Vertebrates Fact Sheet

Vertebrates are animals that have a backbone. There are 5 main subgroups of vertebrates which include mammals, birds, fish, amphibians and reptiles. Below you will find some interesting characteristics that belong to each subgroup.

Mammals

- Have hair or fur
- Typically have 4 legs
- Give birth to live young
- Mothers nurse their young with their own milk
- Have lungs and therefore need oxygen to breath
- They are warm-blooded meaning that they can make their own body heat even when it is cold out
- Examples of mammals include humans, dogs, elephants and bears

Fish

- Live in water
- Breath under water using gills, not lungs
- They have scales and fins but no hair or fur
- Lay many small eggs
- They are cold-blooded meaning that their bodies get warmer or colder depending on the temperature outside
- Examples of fish include trout, salmon, bull shark and stingray

Birds

- Have feathers and wings
- Breaths through lungs
- Lay eggs
- Have 2 legs
- Have ear holes instead of ears
- They are warm-blooded
- Examples of birds include blue jays, robins, flamingos and ostriches

Amphibians

- Live on land and in water
- Often have webbed feet
- They breathe with lungs and with gills
- They have moist, smooth skin but no hair or fur
- They often have 4 legs but sometimes will have no limbs at all
- They lay eggs
- They are cold-blooded
- Examples of amphibians include frogs, salamanders and newts

Reptiles

- Have dry, scaly skin but no fur or hair
- They usually lay eggs but sometimes give birth to live young
- They have 4 legs or no legs at all
- They have ear holes instead of ears
- They are cold-blooded
- Examples of reptiles include turtles, snakes and iguanas

*If you don't have scissors just write the words in the appropriate box.

Name: _____ Date: _____

Classifying Vertebrates

Read the vertebrates fact sheet before you begin this activity.

All vertebrates have _____ which makes them different from invertebrates which _____ have backbones.

Vertebrates can be divided into _____ subgroups.

Label the subgroups below based on their characteristics and then cut out and glue 2 examples under each subgroup.

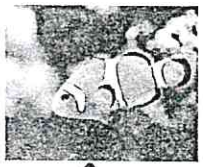
label 1st

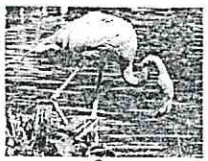
label 1st

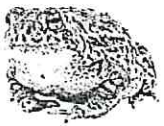
Characteristics • Soft, moist skin • Four legs (often webbed feet) • Most lay eggs • Cold blooded	**Characteristics** • Warm blooded • Mothers nurse their young • Breath through lungs • All have hair at some stage in development	**Characteristics** • Most lay eggs • Cold blooded • Most have bodies covered in scales • Breath through gills	**Characteristics** • Has 2 legs • Breath through lungs • Warm blooded • Feathers • Lays eggs	**Characteristics** • Most lay eggs • Most have four legs • Cold blooded • Dry skin covered with hard overlapping scales
Examples	**Examples**	**Examples**	**Examples**	**Examples**

Cut and glue these vertebrate examples under the correct subgroup above. (Hint: there are 2 examples for each)

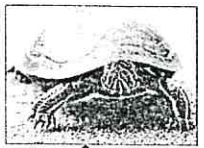

↑ Snake


↑ fish


↑ flamingo


↑ frog

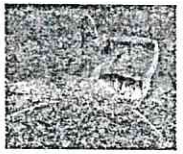

↑ bird


↑ turtle


↑ dog


↑ lizard


↑ baby


↑ shark

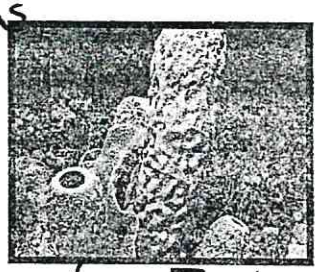
Invertebrates Fact Sheet

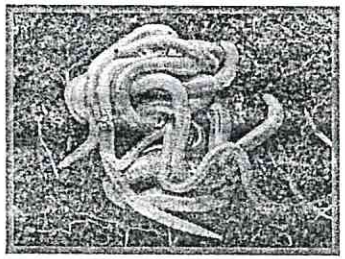
Invertebrates are animals that do not have a backbone. It is believed that approximately 97% of all animals are invertebrates. Although there are many subgroups of invertebrates, some of the most common subgroups include sponges, mollusks, annelids and arthropods.

