A BUTTERFLY IS PATIENT
A SEED IS SLEEPY
AN EGG IS QUIET

TEACHER'S GUIDE

GRADES K–5

An Egg Is Quiet
Dianna Aston, Sylvia Long

A Seed Is Sleepy
Dianna Aston, Sylvia Long

A Butterfly Is Patient
Dianna Aston, Sylvia Long

chronicle books
INTRODUCTION

A BUTTERFLY IS PATIENT, A SEED IS SLEEPY, and AN EGG IS QUIET
By Dianna Hutts Aston, Illustrated by Sylvia Long

Dear Teacher:

This series of beautiful picture books opens the door for science connections, language arts extensions, art projects, reading skills building, and more. The books encourage curiosity and exploration of the natural world, while also reinforcing the pleasures of reading in kindergarten through fifth-grade classrooms, offering various levels of learning.

We’ve provided activities for both books, together and individually. We invite you to step inside the beautiful world presented by Dianna Hutts Aston and Sylvia Long—and, please, bring all your students along.

GENERAL OVERVIEW

THIS TEACHER’S GUIDE CONTAINS:

Pre-Planned Activities for Students

1. Reading
2. Language Arts
3. Science
4. Art
5. Mathematics
6. Geography
7. Social Studies
Match the Details

Scientists are careful observers. They need to look and look again to test their observations. Reading, too, requires attention to details. For youngest readers of A Seed Is Sleepy and An Egg Is Quiet, this matching activity will support the careful paying of attention.

Each of the seeds pictured on the first two pages of A Seed Is Sleepy have a match in the plants pictured on the last couple of pages of the book. This is true, too, for the eggs shown on the first two pages of An Egg Is Quiet and the animals depicted on the last two pages of that book. Individually or as a class activity, have your kindergarteners or first graders examine the seeds or eggs and write the name of each on an index card. When every seed or egg has a card, the students should alphabetize the cards. Then they should look at the plants or animals. As they look at each one, they should go through the deck of cards, and put a check mark on it. One by one, they will connect each seed to a plant, each egg to an animal. They might also illustrate the cards with their own drawings of the seed or the plant, the egg or the animal.

Reader's Theater

One of early childhood’s favorite books, The Very Hungry Caterpillar, by Eric Carle can make a simple reader’s theater project.

One child has the role of the caterpillar. He should have color scarves tied behind him. The other students play the food he eats. Simple signs naming the foods can serve as their costumes.

As you narrate the story, the caterpillar approaches a food. As he eats each item, the child playing that food steps behind him. After he eats all of the food, he crouches into his cocoon. When he emerges, he holds the edges of the scarves out to reveal the he is a beautiful butterfly.

After the performance, discuss with your class which parts of A Very Hungry Caterpillar conform to what they have learned from A Butterfly is Patient.
Descriptive Language

Second and third graders are ready to appreciate figurative language, and this trio of books offers many opportunities for that.

A Seed Is:  
- Sleepy
- Secretive
- Fruitful
- Naked
- Big or small
- Adventurous
- Inventive
- Generous
- Thirsty & hungry
- Clever

An Egg Is:  
- Quiet
- Warm & cozy
- Colorful
- Shapely
- Clever
- Different sizes
- Artistic
- Textured
- Fossilized
- Giving

A Butterfly Is:  
- Patient
- Creative
- Helpful
- Protective
- Poisonous
- Spectacular
- Thirsty
- Big
- Tiny
- Scaly
- Magical

Dianna Hutts Aston uses several descriptive words and phrases in the chapter headings to tell your students what seeds, eggs and butterflies are. As your students read each of the books, have them identify those words. Discuss with the class the different types of descriptive language used. Create a graphic organizer like the one below to connect those words visually. Then have students write sentences for each word that tell about a butterfly:

A seed is ____ because______ or,
A butterfly is ____ when it______.

For example:
Sleepy – A seed is sleepy when it is beneath the soil
Quiet – An egg is quiet as it sits under its mother’s feathers
Patient – A butterfly is patient because it grows slowly from an egg to a butterfly.

Do these words also describe the children themselves or people they know? Have them use the words from the exercise to describe themselves or others.

For example:
I am patient because I don’t rush.
My mother is protective when I feel sick.

