



# Lesson #10

## The Fascinating World of Insects

### A Lesson In Bug Making With Friendly Clay

Insects are fascinating to study, because there are so many and they're all very different. Children are intrigued by bugs. Because of their curiosity and creativity, they see the beauty, colors, and uniqueness of insects. This lesson, with the cooperation of classroom teachers, provides an exciting interdisciplinary study of insects, including art, science, history, and writing. Let this innovative Lesson in Bug Making ignite your students' imaginations!



## **Lesson goals and objectives:**

1. Students will design and create polymer clay beetles.
2. The lesson will incorporate art history, aesthetics, criticism with a hands on activity.
3. The lesson, with the cooperation of the classroom teachers, will also focus on the interdisciplinary study of insects, including art, science, history, and writing.

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## **Background and preparation:**

1. Work with the classroom teachers to create an interdisciplinary lesson that will complement the students' science curriculum.
2. Be sure students understand that, although we use the terms "bug" and "insect" interchangeably, not all bugs are insects. Insects are the ones with six legs.

## **Background and Preparation: CONTINUED**

3. Explain to students that if they take the time to observe, they will see art everywhere, especially in nature. Insects are a huge part of the world. Just because they're so small, doesn't mean that they should be overlooked as a source of inspiration. Insects are survivors. They can live in freezing weather; they can live in the hottest weather; they can live anywhere on earth. They fly; they crawl; they live under things. Insects were among the first living creatures on earth, and they'll probably be among the last. The world of insects is fascinating to look at and to study, because there are so many and they're all so different.

4. Urge students to look beyond the fear or disgust insects are supposed to invoke. Look for the beauty, the colors, and the uniqueness in insects. Begin by encouraging the students to look at as many visual resources as possible — photographs, pictures in books, slides, movies, models, even real insects. If possible, bring real insects into the classroom because most students have never seen an insect up close. Have students use a magnifying glass to examine the insects. They should observe the body parts; find the head, the thorax, and the abdomen; discuss how many legs an insect has; find the antennae. How do they fly? Where are the wings?

5. After the students have observed and researched enough to know quite a bit about the insects they're going to create, have them draw several different types. Drawing helps them grasp the different body parts and shapes. Depending on how old or advanced the students are, have them include more detail. The students discover that insects come in all kinds of shapes and forms — long ones, thin ones, round ones, even kind of triangular-shaped ones — and they have all different lengths of legs.

6. Beetles are excellent to use for this project, because they are among the largest insects, there are so many different types, and many are quite beautiful. Most beetles have two pair of wings, but we don't see them because they are hidden under their hard outer shell. The rear pair (used for flying) is covered by the fore wings which are usually hard. Beetles have six legs, a pair of antennae, and three body parts — head, thorax, and abdomen.

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## **Glossary:**

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**Abdomen** — the lower region of an insect's body that contains the stomach

**Antennae** — a pair of movable sensory attachments to the head of an insect

**Bug** — a non-technical term for insects or other creeping, crawling invertebrate

**Insect** — any one of numerous small invertebrate animals that have segmented bodies and six legs

**Invertebrate** — an animal having no backbone or internal skeleton

**Knead** — to work and press with the hands to make a material soft and smooth

**Polymer** — a natural or synthetic chemical compound

**Thorax** — the middle portion of an insect's body

## **Supplies:**

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Paper or Cardboard (cut into 5" x 7" pieces)

Friendly Clay™ (or FIMO®) — 4 cubes of  
different colors (A one-color 2 oz.  
package can be divided into 12 cubes)

Easy-to-bend wire —  
telephone plastic-coated wire is perfect

Small glass beads — 2 per student

Scissors

Cookie sheet

Parchment paper

## **Additional Supplies:**

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Wire cutters (if needed)

Cabochon Push Molds (Catalog #12218R)

Friendly Plastic® Needle Tool  
(Catalog #70488R)

## **Equipment:**

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Oven or toaster oven

## Instructions:

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1. Prepare clay. Soften by kneading and mix colors, if desired. Blending colors with very young children is not recommended. With younger children, it is better to keep the colors simple.
2. Make a ball/oval for the bottom of the beetle, about the size of a nickel. See photo #1. The AMACO® Cabochon Push Mold can also be used to make bugs. The mold has four different size ovals and two sizes of circles. Press the clay into one of the shapes, making sure clay fills the entire area. Pull a sharp, smooth knife against edge of mold to remove excess clay. Gently lift edges of clay from mold using needle tool.
3. Flatten on the paper to a rectangle about  $\frac{1}{8}$ " thick. See photo #2.
4. Cut three wires about 3" long for the legs.
5. Lay wires flat on clay rectangle. See photo #3. Front and back pairs should be V shaped in opposite directions, and the middle should be straight. Do not bend legs up or down.
6. Make three more balls of clay, each one a different color. The head should be approximately  $\frac{1}{2}$ " in diameter, the thorax  $\frac{3}{4}$ " in diameter, and the abdomen 1" in diameter.



