



# Mystery Bug

**PURPOSE** → To become familiar with insects through a study of insect body structure and function.

**NC STANDARD COURSE OF STUDY OBJECTIVES** → 2.L.1.1 Summarize the life cycle of animals including:

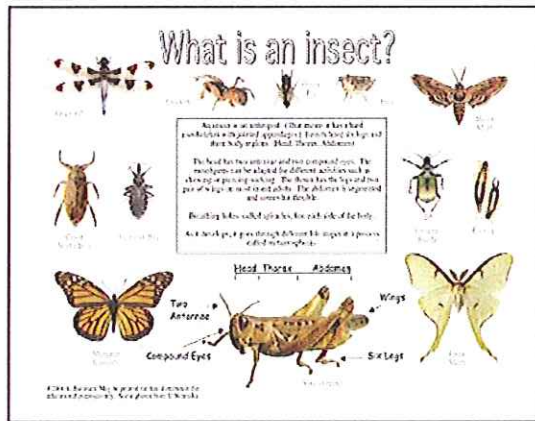
- Birth.
- Developing into an adult.
- Reproducing.
- Aging and death.

2.L.1.2 Compare life cycles of other animals such as mealworms, ladybugs, crickets, guppies, or frogs.

**LIFE SKILL** → Communication – exchange of thoughts, information, or messages between individuals; sending and receiving information using speech, writing, gestures, and artistic expression.

**TIME** → 30 minutes

- MATERIALS YOU'LL NEED** →
- Drawing paper and pencils
  - Tan (or brown) and black crayons
  - One set of the vocabulary list, cover page, and activity sheets for each participant
  - “What is an insect?” poster (available in 8.5” x 11”page – or oversized .ppt file)



**BEFORE THE CLASS** →

- Review the notes on the back of the “What is an insect?” poster
- Practice saying the vocabulary words aloud.

**LEAD-IN** → “Today we will draw a Mystery Bug. I won’t tell you what kind of insect you are going to draw. Instead, I will describe the insect and you will draw according to my description. So, listen carefully. When you are finished with the drawing, you will know the name of the Mystery Bug!”

- PROCEDURE** →
1. Distribute vocabulary list to each participant (page 27).
  2. Draw a Mystery Bug following the script below.
  3. Describe honey bee behavior.
  4. Discuss insect structures using the "What is an insect?" poster.
  5. Label drawings using vocabulary list.
  6. Collect Mystery Bug drawings and vocabulary lists for use in Lesson 2.
  7. Distribute cover page (page 26) and activity sheets (pages 28–29) for take-home. Participants may color these and begin their Bug Out Workbooks at home.

**LEADER'S SCRIPT FOR "MYSTERY BUG" HEAD** → "The Mystery Bug has a small, round head. Place your paper sideways. Use about one-fourth of your paper to draw the head. Draw a circle about the size (diameter) of a soda pop can for the Mystery Bug's head. Draw a larger circle behind and touching the head and another still larger circle behind and touching that. These two circles can be a little flat on top and bottom to form an oval shape. You can use all of your paper for these three circles."

"On top of the head (remember that was the first small circle) the Mystery Bug has two long thread-like things. Does anyone know the name of these?"



**TYPICAL RESPONSES THAT YOUR STUDENTS MAY GIVE, SOME MAY BE INCORRECT** → **feelers, antennas, antennae, and sometimes antlers.**

"These are called antennae (an ten ee). When they are on your TV they are called antennas, but when they are on an insect they are antennae. Antlers are on much larger animals!"

"'Feelers' is not the best word to call these structures, because they do much more than feel. Antennae also work like insects' noses! This Mystery Bug can smell things with its antennae. What do you think it would like to smell?"



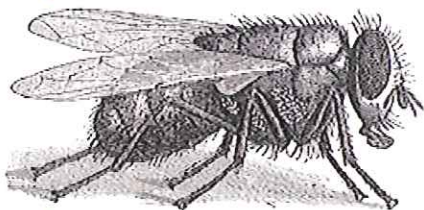
**TYPICAL RESPONSES** → **food, enemies, home, mates, water, air, other animals**

"Some insects 'hear' with their antennae, also. They probably don't hear sounds like we do. Most likely they feel vibrations with the fine hairs growing along their antennae. Male mosquitoes sometimes locate their 'girl friends' by 'listening' to their wing beats!"

"The Mystery Bug's mouth is a little strange. It has lips that move up and down, but its jaws move sideways! Do you think you could eat lunch like this?" The leader can hold his/her hands to the face showing how insect jaws protrude and move sideways. Allow participants to draw this.

"Insect jaws are called **mandibles** (man dah bulls). They often have jagged teeth. These are the only teeth that the Mystery Bug has."

"Now we need to give our Mystery Bug some eyes. Can someone describe what the eyes of an insect look like? Think of the eyes of a house fly."



**TYPICAL RESPONSES** → **like a grid, with dots, like graph paper, a honeycomb, or reflecting ball in the ceiling.**

"The large eyes of an insect are called compound eyes. They are made of thousands and thousands of tiny eyes all put together side by side to make one picture. What do you think the world would look like if you looked through compound eyes?"



**TYPICAL RESPONSES** → Big, I could see all over, I would see the same thing over and over again, I could see a lot.

"Compound eyes may not see an image as clearly as we do, but they can see movement very well. That is important for a fast-moving insect to catch its food-or avoid being some other animal's dinner! Insects also have simple eyes called ocelli (oc cell eye). These eyes don't see a picture, they only see how bright it is. Put three little circles on top of the head."

**Thorax** (thor aks): "Behind the head of the Mystery Bug is a large round chest (the second circle you drew), called the thorax. On top of the thorax are wings and on the bottom are legs. Draw four wings on top of the thorax. The wings are medium-sized and do not have color. They are see-through wings like a window. What does an insect do with its wings? Where does it go?"



**TYPICAL RESPONSES** → fly to food, avoid enemies, fly home, catch its mate, fly to water

"On the bottom of the thorax are six legs. Make sure that you draw six! Insect legs can do something special. They can bend. Can you imagine what it would be like if you couldn't bend your arms or legs? How would you eat a peanut butter sandwich? An insect can run fast, catch its food, and run away from enemies because it has jointed legs. Draw six jointed legs."

**Abdomen** (ab doh men): "Behind the thorax is a large, fat tummy called an abdomen." (optional question) "How long must you hold an insect's head underwater before the insect would drown?" Let the youngsters give you some responses.



**CORRECT ANSWER** → It won't drown with only its head underwater.

"Along both sides of the abdomen and thorax is a row of tiny holes through which an insect breathes. Remember, the Mystery Bug does not have a nose, and it cannot breathe through its mouth. It must use these holes, called **spiracles** (speer ah culls), for breathing. Draw two on the side of the thorax and eight on the side of the abdomen in a single row from front to back."

"The Mystery Bug has a striped abdomen of brown and tan. Do you know what the Mystery Bug is now? What is on the tip of its abdomen? Draw it in."



**TYPICAL RESPONSES** → honey bee, bee, wasp, etc.; stinger

Wasps do a good job by eating a lot of pest insects such as caterpillars and flies.