Sponges

A sponge is a rather unique invertebrate which is most often found in salt water. However, close to 150 species of sponges can be found living in fresh water. One of the unique characteristics of the sponge is that it has many tiny pores throughout it in which water flows in and out. As water flows through these pores, the sponge is able to obtain nourishment and oxygen from the water. To date there is anywhere between 5,000 to 10,000 known species of sponges.

TT Worms





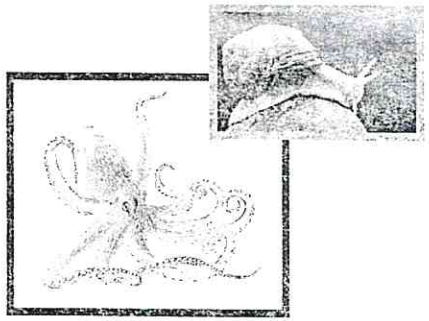
Annelids

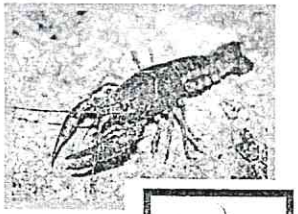
* We used the term worms in our chapter (ex. Earthworms)

Annelids, more commonly referred to as worms, can be found almost anywhere in the world. If you were to closely observe a variety of annelids, you would notice that their bodies do not have limbs. In addition, their bodies can be divided into segments. Most annelids have either long or short bristles on their body. The majority of annelids are quite small, measuring only a fraction of an inch to several inches long. Yet, there are some annelids such as the ribbon worm that can grow up to 100 feet in length.

Mollusks

Mollusks are another common type of invertebrate which are typically found in the ocean. However, some types of mollusks have adapted to living on land. Most mollusks have either an inner or outer shell which they use to protect themselves. Snails, oysters and clams are all examples of mollusks as they have outer shells. A squid is also an example of a mollusk as it has an inner shell called a pin. The octopus is an example of mollusk that doesn't have an inner or an outer shell.





Arthropods

The arthropod subgroup makes up the largest known group of animals on the planet. Arthropods have hard outer bodies which are known as exoskeletons. As arthropods grow they must get rid of their exoskeleton through a process called molting. Arthropods also have jointed legs. Crayfish, flies, centipedes, ants and spiders are all members of the arthropod subgroup.

* If you don't have scissors just Write the examples in the box.

Name: _____ Date: _____

Classifying Invertebrates

label 1st

label 1st

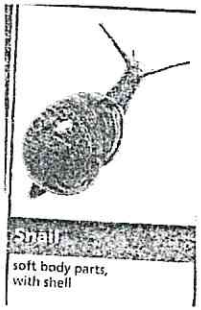
Read the invertebrates fact sheet before you begin this activity.

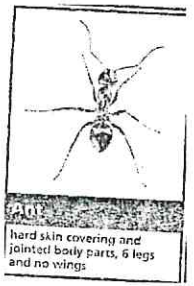
Invertebrates are animals that have no _____.

Label the subgroups below based on their characteristics and then cut out and glue the pictures of the invertebrates under the correct subgroup.

Characteristics Most have an inner and outer shell.	**Characteristics** It has pores to absorb nutrients and oxygen. Most live in salt water.	**Characteristics** Its body is divided into segments. It has no limbs and most have long or short bristles.	**Characteristics** It has a hard outer body called an exoskeleton. It has jointed limbs. It sheds its outer exoskeleton as it grows. This process is known as molting.
Example(s)	**Example(s)**	**Example(s)**	**Example(s)**

Cut and glue these invertebrate examples under the correct subgroup above. (Hint: 1 for each, but the last box has 5 examp





