

**‘Peanuts, Plains, and Pollinators’**  
(Science, Social Studies, with ELA & Math)  
**Framework for an Integrated Unit of Study**  
Highlighting “The Rosalynn Carter Butterfly Trail”  
Created by Steve Rich

Overview and Background:

How did President and Mrs. Carter’s interest in wildlife and the natural world collide with the world of pollinators and butterflies?

President Carter grew up on a farm near Plains, GA where animals and plants were a central focus. Mrs. Carter grew up in the town of Plains, GA, where in their yard her mother grew traditional Southern flowers like Zinnias and Marigolds – which very likely attracted butterflies. Her father asked her to pull up milkweed growing along the fence that kept in their milk cow. The cow would eat the milkweed and make the milk taste sour because of the bitterness found inside the milkweed plant. Many, many years later, Mrs. Carter wanted to provide a habitat for butterflies and other pollinators, so she created the Carter Butterfly Trail, which starts with about a dozen gardens all around Plains. The first garden was established at the home of President and Mrs. Carter and features milkweed, which is the host plant of the Monarch butterfly along with a variety of flowering nectar plants.

**STANDARDS ADDRESSED IN THIS UNIT**

**Focus Standards:**

**S2L1. Students will investigate the life cycles of different living organisms.**

- a. Determine the sequence of the life cycle of common animals in your area: a mammal such as a cat or dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a **butterfly**.
- b. Relate seasonal changes to observations of how a tree changes throughout a school year.
- c. Investigate the life cycle of a plant by growing a plant from a seed and by recording changes over a period of time.

**SS2H1 The student will read about and describe the lives of historical figures in Georgia history.**

- a. Identify the contributions made by these historic figures: James Oglethorpe, Tomochichi, and Mary Musgrove (founding of Georgia); Sequoyah (development of a Cherokee alphabet); Jackie Robinson (sports); Martin Luther King, Jr. (civil rights); **Jimmy Carter** (leadership and human rights).
- b. Describe how everyday life of these historical figures is similar to and different from everyday life in the present (food, clothing, homes, transportation, communication, recreation, rights, and freedoms).

**RELATED STANDARDS ADDRESSED IN THIS UNIT**

MCC2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

ELACC2RI3: Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text

## ESSENTIAL QUESTIONS

1. Why are butterflies important to plants?
2. How are different animal life cycles alike or different?
3. Why did Mrs. Carter create butterfly gardens?

## ENDURING UNDERSTANDINGS

- Animals like chickens, butterflies and others have a life cycle that includes different stages.
- Butterflies are one of the important pollinators of plants – including crops that are grown on farms like the one where President Carter spent his childhood.
- President and Mrs. Carter lived in several places in the United States before he ever ran for public office. People move for different reasons than what animals do.
- Butterflies migrate to find warmer weather and available food sources. Mrs. Carter wanted to provide food sources for butterflies so she planted host plants and flowers for nectar.

## TASKS

### **Task I**

**Essential Question:** How are animals' life cycles alike; how are they different?

**Hook:** Have something in the classroom to represent the life cycle of a chicken (such as an egg) and the life cycle of a butterfly (such as a photograph of any stage of the butterfly life cycle). Ask the students what the egg and the photograph of the butterfly egg have in common – without stating what either one is. If students guess that the photograph is an egg, ask them what type of animal it belongs.

**Description:** President Jimmy Carter grew up on a farm where chickens were a part of the mix of animals and resources for his family. They also grew plants that needed to be pollinated, and butterflies likely were one of the animals that aided in the process of pollination. Help students compare and contrast the life cycle of these two animals, and to determine how they fit into farm life for the Carter family.

### **Resources:**

Chart: Life Cycles of Animals

### **Check for understanding/Assessment:**

Are students able to identify the stages in the life cycle of a butterfly? Are they able to compare to the life cycle of a chicken?

### **For more lessons about butterflies:**

Use the lessons in the free chapter of “Outdoor Science: A Practical Guide”, found at <http://learningcenter.nsta.org/files/PB272Xweb.pdf> .

## **Task II**

**Essential Questions:** How does a seed become a plant? How are peanut plants and milkweed plants alike/different?

**Hook:** Teacher should have either a peanut and milkweed seed pod in the classroom or photographs of both. Show the items or photographs to students and ask them to describe and identify them.

### **Additional Instructions:**

- The teacher may have indoor growing containers at a window or under a grow light. Alternately, seeds may be planted outdoors in spring (following guidelines on seed packaging).
- Students can keep a diary of the seeds' growth that compares the two. The teacher may wish to have students work in pairs with one being the "expert" on the milkweed and the other the "expert" on the peanut.
- Any part of the growth process that is not possible due to weather conditions or school setting may be shared through photographs.
- Students can use rulers or tape measures to keep track of plant growth. Additional evidence can be collected using digital cameras or through drawings.
- Have students compare the two seeds using a chart. Measure and weigh the seeds. Draw a sketch of each one.

