

Shutterfly Photo Story Lesson Plan

Subject: Science – Next Generation Science Standards

Grade level: 1

Lesson Title: Butterfly Metamorphosis

Common Core/State Curriculum Standards:

NGSS.1-LS1-2 From Molecules to Organisms: Structures and Processes

Students who demonstrate understanding can:

NGSS.1-LS1-2 Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

[Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]

Science & Engineering Practices:	Disciplinary Core Ideas:	Crosscutting Concepts:
<p>Obtaining, Evaluating and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. <p>-----</p> <p><i>Connections to Nature of Science</i></p> <p>Science Knowledge is Based on Empirical Evidence</p> <ul style="list-style-type: none"> Scientists look for patterns and order when making observations about the world. 	<p>LS1.B: Growth and Development of Organisms</p> <ul style="list-style-type: none"> Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. 	<p>Patterns</p> <ul style="list-style-type: none"> Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

Common Core State Standards Connections:

• **English Language Arts Standards – Reading – Informational Text – Grade 1**

Research to Build and Present Knowledge

CCSS-ELA-Literacy.RI.1.1 Ask and answer questions about key details in a text. (1-LS1-2)

CCSS-ELA-Literacy.RI.1.2 Identify the main topic and retell key details of a text. (1-LS1-2)

CCSS-ELA-Literacy.RI.1.10 With prompting and support, read informational texts appropriately complex for grade 1. (1-LS1-2)

- **English Language Arts Standards – Writing – Grade 1**

Research to Build and Present Knowledge

CCSS-ELA-Literacy.W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).

- **Mathematics – Grade 1 – Number & Operations in Base Ten**

Understand place value.

CCSS.Math.Content.1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. (1-LS1-2)

Use place value understanding and properties of operations to add and subtract.

CCSS.Math.Content.1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. (1-LS1-2)

CCSS.Math.Content.1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. (1-LS1-2)

CCSS.Math.Content.1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (1-LS1-2)

ISTE NETS for Students:

2. Communication and Collaboration:

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students will:

- b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.

Learning Objectives:

- Students will be able to understand and explain the life cycle of a butterfly.
- Students will be able to pronounce the word metamorphosis and explain what it means.
- Students will be able to construct a drawing of butterfly metamorphosis and label the stages.
- Students will be able to write a paragraph explaining the process of butterfly metamorphosis.

Students Learning Targets:

- As a result of this lesson, students will demonstrate a positive learning attitude.
- As a result of this lesson, students will understand some ways butterflies meet their needs so they can survive and grow.
- As a result of this lesson, students will understand a butterfly’s metamorphosis.
- By creating their own published storybook, students will learn to communicate ideas and information to specific audiences, as well as strengthen their familiarity with the writing process.

Instructional Strategies:

- Discussion (small/large group) – class discussions on the writing process
- Direct instruction - providing foundational information for the lesson
- Cooperative learning – collaboration on storyboards, peer review/editing
- Independent practice – creation of a butterfly's metamorphosis book using Photo Story iPad App

How Students Will Use Shutterfly Photo Story:

Students will create a Photo Story book demonstrating their understanding of a butterfly's metamorphosis.

Required Materials/Lesson Length:**Materials:**

- Butterfly-related library books
- Sentence strips for word cards
- Scissors
- Glue
- iPads with Photo Story App
- Internet access

Lesson Length: Two to Three Weeks working in school and at home

Resources:

Carle, Eric. *The Very Hungry Caterpillar*

Drew, David. *Butterfly Express*

Deluise, Dom. *Charlie the Caterpillar*

Gentner, Norma L. *Munch, Munch, Munch*

Gibbons, Gail. *Monarch Butterfly*

Krulik, Nancy. *The Magic School Bus: Butterfly and the Bog Beast*

Legg, Gerald. *From Caterpillar to Butterfly*

Moncure, Jane Belk. *Butterfly Express*

The Children's Butterfly Site - www.kidsbutterfly.org/life-cycle

NeoK12 - Metamorphosis Videos - www.neok12.com/Metamorphosis

Procedures/Activities: (*What will the teacher and students do?*) (*Prior Knowledge, Opening Activity, Step-by-Step Learning Activities, Closure, Post-Instruction Reflection*)

