the plant stem flowers grow. The flowers contain tiny seeds
that grow into fruit or another plant of the same species. The flowers protect
the seeds until they are ready to germinate and grow new plants.
But the most important thing about plants is that they are photosynthetic.

Plants grow everywhere they make their own food by taking in water
and nutrients from the soil. They give off oxygen and feed the world.

But the most important thing about plants is that they are photosynthetic

Resource: Second Grade , Harcourt Science, California Edition

Input Narrative: Grandpa's Garden

One sunny spring day Grandpa and I decided to plant a garden. First we went to Home Depot to get some seeds. There were many kinds of seeds like vegetable and flower seeds. "I'd like to plant some pumpkins, and flowers," I told grandfather.

After buying the seeds we went back to Grandpa's farm to prepare the soil. First we raked it and picked out all the large rocks and hard clumps of dirt. Then we stretched out the hose and sprayed cool water on the dirt. After that we made nice rows for the seeds and sprinkled the seeds in, pushing them down and covering them with soil. "Now it is time to be patient and wait," said Grandpa.

Several days went by, under the ground the seed coat was splitting open. Tiny roots were growing down from the germinated seed. Finally, a shoot sprouted from the seed and Grandpa and I began to see the very first green stems push up through the soil. We continued to water our garden every day and pulled any weeds that got in the way.

Soon our pumpkins and flowers were about a foot high. The stem was growing large and tall and the leaves were plentiful. Grandpa said the stems carry food or nutrients to the leaves. The leaves are the power house of the plant, it is where the food is made and stored. Now that our plants were getting plenty of food, air, sun, and water they would soon start growing flowers and fruit. "Yum, Yum! I couldn't wait!"

A few days later I began to see some tiny yellow and orange flowers on the plants. Flowers produce seeds and fruit. The flowers on the pumpkin plants would turn into pumpkins. Inside each pumpkin would be the pumpkin seeds.

At last the pumpkins were full grown. Grandpa and I picked one bigger than a basketball. We cut it up and boiled the pumpkin. Then grandma added eggs and sugar and made it into a pumpkin pie. It smelled so good baking in the oven, and tasted even better.

By: Deanna Molby

9-3-05

The Plant Song
(to the tune of Yankee Doodle)

All plants start from a very small seed that grows into a seedling.

Give it plenty of water and sun. The roots will nourish and feed it.

Plant your seeds into the ground. Water them so they'll grow.

Then the flower will bloom real soon and the seeds will scatter round it.

How does a seed know if it is to grow to a flower or a weed?

If it is to be a vine or a shoot, or grow up to be a big tree

Plant your seeds into the dry ground. Water them so they'll grow.

Then the small seed will sprout some roots and grow up to be a green plant.

Del Rey Second Grade Team
Walt Henry
Deanna Molby

Plants Cadence

We just know what we've been told
Plants grow all around the globe
Studying plants here and there
They put oxygen in the air

Sound off: Germination

Sound off: Seedling

Sound off: one, two, three, four, "I'm cool"

Plants grow flowers , pine cones and fruits
They grow up from little shoots
Different parts of plants have they
Roots, and flowers, leaves, and stems

Sound off: Germination

Sound off: Seedling

Sound off: one, two, three, four, "I'm cool"

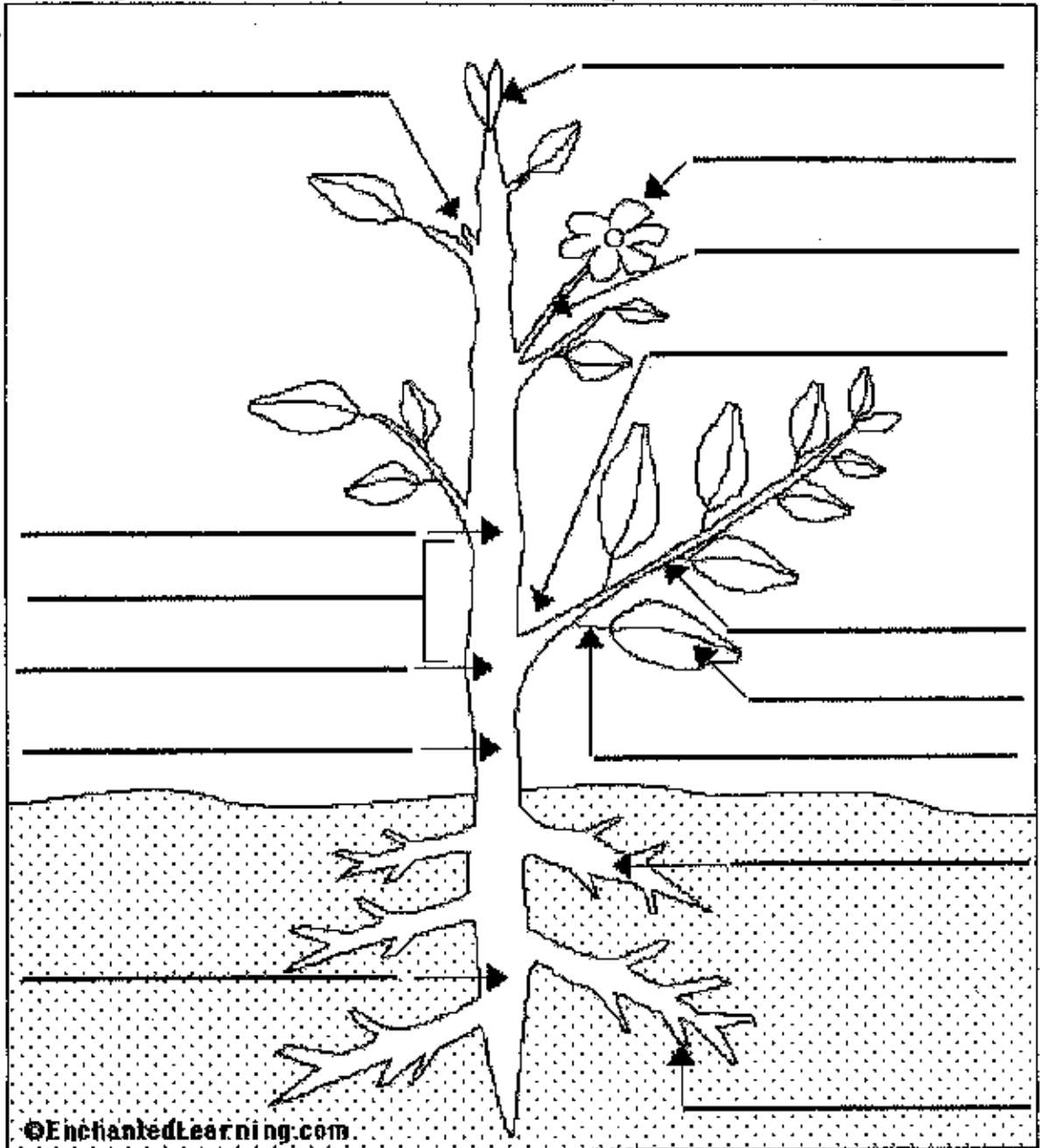
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Input Charts

Content difficulty of the input charts included in this unit are expected be modified by the classroom teacher to the objectives of the teacher and/or the needs of the class.

