

May 17, 2021

Dear rising 7th grade students and parents,

As in previous years, rising 7th grade students will be required to create a nature collection for their Life Science Class. I am sending out this information now so that students can get started on their collections over the summer, since this is the best time to find bugs and leaves. The project will be due on September 9th. This project will count as two test grades.

Students have two collections to complete. Collection 1, students will collect ten *different* insects as specified in the included directions. Collection 2, students will collect ten *different* tree leaves.

Collection #1 -

Students will collect 10 insects. They must have 1 insect specimen from each of the following orders and no more than 2 different insect specimens from an order:

- Coleoptera (beetles)
- Diptera (flies, mosquitoes, gnats)
- Lepidoptera (moths, butterflies)
- Orthoptera (grasshoppers, crickets, katydids)
- Hymenoptera (ants, bees, wasps)
- Odonata (dragonflies, damselflies)

These specimens must be labeled by order, scientific name and common name.

**Please note that adult insects have six legs; spiders do not qualify. Also, please do not kill praying mantises.

Collection #2 –

Students will collect 10 tree leaf specimens (a bush is not a tree). Each leaf specimen must be labeled by scientific name, common name, and category of leaf blade type (either compound leaf or simple leaf). * Compound leaves should have all leaflets.

The two collections must be completed neatly and with correct identification of the specimens. There are identification field guides available at school and at the local libraries in limited numbers. Field guides can also be purchased at local bookstores and even at Green Valley Book Fair.

Labeling – READ CAREFULLY!

- Common name must be written or typed
- Scientific name must be written or typed but both methods must include the Genus and the species name.
- The Genus name is always capitalized and the species name is not.
- If typed the scientific name should be italicized. If hand written the scientific name should be underlined.

Example: Domestic dog *Canis domestica*

Collecting/Presentation –

Attached is information, which explains the proper method of killing and pinning insects. Do not leave insects in the killing jar long after they are dead; they will begin to mold or fall apart. Take them out, pin large insect specimens, or glue small insect specimens and mount them so they can dry. Insect specimens should be grouped according to order when placing them in the display. The specimens may either have the identification directly next to them OR you may number the specimens and have a separate key list attached to the display, which identifies the insect by number and name.

Leaves should be pressed between the pages of a book until dry and stiff, then glued onto thick paper which can then be slipped into a loose-leaf protector page and put into a notebook. Magnetic-type photo albums also work well for this purpose. The common and scientific names as well as the leaf blade type should be included on the page next to the mounted leaf.

I hope the nature collection will be a good learning experience for the students, as well as an enjoyable one. Please do not do the project for your child! I look forward to working with each of the students as we learn about our wonderful God and His marvelous creation.

Warmly,

7th Grade Life Science Teacher

Making an Insect Collection

Goals

1. Use a classification key to identify organisms.
2. Gain experience in collecting organisms.
3. Become familiar with orders of insects.

Materials

1. Box to hold collected insects temporarily
2. Ethyl or isopropyl alcohol
3. Clear fingernail polish
4. Killing jar (made from a large-mouth jar with a screw lid or a coffee can with a plastic lid, cotton or a sponge, newspaper, cardboard, ethyl acetate/isopropyl alcohol)
5. Hand lens
6. Materials for displaying insects
7. Mothballs
8. Paper triangles
9. Straight pins

Procedures

1. Catch as many different adult insects as you can without damaging them. Immature insects, such as nymphs and larvae of insects (grubs, caterpillars, and the like), are sometimes difficult to identify and often require special killing-and-mounting procedures. Do not collect these forms.
2. Kill the insects you catch.
 - Make a killing jar by following the directions below. You can kill many insects by placing them in your killing jar as soon as you catch them. Leave them in the killing jar until they are dead.
 - You can kill beetles easily by dropping them into a small jar of ethyl or isopropyl alcohol (70-80%). Beetles sometimes survive in killing jars for long periods of time.
 - Do not place butterflies and moths into your killing jar. They may ruin their wings by flapping around inside the jar. Kill a butterfly or moth by squeezing firmly on its thorax.
3. Mount the insects.
 - You can mount most insects by sticking pins through the thorax and into a piece of cardboard. Make sure that the insects are suspended in the air on the pins and are not tacked against the cardboard. Be sure that an insect is dead before you mount it.
 - To mount beetles (order Coleoptera), place the pin through the right wing and abdomen, not through the thorax.
 - Mount tiny insects (such as mosquitoes, gnats, and fruit flies) onto small triangles of stiff paper. Touch a triangle of paper to a small drop of clear fingernail polish; then touch the polish on the paper to the insect. Pin the

paper triangles to the cardboard.