### **Resources:**

Seed Comparison Chart

Excerpt from *An Hour before Daylight* by Jimmy Carter

<http://www.nytimes.com/books/first/c/carter-daylight.html>

## **Task III**

**Essential Questions:** How many places that President and Mrs. Carter have lived in could be on the migration path of the Monarch butterfly?

**Hook:** Have a large map of North America (either projected electronically or a pull down map). Ask students to identify Georgia on the map. If using a smart board, students may mark Plains, GA and Atlanta, GA with stars. Use arrows or other marks to show where Monarch butterflies might fly through during migration.

**Additional Instructions:** Work together as a class to following these instructions. (Each student should have a blank map that includes North and Central America.)

1. Use a yellow high lighter or crayon to color these places on the map that the Carters have lived while serving in the Navy or in public office: Georgia, Virginia, Connecticut, Hawaii, Washington, DC. (Bonus – Mark the year(s) that the Carters lived in each location.)
2. Use a darker color to mark some of the various migration routes of Monarch butterflies from Canada, through the USA to Mexico.
3. Which of the places the Carters lived could be on the path?
4. What are the reasons that animals migrate? What are the reasons that people move from one place to another? How are the reasons alike/different?
5. Have the reasons people would move changed over the course of history?

### **Resources:**

North America map page

### **Culminating Activity:**

After teaching students about the butterfly life cycle, the purpose of butterfly gardens, the life cycles of peanuts and milkweed, give students the opportunity to use what they have learned in a creative writing assignment of their choice.

The graphic is titled "Writing - Choice Board" and features a red curved header. Below the title, it says "Use vocabulary words about butterflies, peanuts, and Plains in one of the following...". There are six options arranged in a circle, each with an icon and a text label:

- Lyrics to a rap or song (Icon: a person with a microphone)
- Poetry (Icon: a person reading a book)
- Telling a Story (Icon: an open book with a pencil)
- News Article (Icon: a rolled-up newspaper)
- Persuasive Speech (Icon: a person at a podium)
- Play or Skit Script (Icon: a stage with actors and an audience)

### **TEACHER INFORMATION & RESOURCES**

#### Background reading for teachers:

Carter, Jimmy. (2001) An hour before daylight. Simon & Schuster.

Carter, Rosalynn. (1994) First lady from Plains. Fayetteville, AK. University of Arkansas Press.

Rich, Steve. (2010) Outdoor Science: A Practical Guide. Washington, DC. NSTA Press.

#### Children's Literature:

Butterflies by Seymour Simon, Harper Collins, 2011

From Caterpillar to Butterfly by Laura Marsh, National Geographic, 2012

National Audobon Society Pocket Guide to Familiar Butterflies of North America, Knopf Publishing, 1990.

#### Websites:

Jimmy Carter Education Program [www.jimmycarter.info](http://www.jimmycarter.info)

Environmental Education in Georgia [www.eeingorgia.org](http://www.eeingorgia.org)

Georgia State Symbols: <http://www.enchantedlearning.com/usa/states/georgia/>

Journey North [www.learner.org/jnorth](http://www.learner.org/jnorth)

Monarch Watch [www.monarchwatch.org](http://www.monarchwatch.org)

National Gardening Association [www.kidsgardening.org](http://www.kidsgardening.org)

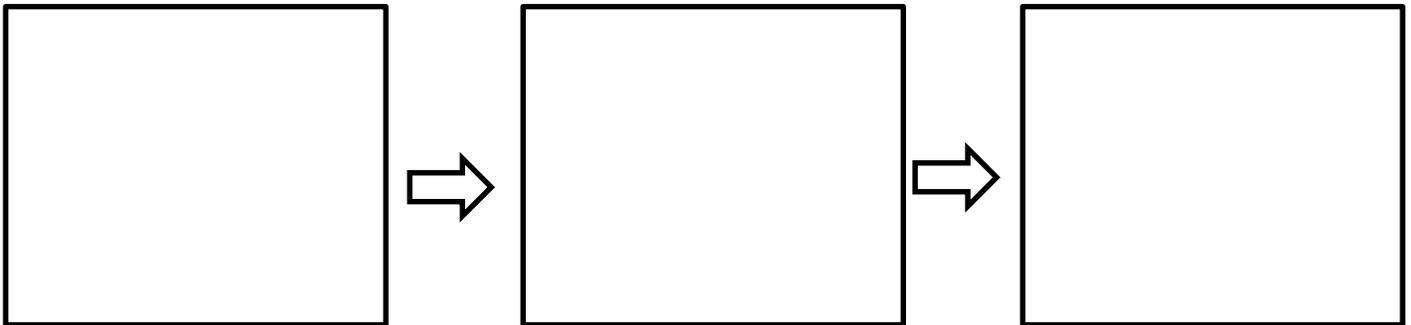
National Science Teachers Association [www.nsta.org](http://www.nsta.org)

# Life Cycles of Animals

Use the boxes and arrows to draw each stage of the chicken and butterfly life cycles.

