IT'S TIME TO EXPLORE

YOUR POLK COUNTY BACKYARD

4-H GROWS HERE

WEEK THREE: THE INSECT ISSUE

Bugs In Your Backyard

Dear 4-H Families,
As you have explored your backyard, you have probably noticed all kinds of insects, some on the ground and some in the air. There are more types of insects than any other type of animal on the planet.

This week, you will become an ***entomologist***, which is someone who studies insects. And there are plenty of them to be found in your Polk County backyard, including several species of ants, beetles, ladybugs, stink bugs, bees ,wasps, butterflies, praying mantis, flies, mosquitos, grasshoppers, crickets, and--come June--my favorite: fireflies!

Let's get the "buzz" on bugs!

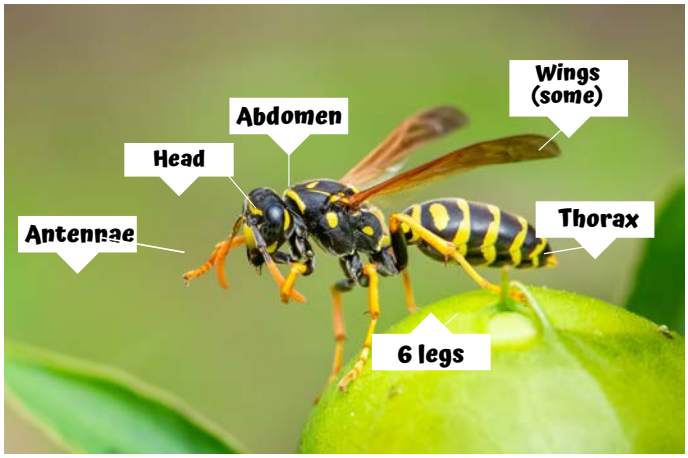
Polk County 4-H Youth Development Agent Helen Blackwell

Contact Helen

Some of the content for this newsletter was pulled from the NC State Extension "Bug Out" curriculum.

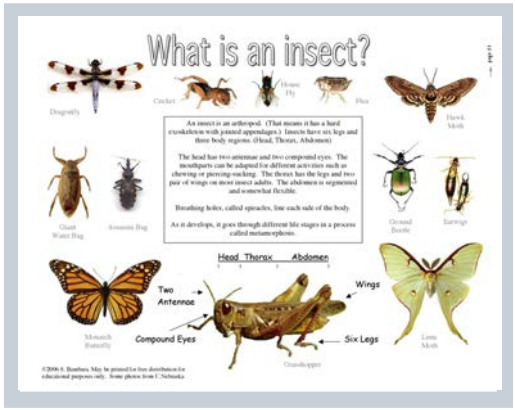
WHAT MAKES AN INSECT AN INSECT?

The main categories of insects are butterflies, moths, beetles, centipedes, flies, grasshoppers, and social insects. Insects tend to be small, but can vary in size from nearly invisible to over 7 inches long.



- Insects all have a hard external covering made of something called chitin.
- Their bodies are made up of three sections called the head, the thorax, and abdomen.
- All insects will have a pair of antennae on their head.
- They all have six legs connected to the thorax (arachnids will have eight legs).
- Some insects have wings and can fly.

INSECT POSTER



Click to Download

Craft

Build a Bug

Materials you will need:

- 3 oval balloons (or 2 oval balloons and 1 oblong balloon)
- Clear plastic sheet
- Scrap paper or newspaper
- 2 Cups of flour
- Spoon
- Water
- 1 Tablespoon of salt
- Bowl
- 8 Pipe cleaners (or floral wire)
- Acrylic craft paints
- Permanent markers
- Masking tape
- Glue

In this activity, you'll learn about the body parts of an insect by creating your own with materials you have at home.

