



# INSECT COLLECTING INSTRUCTIONS



## SEVENTH GRADE SCIENCE INSECT PROJECT

The first unit that you will study in science in the fall is entomology. This is a study of insects and includes preparing an insect collection. If you collect most of your insects in the summer when they are plentiful, then you will feel less stressed in the fall.

Instructions on how to identify the insects and prepare them for your collection will be given to you in school. Collect your insects during the summer and keep them in a safe place at home until school starts. **Most of the final work preparing the collection will be done at home once you learn preparation techniques in science lab.**

### WHAT IS AN INSECT?

Insects are a class of organisms that belong to the phylum, Arthropoda. Besides insects, this phylum also includes centipedes, millipedes, spiders, crayfish and other organisms. Insects are also organized into different groups called “orders”. *An insect’s most distinguishing characteristic is that it has **six legs**. Make sure you are **only collecting insects** and not other organisms from the Arthropoda phylum.*

Enclosed is a page of examples of some of the insect orders with their common names. While you are collecting, remember that some insects bite or secrete toxic chemicals (caterpillars). It is wise to handle all insects with care. If you are allergic to bee and wasp bites, have someone else collect them or omit them from your collection.

### INSECT SUPPLIES

1. Clean jars with lids. Wide mouth jars like instant coffee, pickle, or peanut butter work best. Plastic jars are safer than glass. **Make sure you follow the instructions for labeling the collecting jars.**

2. Rubbing alcohol (isopropyl alcohol), finger nail polish remover, and cotton balls are needed for the killing jars. **CAUTION:** Rubbing alcohol and finger nail polish remover is flammable. Keep them away from open flames!!!

3. Nets are optional. You can make a sweep net with a coat hanger and light weight cloth if you would like. A few nets may be borrowed from school. Contact me at home or school to arrange to use one. **Borrowed nets must be returned the first full week of school!!!!**

4. BRING TO SCHOOL:

- tweezers
- plastic gloves (*if you do not want to handle the insects with your hands*)
- 3X5 cards
- scissors
- clear glue or clear nail polish
- sewing pins for securing vials in the box (*not for pinning insects!*)
- eye dropper or pipette
- All other supplies you need will be given to you in lab.
- Some school supplies may be taken home.
- **Please return all unused or borrowed items!**

## **COLLECTION TECHNIQUES**

### **A. COLLECTING OF ALL INSECTS (EXCEPTIONS: butterflies, moths, and hairy bees)**

1. Fill the jar 1/3 - 1/2 full with rubbing alcohol.
2. Label the jar with the:
  - COUNTY & STATE (where collected)
  - MONTH & YEAR (when collected)
  - YOUR NAME
    - ❖ **Labeling the jar correctly is very important for labeling the insects in your collection.**
    - ❖ **EXAMPLE: St. Joseph Co., IN, July 2004, Ryan Barry**  
**ALL JARS AND FREEZER CONTAINERS BROUGHT TO THE SCIENCE LAB MUST BE LABELED!!!!!!!**
3. You can catch many insects with the empty jar in one hand and a lid in the other. As soon as the insect falls into the alcohol it will die quickly. The alcohol acts as a preservative until you are able to pin the insect in lab.
4. **All insects that are collected during the same month and in the same county may be placed in the same jar.** Make sure to tightly close the jar lid when storing your insects at home. Do not be concerned if the insects lose some of their color and the alcohol turns yellow.
5. **You are allowed to have only 5 different species of caterpillars.** They will be put in glass vials in school.

### **B. COLLECTING BUTTERFLIES, MOTHS AND HAIRY BEES:**

1. Avoid capturing beautiful butterflies and rare moths unless they are close to death. White Cabbage Butterflies and Army Worm Moths are common pests, so they can be collected. Most of the duller moths are plant pests in their larval form so you can include them in your collection.
2. **Butterflies, moths and bees are ruined if they are put in alcohol.** It is important that you follow the directions below!
3. Obtain a margarine container and place a few drops of nail polish remover on some cotton balls.
4. Put the cotton balls in the bottom of the margarine container. **Do not add too much remover, just enough to fill the jar with fumes.**
5. You can place several insects into the labeled margarine container.
6. Keep the labeled margarine container in the FREEZER. Do not disturb the container until it is time to bring it to school. You will bring them to school **after** you have learned how to spread butterflies and moths. They must be spread the same day they are removed from the freezer. I do not recommend catching SMALL MOTHS since they are difficult to spread.
7. You may catch butterflies, moths, and hairy bees in margarine containers without any rubbing alcohol. You will need to immediately put them in the freezer.

### **HINTS FOR LOCATING AND COLLECTING INSECTS**

1. Some insects are attracted to light. Collect around your porch light on a hot, muggy night or set up a light bulb so that it is shining on a white sheet. You will be able to "flick" the insects off the sheet into your jar without having to use a net.

2. Some insects are garden pests. Look under leaves and on stems of plants in both flower and vegetable gardens.
3. Look in decaying organic matter such as rotting logs, decaying leaves, compost piles, etc.
4. Some insects have aquatic stages in their life cycles. Look near ponds, rivers and lakes for dragonflies, damselflies, and mayflies. Look on top of the water or under rocks for water beetles, water bugs, and the immature stages of dragonflies and mayflies. An aquarium net can be helpful for catching water insects.
5. To collect insects that avoid light,
  - look at night for cockroaches and silverfish.
  - pour soapy water in cracks in sidewalk.
  - look under flat stones or boards.
7. THE BEST TIME TO COLLECT is on warm, bright, sunny days. It is best to look in areas of tall weeds and grasses. Goldenrod (fall) and other wild flowers in fields attract many insects.

