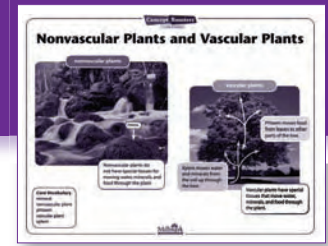


## E-Poster 13

# Nonvascular Plants and Vascular Plants



### OBJECTIVES

Students will:

**UNDERSTAND** the difference between nonvascular plants and vascular plants.

**EXPLAIN** the function of xylem and phloem.

**USE** visuals to aid comprehension.

**BUILD** vocabulary related to nonvascular and vascular plants.

### CORE VOCABULARY

mineral

nonvascular plant

phloem

vascular plant

xylem

### MATERIALS

- **E-Poster 13** (CD)
- **Learning Master 13** (TG, p. 29 and CD)

### OPTIONAL MATERIALS

- **Vocabulary Boosters** mineral, phloem, vascular plant, xylem (Life Science Set)

### Preview

Distribute copies of **Learning Master 13**. Then display the **E-Poster** with labels. Ask students the following questions to activate their prior knowledge about plants.

1. *What two groups of plants does this E-Poster show?* (nonvascular plants and vascular plants)
2. *In what ways do the plants look different?* (The moss is small and has no trunk or branches. The tree is big and has a trunk and branches.)

### Teach Core Vocabulary

Read aloud the Core Vocabulary words. Have students find each word on the **E-Poster**. Ask students to use each word in a paragraph. Have students write their paragraph on the **Learning Master**.

### Present and Discuss

Present the following concepts to students. Support the instruction by asking questions, giving examples, and pointing out details on the **E-Poster**.

- **Minerals are natural substances that all plants need to grow.**
- **Vascular plants have special tissues called xylem and phloem that form tube-like pathways so that water, minerals, and food can move through the plants.**
- **Nonvascular plants do not have these special tissues. In nonvascular plants, materials must travel from one cell to the next cell.**

### Apply

Have students organize the difference between nonvascular plants and vascular plants by completing the Venn diagram on the **Learning Master**. Tell students to use the information on the **E-Poster** to complete their Venn diagrams.

### Wrap Up

- Give students copies of the images-only version of the **E-Poster**. Have them use a red pencil or marker to draw arrows to show how water and minerals move through the xylem of the tree. Then have them use a blue pencil or marker to draw arrows to show how food moves through the phloem of the tree.
- Have students write their answers to the questions on the **Learning Master**.

### Extend

Use **E-Poster 14** to discuss the parts of vascular plants and their functions.

### FOR MORE SUPPORT

Use the following demonstration to reinforce the difference between nonvascular plants and vascular plants. Fill two clear plastic cups with clean drinkable water. Give one student a drinking straw and another a paper towel. Have the student with the paper towel put one corner of the towel in the water at the same time the other student drinks water through the straw. Compare the paper towel to a nonvascular plant. Compare the student drinking to a vascular plant.

**This lesson is from the Concept Boosters: Life Science set.** For more information visit the Products section of the Millmark Education website or call (877) 322-8020.

