



Ladybugs

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This information has been prepared by Marin Master Gardeners in conjunction with Farm Day, 2011

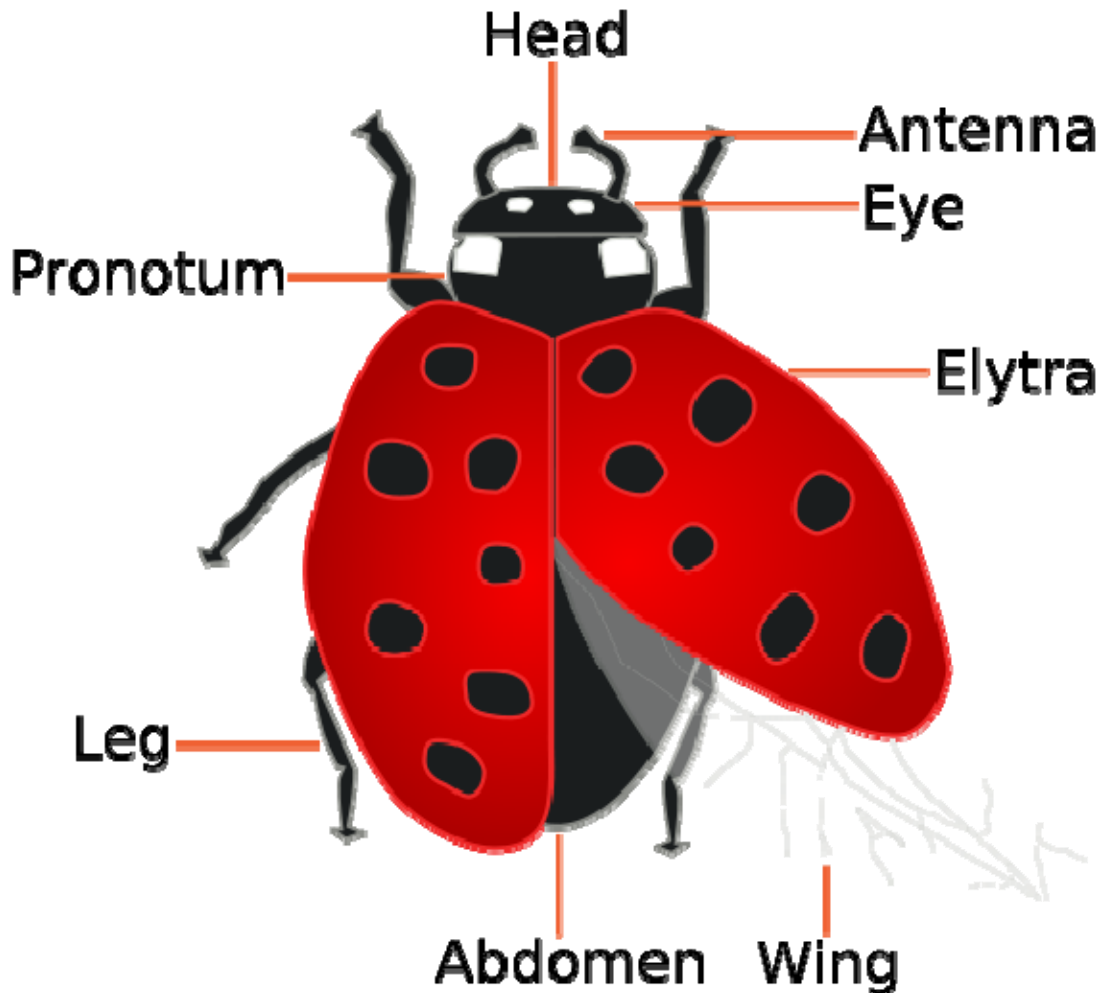
Fun Facts about our friend the Ladybug

- Not all ladybugs are ladies, some are males
- Ladybugs are also called ladybirds and lady beetles, but they aren't bugs nor are they birds, ladybugs are beetles.
- All ladybugs are born black.
- As the ladybug gets older the ladybug's spots fade.
- Ladybugs are cold blooded.
- Ladybugs chew from side to side, not up and down like you do.

