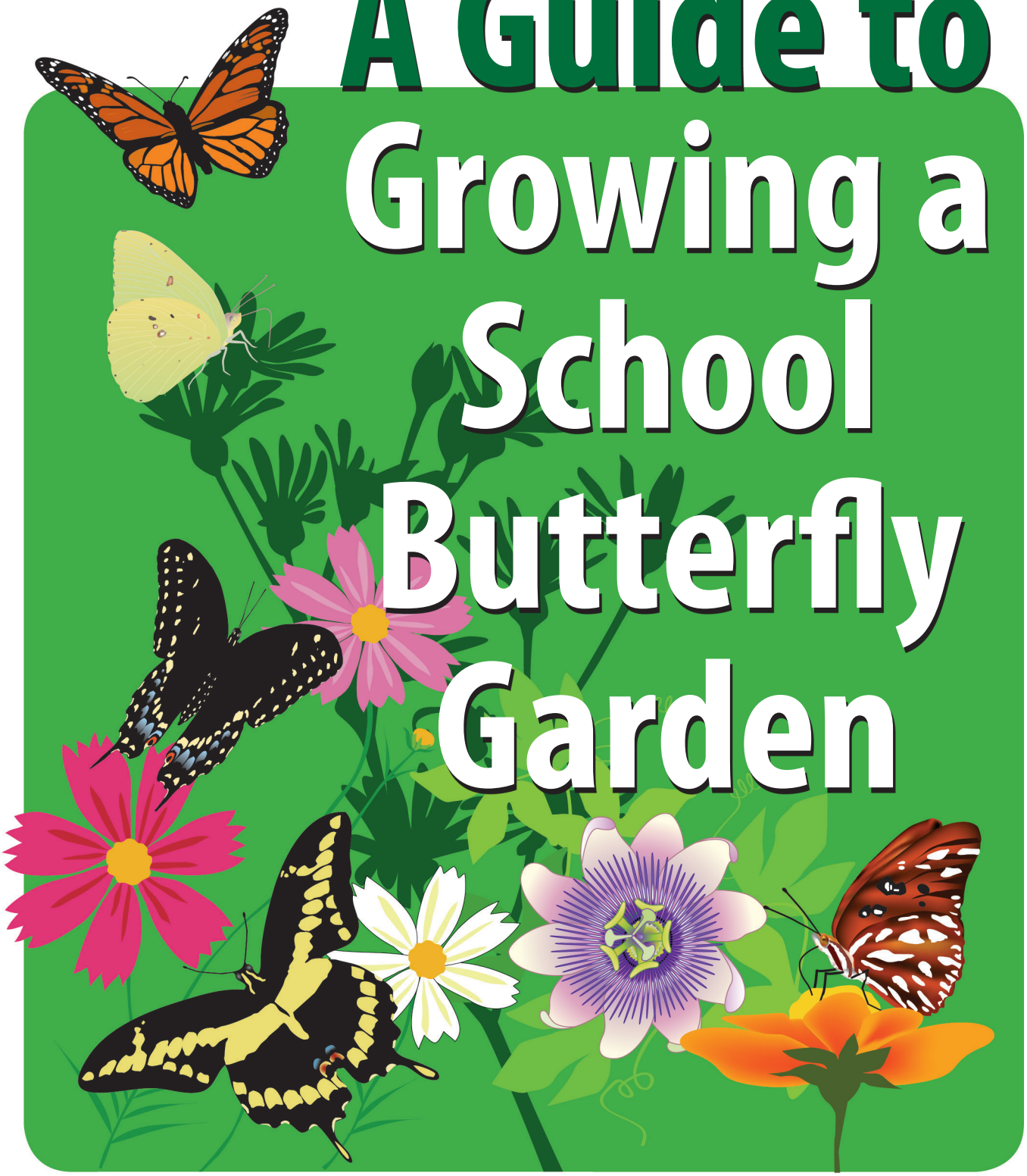
LSU AgCenter Research & Extension

A Guide to Growing a School Butterfly Garden



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Introduction

Benefits of School Gardens

The benefits of school gardens are numerous and are not restricted to a particular age group. Pre-kindergarten through high school students can work in a garden and learn by doing in that setting. Gardens can accommodate students' visual, auditory and kinesthetic learning styles. A growing concern is that today's youth do not spend adequate time outdoors; gardens provide students exposure to true nature – not just photographed nature or nature as depicted on television. Students who work in school gardens learn responsibility for something other than themselves. Working in a garden provides team-building skills. Studies completed by several universities have shown that students who participate in school gardens have higher science scores than those who did not participate in a school garden (Smith, 2003).