# Nonvascular Plants and Vascular Plants

nonvascular plants

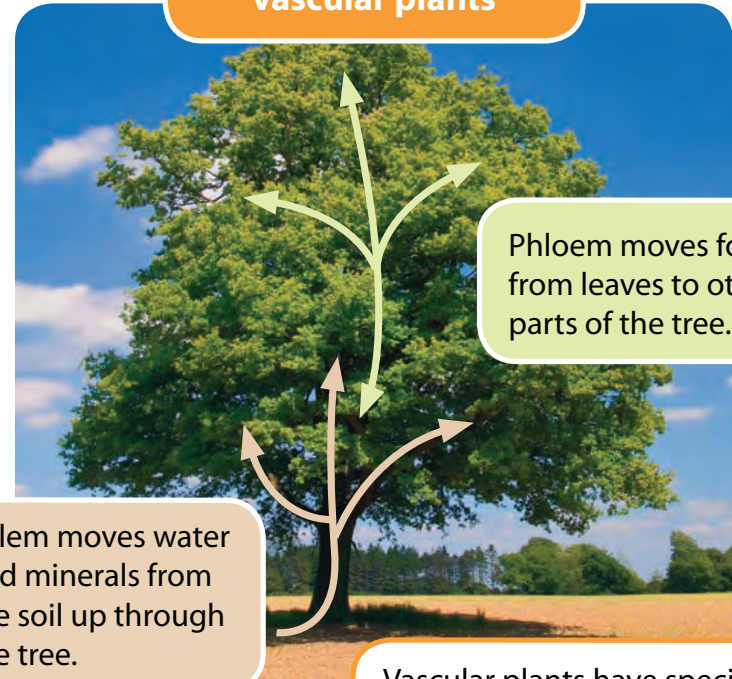


Nonvascular plants do not have special tissues for moving water, minerals, and food through the plant.

**Core Vocabulary**

mineral  
nonvascular plant  
phloem  
vascular plant  
xylem

vascular plants



Phloem moves food from leaves to other parts of the tree.

Xylem moves water and minerals from the soil up through the tree.

Vascular plants have special tissues that move water, minerals, and food through the plant.

# Nonvascular Plants and Vascular Plants



# Nonvascular Plants and Vascular Plants

## CORE VOCABULARY

Write a paragraph that uses all the Core Vocabulary words.

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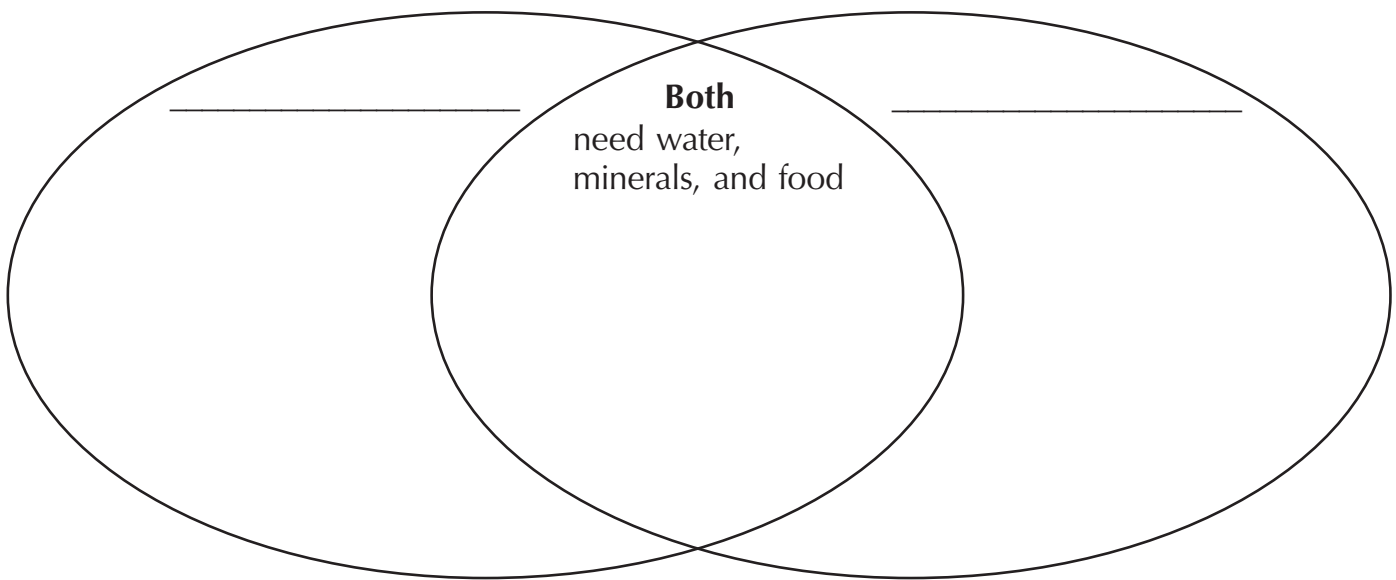
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### CORE VOCABULARY

mineral  
nonvascular plant  
phloem  
vascular plant  
xylem

## APPLY

Complete the Venn diagram with information about nonvascular and vascular plants.