PRINT THE INSTRUCTION SHEET

GROWTH BY MOLTING

Insects are born from eggs. Young insects are called nymphs. As insects grow, they get a new hard outer covering (called an **exoskeleton**). That's right, Insects are sort of the opposite of humans as our skeletal system is on the *inside* of our body, and an insect's skeleton is on the *outside* of their body!

Exoskeletons provide specific benefits to insects:

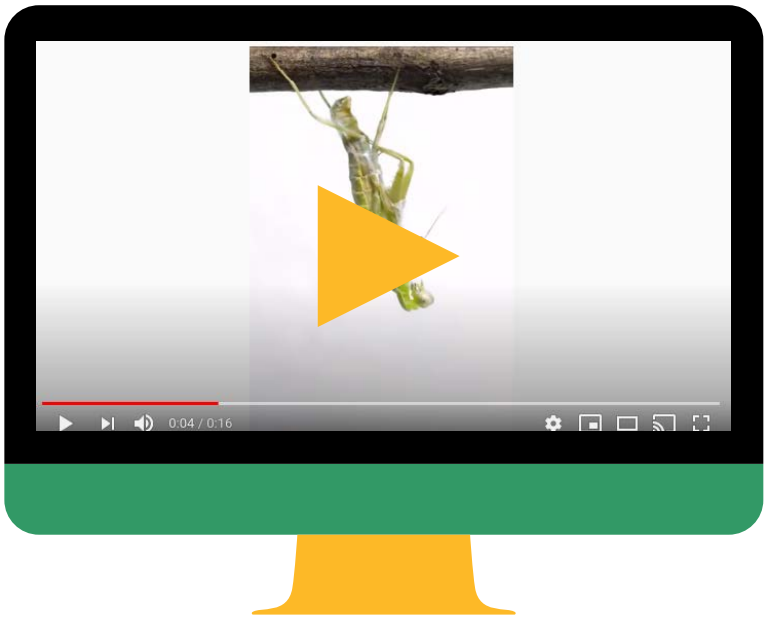
- structural support of muscles
- physical protection
- protection from dehydration

Image Credit: berkeley.edu

As they continue to grow, insects must shed that outer shell to make room for a new one. This process is called **molting**.

Did you know that the periodical cicada nymph molts up to 35 times over 17 years?!

Watch a praying mantis molting!



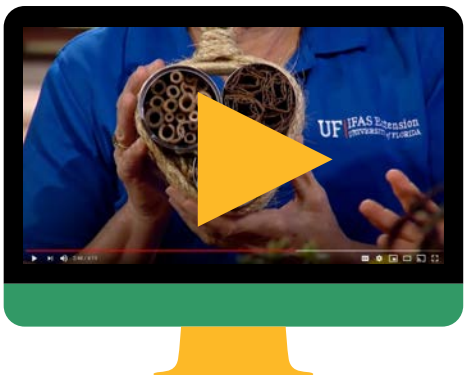
INSECT HOMES

Social insects live in large groups and work together to survive and build their homes. Some examples are bees, ants, wasps, and termites.

Each member of the group (**colony**) has a specific role to play. Social insects communicate mainly through **pheromones**, special message chemicals that are released and affect member behavior.

Insects live everywhere! They live in the ground, on top of the ground, in the air, under logs and rock, inside and outside of plants, flowers, and trees, and even on other animals. And yep--they live right in your Polk County backyard!

Creating an Insect Hotel



There are many insects that are actually beneficial to your yard and garden. Those are the ones you want to attract! Watch this video to find out how to encourage beneficial insects to hang out where you live.

Can't view the video? CLICK HERE for a printable pdf.