Why Grow a Butterfly Garden

A butterfly garden is a great theme garden for kindergarten and first grade students. There are 20 Louisiana grade level expectations that can be taught using a butterfly garden at these grade levels. Growing a butterfly garden provides students the hands-on opportunities to learn about metamorphosis, butterfly food preferences and habitat needs. It also helps them develop the skills to distinguish between male and female butterflies and chances to discuss migration patterns. In addition, students will learn much, much more about growing and caring for plants.

Where Do I Begin

This publication will guide you through creating and maintaining a butterfly garden. It will take you step by step from garden preparation to plant selection and garden maintenance. Lesson plans that are based on the Louisiana Grade Level Expectations (LaGLEs) also are provided. All you have to do is read and begin!

Gardening Basics

Site Selection

The ideal location for a school butterfly garden is one that provides:

- **Full Sunlight.** Most butterfly plants bloom and therefore need at least six hours of direct sun for maximum blooms. The flowers provide the nectar to feed the adult butterflies. Morning sun is better than afternoon sun because it allows the butterflies to use the sunlight to warm up and become active earlier.
- **Good Drainage.** Most butterfly plants need to be planted in a well-drained location. If the proposed butterfly garden area holds water for several days after a rain, either choose a new location or build raised beds. Bed shapes can vary from square, rectangular, triangular or the shape of your choice. To achieve adequate root growth, however, the bed must be at least 8 inches deep. Bed width should not be wider than twice the arm length of the children working in the garden. This will ensure all participants can reach the center of the bed to weed, pick flowers and observe butterflies without stepping into the bed.
- **Close Proximity to a Water Source.** The butterfly garden will need to be routinely watered during periods of drought. Placing the butterfly garden near an outdoor faucet will make watering an easy chore. See the irrigation section for watering tips.
- **Close Proximity to the Classroom.** The butterfly garden will become an outdoor learning space. A 60-minute class period can really mean 45 minutes of learning time after roll call, announcements, homework collections, etc. Ensure that the garden is located close enough to the classroom so students have plenty of time to walk to the garden, participate in the lesson and walk back to the classroom before the next period. Placing the butterfly garden near the classroom also ensures that students and teachers notice when the plants need to be watered, fertilized and weeded. The more often the students pass by the garden, the more likely they are to see butterflies in action.

Soil Preparation

Butterfly plants will grow and perform best in well-prepared beds.

- Mark the location and dimensions of the bed. Take a soil sample from the location to check and see if you need to apply lime or fertilizer.
- Meticulously remove any existing weeds and grass by digging them out.
- Till the soil about 8 inches deep using a tiller or shovels. Continue to remove below-ground parts of unwanted weeds and grass.
- Next, spread a 2- to 4-inch layer of organic matter, such as compost (homemade or purchased), bagged manure, soil conditioner or peat moss. Then, sprinkle general-purpose fertilizer following package directions. Sprinkle lime over the area if needed.
- Thoroughly incorporate everything into the tilled soil using a tiller or shovel.
- Rake the area smooth.
- Plant.
- After preparation, soil in the area will be raised somewhat higher than it was. This is desirable and important to make sure the bed drains well during rainy weather.

Building Raised Beds

Raised beds provide excellent drainage and lower maintenance.

- Build the sides of the raised bed out of 2 inch by 12 inch boards following desired dimensions. Other materials, such as landscape timbers, cinder blocks and lumber can be used to construct the bed, as long as the bed is a minimum of 8 inches deep.
- Fill the raised bed with bags or bulk commercial garden soil or top soil. Do not fill to the top of the boards. Soil level should be about 2 to 4 inches below the top of the boards to facilitate watering and allow for mulch.
- Plant.

Young children typically are not physically able to till and prepare in-ground beds. For young children, raised beds constructed especially for them may work best. Even for older children, raised beds generally are easier to maintain and manage.

Fertilization

Fertilizer is applied during bed preparation. Use a general-purpose fertilizer suitable for your area (check at the nursery) or a balanced fertilizer such as 8-8-8 or 13-13-13. If the soil was tested, you will receive specific recommendations for what nutrients to apply. If you put in a butterfly garden during late summer or fall, fertilize again in March. Use the same fertilizer and follow and package directions. If you put your garden in during the spring, the fertilizer applied during bed preparation generally will carry the plants through until the end of the school year.

Most butterfly plants require only moderate fertilizer, so don't fertilize excessively. Using fertilizers is not critical, but it will ensure your butterfly plants grow vigorously and perform their best.

Mulching

After planting your butterfly garden, apply a layer of mulch 1 to 2 inches thick over the soil around the plants. Suitable mulches include fallen leaves, pine straw, cypress, pine bark or other mulches. Fallen leaves and pine straw may be available free from students' yards. Mulches help reduce weeds, conserve soil moisture (reducing the need to irrigate) and prevent soil compaction.

