

📍 TRIBUTE GARDEN

POLLINATORS

Flowers in Garden: Desert marigold, autumn/tropical sage, lantana, and more!

Garden: Tribute garden is the home to many of our pollinator friends! Pollinators are essential creatures that help plants reproduce by transferring pollen from one flower to another!

Ask:

- *"How do plants help animals out in the wild?"*

Answer: Plants are essential out in the wild for many reasons! The most important being they provide animals a food source and shelter.

- *"Can you name some pollinator friends?"*

Answer: Butterflies, Bees, Bats, Hummingbirds, and even animals with fur can be pollinators! For example, a porcupine can help disperse seeds with their coat!

- *"How do pollinators help plants?"*

Answer: Pollinators help plants produce fruit or seeds!

FLOWERS

Flowers in Garden: Here are some flowers you might see in season!



Desert Marigold



Tropical Sage



Lantana



Autumn Sage



Chuparosa



Perry's Penstemon

📍 TRIBUTE GARDEN

POLLINATORS

BIG IDEA: Pollinators have special structures that help them survive and pollinate.

Ask: *What special body parts help pollinators do their jobs?*

- Bees have hairy legs that trap pollen, and long tongues to drink nectar.
- Butterflies have mouthparts like a straw, called a proboscis (proh·bos·kis), to help them reach deep into flowers for nectar.
- Hummingbirds have fast wings, narrow beaks and long tongues to drink from tube-shaped flowers.
- Compare with our zoo animals:
 - Cheetahs have flexible spines, big lungs, and long legs for fast running to catch prey.
 - Camels have long lashes, tough lips, and calluses to help them survive the harsh desert.
 - Kookaburras have strong necks and beaks for hunting prey.

BIG IDEA: Pollinators and flowers adapt to where they live.

Ask: *How do pollinators and flowers differ depending on where they live?*

- In hot deserts, pollinators might prefer to come out early morning or evening to avoid the heat
- Some flowers open at night for moth or bat pollinators! Look for white flowers.
- Compare with our zoo animals:
 - Prairie dogs dig tunnels that help them reach water, food, and homes for themselves and other animals.

BIG IDEA: Differences between pollinators can help them survive and reproduce.

Ask: *How do difference between pollinators help them survive?*

- Not all bees or butterflies are the same. Some may have longer tongues, bigger wings, or are more active at different times of the day.
- These differences can help them reach certain flowers, fly farther to find food, or avoid predators better than others.
- Compare with our zoo animals:
 - Crowned cranes have spikey feathers and those with more elaborate dances might have better chances of finding a mate.
 - Cheetahs with longer strides may be able to catch up to prey more easily than others.

📍 TRIBUTE GARDEN

POLLINATORS

BIG IDEA: Pollinators like smelly scents that come from plants, like in flowers.

Ask: *Why do you think pollinators, like bees or even flies, like smelly flowers?*

- Pollinators are animals that help flowers make seeds and fruits by taking pollen, the yellow dust on flowers, from one flower to another.
- Pollinators are usually looking for food when they pollinate a plant. A strong scent helps pollinators know where to go to find nectar. Once they find the nectar, they accidentally pollinate flowers.
- Compare with our zoo animals:
 - Rhinos have a really good sense of smell that helps them find food.

BIG IDEA: Pollinators use their sense of vision to find nectar.

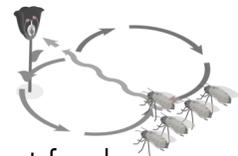
Ask: *How do flowers use their petals to bring pollinators to them?*

- Different pollinators prefer different flower colors! Look for flowers of different colors and see which pollinators are visiting them. See below which colors pollinators prefer:
 - Bees: blue, purple, yellow
 - Butterflies: red, orange, yellow, pink, blue
 - Moths & bats: pale colors, usually white (mostly open up at night)
 - Flies: green, white, yellow
 - Hummingbirds: red, orange, purple
- Find a flower nearby. Do you see any markings on the petals? Even if you don't see anything, flower petals actually have marks that are invisible to humans that pollinators can see! Usually, these marks go toward the center of the flower where the nectar is.
- Compare with our zoo animals:
 - Giraffes use their keen sense of vision and neck height to find food or predators.

BIG IDEA: Pollinators, like bees, work together to find nectar.

Ask: *Bees work together to do many things including finding nectar. How do you think they tell each other where to find it?*

- When bees find nectar and return to the hive, they tell the other bees where to go through a waggle dance. The bees move in a figure-8 and waggle (shake their abdomen) in the direction of the food.
- How long the dance lasts tell other bees how far the nectar is.
- Compare with our zoo animals:
 - African painted dogs communicate with each other to find and hunt food.



ACTIVITY: FLOWER FACINATION

ACTIVITY OVERVIEW

Goal/Objective: Make observations to explain what traits flowers use to attract pollinators in order to successfully reproduce.

Location: Tribute Garden

Topic Overview: Pollination, insects, flowers, traits, adaptations

Activity Time: 15–20 minutes

INSTRUCTIONS

In this activity students will observe a garden to determine what traits flowers have to attract pollinators, and what traits pollinators have to collect pollen and nectar from those plants.

Key Information:

Pollinators assist with plant reproduction by moving pollen between flowers. When they visit a flower they pick up some pollen on their body, and bring it along with them to the next flower they visit. This allows the flower to reproduce. Flowers attract these important pollinators with nectar, color, scent, large flowers, and more.

Chaperone Instructions:

Lead students through the Tribute Garden pointing out each of the flowering plants and pollinators as you pass by and asking the questions below to the group. Allow students to point out their own observations and show the group pollinators they find while traveling through the garden.

Ask:

- What living things act as pollinators to flowering plants?
 - Insects: bees, butterflies, flies, wasps, beetles
 - Birds: hummingbirds, doves, orioles
 - Mammals: mostly bats
- How are the plants here attracting the pollinators to visit them?
 - Students might observe color, scent, size, texture, or other attributes.
- Why is attracting pollinators so important for these plants?
 - They require pollination to reproduce.

UPPER COLORADO GARDEN

OCOTILLO

BIG IDEA: Some plants produce brightly colored flowers to attract pollinators in order to reproduce.

Ask: Keep count! How many ocotillo plants can you spot?

- Ocotillo plants attract pollinators with their bright, tubular flowers, which are filled with sweet nectar.
- As a pollinator drinks the nectar, pollen from the flower sticks to its beak and head.
- When the pollinator visits the next ocotillo flower, it transfers the pollen, fertilizing the new flower and allowing it to produce seeds.



CHOLLA

BIG IDEA: Some plants drop pieces of themselves that develop into new plants to reproduce asexually.

- Cholla cacti reproduce asexually through a process called fragmentation, where a piece of the parent plant breaks off and grows into a new, identical plant.
- Cholla branches are made of loosely connected segments. These small pieces can easily break off from the main cactus, the detached pieces will latch onto fur of passing animals or the clothes of people.



DESERT WILLOW

BIG IDEA: Some plants have flowers that are sweetly scented to attract pollinators for their reproduction.

- Desert willows attract pollinators such as hummingbirds and large bees by producing large, trumpet-shaped flowers with a sweet, scented smell.
- The flowers' different shades of pink, lavender, and white make the flowers easily visible encouraging pollinators to visit the desert willow, facilitating the cross-pollination necessary for its reproduction.