Creative Writing/Poetry

Brainstorm with the children to create a list of as many words as they can that relate to butterflies. If they have trouble you can suggest words from the list below. With older classes separate the words into nouns, verbs, adjectives, and adverbs. Then have them use words from the list to write haiku. Remind them that haiku is a form of Japanese poetry of three lines of approximately 17 syllables (5-7-5)

garden  flittering  playful
rests    bush       leaping
drift    flighty    flowers
falling  colorful   above
field    yellow (& other colors)  nature
summer  bright      tree
dusk     air        dancing
fluttering  dew  branch

Writing

People often wonder what it would be like if they were someone else or if they were an animal. What about a butterfly? Each child should write, then illustrate, a paragraph about what it would be like if he/she were a butterfly. The paragraph can begin with the phrase “If I were a butterfly...”
Growing Seeds in Your Classroom

Science is all about experimenting, experiencing, and keeping good records. After reading *A Seed Is Sleepy* with the class, have the children make a list of what a seed needs in order to grow into a plant. For example, from the picture spread “a seed is clever,” they will see that a seed needs sunlight. Once they have their list, your second through fourth grade student-scientists can test this out by planting beans and other seeds under various growing conditions and in different planting media. They should make hypotheses of what they think will happen, record their observations, measure the growth or lack of growth of the seeds, test to see which hypotheses are correct, and then draw conclusions based on the results.

Brainstorm with them about how they can vary the growing conditions and planting media. Some examples are:

- Planting seeds in containers in soil with water and sunlight
- Planting seeds in containers in soil with water but placed in the dark
- Planting seeds in soil and sunlight but without water
- Planting seeds in a container with cotton, water, and sunlight
- Planting seeds in a container just filled with water and placed in the sun

Each planting should be labeled carefully.

The children should fill out an experiment sheet for each of the plantings they make. The experiment sheet should contain:

- Name of planting
- Hypothesis (what I think will happen)
- Observations (what I saw and recorded)
- Conclusions (what I learned)

Lima beans are easy to use for this project, but your students might also try grass, zinnias, marigolds, or other flowering plants.

To the right is a sample record-keeping chart that you can reproduce for each student.

<table>
<thead>
<tr>
<th>NAME OF SEED:</th>
<th></th>
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</table>

<p>| Seeds planted in soil, water, placed in dark |
| --- | --- | --- |</p>
<table>
<thead>
<tr>
<th>Day</th>
<th>Growth in millimeters</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>Start Date:</td>
<td></td>
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<tr>
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<td>30</td>
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</table>
Seeds of the Food We Eat

Observation is a key to the scientific method. Your fourth and fifth graders are encouraged to be careful observers.

Make a list with the class of the many foods they eat that grow from seeds. Elicit from them what these foods are called: fruits, vegetables, and grains. Bring in as many examples as you can. Cut them open and have the class examine the seeds for size, color, texture, and shape. Everyone should contribute to completing the classroom chart below.

<table>
<thead>
<tr>
<th>Foods</th>
<th>Color</th>
<th>Size</th>
<th>Shape</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
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</tr>
<tr>
<td>Pear</td>
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<tr>
<td>Green Bean</td>
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<td></td>
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<td>Tomato</td>
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<td>Orange</td>
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<td>Squash</td>
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<tr>
<td>Banana</td>
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</table>

Foods to include (but not limited to) are:

- Apple
- Pear
- Peach
- Green bean
- Pea
- Tomato
- Squash
- Banana
- Carrot
- Potato
- Celery
- Lettuce
- Orange

The Parts of a Plant

Introduce your first or second grade class to the parts of a grown plant:

- Roots
- Stems or stalk
- Leaves
- Flowers
- Fruit

A good reference you can use for the parts of a plant can be found online at:

http://www.mbgnet.net/bioplants/parts.html

Your first and second grade students can also learn about the parts of a plant on an interactive Web site from the Howard Hughes Medical Institute at:

http://www.hhmi.org/coolscience/forkids/vegquiz/plantparts.html

Cut open a carrot, a celery stalk, head of lettuce, or a potato. Are there any seeds? Have the children come up with possible reasons why they can’t find any seeds. Explain that different plants have different edible parts. Some are the fruit, some are the roots, some are the leaves, and some are the stalks. The children will only find seeds in the fruit part of the plant.

Have the children categorize the different foods according to where the edible form of the plant is. Some foods will be in more than one category.

<table>
<thead>
<tr>
<th>Foods</th>
<th>Stem (Stalk)</th>
<th>Leaf</th>
<th>Root</th>
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<tbody>
<tr>
<td>Tomato</td>
<td>Celery</td>
<td>Lettuce</td>
<td>Carrot</td>
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Science Vocabulary

A Butterfly Is Patient is filled with scientific words and terms relating to butterflies. Have your students create a butterfly glossary. Start them off with these words:

- Caterpillar
- Pupa
- Chrysalis
- Metamorphosis
- Pollinate

When appropriate they might want to include a small picture of the glossary word or term entry.

Watch Them Grow

If your school has the funding, a wonderful activity is to hatch butterflies in the classroom. There are a number of websites that sell kits. Your students can chart the growth of the butterflies through its different stages, and then have the pleasure of releasing them into nature.