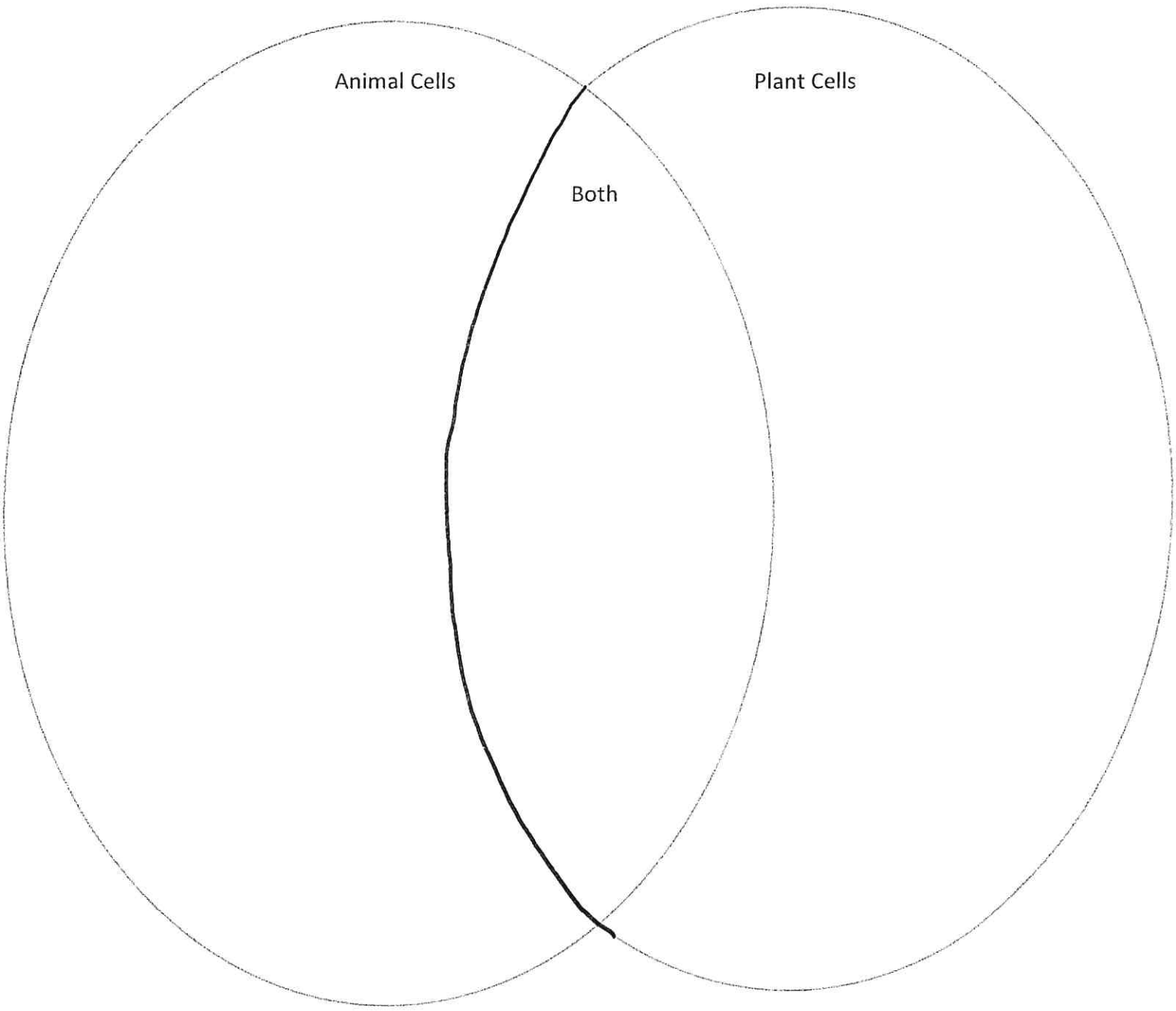
Animal Cells Vocabulary

- Animal cells have a cell membrane, nucleus, and cytoplasm.
- **Cell Membrane**: A thin layer that makes up the outside of the cell. It controls what enters and exits it.
- **Nucleus**: A cell part that controls the cells activities.
- **Cytoplasm:** The jelly-like substance around the nucleus.

Plant Cells Vocabulary

- Plant cells have a cell membrane, nucleus, cytoplasm, chloroplast, and a cell wall.
- **Cell Wall:** The stiff outer layer that helps keep the plant cell firm.
- **Chloroplast:** The green cell part that traps and uses light energy from the sun.