Photo #1



Photo #2

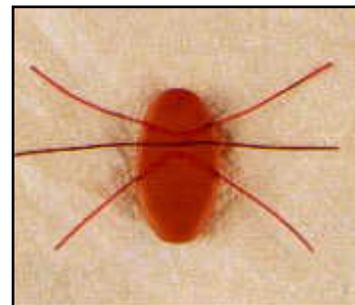


Photo #3

## Instructions: CONTINUED

7. Shape each body part to desired form. Press down slightly, on base. The wire legs will be between the base and the body parts. See photos 4-6. Press and shape. Keep legs flat; do not bend.
8. Add two beads for eyes. Push them into the polymer clay head so they will stick.
9. Add antennae with two wires pushed into the head. Straight pins can be used for antennae, by inserting the point into the clay and using the head of the pin as the antennae end. See photo #7.
10. Bake clay beetle on a cookie sheet lined with parchment paper. Keep legs flat while baking.
11. After baking, let the beetle cool. Bend legs so that the insect will stand. You may need to trim legs to make sure they are the same length.
12. Be sure to store unused polymer clay in a sealed plastic container or bag to prevent drying or hardening.



Photo #4

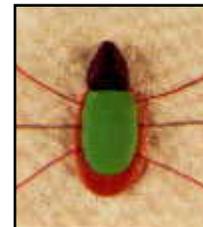


Photo #5

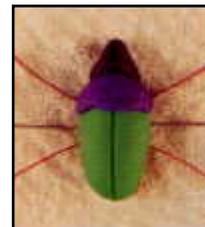


Photo #6

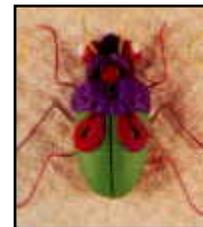


Photo #7

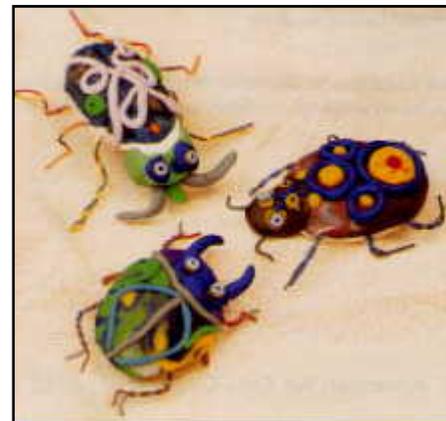
## Specific Instructions for Hardening Polymer Clay Beetles:

Both Friendly Clay™ and FIMO® are polymer clays which harden in a kitchen oven or a toaster oven. Place beetles on aluminum foil or a cookie sheet. Be sure to keep legs flat while baking. Bake in a pre-heated home oven or toaster oven set at 265°F for at least 30 minutes according to package instructions for individual colors and product. For best results, verify oven temperature with a cooking thermometer. **Do not harden in a microwave oven, and do not heat above recommended temperature or overbake.** Heating polymer clays above 375°F (191°C) and overbaking will cause decomposition and the release of toxic fumes. DO NOT inhale fumes.

## **Additional Suggestions for Working with Friendly Clay™ and FIMO® Polymer Clays**

1. Keep working surface clean. Use 5" x 7" paper or card as base so clay will not pick up dirt.
2. Wash hands before and after working with the clay. Clean hands help keep the clay looking bright and fresh.
3. Use the heat of your hands to soften the clay. The clay may be stiff and crumbly when first taken from the package. It becomes soft and easy to model if you warm it and knead it in your hands.
4. Try to use every little bit. Even the smallest scraps are useful. Store scraps in resealable plastic bags. Be sure different colors are wrapped in wax paper to prevent color contamination.
5. Store clay in dark place at room temperature.
6. Follow package directions for hardening. Do not over or under bake.
7. Although all Friendly Clay™ and FIMO® are completely safe to use and are AP Nontoxic, proper safety precautions should still be followed. Don't eat the clay; don't use tools for clay and then food; don't eat while working, and don't overbake clay.

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## **Additional Ideas:**

1. Make a beetle pin by gluing a pin back to the bottom underside of the bug.
2. Work with classroom teacher to create an insect fair or a magnified fantasy insect environment in the classroom or one of the school's showcases.
3. Have students read books (fiction or non-fiction) on insects and write book reviews or reports.
4. Ask students to create imaginary insects — have them draw them, make them out of polymer clay, and write about them.

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This lesson was created by Penny Carpenter, middle school art teacher for Pomona Unified School District, Pomona, California. Examples for this lesson were created by her students.

This is one lesson in a series of art plans for elementary and secondary programs using American Art Clay Co., Inc. products. Successful lessons will be considered for future publication. Send your ideas and slides to David Gamble, National Marketing Director, American Art Clay Co, Inc.