Irrigation

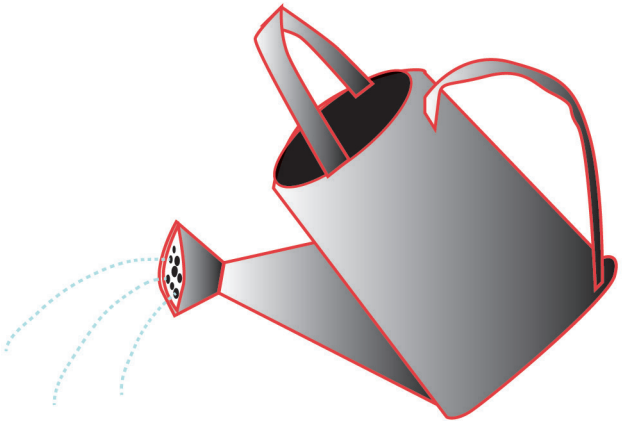
After you spread mulch over the soil of a new bed, apply water using a sprinkler, hose with a breaker nozzle or other irrigation mechanism. Apply enough water to penetrate the soil about 6 inches deep to moisten the root zone. Look at the plants often and watch for signs of drought stress, such as slight wilting. Plants generally "let you know" when they need water. The LSU AgCenter recommends irrigating plants about once a week. Apply enough water to register about 1 inch in a rain gauge placed in the garden. Many butterfly plants adapt well to dry conditions once established. If the soil is sandy, you may want to water twice a week with 1/2 inch of water since water passes quickly through sandy soils. Irrigating correctly can ensure a healthy root zone without wasting water.

Maintenance

Maintaining your school butterfly garden can be very simple. Remember, a class of 20 students has 40 hands to pull weeds! Let the students maintain the garden so they have ownership of the space. Gardens that are maintained by students are more sustainable (will remain around for years to come) than those that are maintained solely by the teacher or volunteers. Students take great pride in their work and their spaces and they should be the No. 1 workers and owners of this space.

Basic Maintenance:

- **Weed Control**. To minimize weed growth, apply a thick layer of mulch between all the plants in the garden. Mulch prevents sunlight from reaching the soil, thus preventing weed seeds from germinating. Good mulches include any bark source (pine, hardwood, cypress), pine needles, leaves, newspapers and landscape cloth. If weeds germinate through the mulch layer, hand pulling and cultivating are the best methods for getting rid of them. Do not use herbicides in a school garden.
- **Watering**. On average, most plants need 1 inch of water per week. Place a rain gauge in a central location of your garden to determine how much rain you have received. If seven-10 days have passed without rain or the weather is very warm, check your butterfly garden for signs of water stress. Plant stress includes light wilting and the leaves turning a duller shade of green. If you see stress, water your garden. Another method to determine if you need more water is to use a trowel to dig 3-5 inches into the soil. If the soil is not damp in this zone, water the garden.
- **Insect Control**. Insecticides should never be used in a butterfly garden. The butterfly caterpillars and adults are harmed when insecticides are used. This defeats the purpose of the garden. Even insect control techniques that do not involve insecticides, such as spraying plants with a jet of water to knock off the insect pests, may dislodge eggs and small caterpillars and cause harm.
- Use this guide to correctly identify insects in the garden. Remember, butterflies are caterpillars before they mature into butterflies! You **want** to see butterfly caterpillars chewing up the plants in the garden that you planted for them. If an overpopulation of undesirable insects, such as aphids or whiteflies, occurs, you may remove the heavily infested plants and replace them.
- **Deadheading**. Deadheading flowers is defined as removing the flowers from the plant after their blooms turn brown. Deadheading most butterfly plants will encourage additional flowers. The more flowers in the garden, the more nectar in the garden, which means more food for butterflies.



Freeze Protection. Butterfly plants that are hardy perennials do not need protection during the winter. At most, a layer of pine straw mulch 8 to 12 inches thick may be applied to cover the lower portions of the plant. (This works well with lantana and salvias). Tender perennials that are not cold tolerant enough to survive the winter easily can be replaced in the spring. It generally is not worth the effort of protecting them with covers through the winter (although you may cover them anytime freezing temperatures are predicted and uncover them as needed through the winter). Cool-season annuals are hardy and do not need protection. Warm-season annuals planted during the fall will die in winter freezes and can be replaced in the spring.

Annuals and Perennials. Some butterfly plants are annuals, meaning they complete their life cycle within one growing season. These plants are removed from the garden when they lose vigor and look bad or are killed by freezes. Warm-season bedding plants can be planted at the beginning of the school year and they will last until the first freezes. They are replanted again in March or April for spring and bloom early in the summer.