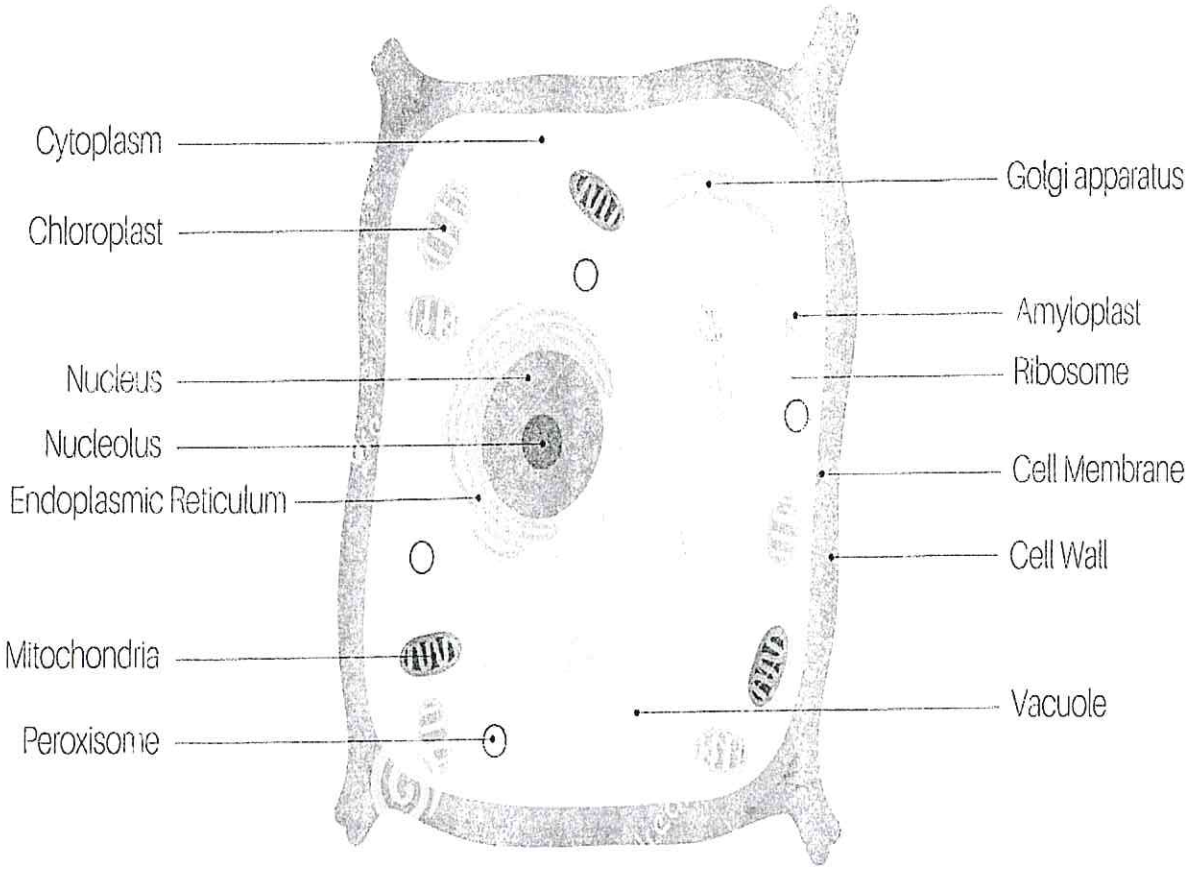
* Use this as a refresher to help you solve the diagram on the next page (!!).



Directions: Compare and contrast the animal cell to the plant cell. Place the vocabulary word in the proper place. (Hint: the center means they have both). ONLY USE THE VOCABULARY WORDS WE HAVE LEARNED ABOUT (see the vocabulary paper)

