Whimsy: Beauty and Botany

Flowers are beautiful, complex living structures. Today we will look at artistic interpretations of flowers as well as at the structure of a flower to help us learn about their unique anatomy.

Goals

- Learn about tin whimsies
- Identify the internal structures of a flower
- Recreate a scientifically accurate paper flower

Vocabulary

Anther–pods of pollen at the stop of the stamen

Filament–The filament is a stalk with a swollen head called the anther. When ripe, the anthers burst open to produce clouds of dusty pollen.

Ovary–the egg of the flower, found at the base of the pistil

Petals–often colorful, soft structures that surround the female and male parts

Pistil–female floral anatomy

Sepals–a ring of green leaf like structures that surround the base of the flower

Stamen–male floral anatomy

Stigma–the sticky tip at the top of the stalk to catch pollen

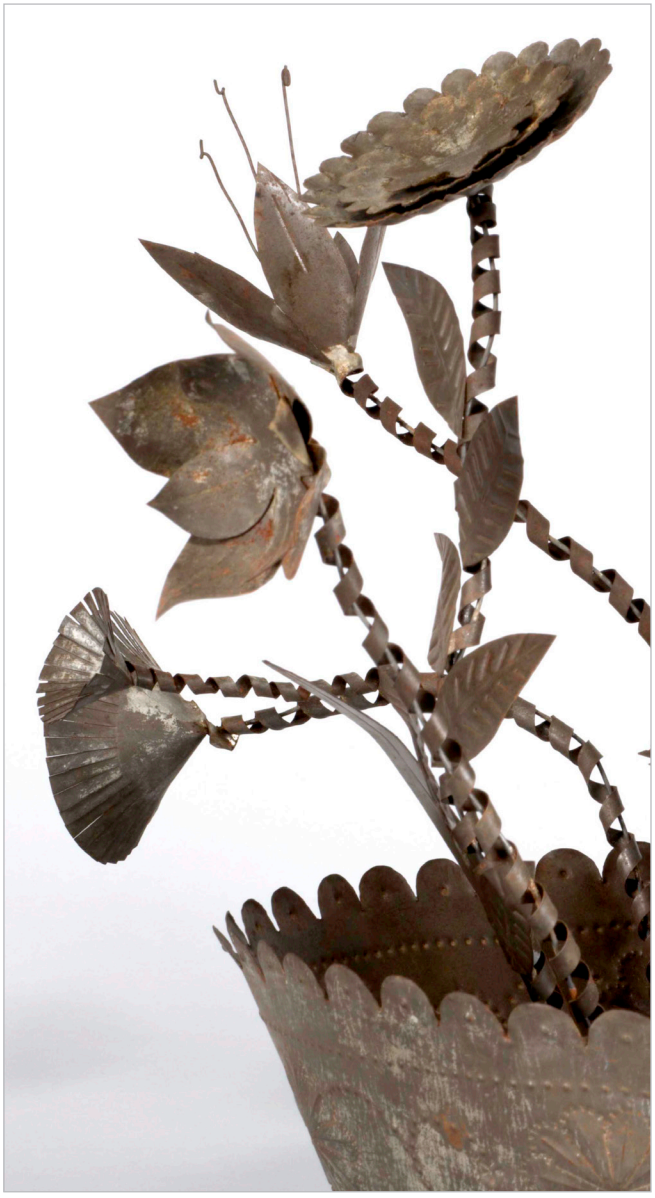
Style–the stalk that sticks out of the ovary; the stigma is found at the top.

Tin Whimsy–folk art created from tin, traditionally given as a gift to celebrate a ten-year wedding anniversary. Most were small table top pieces of art that would not have cost a lot of money.

Standards

MS-LS1.1 Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation.

MS-LS1.4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how specialized plant structures affect the probability of successful reproduction of animals and plants respectively.



Unidentified maker, *Tin Whimsy Bowl of Flowers* (detail), 19th century. Tin, iron, and solder, 11 5/8 x 14 1/4 x 13 in. Museum purchase. 1959-7.

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Background Information

Tin whimsies were intended as humorous souvenirs for the 10th wedding anniversary, an event that received significant attention during the 19th century. The 10th wedding anniversary, symbolized through tin, was considered an important marital milestone, and was commemorated through lighthearted celebrations called tin wedding parties. Invitations were usually printed on tin or on paper decorated with tin, and guests would present the couple with gifts of tin. These gifts could be commissioned from a local tinsmith, and were relatively inexpensive to make. Many of these items were exaggerated versions of everyday objects, such as oversized hats or shoes, but they could also be tailored to the couple's personalities or idiosyncrasies.

Facts About Flowers!

- Flowering plants are made up of four parts: roots, stems, leaves, and flowers.
- The flowers are the seed factories of the plant.
- Seeds form at the base of the pistil of the flower, after the pollen reaches the female cell.
- The petals of the flower die and fall off.
- The base then swells and forms the plant's fruit, which protects the seeds. For example, Apple seeds are found in the fruit's middle, or core. Maple's fruit are little nuts with wings.

More Resources

Flower Anatomy, Youtube, https://bit.ly/Flower-SM

Tin Wedding Anniversary, Orlando Sentinel, https://bit.ly/TinWedding-SM

Unidentified maker, *Tin Whimsy Bowl of Flowers*, 19th century. Tin, iron, and solder, 11 5/8 x 14 1/4 x 13 in. Museum purchase. 1959-7.

LEVEL 1 ACTIVITY

For this activity we will identify the structures within a flower. Then we will make an anatomically correct paper flower! Thicker paper will help with the stability but if you do not have thicker paper you can double your paper by gluing two sheets together with a glue stick.

