

# What Makes an Orchid an Orchid?

## Answer Guide for Critical Thinking Questions

These answers are a general guide to the information and/or concepts students should understand by reading and completing the other What Makes an Orchid an Orchid worksheets. Due to the nature of critical thinking questions, student answers should vary and show the different ways that students interpret and understand each question.

These questions can be a good way to begin discussions about the pollination process and how orchids, as well as other plants, have developed unique systems to support this process.

1.

Answer: The orchid's flower supports the orchid's reproductive stage of its lifecycle. The flower's lip attracts pollinators and guides them to the pollinia that are located under the anther cap.

(Found at the Lip/Labela definition on the Key Terms page)

2.

Answer: Orchid flowers produce some of the smallest known seeds in the world, allowing them to produce thousands at a time. A lot of pollen is needed to pollinate all of these seeds. To do this, orchid flowers developed Pollinia so that every time an orchid was pollinated it would have as much pollen as possible.

(Found at the Seed and Pollinia definitions on the Key Terms page)

3.

Answer: Orchid flowers' unique pollination process, from mimicking their pollinators to their use of pollinia, requires that these reproductive structures be kept in proximity. A pollinator that has already received pollinium from one orchid flower may enter a second flower the same way, searching for a mate or nectar. This means that the Orchid flower's stigma will need to be closely located to the pollinia, so that it can collect pollen from the pollinator as it leaves the flower. Ideally, a pollinator will enter and leave each flower in a similar manner. Picking up pollinia and dropping them off each time.

(Found using a combined understanding of the orchid Key Terms and reading the What Makes an Orchid an Orchid Critical Thinking Questions introduction paragraph)

4.

Answer: The Orchid flower is made up of the column, pistil, ovary, ovule, stigma, stamen, anther cap, pollinia, petal, lip, sepal, and seeds. These parts work together to facilitate the orchid's reproductive cycle, attracting pollinators and producing pollen and seeds.

(Answers can be inferred from orchid Key Terms and Diagram)