TEXAS FARM BUREAU®

The Parts of a Flower

Audience: K-2nd-Grade Students

Lesson Length: To be determined by teacher

TEKS: Science
K.b.2. Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to: (C) collect data and make observations using simple tools, and (D) record and organize data and observations using pictures, numbers, and words.
K.b.10. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to: (B) identify basic parts of plants and animals, and (D) observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.
1.b.2. Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to: (C) collect data and make observations using simple tools, and (D) record and organize data using pictures, numbers, and words.
1.b.10. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to: (B) identify and compare the parts of plants.
2.b.2. Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to: (C) collect data from observations using scientific tools, and (D) record and organize data using pictures, numbers, and words.
2.b.9. Organisms and environments. The student knows that living organisms have basic needs that must be met for them to survive within their environment. The student is expected to: (A) identify the basic needs of plants and animals.
2.b.10. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to: (B) observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant.

Lesson Introduction:
Flower Parts: A flower is the part of the plant that makes the seeds. The main parts of a flower are the carpels and stamens. These parts are often found in the center of the flower. There are egg cells in the carpel and pollen cells in the stamen. All flowers have four basic parts: **sepals**, **petals**, **carpels**, and **stamen**. Different flowers have different numbers and shapes of these parts.

Pollination: Bees can help flowers make seeds. Bees usually look for **pollen** and sweet juice. Every flower has pollen, although some flowers don't have sweet juice. The bee's first job is to move pollen from the **anther** of one flower to the female **stigma** of another flower. An anther is the male part of a flower that has pollen grains on it. A stigma is the female part of a flower that receives the pollen. In other words, when a bee gets pollen from a flower, the pollen sticks to the bee. The bee goes to another flower and the pollen falls onto the stigma. Most flowers use this pollen to make seeds. Other flowers use their own pollen to make seeds. Each tiny pollen grain grows into a long tube. These are called **pollen tubes**. They grow until they come to the **ovary**. The ovary is the section of a flower where the pollen tubes meet. Now a male **gamete** from the pollen tube joins the egg from the ovary and a seed is born. When the gamete and egg join, this process is called fertilization.

Germination: **Germination** happens when a baby plant is growing. The plant is between the **cotyledons**. This is a seed. The seed is underground and is collecting nutrients. When a seed starts to grow, we say it germinates. The cotyledons store food for the baby plant inside the seed. When the seed starts to germinate, the first thing to come out is the main root. The skin starts to split and the tiny shoot straightens, carrying the cotyledon[s] with it. The main root gets bigger. Side roots appear and so do leaves. To grow, the seed's growing conditions usually have to be damp, warm, and dark, like springtime soil. A dry seed will stay dormant unless it soaks in some water. Then it will start to germinate.

Engage

- Read about it! Utilize the book *From Seed to Plant* by Gail Gibbons to teach students about flower parts, fertilization, and germination. This companion resource will introduce the focus topic to students.
    - Activity Options:
        - Individual reading activity
        - Teacher read aloud

Explore

- Weather permitting, take students outside. Ask them to walk around the yard and observe the growing flowers. Utilize the “Flower Search” worksheet below and ask students to record what they see. Note: For older students, this could include more detailed notes about their observations, but for younger students, encourage them to draw pictures of what they see, etc.
    - Students might think about:
        - What does the flower look like? Color? Does it look like it is alive and well, or does it look a little sick?

        - Does it look like the flower still needs to grow a lot, or does it look like it is mostly finished growing?
- Pollination Pictures: This activity is designed to help students better understand how plants are pollinated by pollinators. Students will see that pollen is transferred from one flower to the next.
    - Purchase a container of cheese puffs
    - Pour cheese puffs into a bowl so students can touch the cheese puffs
    - Print three pictures of flowers on paper and place pictures side-by-side on a table
    - Have students touch the cheese puffs in the bowl and then go down the table and touch their fingers to the flower pictures
        - Pipe cleaners can also be used to represent the fuzzy legs of bees
    - Students will realize that the cheese on their fingers is transferred to each flower picture each time they touch a picture

Explain

- Important Vocabulary:
  Teacher Note: Break down these complex words with your students so they understand how plants grow. Depending on grade level, have students look these words up in a dictionary or discuss these terms with your students and make it a group activity. They can also utilize the knowledge learned from the book reading to determine the definitions. Utilize the "What does it mean?" worksheet below.

Elaborate

- Students will identify the parts of the flower using "The Parts of a Flower" labeling worksheet below. This activity can be adapted for the grade level. For example, this could be a full-class activity led by the teacher rather than completed individually. To enhance this activity, this activity could be adapted as a model creation/drawing activity where students create their own flower and label their flower model. Teacher might consider purchasing a small model (like this: https://www.walmart.com/ip/Learning-Resources-Cross-Section-Flower-Model/15915845) to help students better understand the parts of the flower. Then, ask students to draw a model like what they see.

Evaluate

- Word Search: A “Word Search” worksheet is provided for students to complete using vocabulary words they learned throughout the lesson.
- Think About It!: Ask students, utilizing the below worksheet, “How humans use and depend on plants?” This activity could be completed as a pair and share activity or even as a full-group discussion. Students will be able to connect the role plants play in their lives with the science they learned about plant growth.

