



HELPING POLLINATORS



Illinois Extension
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OBJECTIVES

- LEARN WHAT ADULT POLLINATORS EAT.
- LEARN SCIENTIFIC OBSERVATION SKILLS.

GUIDING QUESTIONS

1. WHAT DO ADULT INSECTS EAT?
2. HOW DO SCIENTISTS FIGURE OUT ANSWERS TO QUESTIONS?

MATERIALS

1 -MARIGOLD IN 4" POT
1 SHEET OF CARDSTOCK
COPY PAPER
WATER

CONCEPTS

- PLANTS NEED POLLINATORS IN ORDER TO PRODUCE FRUIT AND SEEDS.
- SOME POLLINATORS EAT POLLEN AND DRINK NECTAR.
- DIFFERENT POLLINATORS ARE ATTRACTED TO DIFFERENT TYPES OF FLOWERS (COLORS AND SMELLS).

FACTS

- THERE ARE APPROXIMATELY 200,000 SPECIES OF POLLINATORS.
 - AROUND 1,000 ARE VERTEBRATES (ANIMALS THAT HAVE A BACKBONE): BATS, BIRDS AND OTHER SMALL MAMMALS.
 - THE REST ARE INVERTEBRATES(DON'T HAVE A BACKBONE): FLIES, BEETLES, BUTTERFLIES, MOTHS, ANTS AND BEES.
- BEES ARE ONE OF THE FEW ANIMALS THAT DRINK NECTAR TO FUEL THEIR OWN FLIGHT AND GATHER POLLEN FOR FOOD LATER. THIS IS WHY THEY ARE SO IMPORTANT.
 - BEES MOVE THE POLLEN FROM FLOWER TO FLOWER WHICH THE PLANTS NEED TO PRODUCE THEIR FRUIT AND SEEDS.



INTEREST APPROACH-ENGAGEMENT

SOME OPEN ENDED QUESTIONS:

- WHAT KIND OF BIRDS DO YOU THINK DRINK NECTAR?
- WHAT DO YOU THINK A PLANT NEEDS TO ATTRACT POLLINATORS?
- CAN PEOPLE BE POLLINATORS?



ACTIVITY 1: PLANTING YOUR MARIGOLD

- MARIGOLD MAY BE LEFT IN THE ORIGINAL POT AND PLACED IN A SUNNY OUTSIDE LOCATION.
- IF YOU WANT TO TRANSPLANT YOUR MARIGOLD EITHER TO YOUR YARD OR ANOTHER POT, PREP THE POT OR SOIL IN THE YARD BY DIGGING A HOLE AS DEEP AS THE POT IS TALL.
- TURN THE POT WITH THE MARIGOLD ON ITS SIDE, ALMOST UPSIDE DOWN.
- GENTLY PULL THE PLANT OUT OF THE ORIGINAL POT. IF IT IS STUCK, RUN A PLASTIC KNIFE AROUND THE OUTER EDGE OF THE INSIDE OF THE POT TO LOOSEN THE SOIL.
- PLACE THE PLANT WITH SOIL INTO THE HOLE IN THE NEW POT OR THE GROUND.
- FILL IN THE REMAINING SPACE WITH SOIL AND THEN PRESS THE SOIL SURROUNDING THE MARIGOLD DOWN TO ENSURE THE ROOTS ARE MAKING GOOD CONTACT WITH THE NEW SOIL.
- WATER THE NEWLY PLANTED MARIGOLD.

ACTIVITY 2: MAKE YOUR GARDEN JOURNAL

- TAKE A PIECE OF CARDSTOCK AND FOLD IT "HAMBURGER" STYLE OR WIDTH-WISE.
- FOLD SEVERAL PIECES OF COPY PAPER THE SAME WAY.
- PUT THE CARDSTOCK ON THE OUTSIDE OF THE COPY PAPER TO ACT AS A COVER.
- KEEP TRACK OF YOUR PLANTS PROGRESS BY DRAWING PICTURES OF WHAT YOU SEE AND WRITING DOWN DESCRIPTIONS AND MEASUREMENTS.
- THE JOURNAL IS ALSO THE PLACE TO KEEP TRACK OF VISITS TO YOUR FLOWER BY POLLINATORS.