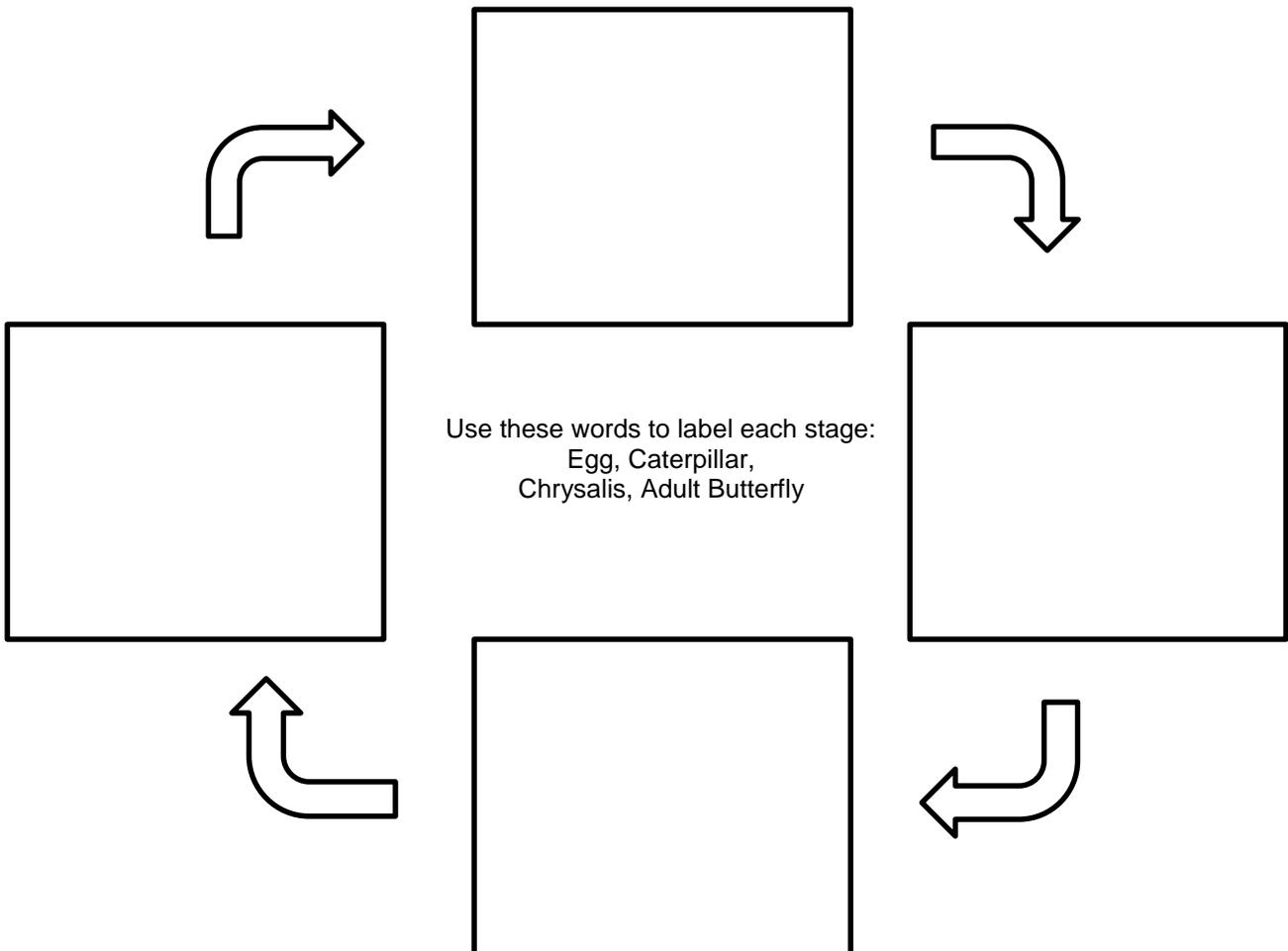
## Stages in the Life of a Chicken

Use these words to label each stage: egg, chick, adult chicken.



## Stages in the Life of a Butterfly

Use these words to label each stage:  
Egg, Caterpillar,  
Chrysalis, Adult Butterfly



## Comparing Migration of Monarchs to the States where the Carters have Lived

Highlight these locations: Georgia, Virginia, Connecticut, Hawaii, Washington, DC.

Use arrows to mark the migration paths of Monarch butterflies.

Compare the routes with states that were the various homes of the Carters.



# Comparing Seeds

1. Draw a pencil sketch of each seed.
2. Measure the seed using a ruler and a scale.
3. Describe the seed with three to five words that tell about its shape, color, texture, etc.

Peanut Seed	Milkweed Seed
Draw:	Draw:
Measure:	Measure:
Describe	

How are the seeds alike? How are they different?