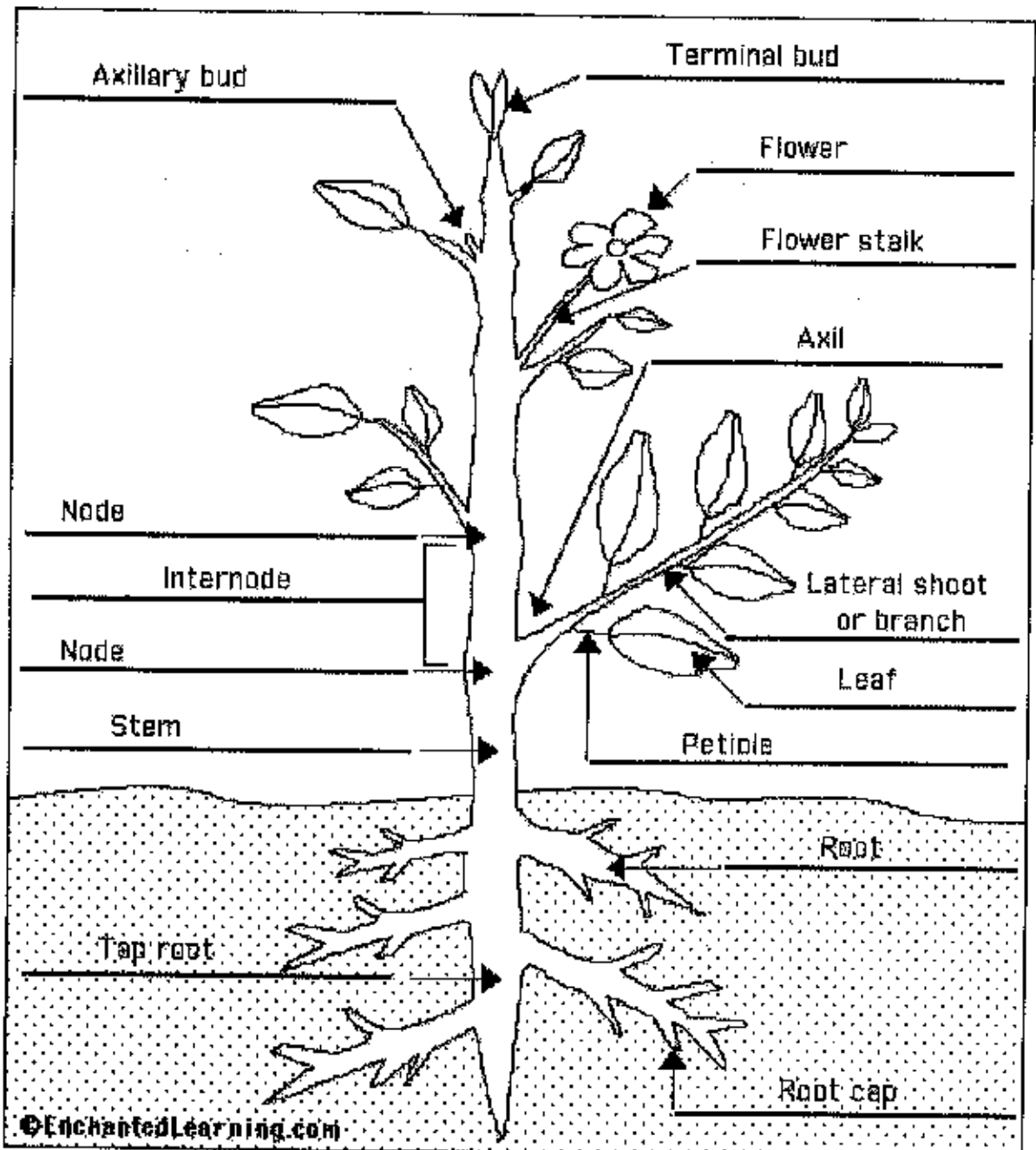
Label Flowering Plant Anatomy

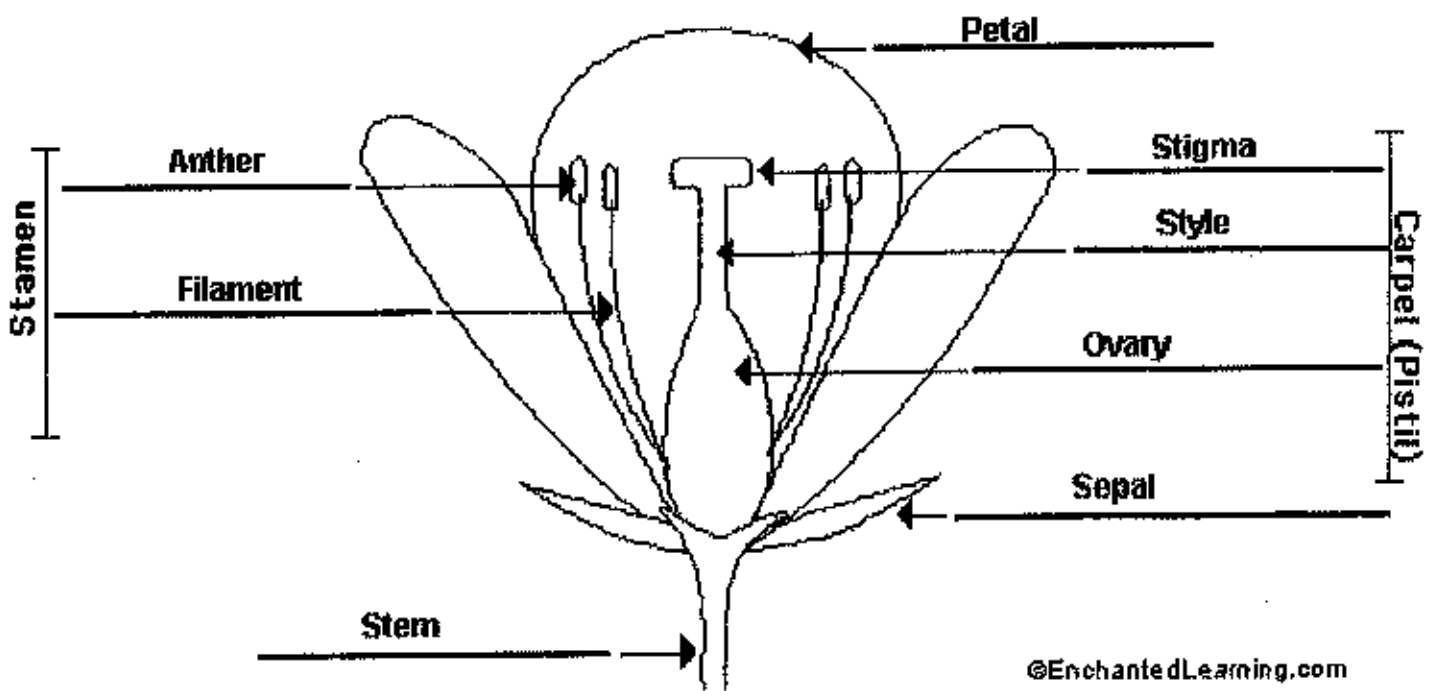
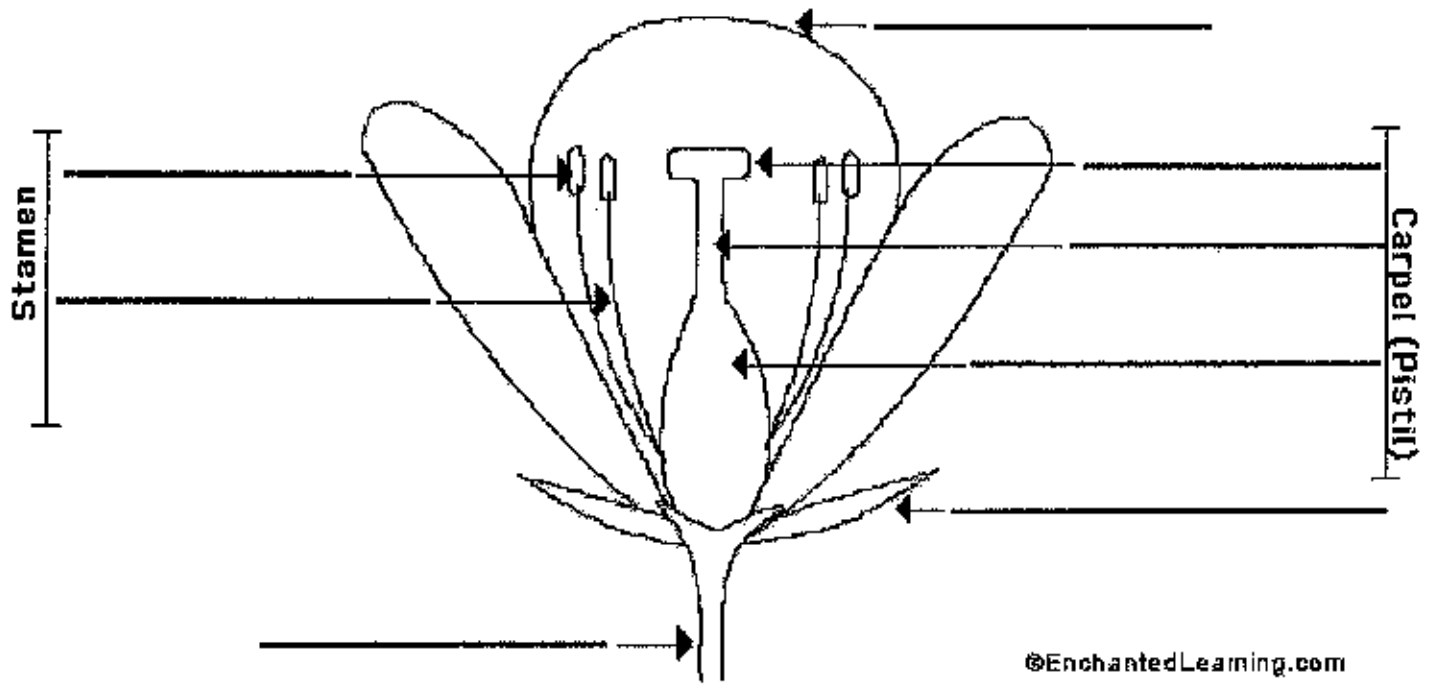
Read the plant definitions, then label the plant anatomy diagram below.



