Inside Three Flowers

Compare reproductive parts across flower species

BOT.3.5 "Compare the similarities between corresponding plant reproductive structures from a variety of species. Record via drawings of observed dissection specimens and explain the similarities and differences observed."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline mentions of anthers, filaments, stigmas, and ovaries, then write 1 beside details distinctive to the lily, 2 beside details distinctive to the hibiscus, and 3 beside details distinctive to the pea.

Different Flowers, Matching Parts

1 At a flower lab, a lily, a hibiscus, and a pea blossom may seem to have little in common. The lily opens wide, the hibiscus has a tall central column, and the pea hides much of its center inside folded petals. To compare them, match parts by their job and position, not by their color or overall shape. A stamen produces pollen in its anther, usually supported by a filament. A flower's female reproductive structure includes a stigma that receives pollen and an ovary that holds ovules. In many flowers, a style connects the stigma to the ovary.

2 In a lily, six stamens stand around the central female structure. Each has a separate filament topped by an anther. In a hibiscus, many anthers project from a tube formed by joined filaments; the style runs through that tube. In a pea blossom, ten stamens sit inside the folded petals. Nine of their filaments are joined, while one remains separate. These arrangements look different in a dissection, yet anthers in all three flowers serve the same role: they make pollen. Counting anthers and tracing what supports them helps reveal the shared structure beneath the different shapes.

3 The pollen-receiving parts offer another comparison. A lily has a stigma at the tip of its style, above an ovary that contains ovules. In a hibiscus, five stigma branches extend beyond the anthers, and its ovary sits below the long style. A pea has a stigma near the tip of a style tucked among the petals, with an ovary at its base. All three ovaries contain ovules, but the stigmas differ in shape and exposure. When sketching a dissection, draw only what you can actually see, and note when petals or other tissues conceal a part.

2 ANSWER WITH EVIDENCE

Use the passage

1. How are lily and hibiscus stamens alike, and how are their filaments arranged differently?

2. Compare how the filaments join in hibiscus and pea flowers.

3. What do hibiscus and pea stigmas have in common, and how does their exposure differ?

4. How are the female reproductive structures of lilies and peas alike, and what might make one harder to see in a dissection?

3 YOUR TURN

Your own words

Use two different flower specimens dissected in class to make a labeled sketch of each. Label an anther, filament, stigma, and ovary where visible, then write two sentences comparing a matching part and one difference you observed.

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PART 1 · READ AND MARK

Underline mentions of anthers, filaments, stigmas, and ovaries, then write 1 beside details distinctive to the lily, 2 beside details distinctive to the hibiscus, and 3 beside details distinctive to the pea. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How are lily and hibiscus stamens alike, and how are their filaments arranged differently?	**Both have pollen-producing anthers supported by filaments. Lily filaments are separate, while hibiscus filaments join to form a tube.**
2	Compare how the filaments join in hibiscus and pea flowers.	**Hibiscus filaments form a tube. In the pea, nine filaments join and one remains separate.**
3	What do hibiscus and pea stigmas have in common, and how does their exposure differ?	**Both receive pollen. Hibiscus stigma branches extend beyond the anthers, while the pea stigma is tucked among the petals.**
4	How are the female reproductive structures of lilies and peas alike, and what might make one harder to see in a dissection?	**Both have a stigma, style, and ovary containing ovules. The pea's folded petals can conceal these parts.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Panel 1: A daffodil sketch shows six anthers on filaments, a stigma, and an ovary at the flower's base. Panel 2: A buttercup sketch shows many anthers on filaments and several separate carpels, with a stigma and ovary labeled on one. Both flowers have anthers supported by filaments. The daffodil has six stamens, while the buttercup has many.

Accept accurate sketches of any two dissected species, including species in the passage. Labels should point to visible parts, and the two comparison sentences should identify a corresponding structure and an observed difference.