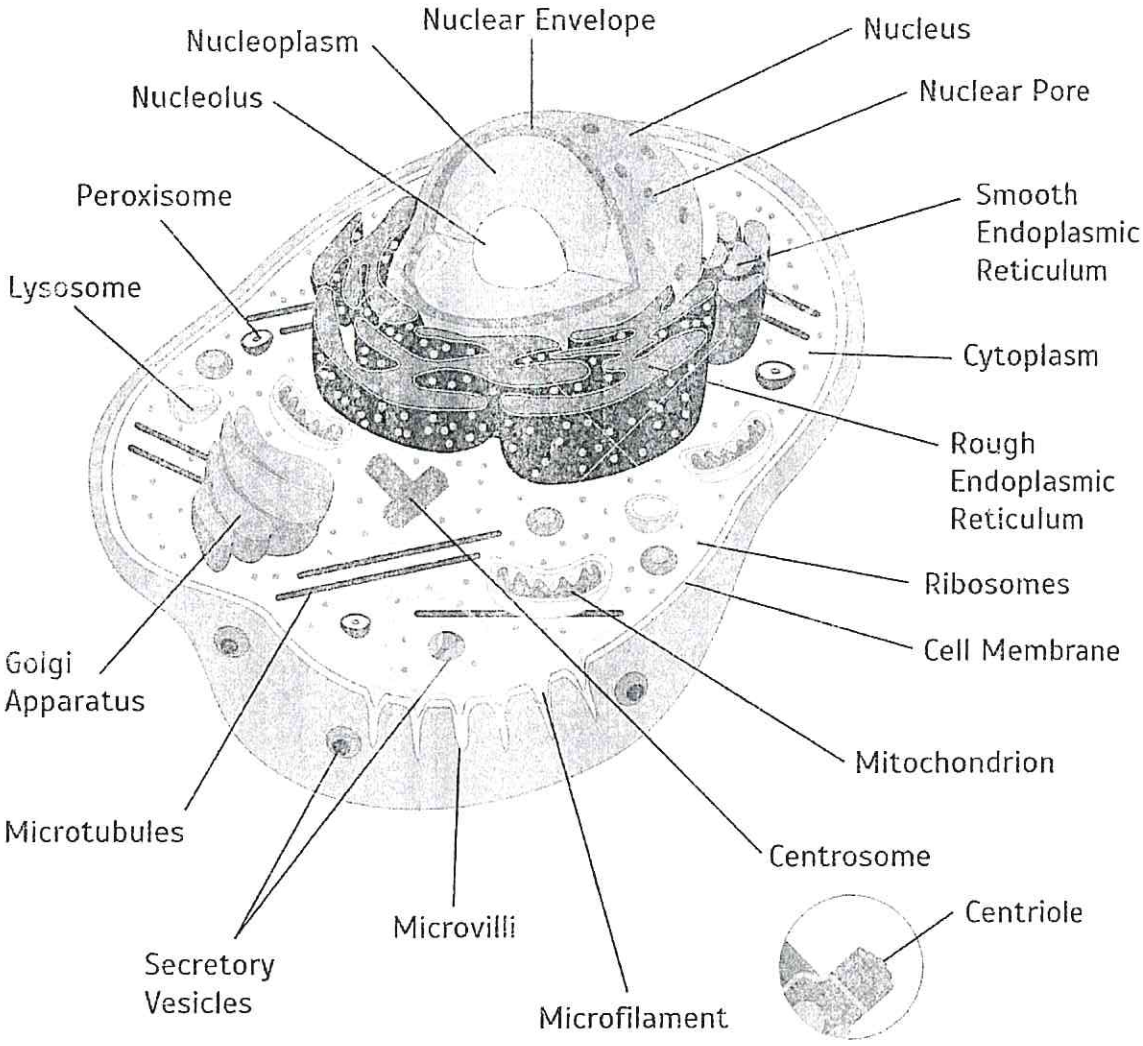
* This was used in our powerpoint. Use it as a tool if you need to (:).

Plant Cell



* This was used in our powerpoint. Use it as a tool if you need to (ツ).

ANIMAL CELL



Name:_____

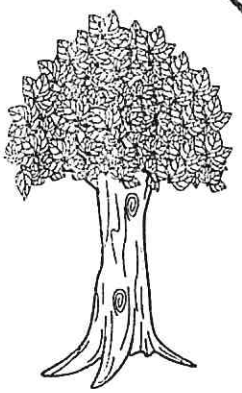
Class:_____

Unit A, Chapter 1, Lesson 1 [redacted]

[redacted] Fill in the grid below with information about how you carry out each of the six life processes.

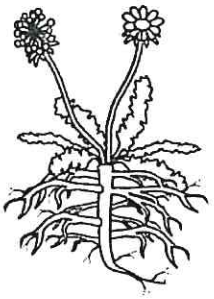
Life Process	How You Live It Out
Getting Energy Plants get energy from sunlight. Animals get energy and nutrients by eating other living things.	
Using Energy Living things use energy to do work. They break down food material and release the stored energy.	
Getting Rid of Waste When they use energy, living things produce wastes.	
Reproducing Living things make more of their own kind. Reproducing keeps groups of organisms alive.	
Growing Growing is a job that takes energy and nutrients.	
Reacting to Change Living things respond to changes around them. What do you do when it's cold outside?	

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.

