

# Pollination Brainteasers

Student name: \_\_\_\_\_ Class/section: \_\_\_\_\_

Below you will find facts about important pollinators. Read through them and use them as clues to help you predict what characteristics plants might have to attract each type of pollinator. When you are done, we will review the answers to see how closely you and nature agree.

## BATS

Throughout most of the United States and Canada, bats feed strictly on flying insects. In tropical areas, however, bats feed on a variety of foods, depending on the species of bat. They might eat frogs, fish, blood (vampire bats), fruit, pollen and nectar. The bats that concern us at the moment are those that feed on pollen and nectar. If you were a plant, how would you attract them? Here are some clues:

- Bats have a good sense of smell. (Remember, many eat pollen and nectar.)
- Bats have a good sense of sight. (They are not blind, although they are colorblind. They can see light and dark.)
- Bats are relatively large for a pollinator, at least compared with insects.
- What time of day are bats active?
- How much food would a bat need compared with, say, a bee?



Photo: Rex Walters

**If you were a flower designed to be pollinated by a bat, what characteristics would you have? (Fill in the blanks below.)**

Color: \_\_\_\_\_

Size: \_\_\_\_\_

Location of flower on the plant: \_\_\_\_\_

Shape: \_\_\_\_\_

Scent: \_\_\_\_\_

Time of day when in bloom: \_\_\_\_\_

## MOTHS

- Their mouth parts are like long soda straws that they carry curled up like New Years novelty toys. Therefore, their food must be liquid. They do not have jaws.
- Most moths come out at night, as opposed to butterflies which are mostly active during the day.
- They see fairly well at very short distances, and they can see color.
- Their sense of smell, like most insects, is truly amazing. They can detect a few molecules of a scent in the air.



Photo: Davis Kwan

**If you were a flower designed to be pollinated by a moth, what characteristics would you have? (Fill in the blanks below.)**

Color: \_\_\_\_\_

Shape: \_\_\_\_\_

Time of day in bloom: \_\_\_\_\_

Scent: \_\_\_\_\_

What the flower might provide the visiting moth: \_\_\_\_\_

## FLIES and CARRION BEETLES

- These charmers like nothing better than to find a dead possum or a pile of dung on which to lay their eggs. The eggs will hatch into maggots and will have a perfect place to feast. Bon appetit!
- Like moths, they see only fairly well at short distances. (You can sneak up on them pretty easily with a fly swatter.)
- They have an amazingly good sense of smell.



Photo: Laszlo Ilyes

**If you were a flower designed to be pollinated by flies or beetles, what characteristics would you have? (Fill in the blanks below.)**

Scent: \_\_\_\_\_

Color: \_\_\_\_\_

Why might flies and beetles visit the flower? \_\_\_\_\_

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## BEES

A huge variety of bees pollinates flowers, ranging from tiny sting-less bees to bumblebees to honeybees. Here are some facts about bees, in general:



Photo: Joost Witteveen

- They search out pollen and nectar. Some bees make honey to feed their young.
- They have jaws, not soda-straw mouths like moths.
- They see colors at the short wavelength end of the spectrum, not long wavelengths. Thus, they cannot see red, but they can see ultraviolet light, which we humans cannot see.
- Their vision is OK, but they have a great sense of smell.

**If you were a flower designed to be pollinated by a bee, what characteristics would you have? (Fill in the blanks below.)**

Scent: \_\_\_\_\_

Colors: \_\_\_\_\_

## HUMMINGBIRDS

These birds are only found in the Western Hemisphere.

- They have long, needle-like bills.
- They see the same colors that people see.
- They cannot smell.
- They feed on tiny insects and nectar.
- They usually hover when feeding, like a miniature helicopter. They rarely perch when feeding.
- How could a flower attract hummingbirds, but not attract bees and other animals that might steal its nectar and not pollinate your flowers?



Photo: Windell Oskay

**If you were a flower designed to be pollinated by a hummingbird, what characteristics would you have? (Fill in the blanks below.)**

Color: \_\_\_\_\_

Scent: \_\_\_\_\_

Shape: \_\_\_\_\_

Location of anthers and stigmas: \_\_\_\_\_

**WIND**

- Can wind-pollinated plants actually attract wind?
- What flower design might help the wind carry off pollen most effectively?
- What are the chances that a single pollen grain, when blown by the wind, will land on the right flower?

**If you were a flower designed to be wind-pollinated, what characteristics would you have? (Fill in the blanks below.)**

Color: \_\_\_\_\_

Scent: \_\_\_\_\_

Shape of flower: \_\_\_\_\_

Season of bloom in most parts of country: \_\_\_\_\_

\_\_\_\_\_

Location of flowers on plants: \_\_\_\_\_

Amount of pollen produced: \_\_\_\_\_

\_\_\_\_\_