Butterflies are not active or present during the cold of winter, so cool-season annuals that bloom in winter are not that important in the butterfly garden. But, cool-season annuals planted from October to February will provide nectar to butterflies in the fall. The plants will provide color in the winter (to make us happy) and they will bloom prolifically in spring from March to the end of May, providing nectar when butterflies are active. 'Amazon' dianthus is a good example of an excellent cool-season annual for butterfly gardens.

Other butterfly plants are hardy perennials, meaning they live from year to year and do not have to be regularly replaced like the annuals. Some perennial plants die back to the ground during the winter but will emerge again when the weather warms up.

Hardy perennial plants will not need to be replaced unless there is a major insect or disease problem in the garden. Annual plants will need to be replaced each season. Appropriate butterfly plants are suggested in the following sections.

Butterfly Life Cycle

Butterflies are advanced insects that have a complete life cycle that includes four distinct stages. Each of these life-cycle stages can be observed in the school butterfly garden. The following is a short explanation of the butterfly's life cycle.

Egg Stage

Female butterflies lay eggs on a suitable host or larval food plant. The host plant provides the proper food for the immature butterfly, or caterpillar, once it hatches from the egg. The host plant selected depends on the butterfly species. Most butterflies will only lay their eggs on one specific plant or a group of closely related plants. (Monarch butterflies, for instance, only lay eggs on the different species of milkweed.) Even though butterfly eggs are small, they can be seen by the naked eye. Once the students know what to look for, it will be easy for them to spot the eggs. Butterflies often lay eggs on the underside of leaves.

Larva Stage

When the butterfly hatches from its egg as a larva, it has a long worm-like body with many legs and we call it a caterpillar. Larvae often have a bright colored pattern and may appear to have spikes or hair. Don't be alarmed by spines or spikes – none of the butterfly larvae sting. This is the stage in which the butterfly will do most of its growing and will need to constantly eat the host or larval food plant. As it grows, the larva will molt, or shed its skin, three or four times. Larval food plants are planted in the butterfly garden to nourish the caterpillars.

Pupa Stage

Once the larva is fully grown, it will look for a safe place to attach itself to, such as the underside of a leaf, so it can begin the pupa stage of the life cycle. The caterpillar will rarely stay on the host plant to pupate and may travel some distance away. After attaching itself at one end, the larva will molt for the last time, exposing a layer of tissue that will harden to form the outside of the pupa. At this stage, the pupa is called a chrysalis. The butterfly is immobile in the pupa stage as the insect goes through metamorphosis to change into an adult butterfly.

Adult Stage

The adult butterfly emerges from the pupa stage with four colorful wings (two in the front, two in the back) and six legs. When the butterfly first comes out of the pupa, the wings are soft and crumpled. The butterfly needs to pump blood into its wings and allow them to dry and harden before it is ready to fly. The adults feed on nectar from flowers. Plants that provide nectar, called nectar plants, are planted in the butterfly garden to attract and nourish adult butterflies. Butterflies mate in the adult stage, and the females lay eggs so the life cycle can begin again.

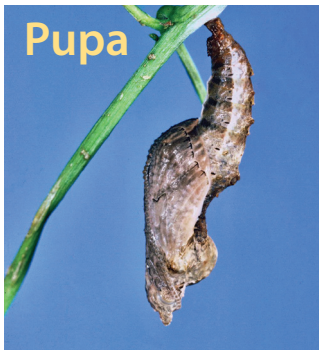
Common Louisiana Butterflies and Their Host Plants

The following pages highlight five of the butterflies you are most likely to see in a Louisiana butterfly garden. The butterflies are listed by their common and scientific names. Note that the scientific names are written in *italics*. All scientific names of animals, insects and plants are either written in *italics* or underlined. The first letter in the genus is capitalized. The species or the second name is written in all lowercase letters.

Accompanying each butterfly is an example of a suitable host or larval food plant. The butterfly life cycle begins with the adult female butterfly laying her eggs on the host plants that are specific to its species. Once the eggs hatch and the larvae emerge, the larvae survive by eating the leaves (sometimes the flowers) of the host plant. Planting host plants in your butterfly garden will allow students to discover the egg, larva and pupa stages of the butterfly.

Gulf Fritillary

Agraulis vanillae



Host Plant for Gulf Fritillary

Passion Vine

Passiflora

- Plant in full sun.
- This vine can spread up to 20 feet. Allow plenty of space to grow.
- Plant next to a wall or trellis for support.
- Hardy perennial vine.

Monarch

Danaus plexippus

Host Plant for Monarch

Mexican Milkweed

Asclepias curassavica

- Plant in full sun.
- Space plants 12 inches apart.
- Grows to height of 36 inches.
- Hardy perennial.