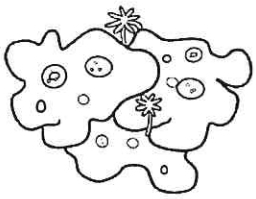
Vascular plants have the ability to grow tall because they have special tissues, or systems, that transport minerals, food, and water through the plant. The word "vascular" comes from the Latin word "vascularis", meaning a vessel that has fluid flowing through it. Just as the human body needs organs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

↓ multiple choice Questions

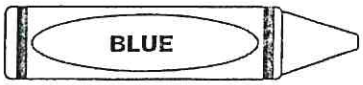
1. What was the author's purpose for writing this passage? A. To persuade you to plant a tree. B. To inform you about the differences between vascular and non-vascular plants. C. To entertain you by telling jokes about plants. D. To inform you about different types of plant seeds.	2. What is the main 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:

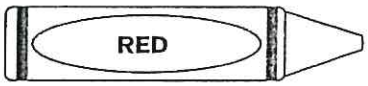
Find the Evidence

*If you don't have a color just underline with what you have

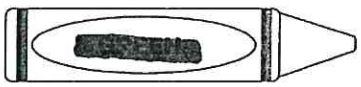
Directions: Using the passage, find the text evidence for each question. Underline the evidence in the passage with the assigned color, then write your answer.



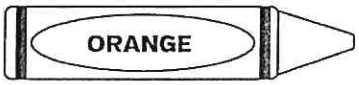
What are vascular plants?



List three examples of vascular plants:



How are [illegible] different?



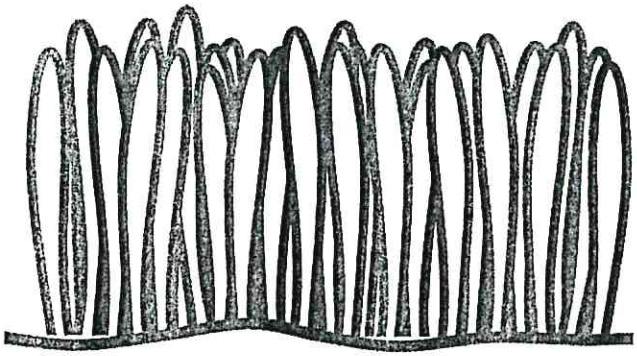
How do non-vascular plants get nutrients?

Interactive Notebook Page

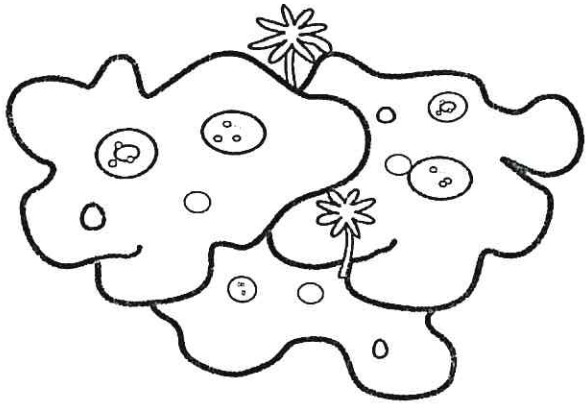
on the back! ☺

Write facts, definitions, or examples from the passage [redacted].

Vascular Plants



Non-Vascular Plants



Vascular Plants

Draw or explain with what you have.

How do they look?

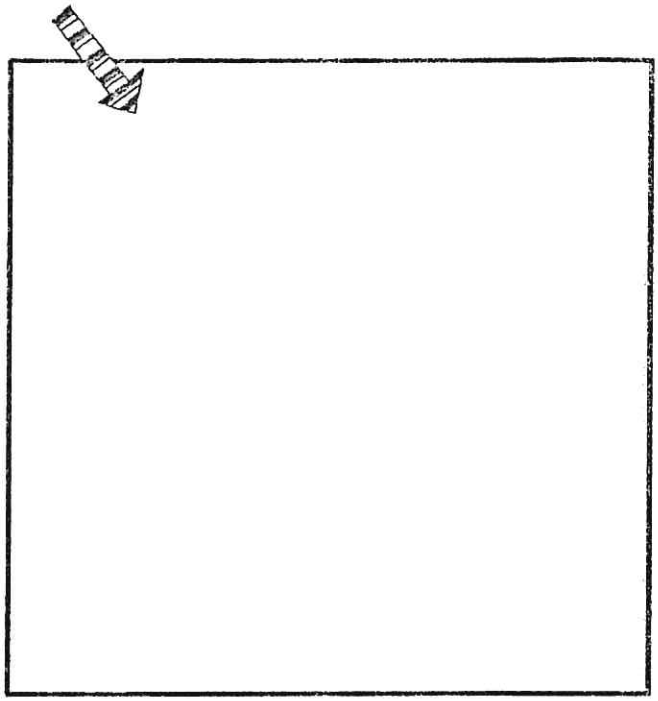
How do they get nutrients?

