

Vascular & Non-Vascular Plants



The world is filled with a variety of plants. Think of the prettiest flower and tallest tree you've ever seen. Most people know that plants, large or small, need sunlight, food, and water to survive. However, scientists also know that plants can be classified as vascular or non-vascular.

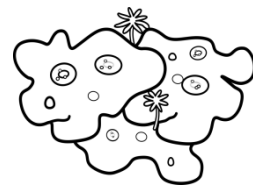
Vascular plants have the ability to grow tall because they have special tissues, or systems, that transport minerals, food, and water through the plant. The word "vascular" comes from the Latin word "vascularis", meaning a vessel that has fluid flowing through it. Just as the human body needs organs like the lungs and heart, vascular plants need organs, too.



Roots take in water and nutrients from the soil, while anchoring the plant in the ground. Leaves carry out the photosynthesis process by capturing sunlight and making glucose. The stem holds the plant upright and helps deliver water and nutrients. Examples of vascular plants include trees, shrubs, grasses, dandelions, and tomato plants.

Vascular plants also have important tissues called xylem and phloem. Xylem is located in the roots, stem, and leaves. It's job is to move nutrients and water up from the soil to the plant. Phloem is the important tissue that delivers food made through photosynthesis. The sugar is moved from the leaves of the plant to other important parts. At times, the plant uses the sugar right away. The sugar can also be stored away for later use.

Non-vascular plants are plants without a vascular system. They do not have special tissues that move minerals, food, and water through the plant. This means that non-vascular plants do not have roots, leaves, or a stem. They also do not produce seeds, flowers, or fruit.



Examples of non-vascular plants are mosses, liverworts, and hornworts. It is important to remember that non-vascular plants are indeed plants, so they still carry out photosynthesis. They get their nutrients directly from the environment and pass them from cell to cell. Due to this fact, non-vascular plants stay very short, and small in size. They also typically grow in shady places that stay damp. When it rains, these plants absorb the water into their cells.



1. What was the author's purpose for writing this passage?

- A. To persuade you to plant a tree.
- B. To inform you about the differences between vascular and non-vascular plants.
- C. To entertain you by telling jokes about plants.
- D. To inform you about different types of plant seeds.

2. What is the main idea of this passage?

- A. Plants reproduce through the use of photosynthesis.
- B. Scientists classify plants and animals into specific groups.
- C. Vascular plants have tissues and non-vascular plants do not.
- D. Stems help plants absorb water and nutrients.

Name: _____

Find the Evidence

Directions: Using the passage, find the text evidence for each question. Underline the evidence in the passage with the assigned color, then write your answer.



What are vascular plants?



List three examples of vascular plants:



How are xylem and phloem different?



How do non-vascular plants get nutrients?

**ANSWER
KEY**



Find the Evidence

Directions: Using the passage, find the text evidence for each question. Underline the evidence in the passage with the assigned color, then write your answer.



What are vascular plants?

Vascular plants have the ability to grow tall because they have special tissues, or systems, that transport minerals, food, and water through the plant.



List three examples of vascular plants:

Examples of vascular plants include trees, shrubs, grasses, dandelions, and tomato plants.



How are xylem and phloem different?

Xylem is located in the roots, stem, and leaves. It's job is to move nutrients and water up from the soil to the plant. Phloem is the important tissue that delivers food made through photosynthesis.

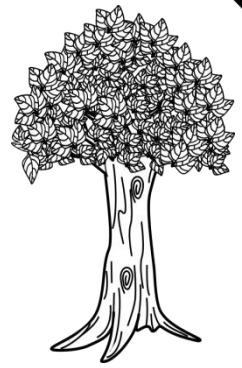


How do non-vascular plants get nutrients?

They get their nutrients directly from the environment and pass them from cell to cell.

ANSWER KEY

Vascular & Non-Vascular Plants



The world is filled with a variety of plants. Think of the prettiest flower and tallest tree you've ever seen. Most people know that plants, large or small, need sunlight, food, and water to survive. However, scientists also know that plants can be classified as vascular or non-vascular.

Vascular plants have the ability to grow tall because they have special tissues, or systems, that transport minerals, food, and water through the plant. The word "vascular" comes from the Latin word "vascularis", meaning a vessel that has fluid flowing through it. Just as the human body needs organs like the lungs and heart, vascular plants need organs, too.



Roots take in water and nutrients from the soil, while anchoring the plant in the ground. Leaves carry out the photosynthesis process by capturing sunlight and making glucose. The stem holds the plant upright and helps deliver water and nutrients. Examples of vascular plants include trees, shrubs, grasses, dandelions, and tomato plants.