Answers - Plant Anatomy Diagram

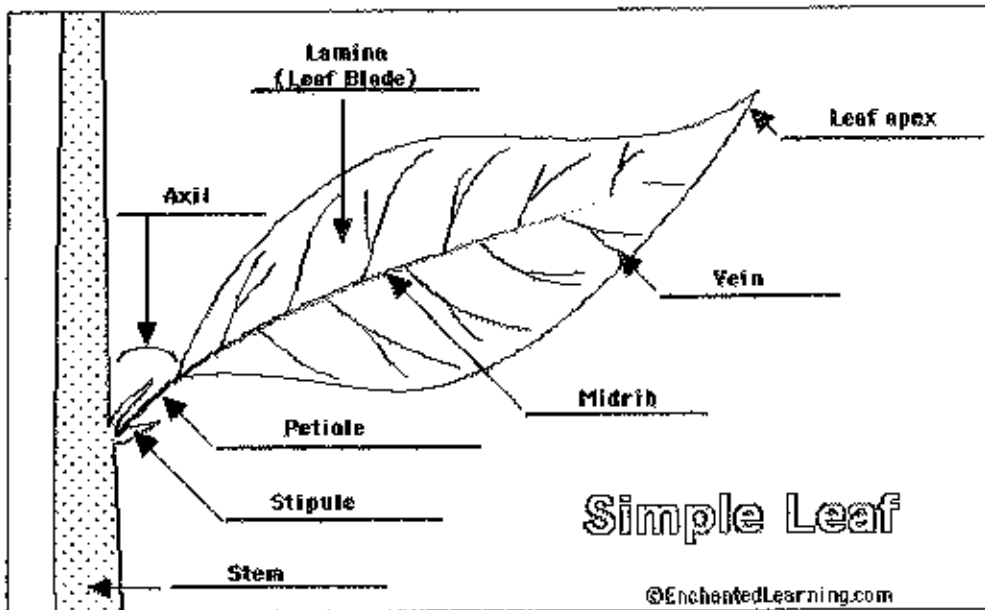
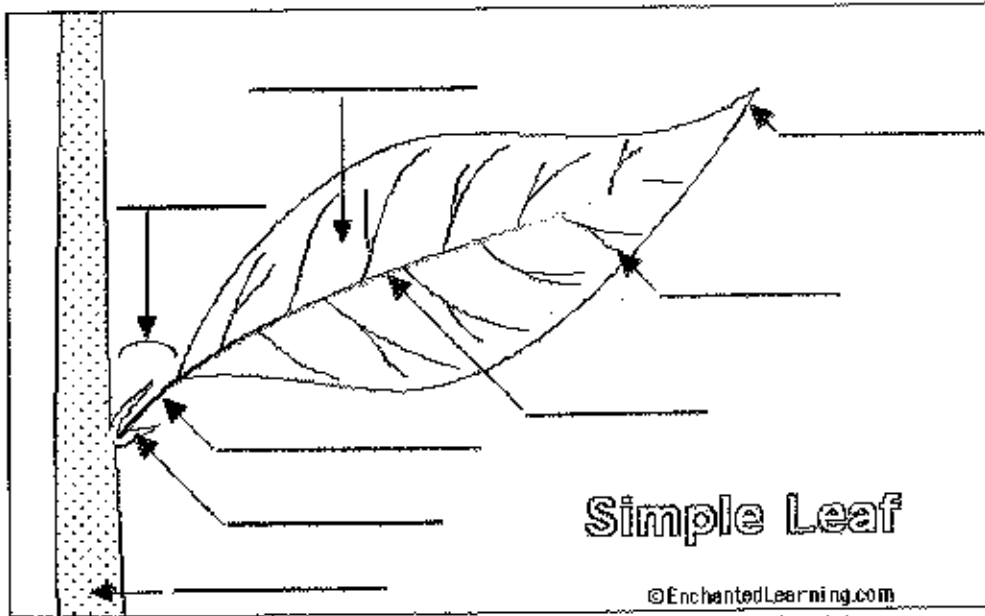
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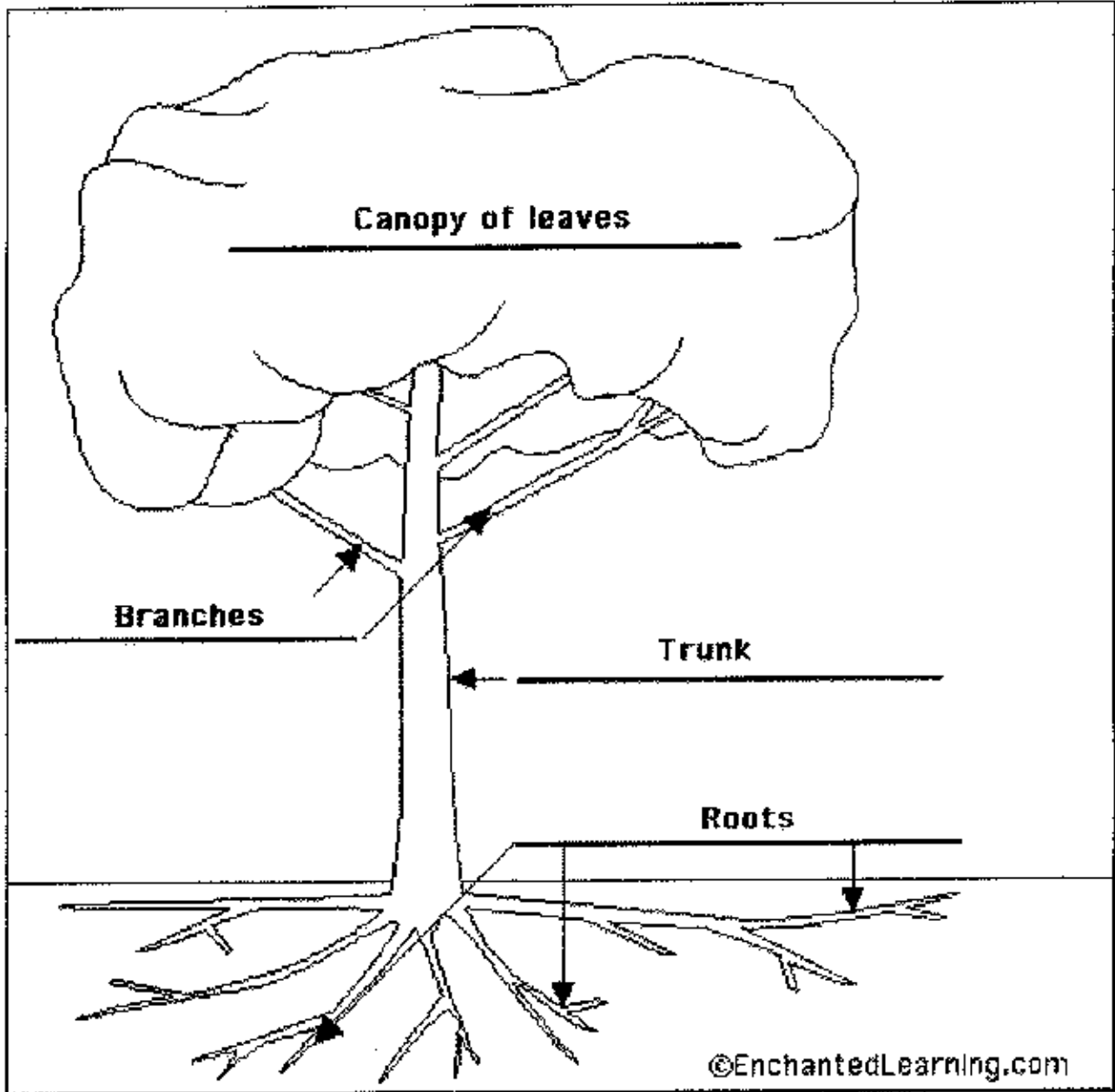


Label Simple Leaf External Anatomy

Read the plant definitions below, then label the simple leaf morphology diagram below.