### **ADDITIONAL IMPORTANT INFORMATION**

1. If you find more than one specimen of the same kind, keep duplicates. You can trade for other insects with students who may have insects you do not have. You may also make a mistake pinning and it helps to have another insect.
2. Handle your insects *carefully*. A good specimen for your collection does not have any parts missing. Insects with a leg or antenna missing can be used. Also, insects with slightly damaged wings may be used.
3. Praying mantis may be included in your collection. If you do collect them, only collect one or two as they are beneficial insects.
4. There are many different kinds (species) of one type of insect. For example, there are many species of lady bugs. They have different colors and spotting. C-7 lady bugs have seven spots and then some lady bugs only have two spots. **Each species can be included in the collection.**

### **WHAT TO EXPECT IN SEPTEMBER**

1. Bring one or two jars of insects to school on the first double period lab day.
2. You will learn how to pin, label, identify, and display your collection in lab. You will need to do some pinning at home, so do not bring all of your insects to class.
3. Do not bring in butterflies or moths as you will not learn how to prepare them until the second full week of school.

#### **4. HELP !!!! HELP !!!!! HELP !!!!! HELP!!!!**

What do you do if you are not comfortable with insects and no one you know is either?  
 What do you do if you are a new student and find out about the collection in August?

You can prepare an excellent collection in five weeks from the beginning of school until the collection is due. Extra help is available twice a week after school until 4:30 p.m. An occasional Friday afternoon session will also be scheduled. On Fridays, you may eat lunch, and work until no later than 3:00 p.m. I will let you know ahead of time which Fridays are available and you will need ***a permission slip from your parents.***

**EXTENDED DAY STUDENTS MAY COME WITH PERMISSION.**

I will be traveling quite a lot this summer but will be at Stanley Clark School occasionally. Call or e-mail me if you have questions and I will get in contact with you as soon as possible. The purpose of this project is to learn about insects, how to identify them and correctly mount them in your collection. A little apprehension about preparing the collection is understandable. **Just remember to enjoy what you are doing!**

### **GRADING**

You will be receiving a grading rubric for this project on the first day of class. If you have at least **45 different insects from ten orders** pinned, identified correctly, in good condition, and labeled properly, you will have a collection that has met all of the requirements for a 90 or above.

Have fun collecting this summer and enjoy your vacation. If you have any questions, feel free to call me.

Mrs. Born

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**COLLECTION DUE DATE: Monday, OCTOBER 8, 2007.** BIG BUG BASH will be after school in the common room. Bring your friends and family for bug juice, insect cookies, etc.

### **Web Sites:**

Osipovs Top 100 Sites about Insects

<http://osipov.org/insects/top/index.php>

The AES Bug Club for Young Entomologists

<http://www.ex.ac.uk/bugclub/welcome.html>

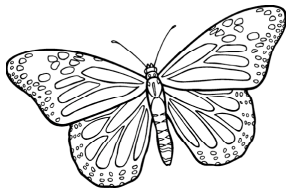
The Insects Home Page

<http://www.earthlife.net/insects/six.html>

Iowa State Entomology Site

<http://www.ent.iastate.edu/>

# Common Insect Orders



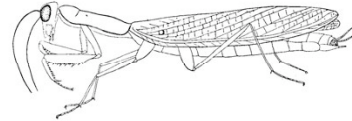
Common Names: Butterflies  
Order: Lepidoptera



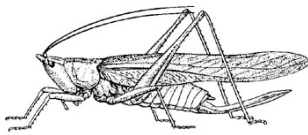
Squash Bug  
Order: Lepidoptera



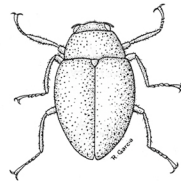
Wasp  
Order: Hymenoptera



Praying Mantis  
Order: Dictyoptera  
Suborder: Mantodea



Grasshopper  
Order: Orthoptera



Beetle  
Order: Coleoptera



Housefly  
Order: Diptera



Stonefly  
Order: Plecoptera



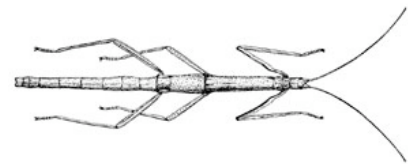
Dragonfly  
Order: Odonata



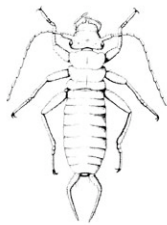
Mayfly  
Order: Ephemeroptera



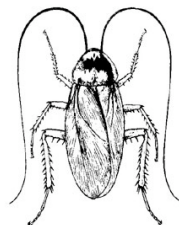
Cicada  
Order: Homoptera



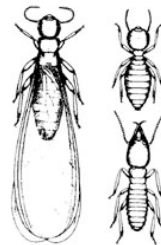
Walking Stick  
Order: Phasmida



Earwig  
Order: Dermaptera



Cockroach  
Order: Dictyoptera  
Suborder: Blattodea



Termite  
Order: Isoptera



Lacewing  
Order: Neuroptera