Cloudless Sulfur

Phoebis sennae

Host Plant for Cloudless Sulpur

Cassia

Cassia

- Plant in full sun.
- Space plants 6 feet apart.
- Grows to height of 8 feet.
- Hardy perennial

Giant Swallowtail

Papilio cresphontes

Host Plant for Giant Swallowtail

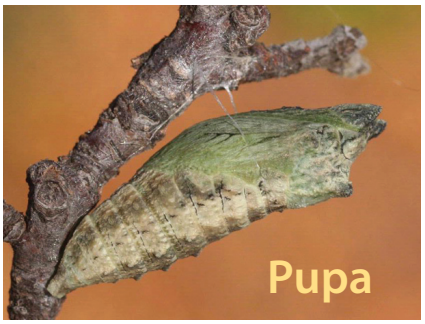
Citrus

Citrus spp.

- Plant in full sun.
- Space trees 10 feet apart.
- Grows to height of 10 feet.
- Hardy perennial.

Black Swallowtail

Papilio cresphontes



Host Plants for Black Swallowtail

Dill

Anethum graveolens

- Plant in full sun.
- Space 18 inches apart.
- Grows to height of 12-24 inches.
- Cool-season annual.

Parsley

Petroselinum crispum

- Plant in full sun
- Plant 15 inches from other plants.
- Grows to height of 18-32 inches
- Cool-season annual

Nectar Plants

While butterflies in the larvae stage need specific host plants to survive, once the butterfly is an adult, it can feed on the nectar produced by a variety of plants. These plants are called nectar plants. Plant many nectar plants in the school butterfly garden to ensure the students see the adult butterflies.

Mexican Heather

Cuphea hyssopifolia

- Space 12 inches apart.
- Plant in full or part sun.
- Grows 24 inches tall.
- Hardy perennial.

Butterfly Bush

Buddleia davidii

- Space 12 inches apart.
- Plant in full sun.
- Grows 36 inches tall.
- Hardy perennial.

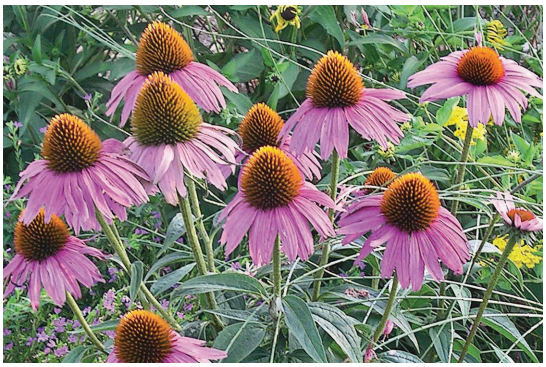
Lantana

Lantana camara

- Space 24" apart.
- Plant in full sun.
- Grows 12-36 inches tall.
- Hardy perennial.

Coneflower

Echinacea purpurea



- Space 24 inches apart.
- Plant in full sun.
- Grows 20-36 inches tall.
- Hardy perennial.

Pentas

Pentas lanceolata

- Space 10-18 inches apart.
- Plant in full sun.
- Grows 10-16 inches tall.
- Warm-season annual.

Marigold

Tagetes spp.

- Space 8-10 inches apart.
- Plant in full sun.
- Grows 10-12 inches tall.
- Warm-season annual.

Dianthus

Dianthus

- Space 10 inches apart.
- Plant in full sun.
- Grows 1-7 inches tall.
- Cool-season annual.

Salvia

Salvia spp.

- Space 12-16 inches apart.
- Plant in full or part sun.
- Grows 18-20 inches tall.
- Warm-season annual.

Resources for the Classroom

Butterfly Texts

With their colorful illustrations and entertaining story lines, trade books capture the interest of children while teaching them science content. These books can be used in your classroom to teach about butterflies and their life cycle. To aid you in finding the books easily, the ISBN-10 numbers have been included in the book citations.

