Unit 3 Lesson 2: Living Like an Insect

Focus Areas: Life Cycles of Insects; Science
Focus Skills: observing, creative movement

Objectives

To identify the four stages of a caterpillar’s life cycle (egg, larva, pupa, adult)

Essential Question

How do insects grow and reproduce?

Essential Understanding

Insects grow to adulthood by going through steps or stages. This change process is called **metamorphosis**.

Background

Insects change from eggs to adults through a process called metamorphosis. Different species follow different steps as they undergo this change. In one type, the three-stage or incomplete metamorphosis, insects are eggs, then nymphs, then adults. In four-stage, or complete metamorphosis, insects begin life as an egg, change next to a larva, then a pupa, and finally an adult. Most insects go through four-stage metamorphosis. The entire process of change varies from species to species. In some insects it can take several days while in others, like the cicada, it takes as long as 17 years!

Insects have very short life spans. However, they reproduce often, which aids them in surviving in a world where they are food for many other creatures. Scientists estimate there may be as many as 10 million different species of insects. In each square mile of land on the Earth, there are billions of insects. Insects can live anywhere, even in the frozen world of Antarctica!
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Vocabulary

**adult** the last stage of insect development

**cocoon** the protective case spun by insects in which they change from pupa to adult

**egg** the first stage of insect development

**larva** the second stage of insect development; larva don’t look like their parents in this stage

**metamorphosis** the process of change which insects go through from egg to adult; either 3 or 4 stages

**pupa** the third stage of insect development; the insects form a hard case in which they change to adult form

Logistics

**Time:** 30 minutes

**Group Size:** 4 to 30

**Space:** classroom

Materials

*The Very Hungry Caterpillar* by Eric Carle *
Handout 1 “Butterfly Life Cycle” *
pieces of 8” x 12” oaktag, one per individual (optional)
Izzy puppet *

* single copy provided

Preparation

Gather a collection of books with pictures of insect metamorphosis.
Make copies of Handout 1, “Butterfly Life Cycle.”
Obtain butterfly and moth larvae from a biological supply house if you wish to provide a fascinating, firsthand look at metamorphosis! (optional)
Activity

Introduction

1. Izzy tells the children that insects are some of the world’s most amazing creatures. The way that they change throughout their lives is incredible! Izzy asks them to share stories of their interactions with insects. Perhaps they have found a cocoon, saved a caterpillar, or been stung by a bee.

2. Read the story *The Very Hungry Caterpillar* by Eric Carle.

Izzy asks the students the following questions:

- “Which parts of the story seemed real? Which parts seemed make believe?”
- “Why was the caterpillar hungry?” (It needed to eat in order to grow and change.)
- “Would a real caterpillar eat chocolate cake, pickles, and ice cream?” (Caterpillars only eat leaves. They are vegetarians.)
- “What did the caterpillar do when it got to be very big and fat?” (It spun a cocoon.)
- “How long did the caterpillar stay inside the cocoon?” (2 weeks)
- “What was the caterpillar doing while it was inside the cocoon?” (changing into a butterfly)

Involvement

Creative Dramatics: *The Very Hungry Caterpillar*

Izzy says, “We’re going to pretend to be insects! Listen carefully, and do what I say.”

“Roll up in a tight ball on the floor.”

“You are one of many, many new eggs that your mother laid. Most of you will not survive. Other creatures might eat you because you are important in the food chain of life. But YOU are lucky!”
Activity

Involvement (continued)

“You hatch out of your egg.”

“You are now called a larva and are you ever hungry! Every day you eat more than your weight. You can't seem to get enough food to fill your tummy. It keeps calling to you all day long. ‘I’m hungry, I’m hungry, I’M HUNGREEEEEY’!”

“You crawl, and you eat, you crawl, and you eat. Up and down and all around, you only think about eating. One day you suddenly feel as though you might burst if you eat another thing.”

“You rub your tummy, and suddenly you feel very sleepy! Oh, sooooo sleepy. You rub your eyes. You cannot stay awake. You find a strong stem, and you begin to spin a cocoon. A very strong thin string comes out of the end of your body.”

“You spin around and spin around and spin around until you are so dizzy. You fall into a gentle sleep and stay asleep for many days and weeks. You are sound asleep. You are a pupa. Nobody notices your sleek cocoon gently swaying in the wind. You are in a very deep sleep.”

“Then, one day you have an incredible urge to move, to break free of this time capsule you have been locked in for weeks. The sun is warm on your cocoon. Suddenly you begin to move! Ever so slowly you hear the case of the cocoon begin to crack and split. It takes hours but you keep working at it. You smell the fresh air and see the blue skies. You want to be free to fly through the blue skies.”

“Your cocoon finally cracks apart, and you slowly crawl out.”

“You no longer look like a long worm. You are a sleek, beautiful butterfly. Your wings are tight against your body, but you slowly begin to pump blood into your wings. You can begin to move them. Up and down. Up and down. You practice this until you have a sense that these wings can take you to many places that you have never been before!”

“You are finally an adult, a beautiful butterfly...and you fly!”
Follow Up

1. Distribute Handout 1 “Butterfly Life Cycle.” Have the children cut out the mixed-up pieces and paste them on a piece of construction paper in the correct sequence. **Note:** To save time, have the children just write the numbers 1 through 4 on the pictures in the correct sequence.

2. Izzy sings *The Life Cycle Rap* or reads it as a poem.

   All living things have a life story,
   Every bug and plant, even you and me.
   From tiny ants crawling on the ground,
   To busy, buzzing, bumble bees!

   You and I were born as babies,
   Small, but we could feel, smell, and see.
   Insects start life as eggs,
   They need to hatch to begin to be.

   When they hatch, they’re called larvae,
   Small worms that live to eat.
   They grow fatter and fatter, then spin cocoons
   Which is quite an amazing feat!

   The cocoon is hard, it cannot move
   But look closely, you will see
   Some bumps and some lumps,
   Signs of what it will be.

   One day the cocoon jiggles and shakes,
   The pupa splits, the creature awakes.
   Whether caterpillar, ladybug, ant, or bee,
   From egg to adult, takes time you see.

   Oh what a creature will greet your eyes,
   For what comes out is a big surprise!
Notes