- Pest or Pal? Ladybugs eat plant eating pests, such as aphids, and in doing so protect crops. Farmers love Ladybugs.
- Pest or Pal? Ladybugs eat up to 5,000 aphids in their lifetime.
- Pest or Pal? In the 1880's California's orange trees were almost destroyed by a pest called the cottony cushion scale. Scientists brought Australian ladybugs called Vedalia ladybug beetles to eat the scales and these ladybugs saved the trees and California's citrus crop.
- Pest or Pal? Many exotic examples of fauna live on the Islands of the Galapagos; Ladybugs have been deliberately introduced to the Galapagos to combat the devastating effects of the cottony cushion scale insect and is having a beneficial effect.

- Ladybugs hibernate in the winter and live off stored fat, kind of like a bear.
- There have been over 500 species of ladybugs identified in the United States, and over 4500 in the entire world.
- There are 175 species of ladybug in our state of California

Ladybug Anatomy



- Because of the distinctive markings that look like eyes, it is pretty easy to confuse the Pronotum and the Head on a Ladybug.



- The Ladybug can draw its Head into the Pronotum like a turtle.
- The Elytra is a hard shell that covers the Ladybug's fragile wings. It can be red with black spots, black with red spots, orange with black spots; it can also have no spots or be yellow.



- Ladybugs have a Latin name; the family is coccinellidae which literally means a small red sphere in Latin. The order for Ladybugs is coleoptera, which means sheath winged.
- The distinctive spots and attractive colors of the Elytra are meant to make them unappealing to predators. Their coloring is likely a reminder to any animals that have tried to eat their kind before: "I taste awful."

- Ladybugs can secrete a fluid from joints in their legs which gives them a foul taste. A threatened ladybug may both play dead and secrete the unappetizing substance to protect itself.
- A ladybug's wings are so thin you can see through them. They beat these wings 85 times a second to fly.
- A ladybug will not fly if it is below 55 degrees Fahrenheit, 13 degrees Celsius.
- There are special organs on Ladybug's feet to help them smell.
- The ladybug uses its antennae to touch, smell and taste.

The Ladybug Lifecycle

Ladybugs have 4 life stages. This developmental process is called *complete metamorphosis*. The Ladybug will lay up to 300 eggs in spring or summer in an aphid colony. She chooses an aphid colony so the larvae will have a food source close at hand.



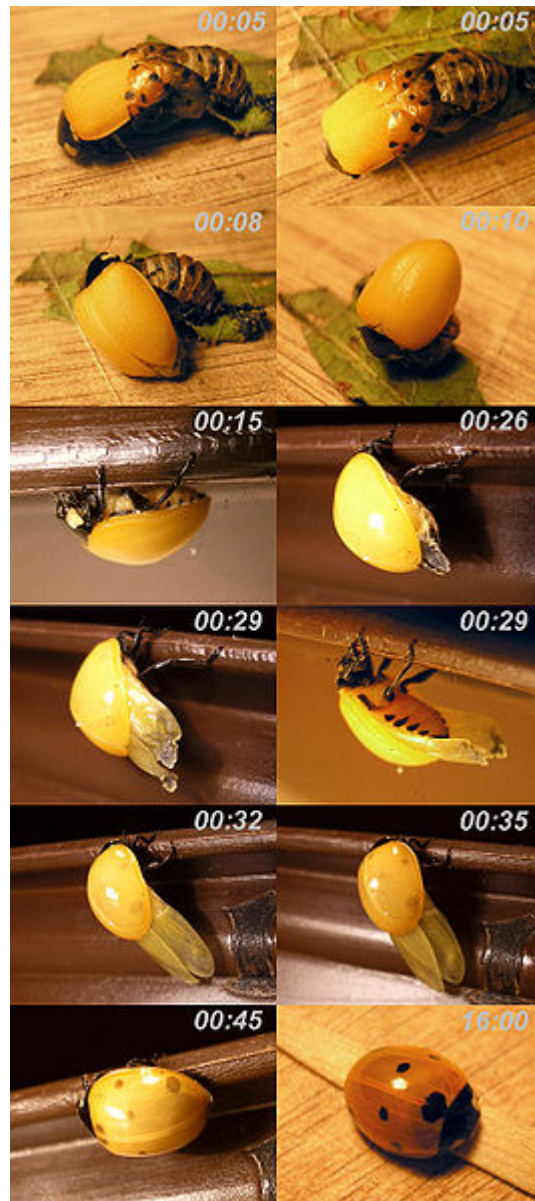
The eggs hatch quickly, just 2-5 days, and then the larvae emerge. The larvae feed on the aphids for up to three weeks.