Butterfly supply kits are available from the following sites:

http://educationalscience.com/butterflyfarmkits.htm
http://www.thebutterflysite.com/rearing.shtml
http://www.nature-gifts.com/live-butterfly-kits.html?gclid=Clz5zyXU-aYCFQqi7Aod0nZ7DQ

Butterfly Anatomy

When your students look at the page titled “A Butterfly is Thirsty,” they should notice that a butterfly has distinct body parts. The text tells them that a butterfly smells with its antennae, tastes with its feet, and sips with its proboscis. Using the line drawing provided here, have them label the different parts of the butterfly’s anatomy. They should research the function that each part plays in a butterfly’s life. A useful web site to use is: www.foremostbutterflies.com
Botany

You and your students can lure butterflies to the school grounds by planting a butterfly bush garden. There are a number of bushes of the buddleia species that are specific for attracting butterflies. They come in a variety of colors, need only a small plot of land, and are inexpensive. Visit your local nursery or go to websites such as these to find out more about how you can get started.

http://www.mountainvalleygrowers.com/mvv2-94.htm
http://www.amnh.org/exhibitions/butterflies/garden.php

Butterfly Characteristics

The endpapers at the back of the book show 34 different butterflies. Pair off the children and have each pair research two butterflies. Create a butterfly chart comparing the characteristics: size, coloring, and habitat. A sample chart is below. We made some entries for them.

Useful websites are:
http://www.defenders.org/wildlife_and_habitat/wildlife/butterflies.php
http://butterflywebsite.com/
http://www.kidsbutterfly.org/
http://www.butterfliesandmoths.org/

(Some butterflies named in the book may be difficult to research. If children hit a roadblock feel free to reassign them other butterflies)

An Egg Is Strong

In An Egg Is Quiet, your students learn that an egg “sits there, under its mother’s feathers.” Why can a mother bird sit on its eggs without breaking them? Have the students discuss why they think the mother does not break her eggs. Then propose the question: Can six empty eggshells support the weight of three or four heavy dictionaries? Have the students make hypotheses about the answer.

Hypothesis A: Heavy dictionaries will break the eggshells. Hypothesis B: Heavy dictionaries will not break the eggshells.

Test these hypotheses with this experiment:

MATERIALS
- Six large eggs
- Scissors
- A cup
- Three to four dictionaries
- Masking tape

PROCEDURE
_Using a serrated knife carefully cut about a dime-size hole off the other end of the egg.
_Shake the yolk and the egg white into a bowl and set it aside. (If you have the facilities, you can use the eggs to make a giant omelet for the children.)
_Wash the shells with warm soapy water and let them dry.
_Once the egg is completely dry, apply a small piece of masking tape over the hole to cover it.
_Arrange eggshells in a square and put one dictionary on top. Does it break the eggs? Before you continue allow each student the opportunity to change his/her hypothesis if he/she wishes.
_Place the second dictionary on the eggs. Did the eggs hold up the dictionaries? Again ask the students if they want to change their minds.
_Continue placing dictionaries on the eggs. After all of them are sitting on top of the eggs, what do the children observe? They should see that the dictionaries do not break the eggshells.

Discuss with them why the eggs don’t break. The arc-like shape of the egg helps support the weight of the dictionaries. The shape of the egg is the reason it doesn’t break when a bird sits on it. Explain to the class that this is exactly the way scientists work: they make a guess or hypothesis about something; they try it out; and then they change the hypothesis if their observations prove otherwise.

Another important aspect of the scientific method is keeping records. Your students should record the experiment using this format:

TITLE OF EXPERIMENT:

HYPOTHESIS:

PROCEDURE:

OBSERVATIONS:

CONCLUSION:
Mexican Confetti Eggs

When the previous experiment is finished recycle the eggshells into an art activity! The class can use the shells to make colorful Mexican confetti-filled cascarones. Have your students access the Internet to find out what cascarones are and what Mexican and Southwestern American children do with them. Some Web sites to look at:

http://www.pbskids.org/zoom/activities/do/cascarones.html
http://www.highlightskids.com/stories/NonFiction/NF0302_cascarones.asp

MATERIALS
• Clean eggshells (see “An Egg is Strong” experiment for cleaning instructions)
• Colored tissue paper
• White glue
• Mixing container

DIRECTIONS FOR EACH EGG
1. Cut up or tear the colored tissue into 1-inch by 1-inch squares and set them aside.
2. Carefully remove the masking tape from the edge of the eggshell.
3. Cut up colored construction paper into small ¼-inch by ¼-inch squares to make the confetti.
4. Fill the eggshell about half-full with the confetti and replace the masking tape.
5. Make a diluted solution of glue and water (half-glue and half-water).
6. Paint the white glue onto the entire eggshell and cover it with the cut-up colored tissue paper overlapping the paper until the entire egg is covered.
7. Place in the egg crate to dry.