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Examples of non-vascular plants are mosses, liverworts, and hornworts. It is important to remember that non-vascular plants are indeed plants, so they still carry out photosynthesis. They get their nutrients directly from the environment and pass them from cell to cell. Due to this fact, non-vascular plants stay very short, and small in size. They also typically grow in shady places that stay damp. When it rains, these plants absorb the water into their cells.



1. What was the author's purpose for writing this passage?

- A. To persuade you to plant a tree.
- B. To inform you about the differences between vascular and non-vascular plants.**
- C. To entertain you by telling jokes about plants.
- D. To inform you about different types of plant seeds.

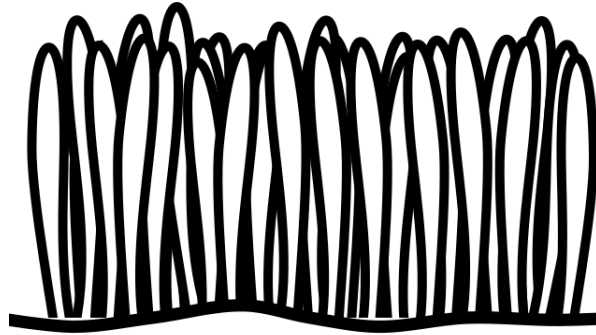
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- B. Scientists classify plants and animals into specific groups.
- C. Vascular plants have tissues and non-vascular plants do not.**
- D. Stems help plants absorb water and nutrients.

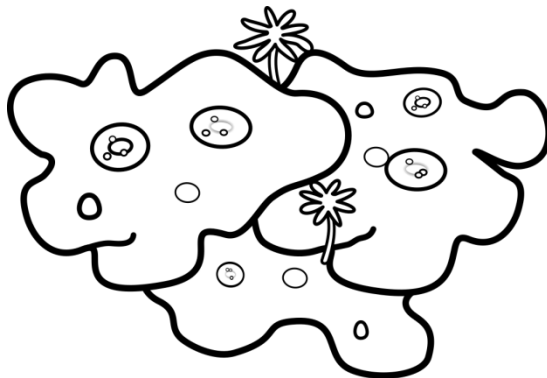
Interactive Notebook Page

Write facts, definitions, or examples from the passage under each flap.

Vascular Plants



Non-Vascular Plants



Vascular Plants

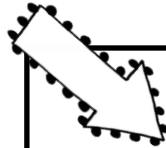
How do they look?



How do they get
nutrients?

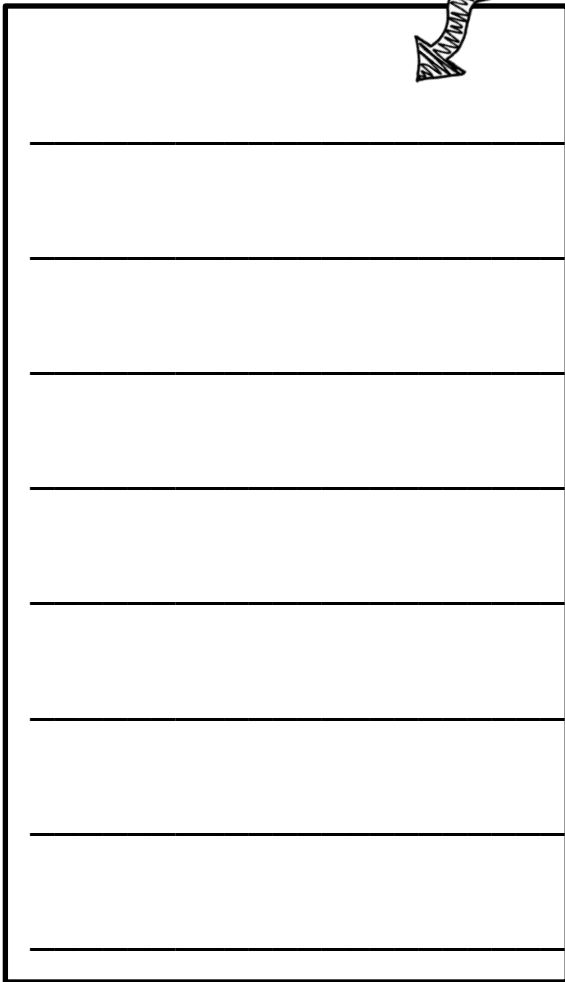


Where are they found?

