

All About Insects



Overview

In IPM we need to learn about the biology, habits and abilities of pests in order to manage them effectively. Students take notes and learn about the characteristics, capabilities and life cycles of insects.

Objectives

Students will:

- learn characteristics of insects
- learn parts of insects
- learn about metamorphosis
- observe live insects

Getting Ready

Live insects bring this lesson to life. You may wish to rear insects in the classroom, or you may wish to collect some insects from outside to observe. For more information on either option see the resource list on the following page.

Review the teacher insect fact sheet to learn and review characteristics and capabilities of insects. If you use live animals for this lesson, you may want to keep them covered or hidden until you are ready to introduce them to the students. Live animals are very interesting and can become a distraction when you want the students to concentrate on listening and writing!

Doing the Activity

Step 1: Discussion. Tell the students that today we will learn more about insects and some insects that are pests. Ask: *How does knowing the biology of pests help us manage them?* Emphasize the importance of knowing how quickly pests

Materials

student worksheet, teacher key, teacher insect fact sheet, live insects

Duration

1-2 hours

Subjects

science

reproduce, what they need to live and how they behave. When we know this, we can take away the things that they need to survive. We can trap them easier if we know the places they like to live and travel. We can keep them out if we know how they come in and what they are capable of doing.

Step 2: Taking Notes. Ask the students what they know about insects. Write the facts on the board. Hand out the student worksheet. You may wish to copy the worksheet onto overhead film so that you can fill the worksheet in together with the class. Fill out the worksheet with the class by asking them the questions first and writing down the answers together. Explain the function of each body part. Add some fun insect facts from the teacher fact sheet.

Step 3: Introduce Live Insects. (optional) Walkingsticks and Madagascar hissing cockroaches work well to demonstrate parts of an insect because they are large. If you do not have large

insects, have students collect an insect to observe. petri dishes or clear containers with tight fitting lids (readily available at restaurant supply stores) work well for this. Ask students to write down as many characteristics that they see. Entomologists use these characteristics to tell different insects apart. Ask the students to try to find all of the insect parts that they labeled on their worksheet on the live insect.

Closure/Assessment: Discuss with the students what they learned.

Extensions

1. Have students cut out pictures of insects from old nature magazines or print from the internet (see sites below). Ask them to glue the pictures onto a piece of paper and label as many of the parts as they can see.
2. Using insect nature guides or live or pinned insects, have the students study different types of insect characteristics. Break the students into groups and assign each student a different insect part (head, thorax, abdomen, eyes, antennae, legs). Each group draws a new insect with each student drawing their part. This can also be done as a relay.

Internet Fun

There are many excellent internet sites on insects for kids. Here are a few to check out.

Yucky Roach World Website

Discovery Communications

- A great kid-friendly site about roaches.

Includes IPM techniques to keep them away.

<http://yucky.kids.discovery.com/noflash/roaches/index.html>

Madagascar Hissing Cockroaches

Information and stories about raising and using these insects in the classroom.

<http://www.geocities.com/CapeCanaveral/Lab/5466/>

Enrichment

There are many excellent resources available for teaching about insects in the classroom. The following are just a few.

Using Live Insects in Elementary Classrooms

Center for Insect Education Outreach, University of Arizona, 1997.

-K-6 curriculum which includes 20 lesson plans that utilize insects to teach all kinds of concepts to young learners. Includes activity sheets, fact sheets, and rearing sheets on the insects used. (free on website)

<http://insected.arizona.edu/uli.htm>

Pennsylvania State University School IPM Education Resources

-The premier clearinghouse for IPM curricular resources, this website includes a comprehensive searchable database on IPM classroom resources as well as lessons and links.

<http://http://paipm.cas.psu.edu/schools/schoolEduc.htm>

Health Teacher with WebMD

Easy to follow online lesson plans on health and safety topics including head lice.

<http://www.healthteacher.com/lessonguides/default.asp>

CityBugs

A collaborative project between the University of California-Berkeley and the Oakland Unified School District. Contains lesson plans.

<http://www.cnr.berkeley.edu/citybugs/>

Carolina Biological Supply, Inc.

One source of insects and other scientific supplies for schools.