EnchantedLearning.com
Answers - Label the Tree Anatomy

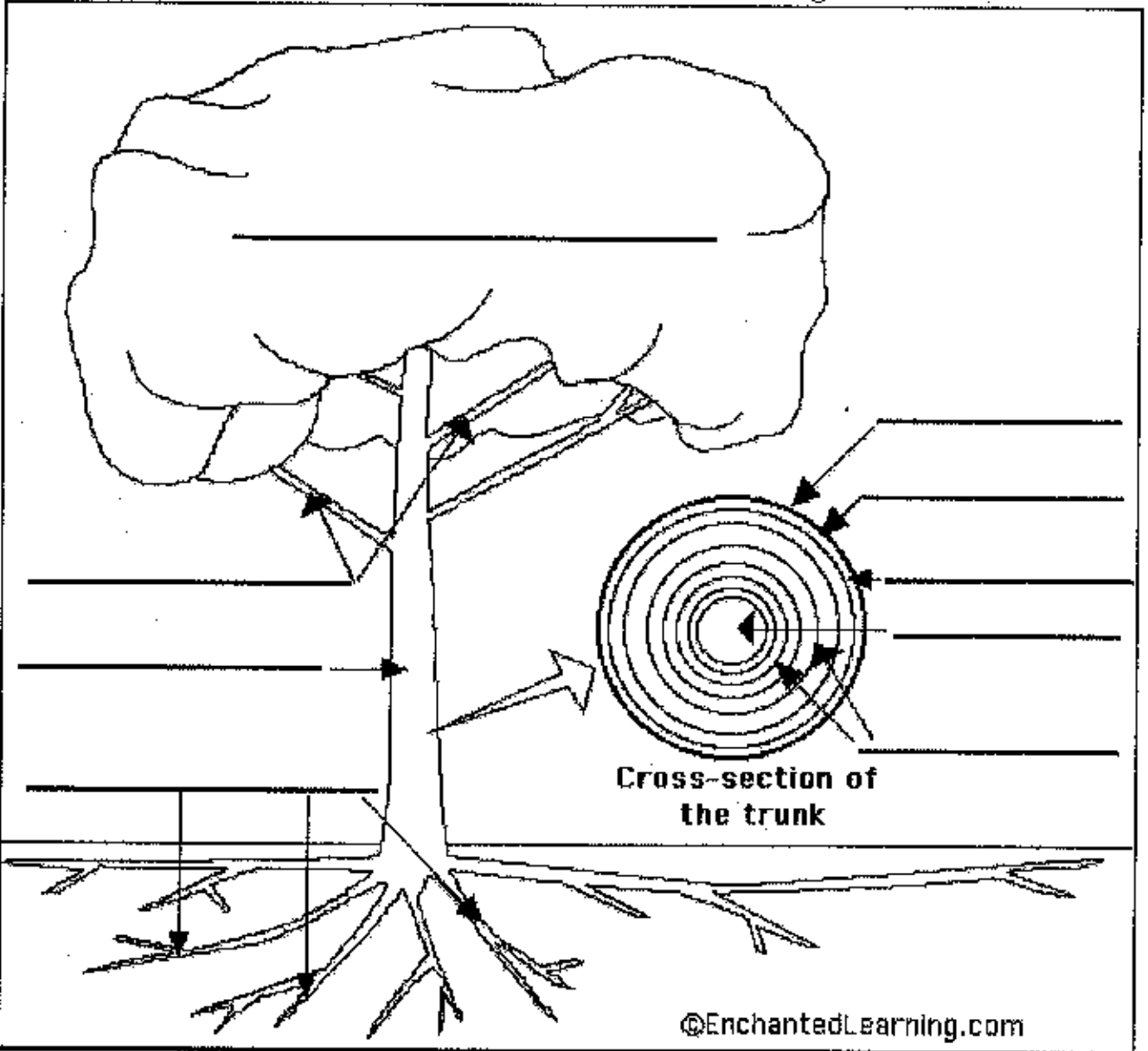


branches - woody parts of the tree that grow from the trunk.
canopy of leaves - the upper parts of the tree, where the leaves are
roots - structures that gets food and water from the soil, stores energy, and provides support for the plant. Most roots grow underground.
trunk - the main support of the tree.

12/10

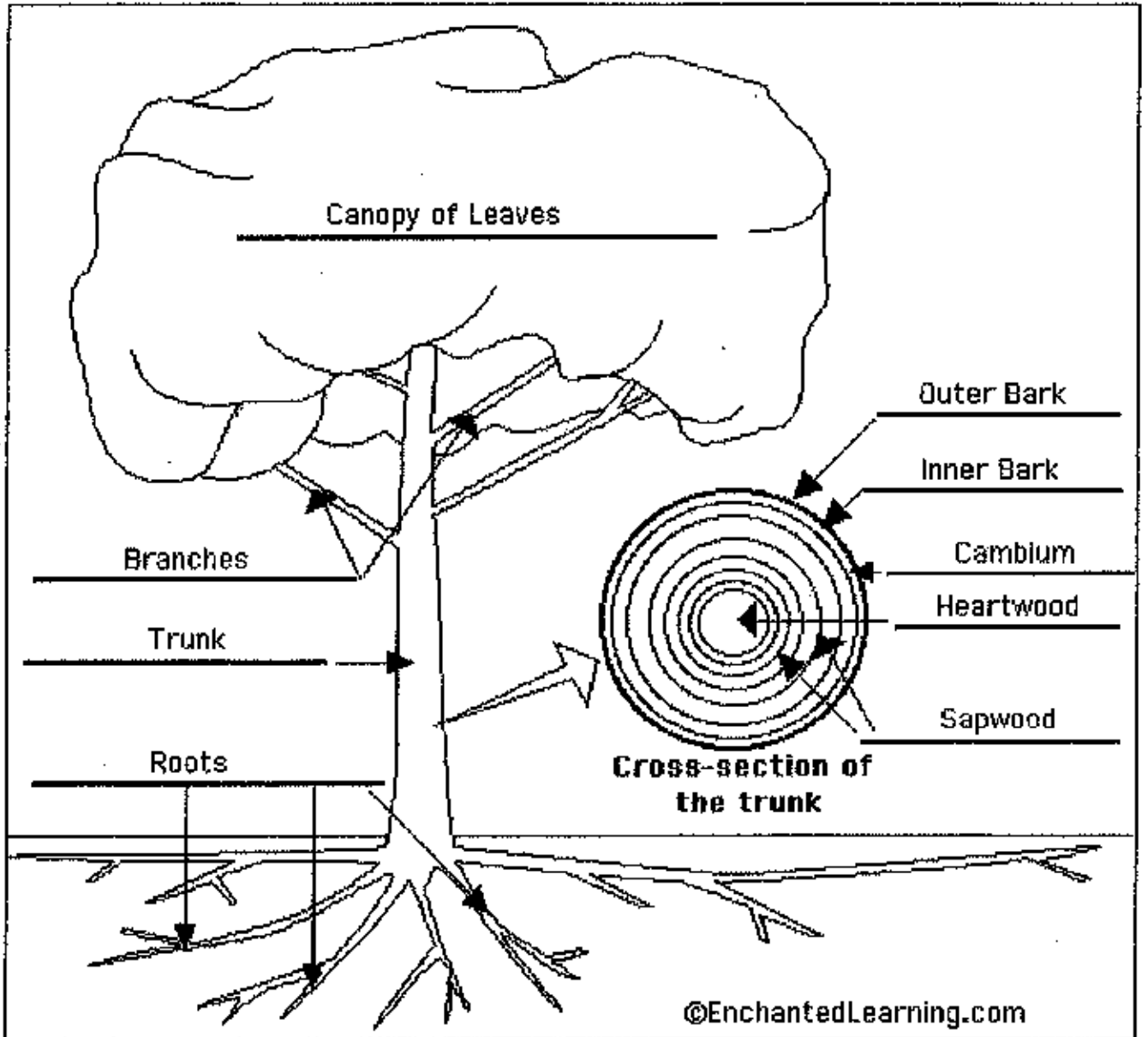
Label Tree Anatomy

Read the definitions, then label the tree diagram below.



Answers - Label Tree Anatomy

Read the definitions, then label the tree diagram below



Label Definitions
(from: enchantedlearning.com)

FLOWERING PLANT ANATOMY

axil: the angle between the upper side of the stem and a leaf, branch, or petiole.

axillary bud: a bud that develops in the axil.

flower: the reproductive unit of angiosperms.

flower stalk: the structure that supports the flower.

internode: the area of the stem between any two adjacent nodes.

lateral shoot (branch): an offshoot of the stem of a plant.

leaf: an outgrowth of a plant that grows from a node in the stem. Most leaves are flat and contain chloroplasts; their main function is to convert energy from sunlight into chemical energy (food) through photosynthesis.

node: the part of the stem of a plant from which a leaf, branch, or aerial root grows; each plant has many nodes.

petiole: a leaf stalk; it attaches the leaf to the plant.

root: a plant structure that obtains food and water from the soil, stores energy, and provides support for the plant. Most roots grow underground.

root cap: a structure at the ends (tips) of the roots. It covers and protects the apical meristem (the actively growing region) of the root.

stem: (also called the axis) is the main support of the plant.

tap root: the main root of some plants; the tap root extends straight down under the plant.

terminal bud: a bud located at the apex (tip) of the stem. Terminal buds have special tissue, called apical meristem, consisting of cells that can divide indefinitely.

FLOWER ANATOMY

anther: the tip of a flower's stamen (the male reproductive organs of the plant); it contains the pollen.

filament: the part of the flower that holds up the anther.

ovary: is at the base of the pistil and produces ovules.

petal: one of the leafy structures that comprise a flower. Petals are often brightly-colored and have many different shapes.

pistil (also called thecarpel): the female reproductive tissue of a flower.

sepal: small leaves located directly under a flower; they are the outermost part of a flower.

stem (also called the peduncle): main support for the flower.

stamen: the male reproductive tissue of a flower.

stigma: the uppermost part of the pistil which receives the male pollen grains during fertilization, when they travel through the style to the ovary.

style: a long tube on top of the ovary and below the stigma.

TREE ANATOMY

cambium: a single layer of living cells in the trunk that is located between the sapwood and the inner bark. The cambium produces sapwood (on the inside of the cambium) and the inner bark (on the outside of the cambium),

canopy of leaves: the upper parts of the tree, where the branches and leaves are located.

heartwood: the core of the trunk, which contains very strong, dead tissue that supports the tree.

inner bark (phloem): the layer of the trunk through which the tree's food flows. It is located between the outer bark and the cambium. When this short-lived layer dies, it is called cork.

outer bark: the protective outer layer of the trunk.

roots: structures that obtain food and water from the soil, store energy, and provide support for the plant. Most roots grow under ground.

sapwood: the layers of wood just outside the heartwood. Each year a new layer of wood is formed (by the cambium tissue), forming an annual ring. Sap (containing water and some nutrients) is transported in this layer. Older, inner rings of sapwood eventually become heartwood. You can tell the age of a tree by counting its annual rings.

branches: woody parts of the tree that grow from the trunk.

trunk: the main support of the tree.

LEAF ANATOMY

axil: the angle between the upper side of the stem and a leaf or petiole.

lamina: the blade of a leaf.

leaf apex: the outer end of a leaf; the end that is opposite the petiole.

midrib: the central rib of a leaf-it is usually continuous with the petiole.

petiole: a leaf stalk; it attaches the leaf to the plant.

stem: (also called the axis) the main support to the plant.