Where are they found?

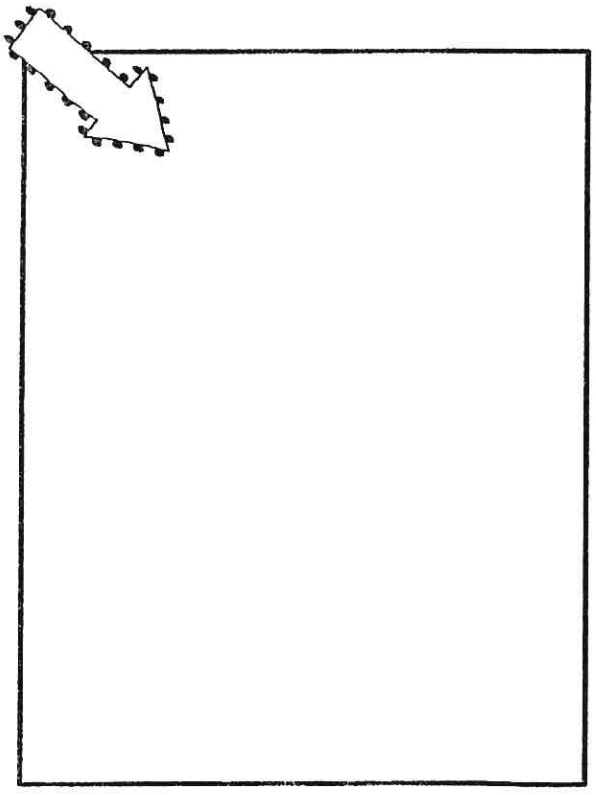
Non-Vascular Plants

How do they get nutrients?

Draw or explain with what you have. How do they look?



Where are they found?



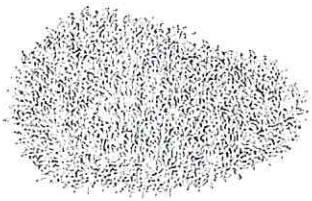
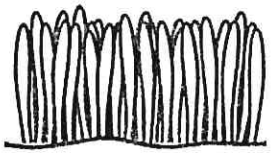
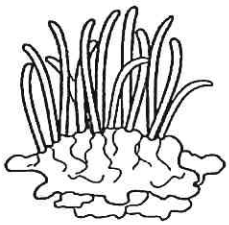
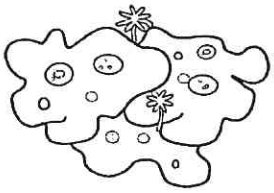
Name:

(If you don't have scissors just write the terms on the appropriate side).

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

 moss	 dandelion	 fern	 pincushion
 grass	 hornwort	 liverwort	 tree

Name: _____

Types of Plants

Directions: Glue the answer under the description.

* If you don't have scissors just write the answers in the box.