- Cain, S. (2007). *The Crunching Munching Caterpillar.* (J. Tickle, Illus.) Wilton, CT: Tiger Tales. ISBN-10: 1589254031.
- Carle, E. (2009). *The Very Hungry Caterpillar. Popup Book.* New York: Philomel. ISBN-10: 0399250395.
- Cassie, B. & J. Pollatto. (1995). *The Butterfly Alphabet Book.* (M. Astrella, Illus.) Watertown, MA: Charlesbridge Publishing. ISBN-10: 0881068942
- Edwards, P. (2004). *Clara Caterpillar.* (H. Cole, Illus.) New York: HarperCollins. ISBN-10: 0064436918
- Ehlert, L. (2001). *Waiting for Wings.* New York: Harcourt Children's Books. ISBN-10: 9780152026080.
- Flatharta, A. (2009). *Hurry and the Monarch.* (M. So, Illus.) Oklahoma: Dragonfly Books. ISBN-10: 038573719X.
- Frost, H. (2008). *Monarch and Milkweed.* (L. Gore, Illus.) New York: Atheneum. ISBN-10: 1416900853.
- Heiligman, D. (2008). *From Caterpillar to Butterfly. (Let's-Read-and-Find-Out Science, Stage 1).* (B. Weissman, Illus.) New York: HarpersCollins. ISBN-10: 0590041436.
- Madion, A. (2007). *Velma Gratch and the Way Cool Butterfly.* (K. Hawkes, Illus.) New York: Schwartz & Wade. ISBN-10: 0375835970.
- Ryder, J. (1996). *Where Butterflies Grow.* (L. Cherry, Illus.) London: Puffin. ISBN-10: 9780140558586.
- Swope, S. (2004). *Gotta Go! Gotta Go!* (S. Riddle, Illus.) New York: Farrar, Straus and Giroux. ISBN-10: 0374427860.

Internet Resources

National Geographic Kids: This website has a short video and map explaining monarch butterfly migration.

http://kids.nationalgeographic.com/kids/animals/creaturefeature/monarch-butterflies/

Monarch Watch: This website is a must see, with its extensive resources for raising butterflies and teaching students about monarch butterflies. Among the resources, you can register your school garden as a monarch waystation to contribute to monarch conservation and order tags for your butterflies so they can be tracked by other participating schools.

http://www.monarchwatch.org/index.html

Butterflies and Moths of North America: A website dedicated to providing accurate information about butterflies and moths to the public. Includes a large image gallery.

http://www.butterfliesandmoths.org/

The Children's Butterfly Site: A project of Montana State University, this website has plenty of resources to involve children in learning about butterflies.

http://www.kidsbutterfly.org/

NOVA's Journey of the Butterflies: Allows you to stream NOVA's full 52-minute film about the 2,000 mile migration of monarchs at no charge!

http://www.pbs.org/wgbh/nova/nature/journey-butterflies.html

Grants

The *National Gardening Association* awards $500 and $1,000 grants to schools to begin school gardens.

http://assoc.garden.org/grants/

Classroom Activities

Butterfly House

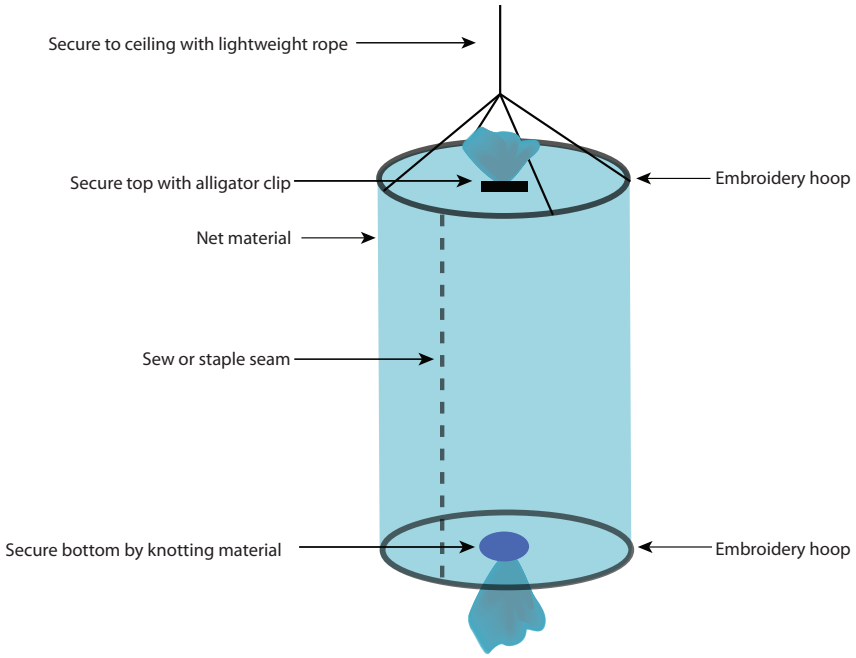
Do you want to have butterflies in your classroom so your students can observe them on days even when you can't go out to the garden? Here's an easy and inexpensive way to make a butterfly house for your classroom. Once finished, place plants from your garden that have butterfly eggs or larvae on them into the butterfly house. Release the butterflies once they become adults.

