

Title: Insect Life Cycle Model

Objective: Construct a free-standing life cycle model of an insect

Time: 30 minutes

Materials Needed: Modeling clay or playdough, Pictures of insects at different stages in their life cycles, display surface (tray/cardboard), paper, markers, tape, journals (optional)

Interdisciplinary Lesson

Theme: Life Cycles

Topic: Insect life cycle models

Suggested Grade Level: 1-4

Indoors or Outdoors: Either

Directions:

1. Begin the lesson by reviewing the two types of insect life cycles, complete and incomplete metamorphosis, and the types of insects that go through each life cycle. (Consider using the *Insect Life Cycle Greeting* and a portion of the set of cards, or the full set of cards, accessed at Jeffersfoundation.org)
2. Allow students to work individually or in pairs for this lesson.
3. Students should select a specific insect and use modeling clay or playdough to construct a model of all of the stages the insect goes through. Students who select insects that go through complete metamorphosis should construct a model that includes four stages (egg, larvae, pupa, adult). Students who select insects that go through incomplete metamorphosis should construct a model that includes three stages (egg, nymph, adult).
*Students may benefit from having life cycle pictures of their insects. Use those from the *Insect Life Cycle Greeting* or images found in field guides or online resources.
4. Provide students with a tray or piece of cardboard upon which they will construct and display their three or four molded stages of their insect's life cycle.
5. Using paper and markers, students should prepare and tape labels for each of the stages of their clay model to the tray.
Optional: If using gray modeling clay, allow extra time for students to paint their three or four-piece models.

Discussion Questions:

1. Why did you select your insect? What did you learn about your insect as you constructed your life cycle model?
2. What do you notice about the body features on the insects at different stages of their life cycles? Compare and contrast.

Science and Engineering Practices:

2. Developing and using models; 8. Obtaining, evaluating, and communicating information.

Crosscutting Concepts:

1. Patterns; 6. Structure and function.

Disciplinary Core Ideas:

Life Sciences: LS 1: From molecules to organisms: Structures and processes; LS3: Heredity: Inheritance and variation of traits.

Background Information:

- **Complete metamorphosis** includes 4 stages: egg-larvae-pupa/chrysalis-adult.
Insects that go through complete metamorphosis include: butterflies, moths, beetles, flies, mosquitos, ants, bees.
- **Incomplete metamorphosis** includes 3 stages: egg-nymph-adult
Insects that go through incomplete metamorphosis include: dragonflies, damselflies, true bugs, leaf hoppers, grasshoppers.

Extension:

Ask each student/group to prepare an oral presentation about their insect and its life cycle, using their model as a prop. The presentation may include two or more of the following: The actual size of the insect, what the insect eats, what eats their insect, where it lives (its habitat), how long the full life cycle takes or the time spent in each stage within the life cycle, etc.

Additional Resources:

- Iowa State University Department of Entomology - <https://bugguide.net/>
- Amateur Entomologists' Society - <https://www.amentsoc.org/insects/fact-files/life-cycles.html>
- Insect Life Cycle Read Aloud - <https://www.youtube.com/watch?v=cKLbbvKBYWc>
- *Insect Life Cycles* by Molly Aloian and Bobbie Kalman

Correlates with:

Greeting - Life Cycle Greeting (p. 23)

Activity - Insect Scavenger Hunt (p. 51)