



Metamorphosis

Developed by Linda Roberts

Grades 2-6

OBJECTIVES

Students will...

- Be introduced to the topic of metamorphosis of butterflies
- Learn the vocabulary of the stages and make a model of the stages in book form

MATERIALS

- Book — *The Very Hungry Caterpillar* by Eric Carle (big book works well) — **SB32100**
- 9" x 12" light-colored construction paper for each student — **9717655**
- String or bag of flat plastic craft pearls — **9724966**
- Pipe cleaners — black, yellow, and white — **9725846(H)**, **9725846(G)**, and **9725846(J)**
- Dry medium shell macaroni
- Green food coloring — **KI01210(D)**
- Rubbing alcohol — **KM00635**
- Board or chart paper
- Colored tissue paper — **9701229**
- Crayons or colored pencils — **9700786(SI)** or **9705757**
- Glue or glue dots — **9729430** or **9730055**
- Optional: Butterfly Life Cycle Kit — **Z30981**



BEST
COMPLETED
IN SPRING

PREPARATION

- A day or two before the activity, place dry macaroni in a container.
- Mix green food color with rubbing alcohol. Pour the colored alcohol over the dry macaroni and let it soak for at least 30 minutes.
- Pour off the alcohol into the original bottle. This can be used again for the same purpose.
- Place the green shells on newspaper to dry. The shells will represent the chrysalis.
- Add four gold dots with the paint pen near the top of the shell in a row. A monarch butterfly chrysalis is green with gold dots.
- Cut black, yellow, and white pipe cleaners into 1½" to 2" pieces. Cut tissue paper into 4" squares, one for each student and a few extras.
- Prepare the construction paper so there is one per student. Fold the paper along the long axis. Open the fold and cut four equal flaps from the edge to the middle. Each flap will be 3" wide.

ACTIVITY

Takes 2 or more days

- Read the story *The Very Hungry Caterpillar* to the class. Discuss which parts of the story are fiction and nonfiction.
- On the board or chart paper, write the four stages of metamorphosis of a butterfly: egg, larvae (caterpillar), pupa (chrysalis), and adult. Have the students repeat the vocabulary. Ask students to find the four stages in the storybook.
- Explain to the students that they will create a book to show the four stages in the life cycle. Give each student a construction paper book. Tell students to write their names on the back of the books. Explain that students will write the names of the four stages on the flaps in order. Remind them to write small.
- After they have written the names of the four stages, give the following directions:
 1. Draw a leaf under the first flap (egg). Glue one flat pearl on the leaf.
 2. Draw a leaf under the second flap (larvae). Twist a black, yellow, and white pipe cleaner together to make a caterpillar. Glue to the leaf. Students may want to draw the leaf with bite marks to show the caterpillar eating the leaf.
 3. Draw a leaf under the third flap (pupa). Glue a green pasta shell hanging from the leaf.
 4. For the fourth flap, (adult) students will cut or tear the tissue paper to show the butterfly wings in a resting position. Students will glue the tissue paper to the book, glue a black pipe cleaner to the tissue to represent the body, draw six legs under the body, and draw two antennae.
- Have the students read the vocabulary words on their books. Ask students to infer what will happen after the adult develops. They should mention that the adult lays eggs and the cycle starts again.



SEL POWER-UP REFLECTION

Suggested questions for an SEL-focused discussion after you finish your creations.

GROUP REFLECTION:

1. The caterpillar eats a lot of different foods. What kinds of foods does he eat?
2. How do foods we eat help our bodies do the things we need them to do? What kinds of things can we do better if we eat the right foods?
3. What does it mean to have a balanced diet?
4. Do humans ever go through something like metamorphosis? How are our life cycles similar or different?
5. Why do we need to learn about caterpillars and the natural world?

SELF-REFLECTION:

1. Did I try my best on this project? If you had to give yourself a score from 1-10, 10 being "I did my best work" and 1 being "I didn't put any effort in my work," what score would you give yourself?
2. How did I feel as I worked on this project?
3. What role does science play in my life?

ASSESSMENT

Teacher observation, participation in activities, cooperation, handling materials, participation in oral discussions, completeness of written work and illustrations.

OPTIONAL EXTENSION

- Raise butterfly larvae by using the Butterfly Life Cycle Kit (Z30981). Materials and instructions are included.
- Have students record observations of butterfly development in a notebook. Draw pictures to accompany the written observations. Continue to reinforce the life cycle vocabulary. After the butterflies are a few days old, they can be released into the outdoors.
- To enhance the release activity, write and read a description of the changes that occurred from the viewpoint of the butterfly.

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