<http://www.carolina.com/>

Name: _____ Date: _____

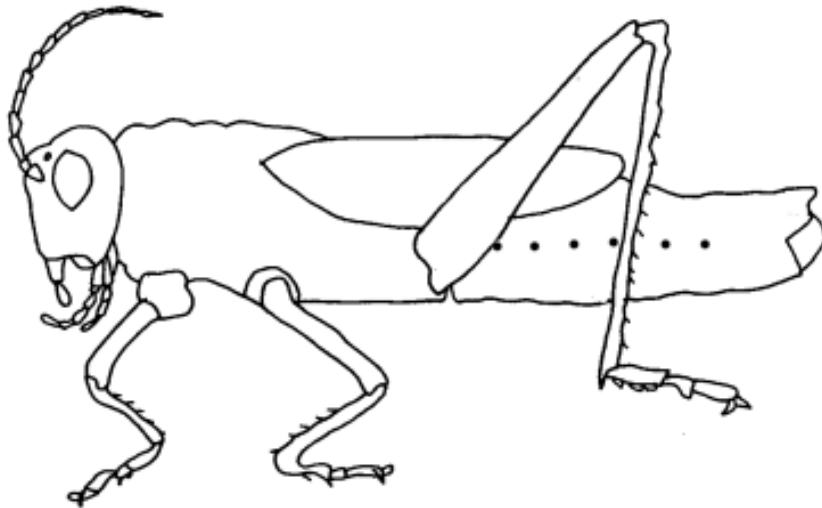
All About Insects

Facts About Insects

Most animals on Earth are insects. There are about 1,250,000 species of animals and about _____ are insects. That is _____ percent of all animals. Insects have been on Earth for a very long time. Fossils show that insects were here _____ million years ago.

Insects have _____ body parts, _____ antennae, and _____ jointed legs. Most adult insects have wings. Flies only have _____ wings. All other insects with wings have _____. All wings and legs are attached to the _____ body part. All insects are covered by an _____, a skeleton covering the outside of their bodies like armor. When an insect sheds this covering it is called _____.

Parts of an Insect



head
thorax
abdomen
compound eye
legs

antenna (plural = antennae)
mouthparts
wings
spiracles

Name: _____ Date: _____

Metamorphosis

Metamorphosis _____

Complete Metamorphosis _____

Examples: _____

Incomplete Metamorphosis _____

Examples: _____

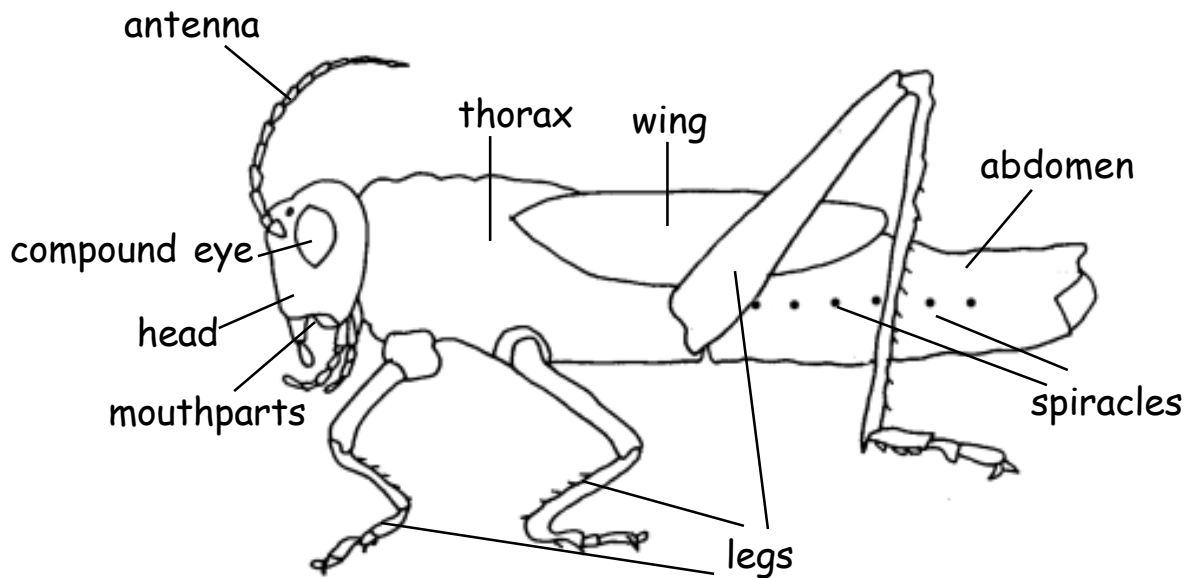
All About Insects

Facts About Insects

Most animals on Earth are insects. There are about 1,250,000 species of animals and about 1 million are insects. That is 80 percent of all animals. Insects have been on Earth for a very long time. Fossils show that insects were here 350 million years ago.