Materials

- Flower worksheet
- Pencil and/or colored pencils
- Scissors
- Paper (use any color of paper you choose)
- Tape
- Optional: Glue stick to create double thick paper

Steps

1. Use the vocabulary list on page 1 to help fill out the Structure of a Typical Flower worksheet.
2. Once complete, begin tracing the different floral parts onto a piece of paper and cut them out. Hold your paper up to the computer screen to trace or place the tracer behind a blank piece of paper and hold them both up to a window.
3. Label the back of each one.
4. Starting with the center-most structures of the flower, reassemble the floral components, then, tape the bases together. You can lay the flower on a table to help tape the pieces together. When you pick the flower up, gently move the paper structures into place if they have shifted. The flower will be delicate.
5. Now for the fun part! Imagine flower petals like you have never seen before! Draw and cut them out, then tape them to surround the internal female and male structures.
6. Get creative! Make as many flowers as you can imagine.

LEVEL 2 ACTIVITY

This activity will follow the same structure as Level 1, beginning with identification of the structures of the flower. Then, students will build a floral whimsy using aluminum foil, incorporating the scientific structures of the flower.

NOTE: cutting aluminum foil with scissors can create a sharp edge, please cut slowly and carefully.

Materials

- Flower worksheet
- Pencil
- Scissors
- Paper for tracers
- Tape
- Aluminum foil–three 8.5 x 11 inch sheets will be enough for this project
- Black permanent marker (you will need to use a permanent marker on the foil to see your tracings)

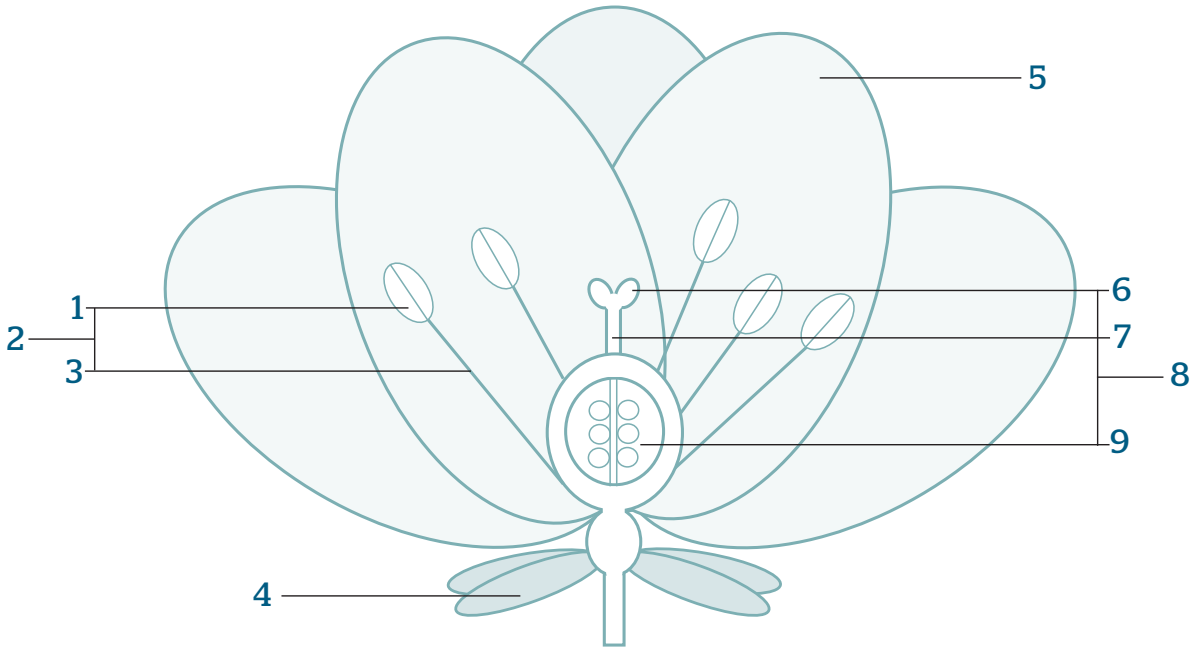
Steps

1. We will begin by labeling the structures of the flower on the worksheet.
2. Once complete, begin tracing the different floral parts onto a piece of paper and cut them out. Hold your paper up to the computer screen to trace or place the tracer behind a blank piece of paper and hold them both up to a window.
3. Label the back of each one.
4. Take your floral structure parts and trace them onto tin foil using a permanent marker.
5. Cut out each structure making sure you keep track of your pieces.
6. Reassemble the flower starting with the center structures and work your way outward to the petals. You can either tape the flower together or pinch/crumple the tin foil together to create a firm hold.
7. Once the internal structures are set, design your petals and stalk. Challenge yourself to create a flower that can stand in a vase. Tin foil can be very sturdy!

STRUCTURE OF A TYPICAL FLOWER

Use the terms below both to label the diagram of the flower and to fill in the blanks of the statements which follow.

Stigma	**Anther**	**Sepals**	**Style**	**Filament**
Ovary	**Petals**	**Pistil**	**Stamen**	



1. Located at the top of the filament, the _____ contains the pollen.
2. The _____ is the collective term for the flower's male reproductive structures consisting of the anther and filament.
3. The anther is supported by the _____.
4. The petals are surrounded by the _____.
5. Often brightly colored, the _____ are surrounded by the sepals.
6. The _____ is sticky and is located on top of the pistil.
7. The _____, a stalk-like structure, has the stigma on its tip and the ovary at its base.
8. The _____ is the collective term for the flower's female reproductive structures consisting of the stigma, style, and ovary.
9. The _____ contains the egg cells.

TRACE THE FLOWER PARTS