



*How many pollinators do you see outside?*

## Activity: Pollinator Simulation

**Learning Objective:** Help youth understand the role of pollinators.

**Service Objective:** Invite youth to identify what they can do to create a more welcoming environment for pollinators at their home or school.

### Activity Instructions

1. Opening prompts: Ask youth to share what kinds of plants they see around them; and to identify which of these have flowers. What types of insects seem to pay attention to the flowers?
2. Explain to youth that they are going to construct a model of an insect and a model for a flower to investigate how flowers are pollinated.
3. Making insects:
  - i. Bend one pipe cleaner into an insect shape.
  - ii. Twist a second pipe cleaner around its center.The insect shape should be small enough to fit easily into the bottom of the cup.
4. Making flowers:
  - i. Poke a hole in the bottom of the cup using the nail.
  - ii. Wrap tape, sticky side out, around the top of the last pipe cleaner.
  - iii. Insert non-taped end of the pipe cleaner through hole in bottom of cup to form the flower **pistil**. Tape pipe cleaner in place on bottom of cup.
  - iv. Sprinkle a teaspoon of talcum and 1 color of powder (chalk or Jello representing **pollen**) in the bottom of the cup (do not get any on the tape or pipe cleaner)
5. Simulate! Invite youth to fly their insects in and out of their flower cup and cups of other youth. Allow insects to touch the powder and taped pipe cleaner.
6. Ask youth to share what happened to the pipe cleaner (pistil) and the powder (pollen).
7. As a class, have youth process and generalize what they've learned. For example, in small groups, have youth discuss which pollinators they typically see in their school or neighborhood. Then ask what they can do to attract more pollinators.

**Time: 20-30 minutes**

### Materials

- For each person:
  - 3 pipe cleaners
  - 1, 8oz paper cup
- Talcum powder
- Colored chalk (crushed to powder)  
OR several colors of Jello powder
- Clear tape (3-4 rolls)

### Preparation

1. Punch holes in the bottom of each cup (big enough to fit a pipe cleaner)
2. Make a sample "insect" and "flower" to demonstrate
3. Setup supplies where youth can easily use them.

### Connections to the Next Generation

**Science Standards:** LS2.A:

Interdependent relationships in ecosystems . 2-LS2-2: Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

### On May 8: Be a Scientist!

Ask youth to go outside and count the number of pollinators they see in 3-minutes. Record answers from youth and submit using the on-line map at [beascientist.ucanr.edu](http://beascientist.ucanr.edu). Share with youth what others are reporting from across the entire state!



Adapted from *Nature's Partners: Pollinators, Plants, and You, UCCE and The Pollinator Partnership, 2007.*

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### Taking it Further

- **For young youth:** Invite children to share their “insect” and “flower” with their families.
- **For older youth:** Ask each group to discuss how pollinators, flowers, and agriculture relate to California. For example, the economics and history of farming, social and political connections, biology and ecology, health and nutrition.
- Link this activity to the food and water activities. Invite small groups to discuss connections between water, pollinators, and food. Have groups present to the class.

**Pistil:** The female part of a flower consisting of the stigma, style, and ovary.

**Pollen:** The tiny, powder-like material produced by the anthers (nutritious food for bees).

### Process of Pollination

Pollinators help plants reproduce by carrying pollen from one flower to another so a plant can develop a seed. The types of pollinators might surprise you - bees, wasps, flies, butterflies, moths, beetles, birds, and bats. Nearly all ecosystems depend on pollinators – the unsung heroes of the natural world.

Successful pollination leads to healthy fruits, vegetables, and nuts. Without pollinators, many plants aren't able to produce food. Without pollinators in our gardens and farms, we wouldn't be able to enjoy the fruits and vegetables we love to eat. A third of the world's food production depend on pollinators.

For more information on the pollination process and descriptions of pollinators, see <http://anrcatalog.ucdavis.edu/pdf/8498.pdf>.



Make pipe cleaner insects.



Use tape to secure pipe cleaner and to cover hole.



Wrap tape sticky side out on one end of pipe cleaner and insert other end through bottom of cup.



Sprinkled colored powder in cup, taking care not to get it on tape.

Photos by Suzanne DeJohn/NGA