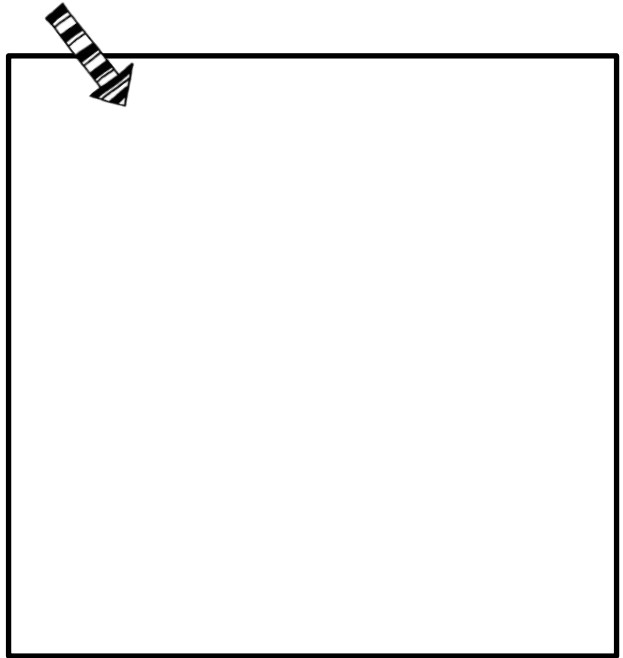


Non-Vascular Plants

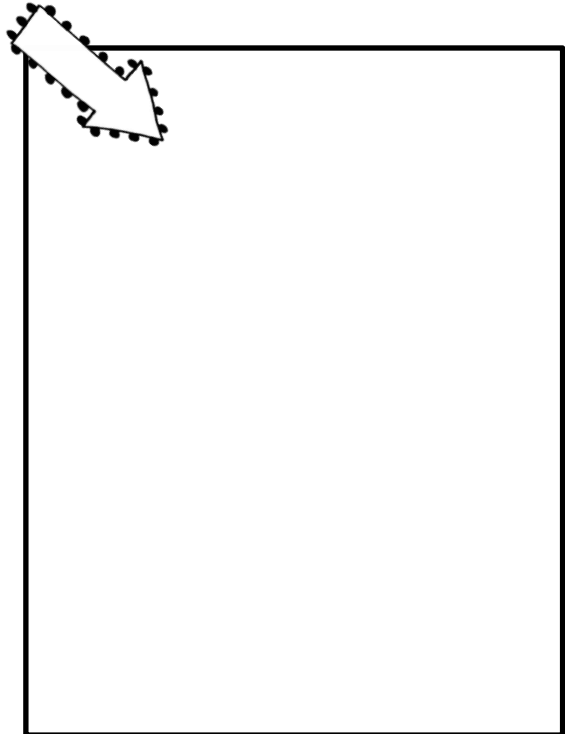
How do they get nutrients?



How do they look?



Where are they found?



Name: _____

Vascular or Non-Vascular?

Directions: Cut out the pictures on the next page. Decide if each picture is an example of a vascular or non-vascular plant. Glue the picture in the correct column.

Vascular

Non-Vascular

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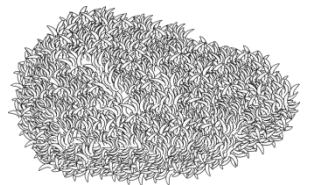
moss



dandelion



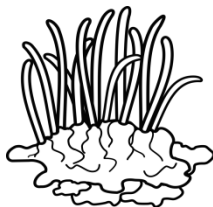
fern



pincushion



grass



hornwort



liverwort



tree

**ANSWER
KEY**

Vascular or Non-Vascular?

Directions: Cut out the pictures on the next page. Decide if each picture is an example of a vascular or non-vascular plant. Glue the picture in the correct column.

Vascular



dandelion



fern

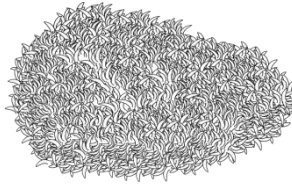


grass



tree

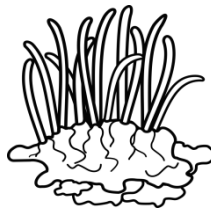
Non-Vascular



pincushion



liverwort



hornwort



moss

Name: _____

Types of Plants

Directions: Glue the answer under the description.

Moves nutrients up from the roots to the plant.

Non-vascular plants grow here.

Anchors vascular plants in the ground

Have special tissues to transport minerals.

Do not have roots, stems, or leaves.

Delivers food made from photosynthesis..

Phloem	Vascular Plants
shady, damp areas	Xylem
Non-Vascular Plants	roots

Types of Plants

Directions: Glue the answer under the description.

ANSWER KEY

Moves nutrients up from the roots to the plant.

Xylem

Non-vascular plants grow here.

shady, damp areas

Anchors vascular plants in the ground

roots

Have special tissues to transport minerals.