## WRAP UP

Use complete sentences to answer the questions.

1. Which group of plants does not have special tissues that move water, minerals, and food through the plant?

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2. What kind of tissue moves water and minerals from the soil up through a vascular plant?

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3. What kind of tissue moves food from leaves to other parts of a vascular plant?

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# Nonvascular Plants and Vascular Plants

## CORE VOCABULARY

Write a paragraph that uses all the Core Vocabulary words.

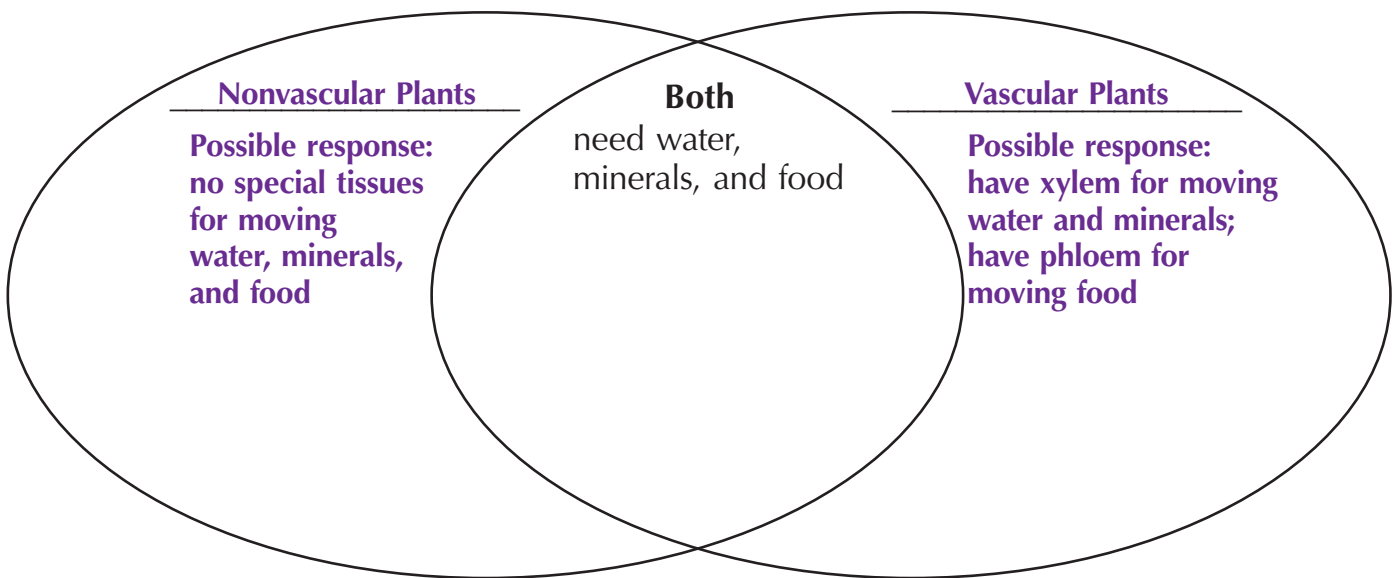
**Possible response: A nonvascular plant does not have special tissues for moving materials through the plant. A vascular plant has xylem that moves water and minerals. A vascular plant also has phloem that moves food.**

### CORE VOCABULARY

mineral  
nonvascular plant  
phloem  
vascular plant  
xylem

## APPLY

Complete the Venn diagram with information about nonvascular and vascular plants.



## WRAP UP

Use complete sentences to answer the questions.

1. Which group of plants does not have special tissues that move water, minerals, and food through the plant?

**Nonvascular plants do not have these special tissues.**

2. What kind of tissue moves water and minerals from the soil up through a vascular plant?

**Xylem moves water and minerals from the soil up through the plant.**

3. What kind of tissue moves food from leaves to other parts of a vascular plant?

**Phloem moves food from leaves to other parts of the plant.**