Opening Activities:

- Explain to students that they will be scientists and authors as they study the butterfly's life cycle. They will write and illustrate their own butterfly life cycle stories.
- Have students share what a butterfly is and where you could find butterflies.
- Discuss with students where they have seen butterflies and what they looked like.
- Discuss the changes the butterfly goes through and introduce the word metamorphosis.
- Throughout the lesson, students will have an opportunity to create a science storybook about a butterfly's metamorphosis using an iPad and the Shutterfly Photo Story app.
- Show some examples of science storybooks.

Learning Activities:

- For their Photo Story book, have students assemble photos of caterpillars and butterflies.
- Have students write in their classroom journals about pictures and live examples of caterpillars and butterflies they've seen.

- Key Vocabulary:

○ egg	chrysalis	antennae	migration
○ caterpillar	cocoon	abdomen	metamorphosis
○ pupa	scales	Monarch	pupate
- Photo Storybook page examples:
 - Read *The Monarch Butterfly* and introduce these vocabulary words: eggs, caterpillars, chrysalis, transparent, and metamorphosis.
 - Talk about and look at the different kinds of butterflies. Have the book *Butterfly Express* handy so students can look at different kinds of butterflies.
 - Show an example of the paper plate model of the butterfly's life cycle.
 - Divide a paper plate in half by drawing a black line with a marker. Then divide the plate into quarters. Discuss halves and equal parts with students.
 - Draw a large circle divided into quarters on the chalkboard. Starting in the upper left quadrant and continuing in a clockwise manner, label the quadrants "egg," "larva," "pupa," and "adult butterfly."
 - Using the Photo Story drawing tool, Doodle, have students draw and label their life cycle drawings.
 - Have students make their own chart showing the metamorphosis from a butterfly or moth egg to an adult butterfly or moth. Students should present each stage clearly, both visually and in writing. All writing and drawing should become part of their Photo Story book.
 - Have students help come up with a good introductory sentence to write about the stages that the butterfly goes through.
 - Have students edit their paragraphs in pairs; and then meet with the teacher to edit further.
 - Butterflies and moths are excellent examples of symmetry that can be found in nature. Encourage students to make their own symmetrical butterfly by folding a large piece of paper in half and cutting out a butterfly shape. Students should then decorate the butterfly the same on the left and the right side. Encourage students to use various art techniques, such as pointillism with paint and cotton swabs, collage with construction paper or colors cut from magazines, or sponge painting. Then they should take a photo of their butterfly for their Photo Story book.

Closure:

Students will present their multimedia Shutterfly Photo Story books about a butterfly's metamorphosis to their class and share their book with their parents. As a culminating activity, each student will receive a published and printed copy of his or her Shutterfly Photo Story book. Printed copies of the students' storybooks will be shared in their classroom and school libraries.

Reflection:

Discuss with students how well they rate their knowledge of the life cycle of a butterfly. How did they enjoy creating their butterfly metamorphosis book? What is their favorite activity?

Differentiation:

Additional differentiation will be determined after formative assessment.

- Invite students to read their books to peer reading buddies with the assistance of parent volunteers.

Special Education/ESL Accommodations & Modifications:

- Have students work closely with an adult during the writing process.
- Provide an outline template for the butterfly metamorphosis book covering the butterfly's life cycle.
- Have students create their butterfly metamorphosis storybooks collaboratively, rather than independently.

Extensions:

- After reading some butterfly related poems, ask students to write their butterfly metamorphosis poems expressing their impressions of the changes a butterfly goes through.
- Encourage students to create original artwork using materials from nature to portray a butterfly.
- Have students write in their classroom journals about butterflies in different parts of the world.
- Plan a field trip to a local butterfly exhibit.

Assessment:

- Teacher observations, classroom work participation, and completed Photo Story butterfly metamorphosis book showing the life cycle of the butterfly.
- Teacher will review students' Photo Story butterfly metamorphosis books for understanding of the butterfly's life cycle concept.