This year many people will hear the sounds of singing insects. These insects are called cicadas. Cicadas spend most of their life in the soil. They eat things such as tree roots. At this time they are called larvae. This is the name of a stage in an insect’s life. For a cicada, this lasts 17 years! Then they climb up on trees. This is the pupa stage. Then they change to an adult. They begin singing to find mates. This is what you might hear this year. These insects don’t bite people, but they can harm young trees.

Many insects are harmful because they hurt plant-life. Others spread diseases like malaria. They eat crops that people need. But many insects are also helpful insects. These insects may be brought into areas to solve problems.

Insect Life

Insects are interesting creatures. They have six legs and a body divided into three parts. These parts are the head, chest or thorax, and abdomen. Insects have a very complex life cycle. A life cycle is the series of stages animals and plants pass through during their
lifetime. The changes insects go through is called **metamorphosis**. The first stage begins with the egg. This hatches to produce a larva. **Larvae** spend most of their time eating. The pupa is the third stage. Sometimes pupae are wrapped in a covering called a cocoon. The final stage is the adult stage.

Different species of insects spend very different amounts of time in these life stages. A cicada spends most of its life as a larva. When it comes out of the ground after 17 years and climb into trees, this is the pupa stage. This lasts only about 2 hours! Then the cicada is an adult.

**People and Insects**

Insects and people have a long history together. People think that for every person on earth there may be as many as 300 million insects! Scientists that study insects are called **entomologists**.

There is much interest in insect ecology. Entomologists study how insects help and harm people and property. Much of the earlier studies looked at ways to get rid of insects. Now, some entomologists are looking at the help some insects can give to people. For example, the blow fly larvae produce a chemical called “allontoin.” This helps heal wounds. Bee venom, the chemical released when they sting a person, has been used to treat arthritis. One of the most useful insects is the Ladybird Beetle.
Ladybird Beetles

Certain insects, like Ladybird Beetles, are helpful to people. The Ladybird Beetle is sometimes called the ladybug. There are more than 4000 species found in the world. They are red to orange colored beetles with black spots. They help by eating pest insects like aphids. Aphids are soft-bodied insects that eat plants. Aphids are usually controlled by spraying with chemicals. However, Ladybird Beetles eat these pests. One species of Ladybird Beetle, called the Asian Multicolored Ladybird Beetle, was introduced from Asia to the United States. This was because they were very good at eating harmful insects like aphids. When insects are introduced to control pests, it is called biological control.

Ladybird Beetles were named in the Middle Ages. Swarms of locust and other insects would destroy crops. Farmers in the Middle Ages were glad the Ladybird Beetles ate harmful insects. They named these beetles Lady after Mary, Jesus’ mother, who was also know as Our Lady.

Biological Control

Biological control is using plants or animals to control pest species of other plants or animals. Biological control is often used in small gardens. To help control pests, Asian Ladybird Beetles were introduced to North America between 1910 and the 1970s. This species was chosen because of its feeding habits. Each Asian
Ladybird Beetle will eat about 75 aphids each day. They will eat as many as 5000 aphids over a lifetime. Many people would rather have Ladybird Beetles in their gardens. They don’t like to use sprays. These may cause problems for birds and other animals.

Often children like to pick up and hold Ladybird Beetles. They are one of the few insects that don’t seem to mind this! The next time you see a Ladybird Beetle in your yard, think about what it could be doing to help your plants.

Is this beetle helping or hurting?
Thinking Like a Scientist!

Now it’s your turn to be a scientist. Think about what you read about insects, cicadas, and Ladybird Beetles. Answer these questions.

A. What do you think makes cicadas unusual?

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B. Tell about the life cycle of an insect.

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C. Why is it important to learn about helpful insects?

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D. Do you think it was a good idea to bring Asian Ladybird Beetles to the United States? Explain your thinking.

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E. What do you find most interesting about insects?

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Understanding Scientific Vocabulary

There are eight bold-face words in this article. Use what you already know and the context in which the words are used to help you write good scientific definitions for each one.

1. thorax

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2. life cycle

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3. metamorphosis

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4. larvae

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5. pupa

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6. entomologist

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7. aphids

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8. biological control

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_______________________________________________________________
Dear Colleague,

Get ready for the cicadas! That’s what we, in Virginia, are saying. It’s been 17 years since we last saw them. My daughter was graduating from pre-school and we could hardly hear the speakers because of the cicada “song.” Now she’s graduating from college, and we wonder whether we will have the same problem! If you live in the area of the United States where Brood X will soon inundate us with their “song,” here’s a fun idea for you and your students. Have each child calculate how old she/he will be when the cicadas make their return, 17 years from now. Children can write letters to themselves telling about what their life is like now, their likes and dislikes, hope for the future, etc. I am going to take a picture of each one of my students holding or pointing to a cicada. Then I will seal each letter and picture in an envelope and instruct the students to write: To Be Opened When the Cicadas Appear Again. Just imagine the children opening these keepsakes as adults and thinking about the time in YOUR class when they wrote these letters!

As the weather grows warmer, insects are beginning to make their presence felt. Have your students look closely at this animal world. There are many fascinating facts to discover. Some of them have been presented in this short article. I’m sure many of your students will be eager to learn more about insects. Perhaps they will want to delve into research books at the library and produce a list of “Incredible Insect Information.” They could make trading cards using these insect facts. Other students might want to put their math skills to work and figure out how long an aphid lives. Perhaps some children could integrate math and art and make a scale model of an interesting insect. This world teems with educational ideas! Share yours with us!

Happy teaching,
Kathy

Answers to Vocabulary (Answers to “Thinking Like a Scientist” will vary; however, you may want to discuss with your students that introducing even helpful animals like the Asian Ladybird Beetle could be harmful. We can’t always predict what the effect will be. Many scientists think the Asian Ladybird Beetle can out-compete the native species for food.)
1. thorax – the chest part of an insect
2. life cycle - the series of stages animals and plants pass through during their entire lifetime
3. metamorphosis - dramatic changes insects go through
4. larvae – second stage of an insect’s life cycle; most of this stage is spent eating
5. pupa - third stage of an insect’s life cycle; sometimes pupae are wrapped in a covering
6. entomologist – a scientist who studies insects
7. aphids – tiny soft bodied pest insects that eat plants
8. biological control - when beneficial insects like ladybird beetles are introduced to control pests

Goals –
Students will read an article about insects and their life cycle. In particular, cicadas and Ladybird Beetles are highlighted. Reading in the content area skills are practiced as students answer both literal and critical comprehension questions. Students define scientific vocabulary based on context clues. This activity is available in both the intermediate and primary levels.