

Gone Buggy

Objective: Discuss types of insects and learn how some species can actually be beneficial to plants that grow in a garden.

Materials:

- Poster board
- Bee cutouts on cardstock for students to color
- Black and yellow foam to make bees
- Scissors
- Glue
- Markers
- Bananas
- Wooden Popsicle sticks
- Crushed graham crackers
- Honey
- Plates
- Spoons

10 to 15 minutes; Bugs in a Garden

Ask students to name as many insects as they can and to think about how insects can help the plants in a garden. What products would we not have without insects?

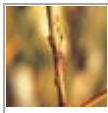
Ex. pollination, control harmful pests, etc.

The benefit of insects that pollinate flowers is somewhat easier to estimate since without them there would be no apples, pears, cherries, citrus fruit, nuts, berries, coffee, melons, cucumbers, squash, or many other common foods. Pollinating insects are estimated to be worth at least 8 billion dollars annually.

10 to 15 minutes; Good Bugs vs. Bad Bugs

Discuss the beneficial insects that can be found in a garden (see beneficial insect list). Be sure to show pictures of the insects as you discuss.

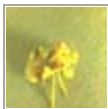
BENEFICIAL INSECT LIST:



Everyone recognizes the familiar ladybug, or ladybird beetle. Many species have an enormous appetite for aphids--one of our most common plant pests. Others prefer scale insects and mites and are very effective in reducing infestations.



The praying mantis is another widely recognized insect predator. Nymphs and adults alike lie in wait for an unlucky insect that strays too close, then strike out to grab it with their modified front legs.



Ambush bugs use the same lie-in-wait tactic. Notice that their front legs are also enlarged and modified. The bright yellow colors of this species camouflage them in their favorite hideout--goldenrod flower.



The larvae of common lacewings are miniature monsters when viewed at close range. They are deadly enemies of small caterpillars, aphids, and other soft-bodied insects.



The lowly ground beetle, so common under logs and debris, is another friend of man. Both larvae and adults are predaceous and feed on a wide variety of insects.



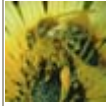
Less common, but still important, robber flies are deadly enemies of grasshoppers, wasps, and other flies that they capture on the wing. Some of their preys are as large or larger than they are.



Tachinid flies are parasites of other insects. This fly has laid its small white eggs just above the legs of the caterpillar in front of it. Upon hatching, the fly maggots will burrow through their hosts skin and feed on its internal organs. The caterpillar will die just as the larvae emerge and complete their development.



In addition to these flies, many small wasps are important parasites of other insects. It is very difficult to measure how important these insects are, but there is no doubt that they are extremely valuable allies to us. Without their behind-the-scenes help, our pest problems would be infinitely worse.



The best-known pollinator and man's best friend among the insects is the honeybee. Besides the pollinating services it renders, this insect provides us with honey we eat and beeswax that we use in making candles, polishes, inks, and cosmetics. It is hard to imagine what life would be like without the natural pest control, flower pollination, and products provided to us by these beneficial insects.

20 to 25 minutes; Honey Bee Display Board

Using poster board or foam board, honey bee fact printouts, foam, and markers, ask students to design and make a "Honey Bee Files" poster to be placed in the classroom for display. The facts and graphics below can be printed on cardstock to give the poster more strength and stability.

10 minutes; Banana Pops



Spread crushed graham crackers on a plate. Cut bananas in half crosswise. Insert a craft stick into the cut pieces of banana. To assemble, hold each banana half over plate or waxed paper to catch drips. Spoon about 1 Tbsp. honey over banana, rotating and smoothing honey with back of spoon to coat all sides. Roll banana in graham crackers until coated on all sides, pressing with fingertips to help topping adhere. Serve at once. While making, ask students what in the snack is brought to us by insects.

Ladybug



Praying Mantis



Ambush Bug





Lacewing Larvae



Ground Beetle

Robber Fly



Tachinid Fly



Wasp



Honeybee



Honey Bee Files

Honeybees must tap two million flowers to make one pound of honey!

A hive of bees flies 55,000 miles to bring us one pound of honey!

The average honeybee worker makes 1/12 of a teaspoon of honey in her lifetime!

Honeybees fly 15 miles per hour.

It would take one ounce of honey to fuel a bee's flight around the world.

Utah is known as the beehive state!

A honeybee visits 50 to 100 flowers in one collection trip!

Bees communicate with each other through 'dancing.'

Bees have been producing honey from flowering plants for 10 to 20 million years!