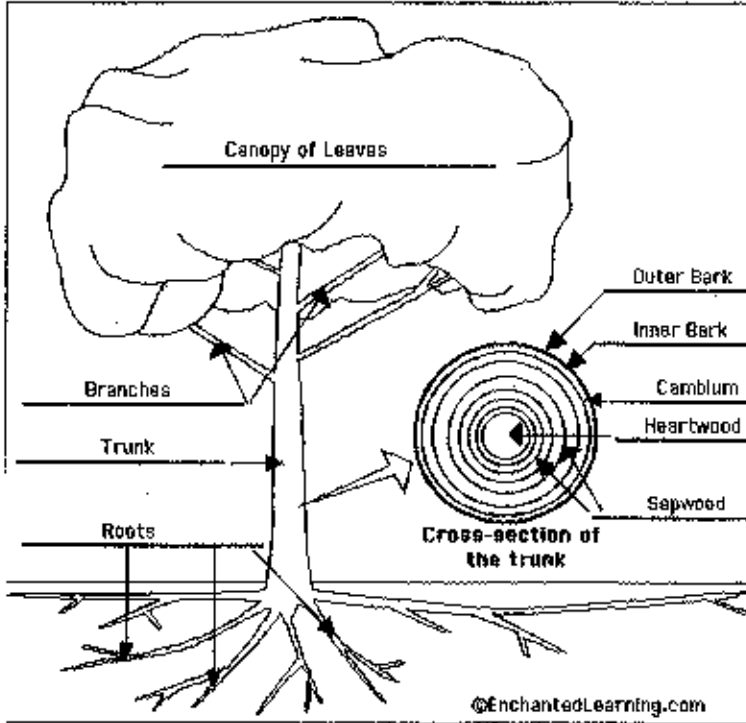
stipule: the small, paired appendages (sometimes leaf-like) that are found at the base of the petiole of leaves of many flowering plants.

vein: one of the many vascular structures on a leaf. Veins provide supports for the leaf and transport both water and food through the leaf.

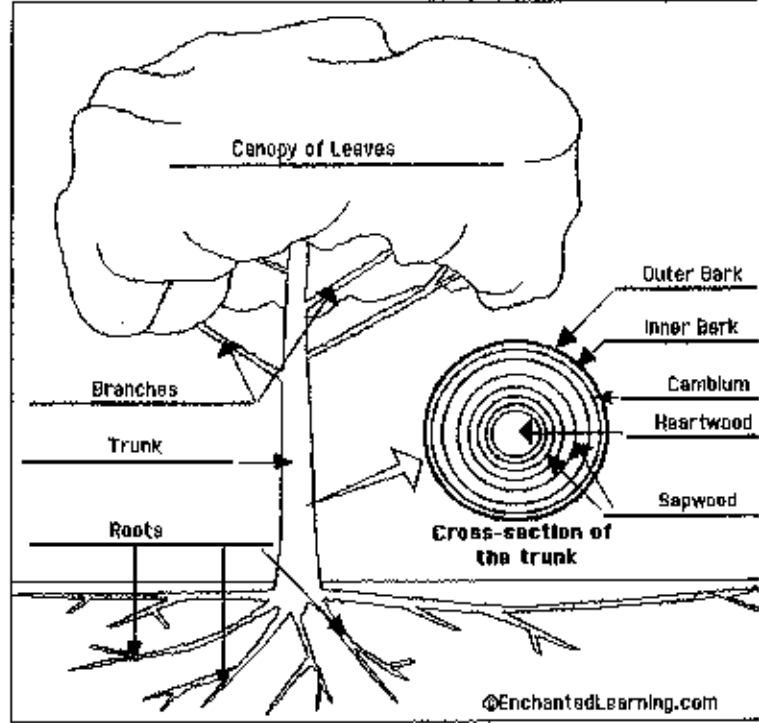
Process Grid

Plant Anatomy	Parts of:	Uses	Environment	Resources Needed for growth
plant				
flower				
tree				