When the eggs are dry the children will have authentic cascarones. Don’t break them indoors because you’ll make a mess. Go outside and have some fun!

Butterfly Masks

Partygoers have worn masks in the shape of butterflies for hundreds of years. Reproduce the template below on oak tag stock and have your students create their own butterfly masks. The cut outs for your students’ eyes are for reference. You should adjust the hole size and place to suit the needs of the children.

MATERIALS
• Crayons
• Glitter glue
• Decorative feathers
• Cut colored paper
• Small colored paper dots
• Sequins
• White glue
• Ribbon
• Scotch tape
• Colored pipe cleaners (optional)
• 18-inch dowel stick (optional)

Before the children begin, discuss with them the symmetry of a butterfly wing. From the illustrations in the book they should note that the markings on the wings are almost mirror images, and they should use that concept in decorating their masks. Make butterfly antennae from the left over oak tag or from the pipe cleaners and tape them to the top inside of the mask at points A and B.

When a child is finished decorating his/her mask, attach a length of ribbon to each side of the mask at points C and D or attach a dowel stick handle at point E with some scotch tape. Now you are ready to have a butterfly ball.
**MATHEMATICS**

**Measurement**

If you and your class have entered the data for butterfly wingspan on a Butterfly Characteristics chart, it will be clear that there is a great difference between the smallest butterfly and the largest. Your young students will get a better understanding of the relative sizes with a pictorial representation.

First rearrange the data so that it is sequenced from the smallest butterfly to the largest. Then have the children go around the room and find objects that are approximately the same size as a particular butterfly. (They will need a ruler that measures in millimeters.) For example, the smallest butterfly the Arian Blue has a wingspan of 7mm. The top of a standard pencil eraser is about 7mm. The largest butterfly is the Queen Anne’s Birdwing with a wingspan of up to 310mm. That makes it about the size of an 8 ½ x 11 piece of paper. Place the objects they’ve found in a display labeled Comparing Butterfly Wingspan to Objects Found in the Classroom.

Some of your better students might want to figure out how many Arian Blue butterflies it would take to occupy the same amount of space as the Queen Anne’s Birdwing.

In older classes, have the students graph the sizes on a bar graph.

**GEOGRAPHY**

**Using a Map**

Using the information from the Butterfly Characteristics chart, map with you class the distribution of butterflies on a classroom world map. Cut strips of paper ½ inch x 1 ½ inches from index card stock. Write the name of a butterfly on the strip and with a pushpin or tape place the strip on the map where the butterfly can be found. Most butterflies have more than one habitat, so you’ll need several strips for each butterfly.

**Travel with the Monarch Butterfly**

Every fall the monarch butterfly migrates from north Canada and the United States to its wintering habitat in the mountains of Mexico. In the spring it begins its journey back to its summer home. You and your students can track its migration on the website of “Journey North’s Monarch Butterfly Migration Tracking Project,” at:

http://www.learner.org/jnorth/monarch

There are photos, maps, stories, slideshows, news, and updates about the monarch butterfly. There is even a place for you and your students to enter your sightings of monarch butterflies. The first time you go to the site, click on “Welcome to New Participants” to get useful information and a quick overview.
Food Preparation and Sharing

Students as young as kindergarteners and as grown up as fifth graders will enjoy sharing their favorite family egg recipes with their classmates. Ask your students to bring in family recipes for egg dishes from omelets, frittatas, egg salads, and custards to cakes, muffins, and some specialty breads, since eggs are necessary ingredients for many baked goods.

Gather the recipes your students bring into an EGGS-TRAORDINARY COOKBOOK by the families of your class. Parents, grandparents, and others might want to contribute stories of egg recipes from their native countries.

Have a publishing party for your recipe book. Invite the families of your students and serve some of the egg dishes.

AWARDS AND HONORS

Awards and Honors for An Egg is Quiet:

- Publishers Weekly, ★ starred review
- Kirkus Reviews, ★ starred review
- AAAS/Subaru SB&F Prize for Excellence in Science Books
- The New York Public Library’s 100 Titles for Reading and Sharing
- Texas Library Association’s 2x2 Reading list
- Children’s Book Sense Pick

Praise for A Seed Is Sleepy:

“This introduction to seeds and plants uses simple sentences that will stretch children’s minds and imaginations...a wonderful addition to units that focus not only on seeds and plants, but also on writing and the language arts.”

—★ School Library Journal, starred review


ABOUT THE AUTHOR OF THIS GUIDE

This guide was prepared by Clifford Wohl, Educational Consultant.

For more activities and a conversation with Sylvia Long and Dianna Hutts Aston visit: http://www.chroniclebooks.com/sylvialong

To request information on the author’s availability for events or to request promotional materials, please e-mail: kids@chroniclebooks.com