Vascular Plants

Do not have roots, stems, or leaves.

Non-Vascular Plants

Delivers food made from photosynthesis..

Phloem

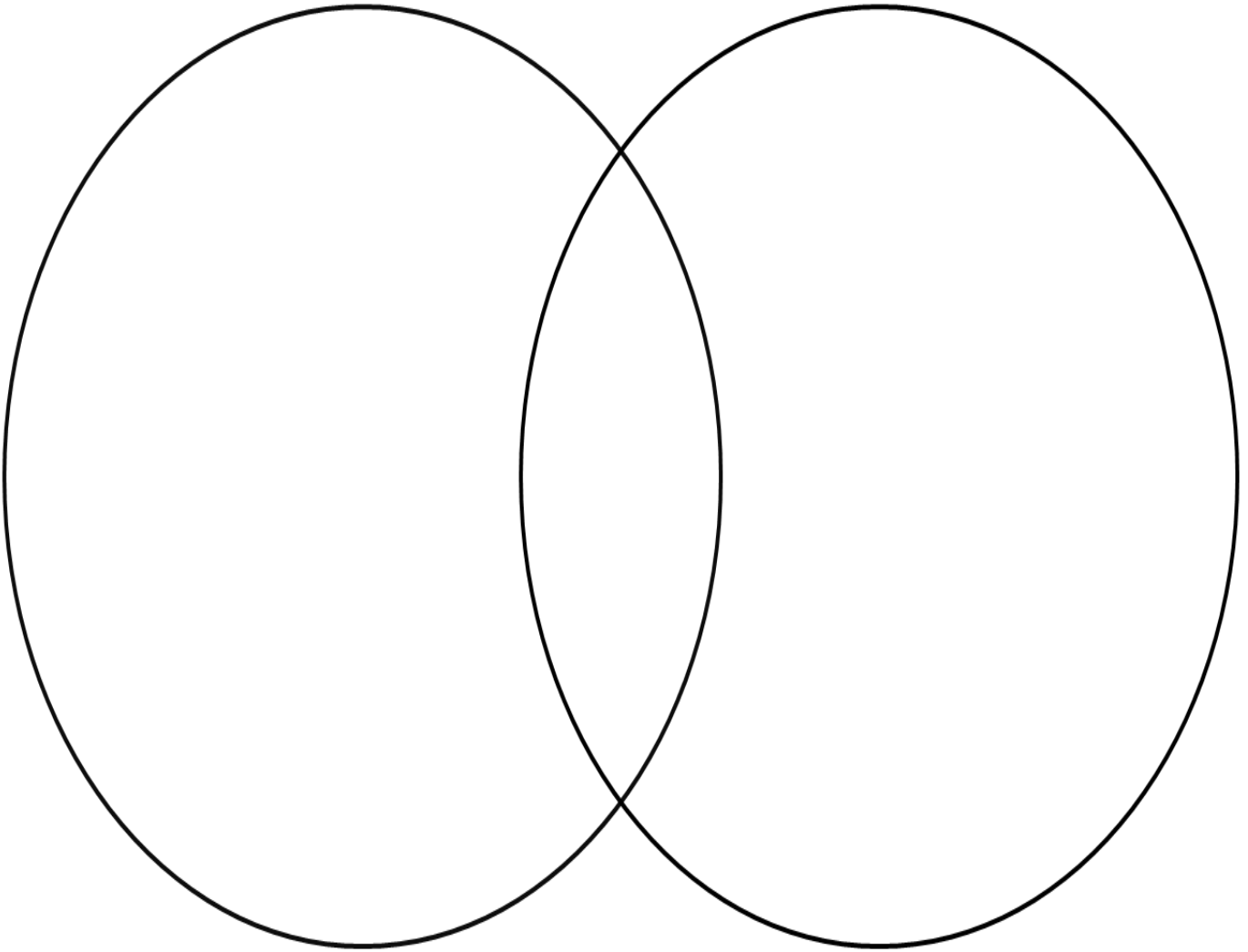
Name: _____

Compare *and* Contrast

Directions: Write each fact on the Venn Diagram below.

VASCULAR

NON-VASCULAR



Uses photosynthesis

Grow close to the ground

Have roots, stems, and leaves

Have xylem and phloem

Can grow tall

No roots, stem, or leaves

**ANSWER
KEY**

Compare *and* Contrast

Directions: Write each fact on the Venn Diagram below.

VASCULAR

NON-VASCULAR

Have roots, stems,
and leaves

Have xylem and phloem

Can grow tall

Grow close to the ground

Uses
photosynthesis

No roots, stem, or leaves

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