After feeding on the aphids the larvae develop a hard case and enter a resting stage called the pupae.



The pupae stage lasts one week and then the Ladybug emerges complete with wings, antennae, and long jointed legs.



The newly emerged Ladybug is ready to eat more aphids.



Scarlet in the Garden

A pretty ladybug spread her wings for the very first time, and set off to search for food. She had just completed three of her growth stages and was now an adult. What freedom she felt as she soared over the land where she had hatched from an egg and gone through metamorphosis. Those tiny wings were strong.

Feelings of hunger brought her to land on some lush looking ground. She had barely folded her tiny wings when a loud and forceful voice boomed, "Who goes there?"

Pest or pal?" The ladybug looked up into the face of a large and fierce looking insect. It was a ground beetle and he looked angry.

"Oh dear, my name is Scarlet" stammered the frightened ladybug. "I don't know what you mean, pest or pal. I just know that I am a little bug looking for some food. I think I'll just keep flying on."

"Just stay where you are, little one," said the ground beetle. "I'm sorry that I scared you with my big voice, but I'm trying to keep pest bugs out of here. You see, this is the garden of some school children who are learning how to grow their own food, and some of us critters want to help them be successful. We are garden pals who protect plants by eating the pests who feast on them. People don't have to use poisons when we are around because we do the job without harming people, wildlife or the environment. Now, I think that ladybugs are called "beneficial insects" because you eat

aphids that damage plants. I heard that one little bug of your size can munch 5,000 aphids in its lifetime. That would be mighty helpful to the children growing their food. With us at work, snails, slugs, scale and mosquitoes can be kept under control."

Scarlet had lost her fright and was listening eagerly to the ground beetle's story. She could see beyond him to the pretty greenery and was curious to explore it herself. The ground beetle sensed this and said, "Would you like to come into our garden and meet the other pal helpers?"

"Oh yes, indeed I would" Scarlet replied. The ground beetle bowed with a flourish and she skipped happily to meet the other members of the pest patrol. There were green lacewings, striped hoverflies and graceful dragonflies. Frogs and toads were hard at work using their sticky tongues to catch bugs. Spiders were busily spinning webs to catch their prey. The ground beetle

bragged that the garden pals even had a night patrol- bats emerged when the garden was dark to hunt for flying insects.

Scarlet spied some vegetables covered with those pesky aphids that were sucking the life out of the plants. She was excited to get busy herself, eating them all up. "I think that I would like to be part of your pest patrol, Mr. Ground Beetle," she said. And he welcomed her to the school garden with a huge smile. Scarlet scampered happily off to join the other beneficial insects and creatures.

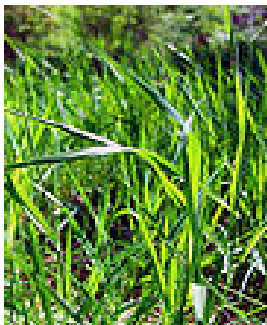
by Rita Chase Bernardi

Activity- Building a Ladybug Habitat

Into a clean empty container



Place



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Grass

Twigs

Pebbles

Add the Ladybugs and close the top. Gently spray the grass with water and every few days, add more leaves, flowers or live aphids for food. Set your Ladybugs free in your yard or garden in a few days.



Sources for Materials

- National Geographic Ladybug *Coccinella septempunctata*
<http://animals.nationalgeographic.com/animals/bugs/ladybug.html>
- Lost Lady Bug Project- a joint collaboration between Cornell Institute for Biological Teaching and 4-H Cooperative Extension Master Gardeners
<http://www.lostladybug.org>
- A Kid's Guide to Backyard Bugs
Marin County Stormwater Pollution Prevention Program
<http://mcstoppp.org/>
- Questions and Answers about Lady beetles
<http://cecalaveras.ucdavis.edu/lady.htm>
- Photos from Wikipedia Commons
http://commons.wikimedia.org/wiki/Main_Page