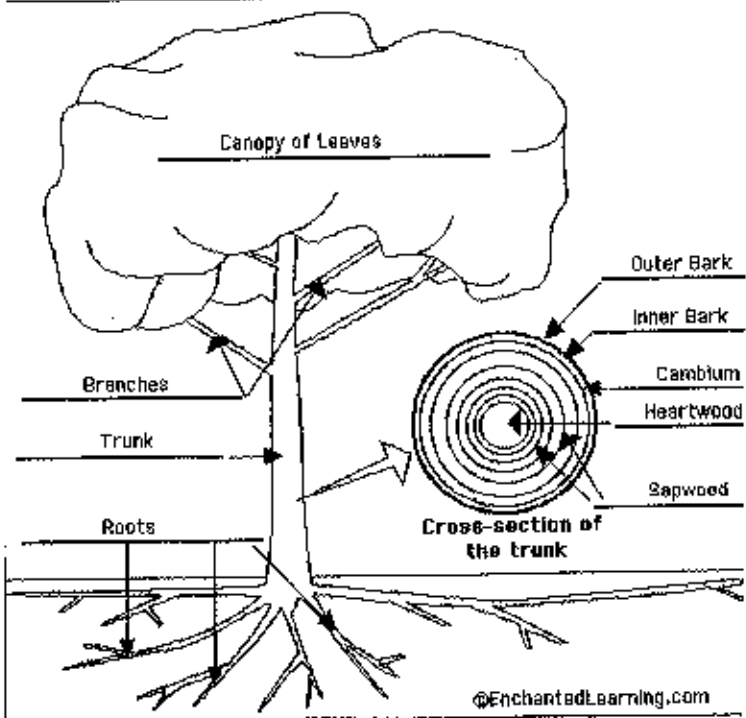
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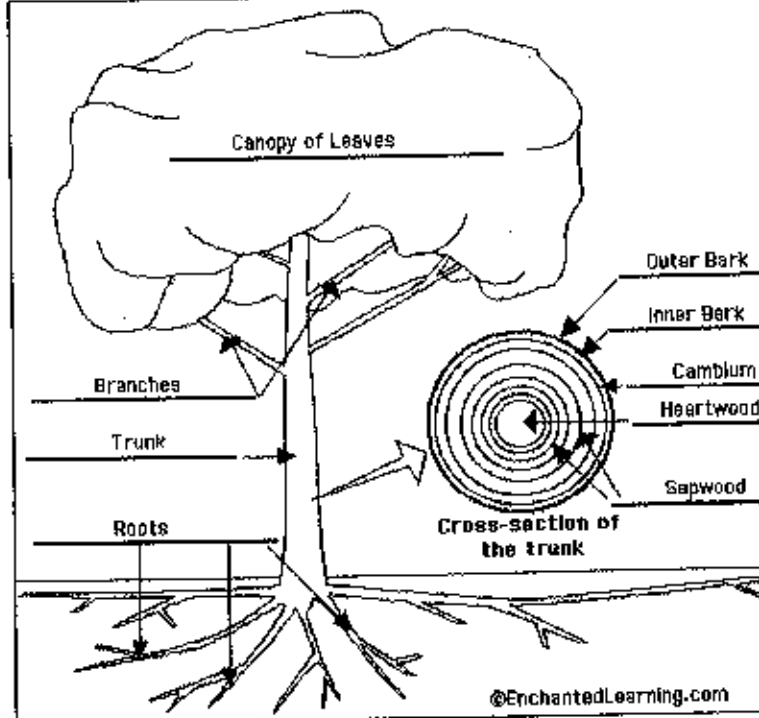
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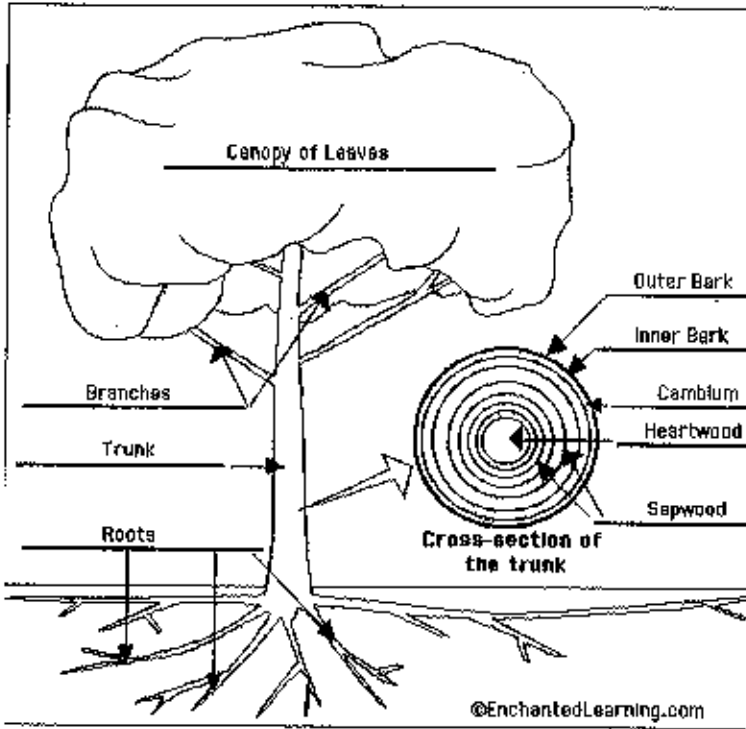
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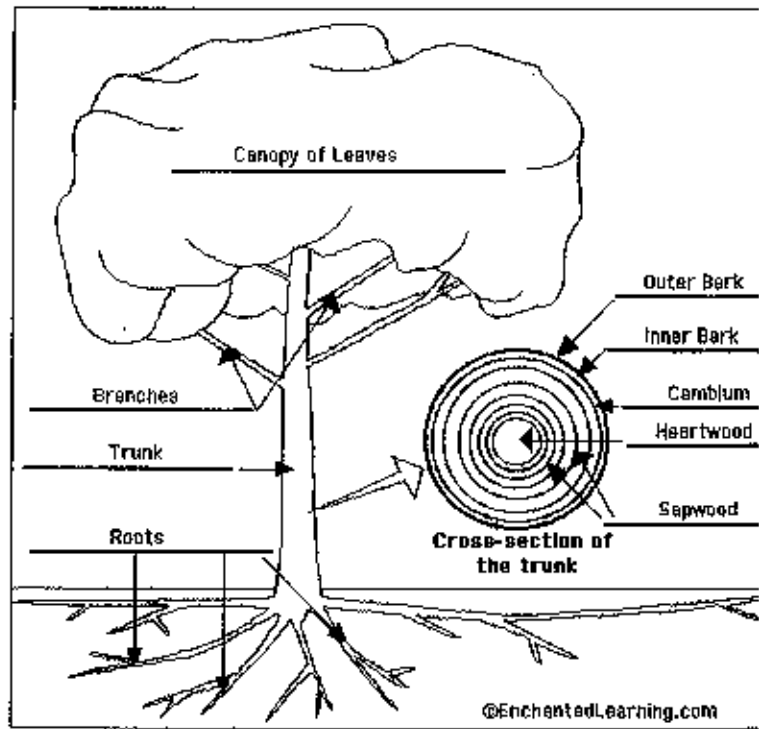
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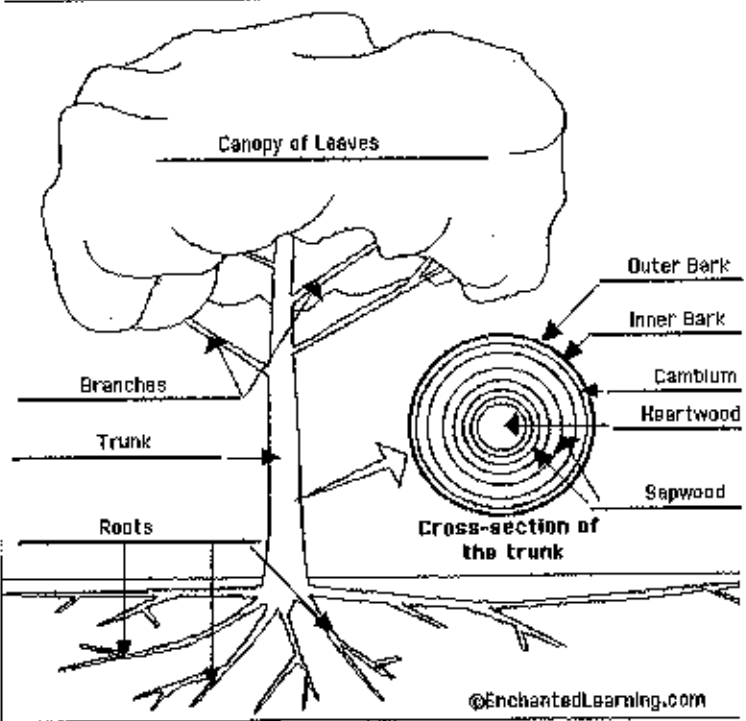
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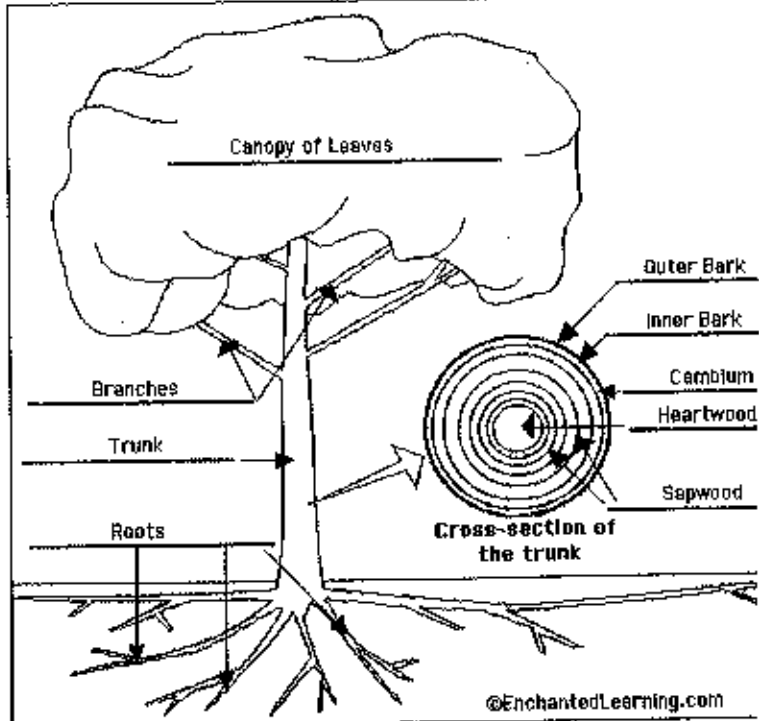
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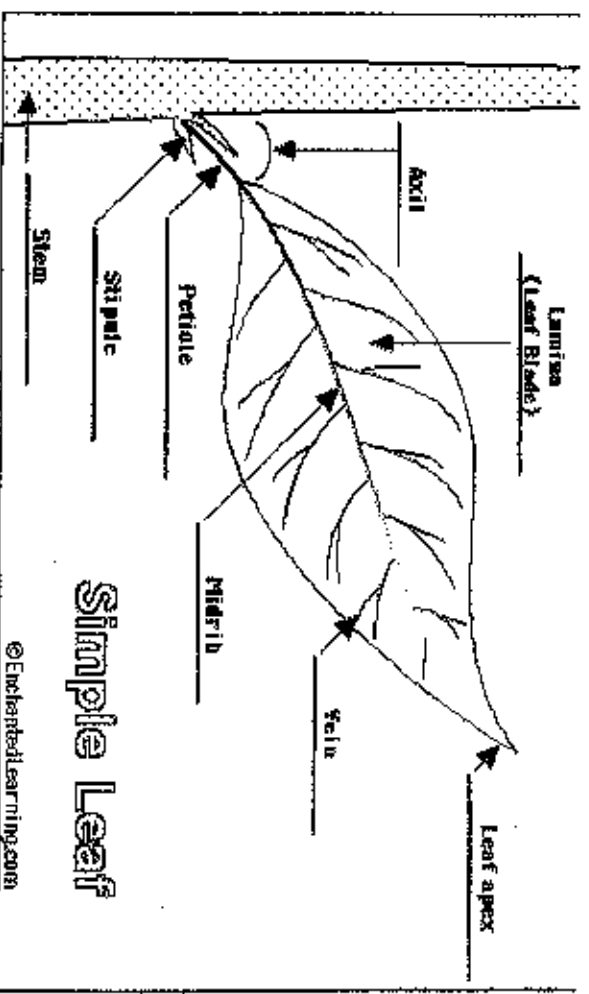
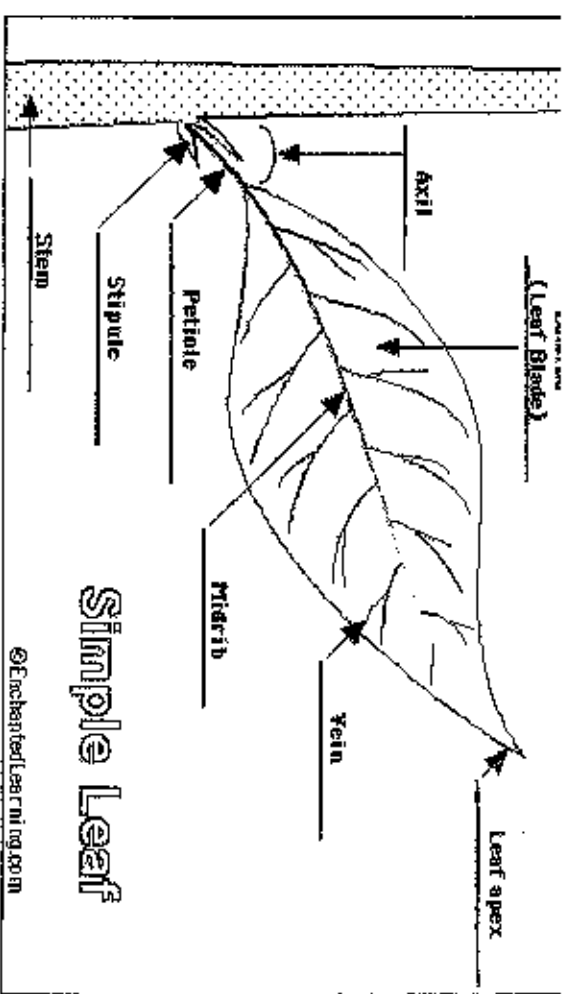
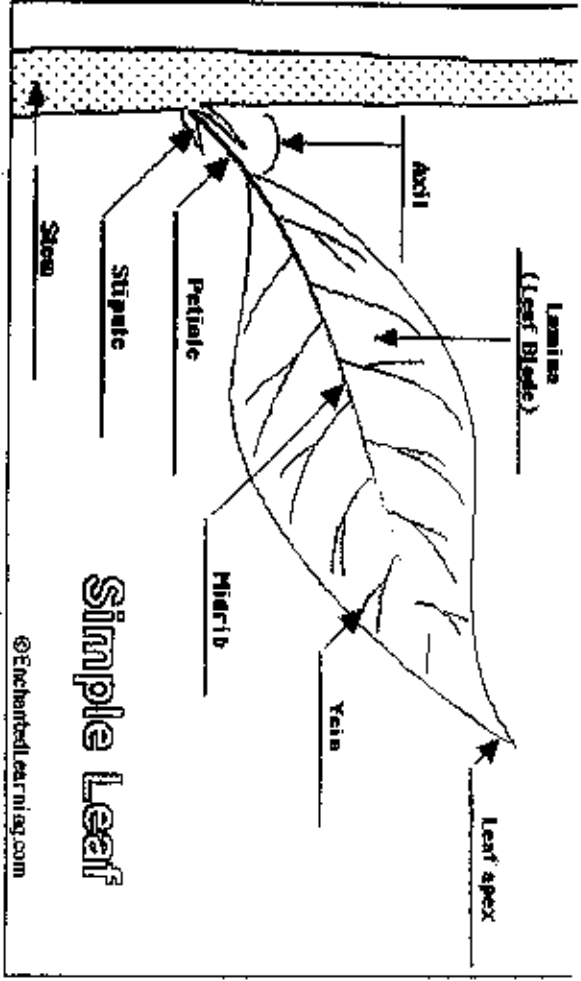
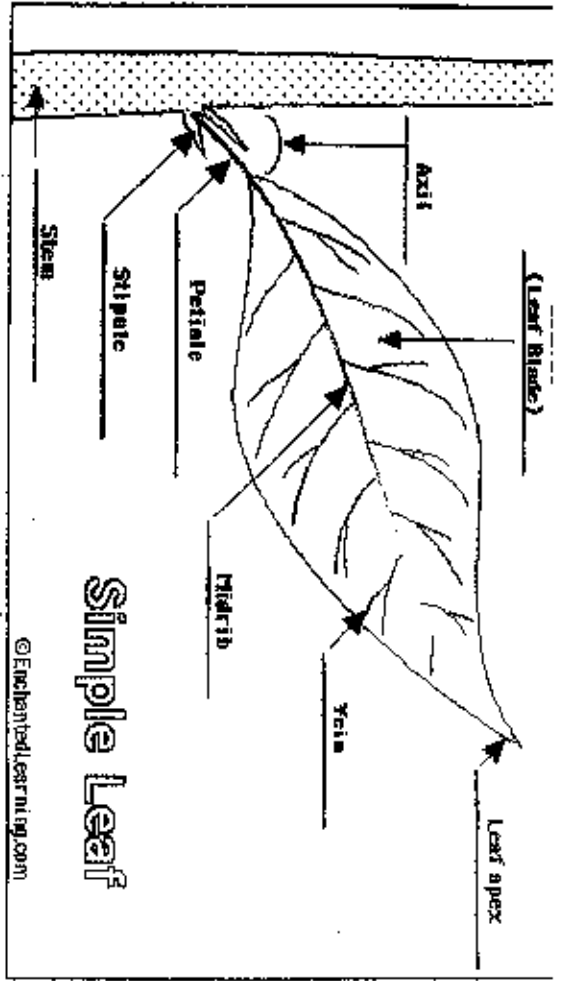