Insects have 3 body parts, 2 antennae, and 6 jointed legs. Most adult insects have wings. Flies only have 2 wings. All other insects with wings have 4. All wings and legs are attached to the thorax body part. All insects are covered by an exoskeleton, a skeleton covering the outside of their bodies like armor. When an insect sheds this covering it is called molting.

Parts of an Insect



head
thorax
abdomen
compound eye
legs

antenna (plural = antennae)
mouthparts
wings
spiracles

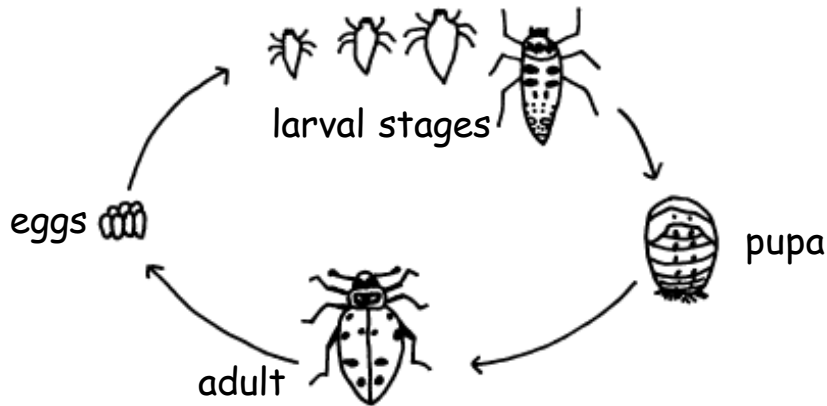
Name: KEY Date: _____

Insect Life Cycles

Metamorphosis is a change from one life form to another.

Complete Metamorphosis has four life stages. They are egg, larva, pupa and adult. The larva looks very different from the adult. The adults and larvae do not eat the same food.

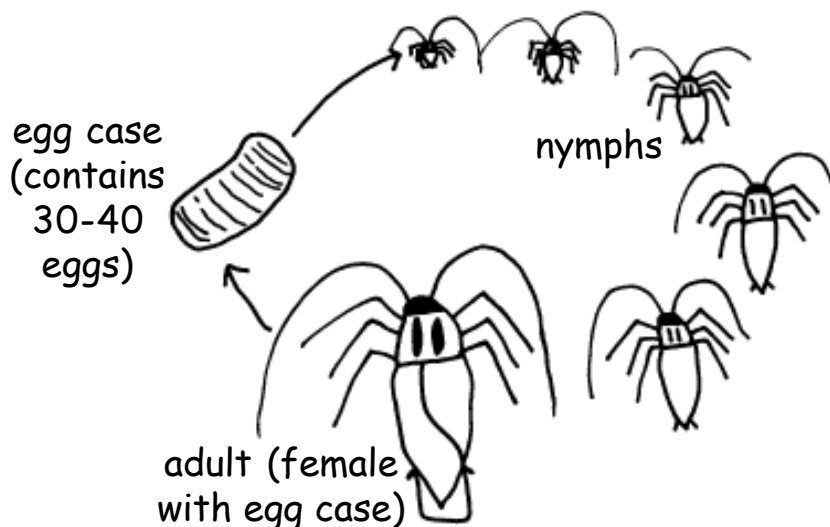
Life Cycle of a Lady Beetle



Examples: beetles, butterflies and moths, flies, fleas, wasps, bees, ants

Incomplete Metamorphosis has three life stages. They are egg, nymph, and adult. The nymphs look similar to the adult but they cannot lay eggs yet and do not have fully developed wings.

Life Cycle of the German Cockroach



Examples: cockroaches, earwigs, head lice, grasshoppers, crickets