Inside Two Blooms

A comparative flower dissection

BOT.3.4 "Plan and conduct comparative flower dissection to identify reproductive structures within the flower."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each step you would use on both flowers, circle the reproductive structures, and number the cuts in the order you would make them. Use your marks to plan a fair comparison.

A Lily and a Hibiscus on the Lab Tray

1. Two flowers sit on a lab tray: a lily and a hibiscus. The goal is to compare where each flower carries pollen and where its ovules are enclosed. Before cutting, sketch both blooms and record which side faces the stem. Use forceps to lift one outer floral part at a time; place removed parts in order beside each flower. Keep tools pointed away from your hands, and check for pollen allergies before handling either bloom. Make the same observations on both flowers so a difference in your notes reflects the flowers, not two different methods.

2. Start with the lily. Its six broad, petal-like tepals surround six stamens. Each stamen has a slender filament topped by an anther, where pollen is produced. Count the stamens before removing them, then cut one anther open above a sheet of paper to see its powdery pollen. In the center sits the pistil: a sticky stigma at the tip, a style beneath it, and an ovary at the base. Slice the ovary lengthwise with teacher supervision. Tiny ovules inside the ovary can develop into seeds after fertilization. Record where each structure sat before you moved it.

3. Now examine the hibiscus using the same sequence. Many anthers cluster along a tube of joined filaments that surrounds the style. At the top, the style ends in several rounded stigma lobes; the ovary lies below the tube, near the base of the flower. Gently separate the tube to trace the style, then make a lengthwise cut through the ovary to look for ovules. A sketch of each intact flower beside a sketch of its cut ovary preserves evidence of location. Compare anther number and arrangement, stigma shape, and ovary position, not flower color alone.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which two actions before cutting help you compare the flowers fairly?

2. How would your notes distinguish the pollen-bearing structures of the lily from those of the hibiscus?

3. What cut would let you check both flowers for ovules, and where would you look after cutting?

4. In the hibiscus, how could you tell the style from the tube around it during dissection?

3 YOUR TURN

Your own words

Write a dissection plan for a third, unfamiliar flower. Include two observations to record before cutting, where and how you would cut to check for ovules, and how you would compare your findings fairly with the lily and hibiscus without guessing what the new flower contains.

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PART 1 · READ AND MARK

Underline each step you would use on both flowers, circle the reproductive structures, and number the cuts in the order you would make them. Use your marks to plan a fair comparison. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which two actions before cutting help you compare the flowers fairly?	**Sketch both intact blooms and record which side faces the stem; use the same observation sequence for both.**
2	How would your notes distinguish the pollen-bearing structures of the lily from those of the hibiscus?	**The lily has six stamens with an anther on each filament. The hibiscus has many anthers clustered along a tube of joined filaments.**
3	What cut would let you check both flowers for ovules, and where would you look after cutting?	**Cut each ovary lengthwise and look for ovules inside it.**
4	In the hibiscus, how could you tell the style from the tube around it during dissection?	**Gently separate the tube of joined filaments and trace the style down from the stigma lobes.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Before cutting, I would sketch the intact flower and record how many anthers I can see. I would also note whether the anthers are separate or joined. After locating the ovary, I would cut it lengthwise with teacher supervision and look inside for ovules. I would record the stigma's shape and the ovary's position, then compare those notes with my lily and hibiscus sketches using the same categories.

Accept plans that observe the intact flower first, locate and cut the ovary to check for ovules, and use consistent features for comparison. Students should not claim to know the unfamiliar flower's structures before examining it.