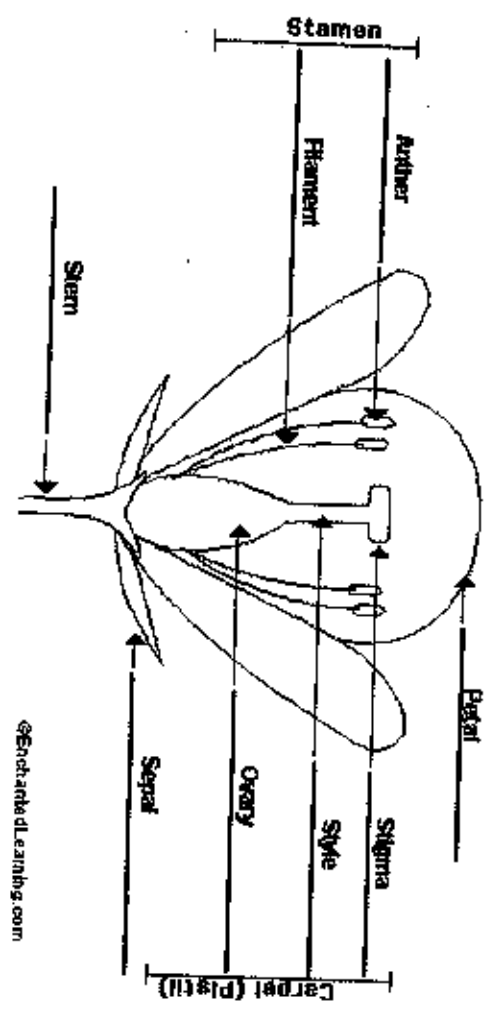
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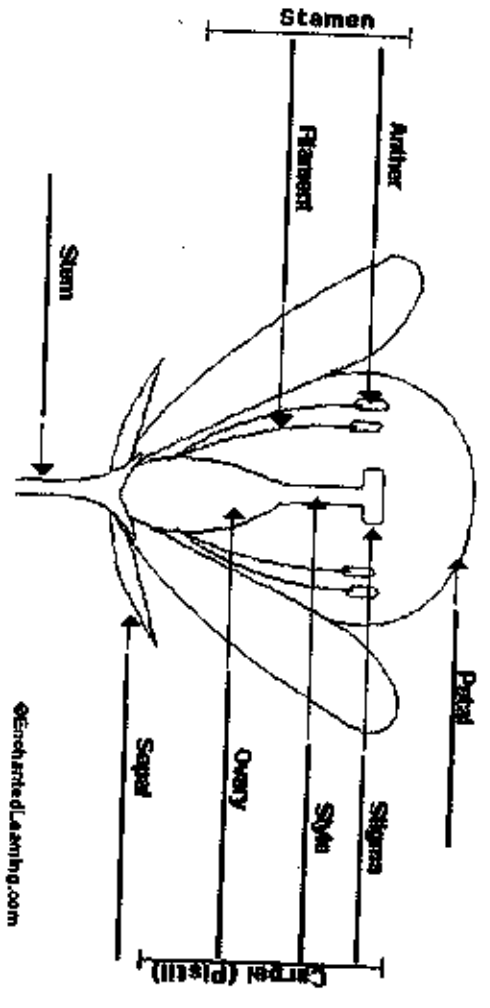
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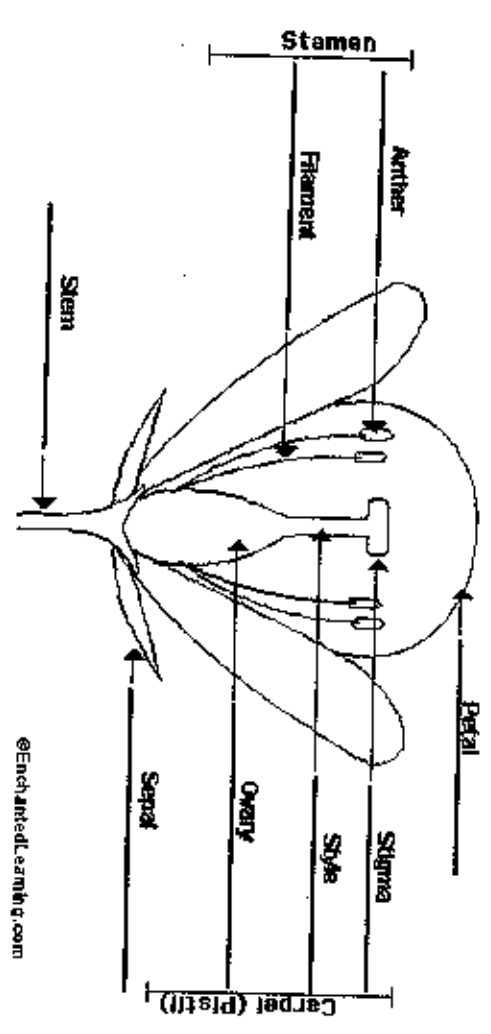