CITIZEN SCIENCE, OBSERVING POLLINATORS:

- PICK A DATE AND A TIME TO OBSERVE YOUR MARIGOLD AND ITS VISITORS.
- IN YOU JOURNAL, WRITE DOWN THE DATE AND TIME. KEEP TRACK OF WHAT TYPE OF POLLINATORS VISIT YOUR MARIGOLD.
- WHAT TYPE OF POLLINATORS ARE THERE VISITING? ARE THEY BUTTERFLIES, BEES, ANTS OR FLIES?
- IF YOU HAVE A WAY TO TAKE A PHOTO OF THEM, PLEASE DO AND THEN POST THEM TO THE THREE RIVERS HORTICULTURE FACEBOOK PAGE WITH THE DATE AND TIME OF THEIR VISIT TO YOUR FLOWER.
 - [HTTPS://WWW.FACEBOOK.COM/THREERIVERSHORT](https://www.facebook.com/threerivershort)
 - @THREERIVERSHORT
 - IF YOU DON'T HAVE A PHOTO, DON'T WORRY, FEEL FREE TO WRITE A POST TELLING ABOUT YOUR EXPERIENCE.
- OBSERVE ON AT LEAST 5 DIFFERENT DAYS. RECORD ALL OF YOUR DATA (OBSERVATIONS).
 - WHAT WAS THE TOTAL NUMBER OF POLLINATORS SEEN?
 - DID YOU NOTICE ANY TRENDS OR PATTERNS?
 - WAS IT ONLY ONE TYPE OF POLLINATOR THAT VISITED?
 - DID THE VISITS HAPPEN AT A PARTICULAR TIME OF DAY?

VARIATIONS OF OBSERVATIONS:

- IS THERE A DIFFERENCE BETWEEN MORNING AND EVENING VISITS TO THE MARIGOLD?
- ARE THERE OTHER FLOWERS IN YOUR YARD? DO THE POLLINATORS LIKE THEM MORE OR LESS?

8 Cool Pollinators



Bees

- Bees are very important pollinators.
- Honeybees for example pollinate a lot of the food we eat like apples and strawberries.
- Favorite type of flowers: Yellow and blue flowers that have a place for them to land. Bees can't see the color red.
- How they pick up pollen: They have tiny hairs on their bodies that pick up pollen when they go to drink the nectar of a flower.



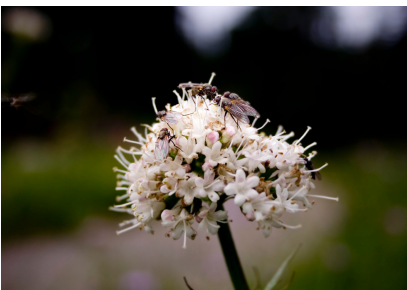
Hummingbirds

- Hummingbirds drink a lot of nectar in order to keep those fast wings moving.
- Favorite type of flowers: Red, orange, or white tube-shaped flowers.
- How they pick up pollen: They reach their long beaks into flowers in order to get the nectar. When they are finished drinking, their faces and beaks are dusted with pollen.



Butterflies

- Butterflies pollinate the same way bees do, just not as much since their bodies are slim.
- Favorite type of flowers: Brightly colored flowers that are flat so they have a place to land.
- How they pick up pollen: When they go in for a drink of nectar, they get pollen on their bodies.



Flies

- A species of fly called a midge pollinates the cocoa tree. These flies are responsible for us having chocolate.
- Favorite type of flowers: Flowers that smell like rotting meat, dung, blood, carrion, or fungus.
- How they pick up pollen: Although they don't have as many hairs as bees, they do pick up pollen on their bodies when they go to drink the flower nectar.



Black and white ruffled lemurs

- They are the largest pollinators in the world.
- Favorite type of flowers: Anything fruity. They eat up to 130 different fruit species.
- How they pick up pollen: They are the primary pollinator of the traveller's tree, and it isn't easy getting to its flowers. These lemurs have to open up the flower to reach in with their long snout and tongue. While they are eating, the pollen brush up against them and gets stuck on their fur.



Beetles

- There are more types of pollinating beetles than any other pollinating species.
- Favorite type of flowers: White or green bowl-shaped flowers.
- How they pick up pollen: They pick up pollen on their bodies as they munch on flower parts.



Moths

- Moths pollinate flowers that same way butterflies do. Unlike butterflies, they continue pollinating after the sun goes down.
- Favorite type of flowers: Flat strong smelling white or dull-colored flowers.
- How they pick up pollen: They pick up pollen on their wings and bodies when they go into drink the nectar.



Bats

- Bats are important pollinators in tropical places and deserts. They are responsible for pollinating over 300 fruits, including mangoes, bananas, and guavas.
- Favorite type of flowers: Strong smelling white and dull-colored flowers that open at night.
- How they pick up pollen: They pick up pollen on their face as they drink the nectar.