Biology
Classification - Insect Collection

This activity is assigned in addition to the required labs we complete in class, and there will be no class time dedicated for this activity. Students must work independently outside of class on this project. You cannot procrastinate, and you must do quality work. Expect to put in 15-20 hours on this project.

Purpose
The reason that you will be putting together an insect collection is to learn and utilize the classification system that is used by biologists to classify living things. You will need to learn how the system works and then use what you learn to classify your insects.

Why Insects?
First, they are readily available and fairly easy to collect. Second, you will use your insect collection to show that you understand how to identify and classify living things. Third, insects are a very important group of organisms on the planet. They are the most numerous group of organisms, and they live in almost every conceivable niche. According to last count, there are 750,000 species of beetles alone! In addition, insects are important in other ways:

- They pollinate 1000s of different kinds of flowering plants.
- A few are carriers of disease causing organisms.
- They participate and are vital in many food chains.
- Many are detritus feeders (scavengers).
- Many are parasitic.
- They are sources of many products - honey, beeswax, silk, shellac, etc…

Collecting Insects - Collecting insects consists of catching an insect and putting it into your kill jar. There are several methods to catch an insect. You will primarily be using small sweep nets in which you can chase down insects or sweep the vegetation and catch them. You can purchase these or make your own using household items. I’ve read that colanders work well, too.

What To Catch - You want to catch adult insects. The easiest way to tell if it is an insect is to count the legs. If there are six, it’s probably an insect. Insects that are a 1/2-inch or longer are the easiest to work with. For a beginner’s collection, it is best to work with adult insects only. **Do not catch or kill a praying mantis, please.**

Where To Catch - Places to catch insects include on plants (flowers and others), debris (leaves, etc.), around water, and in the ground. Insects live virtually everywhere! You may even try to catch some at night near a porch light.
Kill Jars – You may want to create a kill jar. These must be charged with ethyl acetate before you go collecting. Many finger nail polish removers are made with ethyl acetate (read the label). Don’t use acetone. To charge your kill jar, you simply squirt or dump a small amount of ethyl acetate into your jar and let it soak into cotton. Cover the cotton with a small disk of cardboard. To kill an insect you simply put it in the jar, and it will be ready to pin in a few hours.

Pinning Insects
The best way to preserve hard-bodied insects is by pinning them. Special insect pins are used to pin insects. Regular stickpins are not recommended as they are too short and often rust. Usually insects are pinned vertically through the body so that the insect is straight on the pin. Insects should be pinned so that they are at a uniform height - about 25 mm above the point. This is important for display purposes!

To pin an insect, it is best to hold it between your thumb and forefinger with one hand and insert pin with other hand. See websites for the point of entry for the various types of insects. If the abdomen hangs down you can support by putting a stiff piece of paper or cardboard on the pin until the insect dries. If you wish, you may display the wings of some of your insects by pinning these out until dried. It normally takes 2 or 3 days for an insect to thoroughly dry. Once your insect is dry it can be moved to your pinning board/box for storage.

Labeling Insects
For this collection each insect will have one label (some collections have more). The labels will be typed and neatly cut out. The insect pin will then be pushed through the center of the label so that it is approximately 10 mm from the point of the pin.

The following information will be included on the label. The insect order, the insect family (optional), the county & state collected, the date collected, and the collector’s name. Example:

Order Lepidoptera
Family Pierdae
Decatur, AL
August 2014
Johnny Insect-Colelctor

Before printing, the font size should be changed to 6 point. They will be small! They can then be printed and neatly cut out. Example:

Order Lepidoptera
Family Pierdae
Boone Co. NE
August 2007
Johnny Insect-Colelctor
Requirements
The following are requirements for the insect collection.

1. Must have at least 25 different species (kinds) of insects. The following orders must be represented: orthoptera, hemiptera, coleoptera, lepidoptera, diptera, hymenoptera, odonata.
2. Insects must be pinned properly.
3. Insects must be properly displayed with all parts intact and natural looking.
4. Insects must be grouped on the display board according to classification system (order).
5. Insects must be labeled correctly.
6. Insect labels must be typed and neat.
7. Insect must be identified to order.
8. Use the rubric to insure that you’re completing all aspects of the assignment.

Handing in instructions:
1. Group your insects on your board according to order.
2. Make sure each insect has its own label.

Getting Started:
You may want to begin by reading exercise 10.2 in your lab book, which discusses insect collections. Once you have collected some insects, keep them in the kill jar for at least 30 minutes. They can then be transferred to a zip lock bag and stored in a cool place (refrigerator) for a couple of days.

Collected insects need to be pinned within a couple of days of collecting. After insects have been pinned they need to dry for a couple of days. They remain on the board in the position that you want them to dry. After 2-3 days of drying, the insects can be placed in a storage box.

Important Dates:
Your completed insect collection is due by 12:30, Friday, September 3, 2014.

Helpful Websites:
*Links have been checked before posting; however, parents may want to check links again before allowing students to use them. Thanks!

Collecting and preserving (pinning) -
http://www.extension.umn.edu/distribution/youthdevelopment/DA6892.html
http://www.bugcollectors.com/

Identifying Insects -
http://bugguide.net/node/view/15740
http://www.whatsthatbug.com/