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Name _____

Flower Search

What do you see? (Observations)

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Name: _____

What does it mean?
Vocabulary

Pollination	
Fertilization	
Germination	

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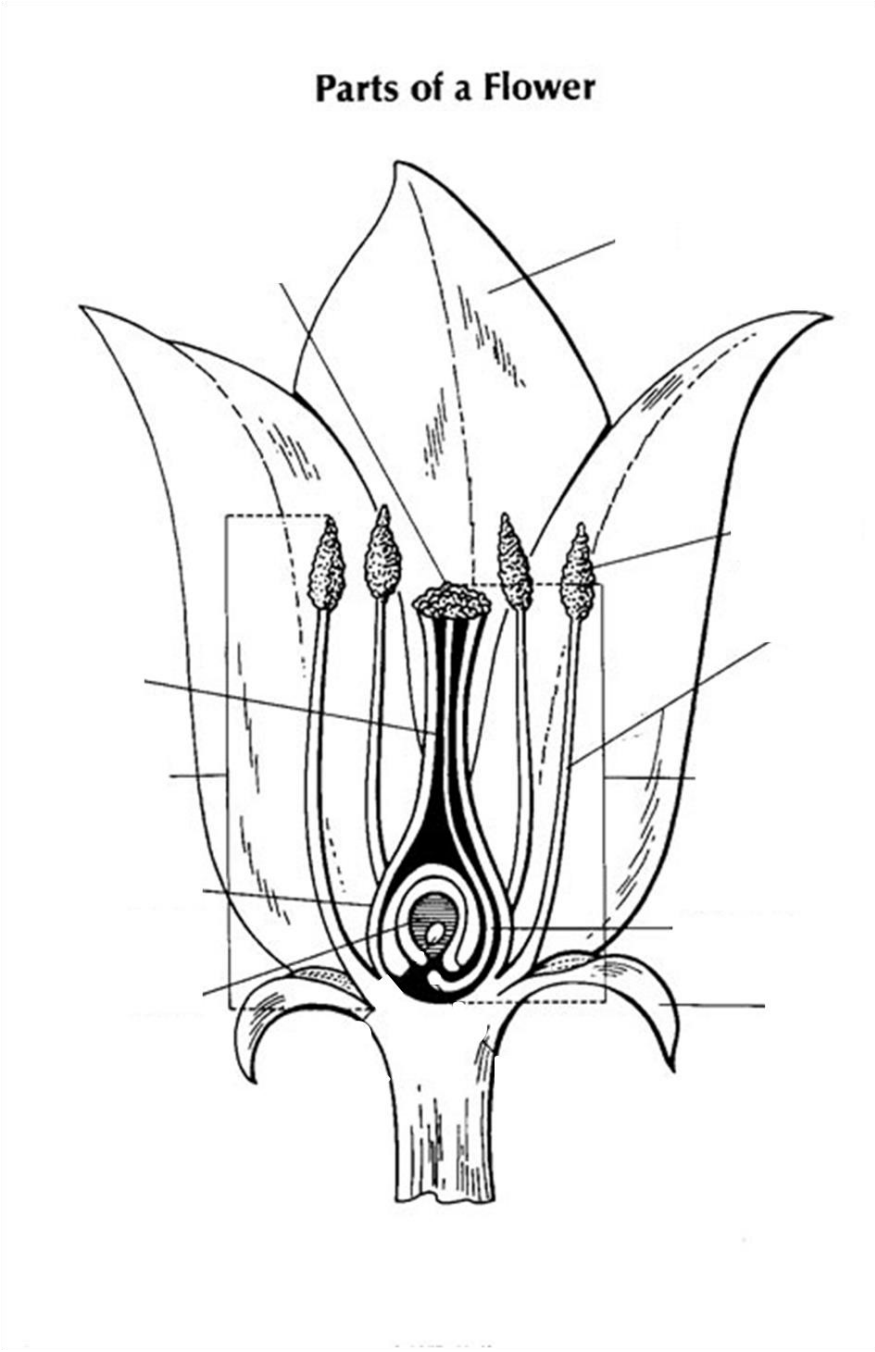
Name: _____

The Parts of a Flower
Flower Parts and Function: Identify the parts of the flower

Word Bank:
anther, stigma, filament, ovary, sepal, petal, ovule, style, carpel, pollen tube, stamen



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Word Search

Instructions: Find the flower parts in this puzzle from the list below.

Parts of A Flower

J R P S E P A L B C Y E G M L
O P S K T C X W H R B P R G K
V R W T C F A L A U H H G J X
U R V C A C G V T P I V W F D
L Z G L G M O N S N N X Q P S
E Q W P K B E O T J V V Y O A
J J W P N L I N I N D K Y L R
R U A E L I W U G Y P K Q I W
T P R O S M V J M S H U T P Q
Y O P C L I S M A C Q W V Q S
F I L A M E N T N A I M G F T
K Z T M K Q N P T R P I Y D Y
W E W H J E B O H P X O V X L
P B D G Y I X H E E K J Q R E
R G Q N U W S L R L W Z Z T Y

ANTHER
CARPEL
FILAMENT
OVARY
OVULE
PETAL
POLLEN TUBE
SEPAL
STAMEN
STIGMA
STYLE

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How do humans use and depend on plants?

1.

2.

3.

4.

5.