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

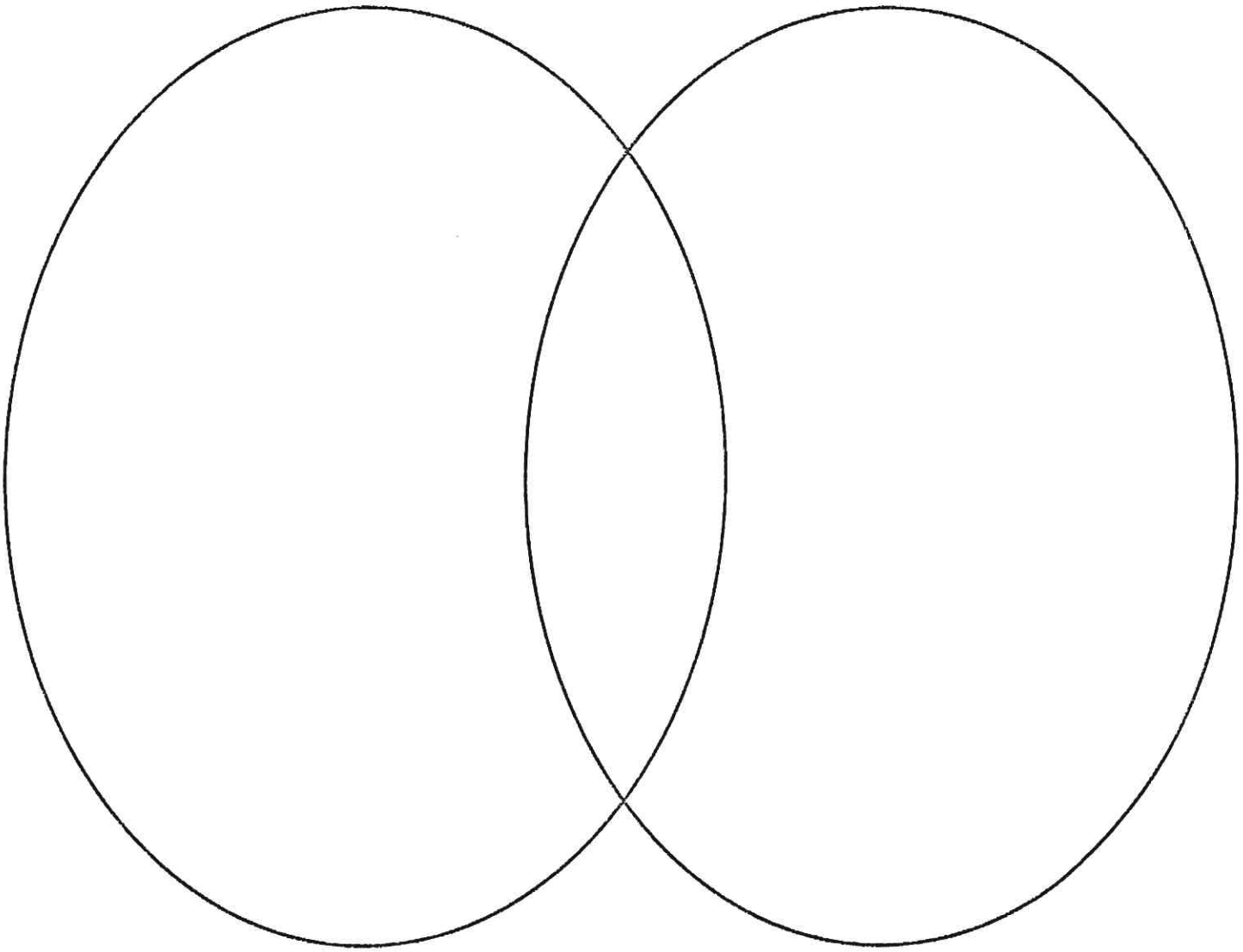
roots

Name:

*If you don't have scissors just write the answers in the circles.

Compare *and* Contrast

Directions: Write each fact on the Venn Diagram below.



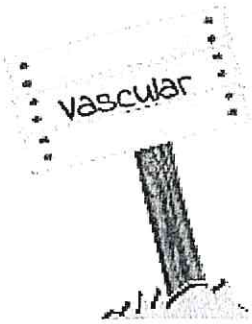
Uses photosynthesis	Grow close to the ground
Have roots, stems, and leaves	[redacted]
Can grow tall	No roots, stem, or leaves

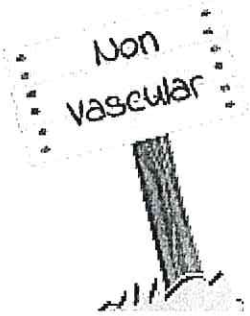
Name:_____ Date:_____ Code #_____

Vascular or Nonvascular?

If you don't have scissors, you can just write the answer! ☺

Directions: Cut out the boxes and glue them in the correct column.



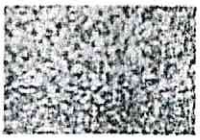


Don't have leaves, roots, or stems

Grow close to the ground

Has leaves, roots, and stems

Grow taller and make their own seeds/spores



Absorb water like a sponge.

Have a system of tubes that carry water

Examples: Trees, Flowers, Shrubs

Examples: Moss, liverworts, hornworts, and lichen