4. Protect your mounted insects.
 - Children and friends may want to handle your specimens. Keep your collection away from children and allow friends to look but not to touch. Some insects are very fragile.
 - For temporary storage of your insects, glue a piece of thick, corrugated cardboard to the bottom of a box. (A shoe box works well.) Stick the pins with insects on them into the cardboard.
 - Protect your dead insects from hungry live insects by attaching mothballs inside the collection box. Loose mothballs may damage insects; therefore, put holes in a tiny box filled with mothballs, tape the box shut, and tape it into the corner of the storage box.
5. Identify your insects.
 - Once you have determined the order to which an insect belongs, use books on insects to identify the specimen by common name. Field guides to insects are helpful. Your teacher may be able to suggest specific books to help you.
6. Label and display your insects.
 - Attach the label for each specimen under that specimen by pinning it to the cardboard with the same pin that goes through the specimen.
 - Devise a method to display your insect collection. You may display your insects temporarily on a piece of cardboard, or you may display them in a collection box.
 - Be sure to arrange your specimens by scientific order when placing them in your display.

Ideas for Catching Insects

1. Look under stones and boards.
2. Collect mushrooms and put them in a closed jar. As the mushrooms dry, insects that were inside will come out.
3. Dig up and turn over a shovelful of earth. Watch it closely and capture the insects that scurry away.
4. Check around outdoor lights at night.
5. At night, put a light over a tub of water with a spoonful of kerosene in it. In the morning gather the insects from the tub.
6. Collect caterpillars and grubs. When they become adults, kill and identify them.
7. Leave an open sandwich outside for an hour or two. Insects will be attracted to the food.
8. Attach an insect net to an automobile and drive along at dusk at about 25-30 mph. The net will trap many flying insects. This method works very well along country roads.
9. Use an insect net to capture flying insects. Disturbing bushes and tall grass will often arouse many flying insects.

How to Make a Killing Jar

1. Use a large-mouth jar with a screw lid or a coffee can with a plastic lid. Make several jars of various sizes if you plan to catch several insects at one time.
2. Place a half-inch thick layer of cotton in the bottom of the jar or can. (You may use a sponge instead of cotton.)
3. Pour ethyl acetate onto the cotton or sponge. Keep the killing jar tightly closed as much as possible. The more you keep the jar covered, the fewer times you will have to add more ethyl acetate to the cotton sponge. If the sponge or cotton becomes too dry, add more ethyl acetate.
4. Cover the cotton or sponge with cardboard that has holes punched in it and has been cut to fit the inner diameter of the can or jar. This keeps the insects from coming into direct contact with the ethyl acetate.

Collection Project

Student _____

Bugs (total value = 50 pts.)

- Have all ten bugs _____ (5 pts.)
- Bug condition; color, parts _____ (1 pt./bug = 10 pts.)
- Correct identification _____ (3 pts/bug. = 30 pts)
 - common name – 1 pt./bug
 - scientific name – 1 pt./bug
 - order – 1 pt./bug

- Mounting _____ (5 pts.)

Total - _____ pts.

Leaves (total value = 45 pts.)

- Have all ten leaves _____ (5 pts.)
- Leaf condition _____ (1 pt./leaf = 10 pts.)
 - No insect holes
 - No frayed edges or rips
 - No brown spots

- Correct identification _____ (3 pts./leaf = 30 pts.)
 - common names – 1 pt./leaf
 - scientific name – 1 pt./leaf
 - blade type – 1 pt./leaf

Total - _____ pts.

Organization/Execution (total value = 10 pts.)

- Is your labeling neat and legible _____ (5 pts.)
- Is the display organized in a clear presentation _____ (5 pts.)
 - bugs organized by scientific order
 - leaves in page protectors

Total - _____ pts.

Creativity (total value = 5 pts.) BONUS

- Unique presentation _____ (5 pts.)

Total - _____ pts.

Points Total = _____ /105 pts total

Bonus pts. = _____

Final grade = _____