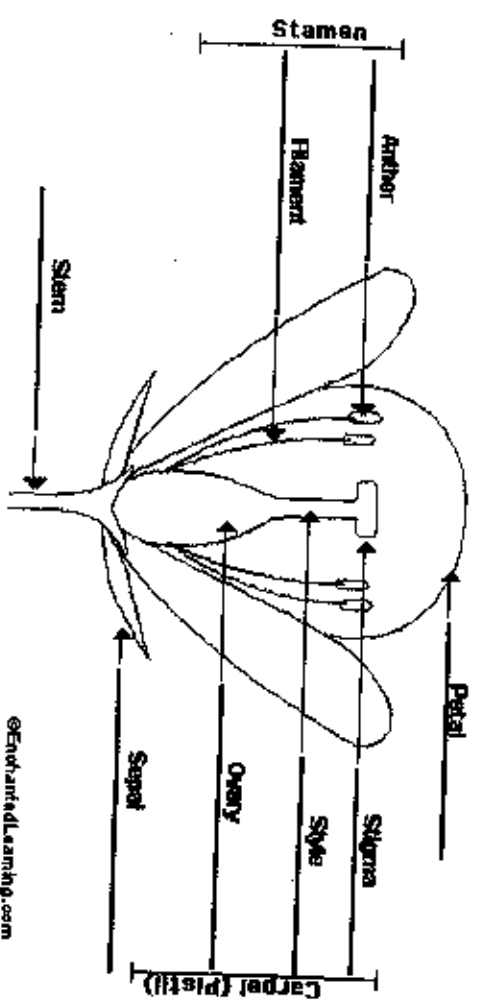
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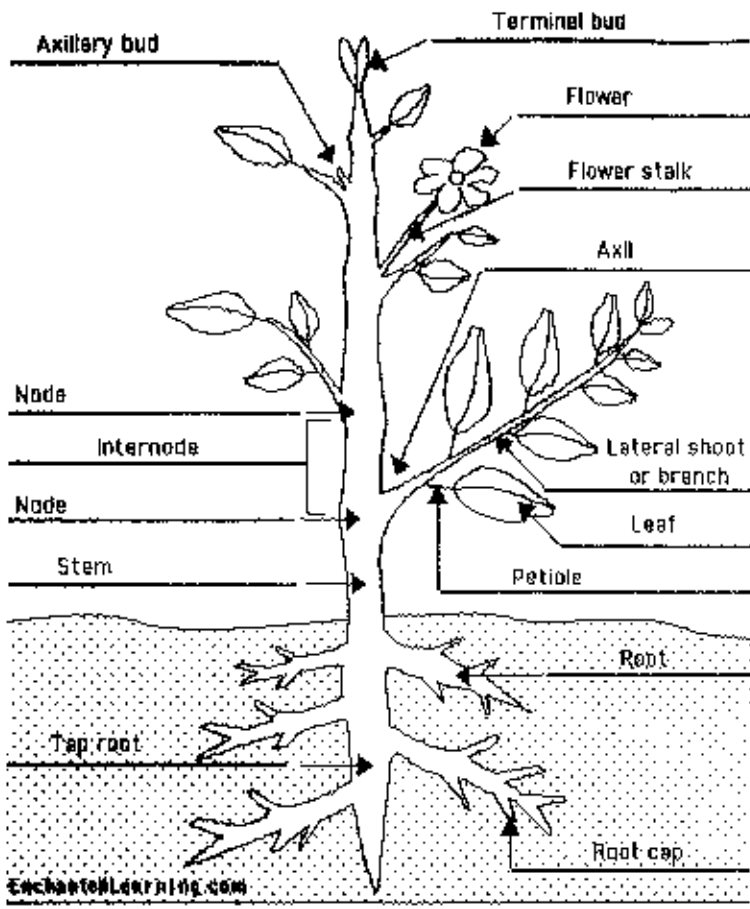


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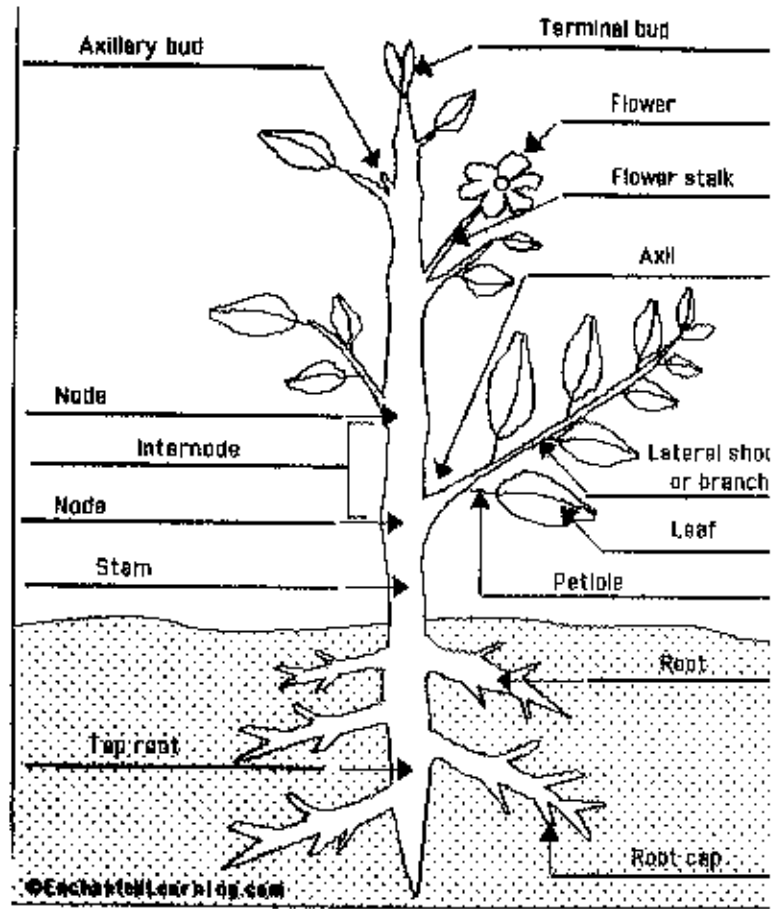


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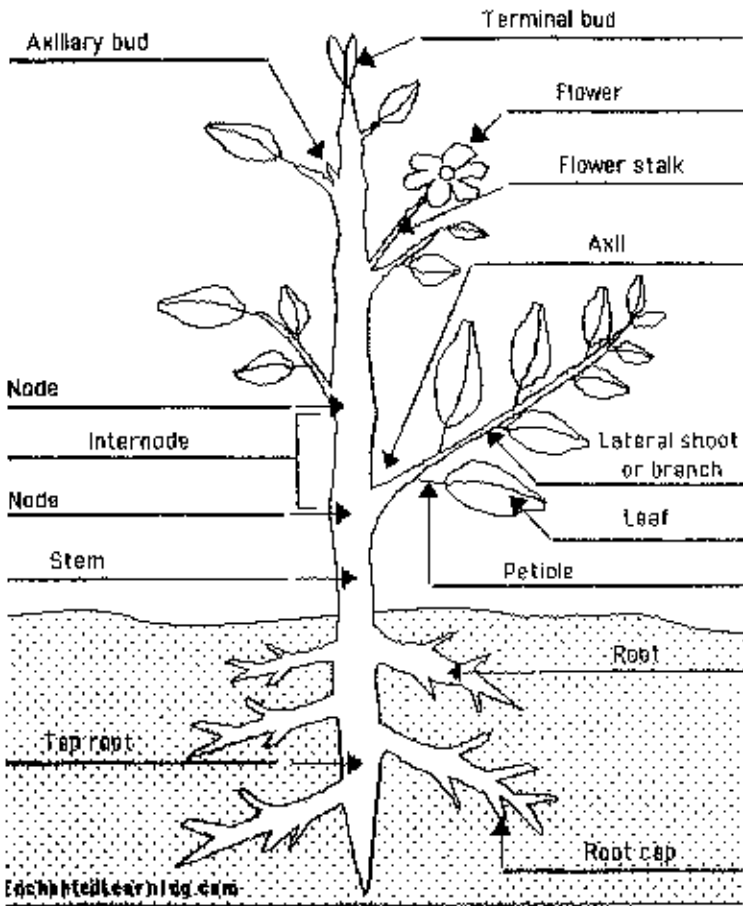
Plant Anatomy Diagram



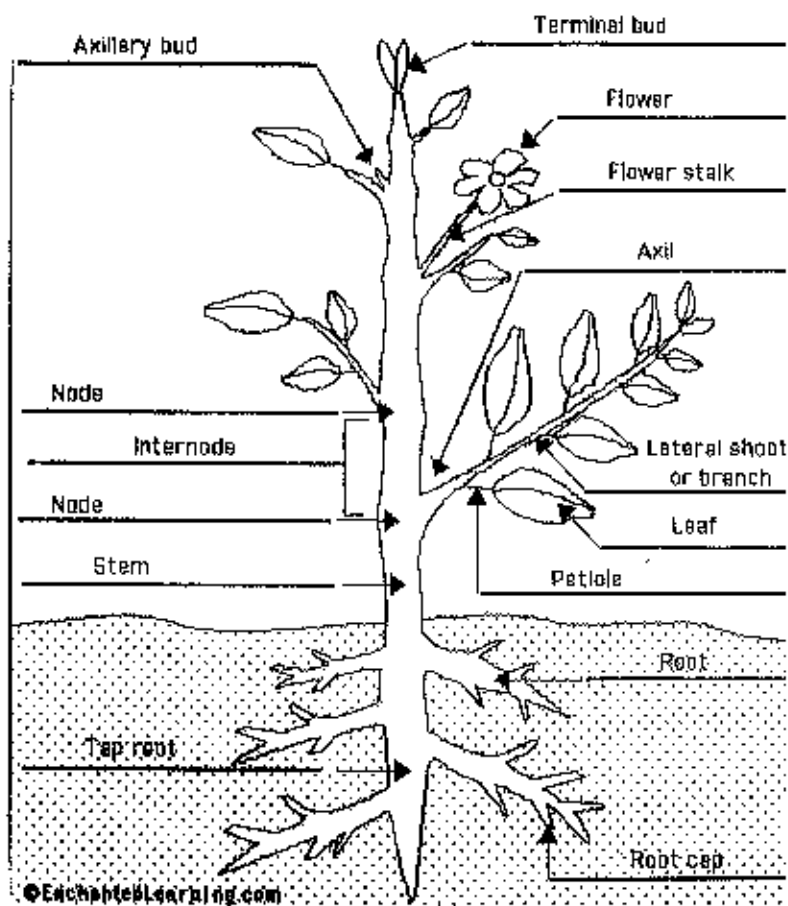
Plant Anatomy Diagram



Plant Anatomy Diagram



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References

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Second Grade Science: Harcourt