

# The Life Cycle of Butterflies Science Kit- Second Grade (2012)

\*\*\*Teachers please use this as a guide, when preparing the science kit lessons. Please be sure you are using focus questions with each lesson and are having the children use some type of science notebook. The purpose of the notebook is to help students develop, practice, and refine their science understanding, while enhancing reading, writing, mathematics and communications. Below you will find a link to additional teacher materials. In addition, we have provided you with a description of lessons and special things to consider. If you are in need of further assistance please contact your CTC. \*\*\*

## Website to obtain teacher materials and video lessons

[http://www.carolinacurriculum.com/premium\\_content/Premium+Gateway>Login+Failed.asp](http://www.carolinacurriculum.com/premium_content/Premium+Gateway>Login+Failed.asp)

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## Teacher Materials include (but are not limited to)

- Butterflies-Teacher's Guide
- Video Resources
- Inquiry Masters
  - Lessons 1-15
- Concept Storyline
- Goals
- Safety Contract
  - English/Spanish
- Assessments
  - English/Spanish
- Glossary
  - English/Spanish

## Videos

- Lesson 1
  - Getting Ready for the Caterpillars
    - Students will discuss what they know about caterpillars and butterflies.
    - The teacher will chart student responds on what they know about caterpillars and butterflies.
    - Chart *"What we would like to Learn about Butterflies."*
    - Students will draw a picture of what they think a caterpillar s and butterflies look like.
      - Include how a caterpillar changes during its life
      - Used as a pre-assessment
      - Kids will do the same task after studying the butterfly

## ➤ Lesson 2

### ○ Caring for the Caterpillars

- Caterpillars arrive at 3-6 days old
  - Undergone two molts already
- Tell the school office to let you know as soon as the caterpillars arrive.
  - Should do the lesson as soon as they arrive
  - If needed, put into fridge up to one week...no colder than 40 degrees
- Kids learn about caterpillars basic needs air, water, food, and shelter as well as making a record of their first observations
- Review safety information about the caterpillars. **Don't let the students handle the caterpillars.**
  - Acids on human finger tips may hamper molting process
- *(See video on preparing cups for caterpillars, distributing to kids, and storing cups)*
- **DO NOT STORE CUPS IN A WINDOW OR DIRECT SUNLIGHT.**
- Create a class calendar to record the stage the caterpillar is in. *(see video for examples)*
- Recommended to set up terrarium with extra caterpillars. *(See video to see how to make.)*

## ➤ Lesson 3-6

### ○ Learning More about Caterpillars \*Teacher decides which order to teach these lessons.

- Lessons 3-6
  - Students will be observing and recording information about their caterpillars.
- Lesson 4
  - Looks at the caterpillars body parts. *(see video to show kids examples of body parts)*
  - Head
    - 12 small eyes- six on each side of head- only distinguishes between light and dark
    - Jaw- under head chews in back and forth motion
    - Body- 13 segments, covered in bristles, spiracles draw in fresh air and stale air is expelled, pro-legs act as suction cups and have small hooks also help with shedding;
    - Frass- waste (green pellets)
    - Skin- small black wrinkled skin (molts)
    - Very tiny brain
- Lesson 5
  - Looks at growth and molting.
- Lesson 6
  - Looks at spinning.

➤ **Lesson 7-8**

○ **From Caterpillars to Chrysalis**

▪ **Lesson 7& 8**

- Caterpillar molts one last time and is transformed into a chrysalis
- Students will draw and label a picture of the chrysalis.
- Kids think of questions to ask the chrysalis
- Chrysalis will be moved to butterfly cage in 3 days (see video for instructions on how to construct cage and place chrysalis into cage.)
- Impt. Butterfly needs space below it and around it in order to unfold and pump up the wings...if space is not provided, deformities may occur.

➤ **Lesson 9**

○ **Butterflies Emerges**

- Students watch the butterfly emerge from chrysalis (30 min process) and observe its distinctive body parts.
- After the butterfly is out and the wings are expended, it will take 2-3 hours for the wings to harden and be ready to fly.
- Two sections are joined, spines are working to interlock, waste is being released (red liquid- not blood)
- Kids make a life cycle wheel (See video for example)
  - Use section A-pics of each stage-kids cut and paste the correct order on the wheel
  - Attach a cover
  - Use to re-teach each other, family, and friends

➤ **Lesson 10**

○ **Feeding the Butterflies**

- Students observe how the butterfly uses its proboscis.
- (See video for instructions on making sugar solution.)
- Video also provides suggestions of flowers butterflies like

➤ **Lesson 11**

○ **Butterfly's Body**

- Students observe the parts of the butterfly's body and what each part does.
  - Head (first section)
    - antenna- used for touch and smell
    - compound eyes- large, rounded, see color well
    - together the antenna and compound eyes help find food, select a mate, and find a place for laying eggs
    - proboscis- reaches into deep part of flower to get nectar
  - Thorax (middle section)
    - Wings
    - Three pairs of jointed legs- only three are visible because one pair hang around the neck like a furry scarf
  - Abdomen (last section)
    - In females more rounded...females lay eggs from abdomen
- (See video for extension activity- goes along with global awareness)

➤ **Lesson 12**

○ **Butterflies Go Free (not really)**

- Please review the guidelines for releasing the butterflies in this lesson.

➤ **Lesson 13-15**

○ **Observing Data, Discovering that Butterflies are Insects, and Looking at other Life Cycles**

- Students will review and analyze their own data and the observations they made about the butterfly life cycle calendar.
  - Kids apply the concept of the butterfly life cycle to other living things
  - Activity- show life cycle of grandparent
- Visit sheets "What we think we know about Butterflies"
  - "What we want to Learn about Butterflies"
- Kids draw picture of caterpillar changing-compare to picture drawn at beginning of unit
  - Kids evaluate their own learning