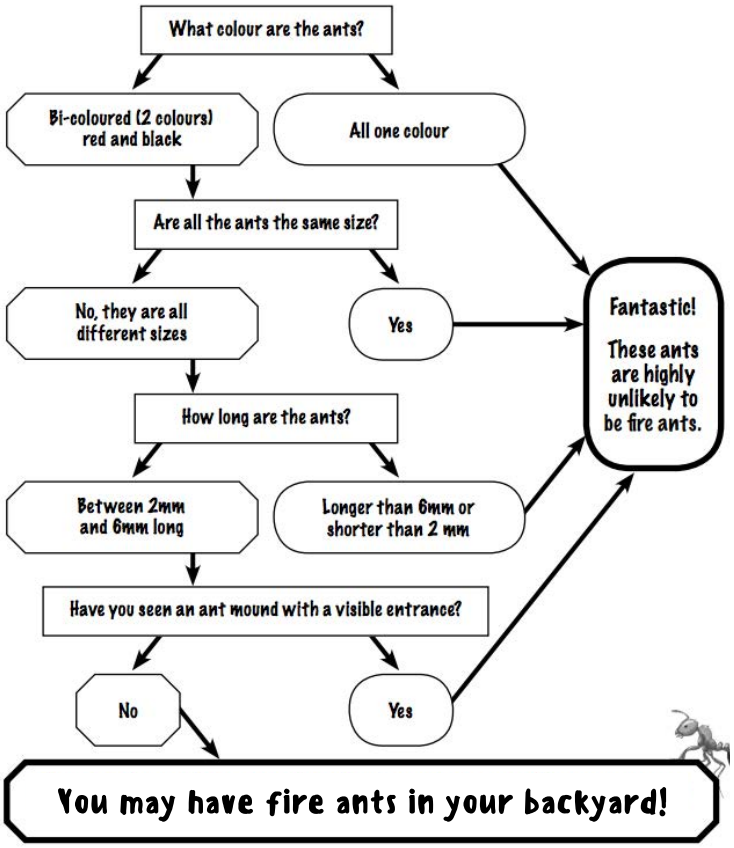
Growing a Butterfly Garden

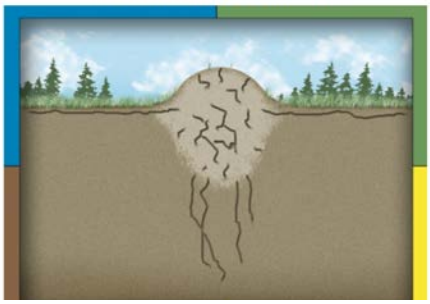
Butterflies are one type of beneficial insect that you may want to attract. To encourage butterflies you can build a flower bed that includes plants such as:

- Butterfly bush
- Cosmos
- Coneflower
- Milkweed
- Phlox
- Yarrow

FIRE ANTS

While you want to encourage certain insects to take up residence in your yard, there are some that should actually be sent packing! One of the most common of these insects here in Polk County is the Imported Fire Ant. How can you recognize if you have fire ants in your yard? Use this chart to find out.



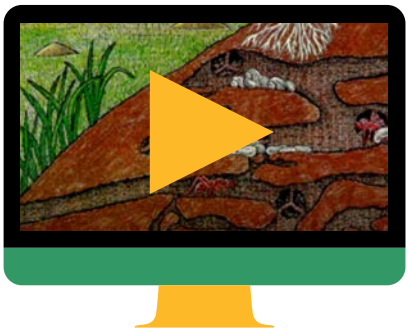


Mound of Trouble

Like any animal, a fire ant needs a place to live. As fire ant workers are produced, they begin to tunnel into the surrounding soil, making many interconnected chambers. The soil removed during the formation of the chambers and tunnels is carried above ground, where it is used to form many more chambers and tunnels.

A mature fire ant colony (a year or so old) consists of a mound averaging 12 to 15 inches wide and about 10 inches tall. The surface of a fire ant mound usually has a slight crust that protects it. The inside of the fire ant mound is filled with tunnels and chambers. These chambers form a cone that extends 1 to 3 feet into the ground.

Video: Fire Ant Mounds



Parents, want to get rid of fire ants in your yard?

Download this Extension Brochure

GOING ON A BUG HUNT

Have you ever gone hunting? Get ready, because in this activity you will be a hunter of very small game: insects.

