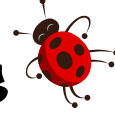


7- Science



The Great Bug Hunt



Purpose: This lesson will provide students the opportunity to get outside and discover the world around them. It will enable students to learn about insects that are in the environment in which we live.

Objectives: The students will be able to:

1. Collect insects from their environment
2. Know how to use the tools (nets and termination jars) when capturing insects
3. Identify the different body parts
4. Pin and label an insect with the correct information
5. Use books, encyclopedias, and the Internet to discover the correct insect
6. Present their insect collection to the class

Materials:

Nets, bug viewing container, termination jars, magnify glass, pins, clear plastic bug box or shadow box for storing specimens, braded folder (for journal), insect field guide

Where and How to collect Insects:

Where?

- In the air for flying insects on warm days from early spring to late fall
- On a wide variety of vegetation, both night and day
- Around street lights, porch lights, and study lamps
- In woodpiles, especially in spring and early summer
- In the soil
- Along the edges of streams, lakes, ponds
- In buildings- windows, floors, closets

How?

As you see insects live in a variety of different places. Some of these insects can be a challenge to capture while others will be slow enough to pick up with your hand and put into the killing jar. If you think an insect may bite or sting, gently tap it into the jar with a twig or tweezers. You will need a net for fast moving insects.

An insect net can be used in a variety of different ways. You can use the net to scoop insects out of the air as they fly by, or you can sweep the net through the weeds and flowers to catch whatever is hidden there.

Be careful when catching stinging and biting insects. Sweep the insect into the net and, with a quick jerk, force it to the bottom of the bag. Then grasp one hand around the bag just above the captured insect. Put the end of the bag with the insect into the termination jar. Place the jar lid over the mouth of the jar as tightly as you can, and wait until the insect becomes still. Then take the end of the bag out of the termination jar, quickly remove the stunned insect, and put it back into the termination jar.

Collecting moths and butterflies without damaging them takes special care. To keep them from escaping after being netted, whip the net so the insect goes to the bottom of the bag. Keep the insect trapped in the bottom of the bag by giving the net a flip so the bag bottom rests across the loop. Then pinch the thorax of the insect while it is still in the net. This will stun the moth or butterfly and keep it from beating the scales off its wings when it is put in the termination jar.

Identifying Your Insects:

You can identify your insect by using a field guide or Internet. I have listed the field guide and a useful internet sites.

The National Audubon Society: Insects and Spiders Field Guide - ISBN: 9780394507637

www.insectidentification.org, [www. Bugguide.net](http://www.Bugguide.net), www.floridata.net (butterflies and moths)

Insects to Be Collected: 10 insects

Pinning Your Insect:

After collecting insects for the day, you should go ahead and prepare the specimens to put in your collection. This means putting them on pins. Don't wait until the next day because they can become brittle and dry.

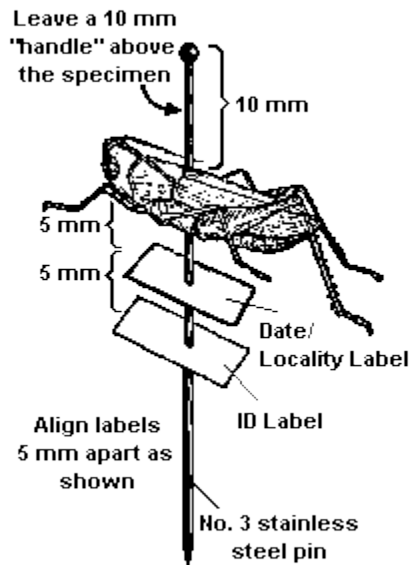
You begin pinning them after they have been in the termination jar at least 20 minutes. If you take them out too early they could revive after you have pinned them.

Gently run the pin through the thorax of the insect a little to the right of the midline of the body, dorsal side up. Leave 10mm "handle" above the specimen. (Look at diagram)

Mounting Butterflies and Moths: Spreading the Wings The wings of butterflies and moths must be spread. To do this, you need a spreading board. It is made of some soft material, such as Styrofoam, that pins can go through. To make a simple one, cut a groove in the middle of the board so that the abdomen of the butterfly or moth fits into it. Pin through the middle of the thorax as described above and pin the whole thing into the middle of the groove on the board. Make sure that the wings lay flat on the flat surface of the board. Work with one side of the body at a time. Cut strips of paper about 1/8 in. wide and long enough to spread across the wings. Cut them to about 3 in. long. The wings are very delicate so handling them with forceps will prevent them from being damaged. Pin the strips down to hold the wings. Repeat with the other side. **NEVER PIN ON THE WINGS OF THE SPECIMENS!**

Leave the mounted specimens to dry for about a week. When dried, remove the pins from the paper strips carefully and remove the specimen. Labels can be placed on at this time. This process can be quite difficult for beginners but with practice, you can perfectly mount a specimen.

Example of pinning:



Labeling Your Insect

Use index card stock or equivalent. Labels should be lettered in black ink printed with a laser printer. Size of card stock should be **no larger** than 5x4 cm, 1-4 lines of writing per label.

Format:

1. Top level- Date/ locality label

Lines 1&2: Country, State, County, City

Line 3: Date Collected (day, month in Roman, year in full as 26-VII-2008)

Line 4: Collectors Name

2. Second level- Identification label

Line 1: Give family name for pinned insects

Line 2: Common name

Storing Your Insects

After you have pinned and labeled your insects, keep them in a safe place (a clear plastic box) where they will not get eaten from other insects. Place a piece of Styrofoam in the bottom of the box to pin the insects into. Placing moth balls in a film canister with holes or cedar chips will keep other insects from eating the collected insects.

What will be graded:

• Collected Insects (20pts.)

- Neatness
- Evidence of Effort

2. Storing the insects (10 pts.)

- Insects pinned with typed information under them (see project guidelines)
- Organized neatly
- Evidence of Effort

3. Typed Journal (25 pts.)

Type out the questions and answers for each insect. Place information in a braded folder.

1. Name of insect (family name and common name)
2. What does it eat and who eats it?
3. What kind of lifestyle or life cycle does it have?
4. What are the mating habits? How many generations are there in a year?
5. How long do they survive?
6. Why is it important to life on Earth?
7. Is it a pest or beneficial?
8. What is the insect's prospect, is it endangered?
9. How do humans affect this organism?
10. What are the most interesting fact or facts you learned about the insect?

4. What is due:

- The insect collection
- Typed journal in a braded folder

5. When is it due: April 15, 2011

6. Total amount of project: 55pts.