Hands On Activity

In this activity you make and use a pitfall trap to collect insects that walk on the ground.

What You'll Need:

- 3 plastic or foam cups
- Paper clip
- Bait (bread, fruit, lunch meat)
- 3 small pieces of board
- Small rocks
- 3 containers
- Trap Table data sheets

HERE'S WHAT TO DO:

- Choose three different habitats to place your pitfall traps. Examples of habitats are in a lawn, under a tree or shrub, near water, in a ditch, in the woods.
- Ask for help to dig three holes and set the cups in them. Position the top of the cup even with the soil surface.
- Place your bait in the bottom of each cup. Use the same bait in each cup.
- Place a board over the top of each cup. Elevate the board above the ground by placing small rocks under it. This leaves space for insects to walk under and reach the cup.
- Empty each cup into another container each day for three days. Count the insects and other organisms collected and record them in the Trap Tables (or make your own).

Track your data on the Trap Table data sheets!

PRINT THE TABLES

Email Helen a copy of your data!

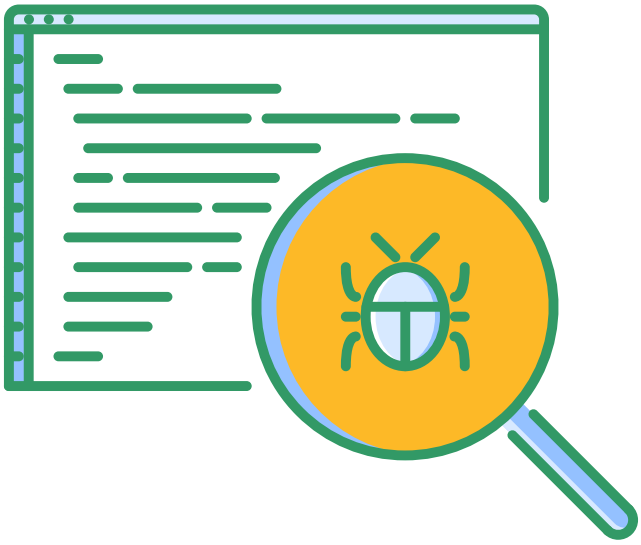
Need help identifying the bugs you find? Try these sites:

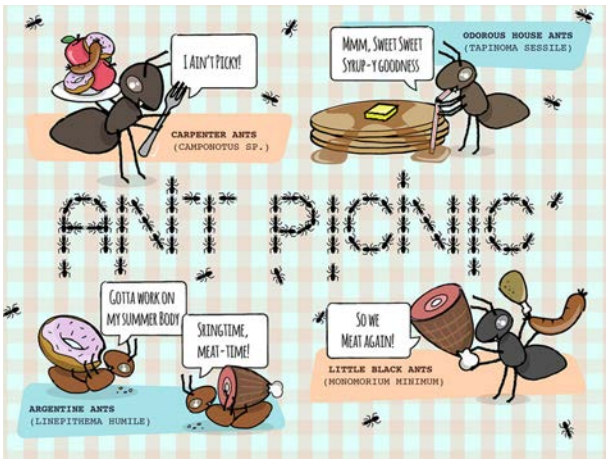
- Bug Guide
- Insect Identification

WANT TO BE A HOME ENTOMOLOGIST?

You can help entomologists in their study by being a citizen scientist. There are two studies being conducted right now, one on ants through NC State University and the other on bees. It involves locating, taking photos and identifying the insects and uploading the photos to the individual sites.

What a great way to make a difference right in your own backyard!





Ant Picnic

This project works with any grade level from K-12 and involves helping scientists discover what different types of ants around the world prefer to eat.

Check It Out

Bumble Bee Watch

This is a collaborative effort to track and conserve North America's bumble bees. Create an account and then submit your data via the Bumble Bee Sightings form.

Check It Out