Materials

- 2 embroidery hoops of the same size (choose the size based on how large or small you want your house to be)
- Net material, such as tulle (decide how tall you would like your butterfly house to be)
- Alligator clip (found at office supply stores)
- Stapler or needle and thread
- Lightweight rope

Directions

1. Secure net material between the embroidery hoops so the net material forms a long tube, leaving extra net material on either side of the hoops.
2. Sew or staple the seam along the butterfly house.
3. On one end of the butterfly house, pull the extra material (beyond the embroidery hoops) tautly and tie it in a secure knot, forming the bottom of the butterfly house.
4. On the end of the butterfly house that is still open, pull the extra material tautly and pin it together with an alligator clip. This forms the top of your butterfly house, allowing easy access to the inside of the house.
5. Attach lightweight rope, as shown in the diagram, to the embroidery hoop that is the top of the butterfly house. Hang it from the ceiling.



Butterfly Life Cycle Plates

Background Knowledge: Students should have some exposure to the butterfly's life cycle.

Students will:

- Label the stages of the butterfly life cycle.
- Put the stages of the butterfly life cycle in correct order.
- Draw a correct habitat for each stage of the butterfly's life cycle.

Kindergarten and First Grade Science Grade-Level Expectations (these GLEs are shared between the grades)

- Observe life cycles and describe changes (e.g., humans, dogs, insects) (LS-E-B1)
- Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps and oral and written explanations as appropriate (SI-E-A5) (SI-E-B4)
- Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E-A1)
- Pose questions that can be answered by using students' own observations and scientific knowledge (SI-E-A1)

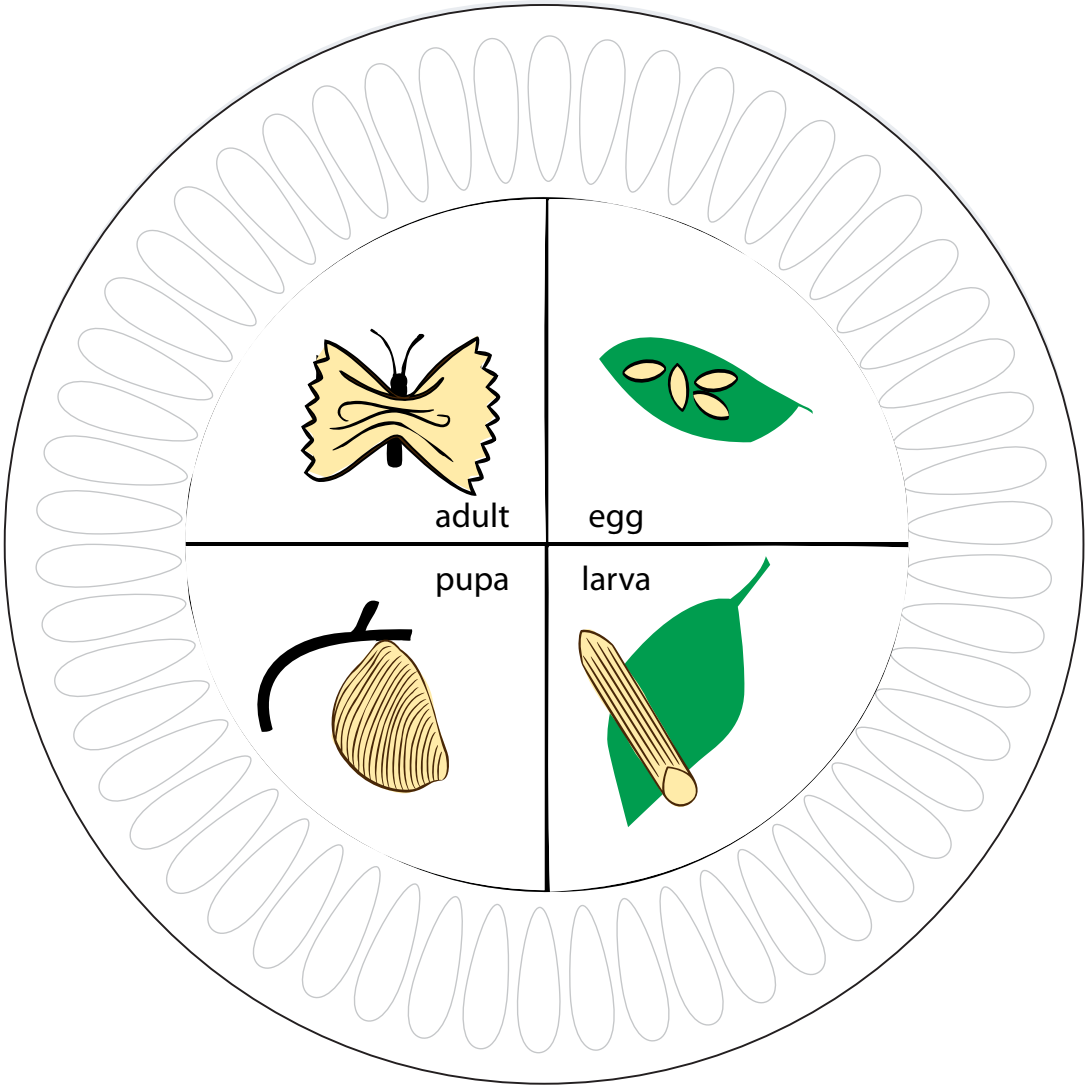
Materials – each child will need one of the following:

- Paper plate
- Orzo pasta (represents egg stage)
- Shell pasta (represents pupa stage)
- Penne pasta (represents larvae stage)
- Bow-tie pasta (represents adult stage)
- Crayons
- Glue

Procedure

1. Spark student interest and knowledge by reading a trade book to the class that includes information about the butterfly life cycle.
2. Hold a class discussion about the life cycle of the butterfly, recording information about each step on an anchor chart or the chalkboard. Questions you may wish to pose to the class include:
   - Where does the butterfly life cycle begin? (This question should include a discussion about how there is no real first step since it is a cycle!)
   - Where does the adult butterfly lay its eggs? (Establish the importance of the host plant.)
   - How does the larva attach itself to a plant to make a pupa? (Talk about how the larva makes a sticky "button" to stick itself to a safe place.)
   - What is the name of each stage?
   - What order do the stages go in? (It is important here to establish that it is a cycle — and therefore a circle. Use arrows to illustrate. Have students repeat the stages in the cycle as you say and point to each stage.)

3. Pass out materials to class.
4. Have students divide their paper plates into four equal "pie pieces" by drawing lines.
5. Have students examine the pasta pieces they received. Going stage by stage, ask students to identify which piece of pasta represents each stage of the butterfly's life cycle. Have them discuss their ideas about which piece of pasta matches each stage with neighboring students before telling them the answer.
6. Have the students place one pasta piece in each of the sections of paper plate in the order of the butterfly life cycle. Walk around to check that students have this correct.
7. Ask students how someone looking at their plates would know what order (i.e., clockwise or counterclockwise?) the life cycle of the butterfly goes in. Suggest that students draw arrows on the rim of their plates to indicate the correct order. Have students label each stage.
8. Ask students where the butterfly would be in each stage of its life cycle and tell students to draw the correct place in each section of their plates for that stage.
9. Have students glue the pasta pieces to their plates.
10. Reread the trade book you read to the class at the beginning of the lesson. As the trade book talks about the different stages of the butterfly life cycle, have students point to that particular stage on their butterfly life cycle plate.



Butterfly Garden Journals

Objectives

Students will:

- Observe the stages in the life cycle of the butterfly.
- Make observations about how a garden changes over time.
- Understand what plants need to grow.

Kindergarten and First Grade Science Grade-Level Expectations (these GLEs are shared between the grades)

- Ask questions about objects and events in the environment (e.g., plants, rocks storms) (SI-E-A1)
- Pose questions that can be answered by using students' own observations and scientific knowledge (SI-E-A1)
- Predict and anticipate possible outcomes (SI-E-A2)
- Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps, and oral and written explanations as appropriate (SI-E-A5) (SI-E-B4)
- Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (SI-E-A6)
- Observe life cycles and describe changes (e.g., humans, dogs, insects) (LS-E-B1)

First Grade Science Grade-Level Expectations

- Record and share observations of changes in developing plants (LS-E-B1)
- Record evidence of plants and animals in the schoolyard or other environments (LS-E-C2)

Materials

Journals can be notebooks or can be made by stapling loose pieces of paper together with construction paper that forms the front and back covers.

Procedure

The butterfly garden journals should be used from the time the garden is first planted until the end of the school year. Students should write and draw in their journals about their observations each time they visit the garden. It is important to tailor the use of the journals to the needs of your students and curriculum so they will be meaningful to student learning. While it is important to guide student entries with questions that will lead students to making their own observations and discoveries about the garden and the butterflies that live there, you should also allow students space in their journals where they can make decisions about what they want to include about the butterfly garden. The following are a few ideas of what you could have students include in their journals:

- Draw and label pictures of the plants in the garden.
- Illustrate and label all of the things a plant needs to survive.
- Illustrate and write about the planting of the garden.
- Measure and chart the growth of plants over time.
- Observe how often the garden needs watering or how long it takes for weeds to grow.
- Write a poem or story about butterflies.
- Illustrate and label the butterfly's life cycle.
- Make counts of eggs, adult butterflies, etc.

Photo Credits

Gulf Fritillary Larvae: Kathy Kramer, LSU AgCenter
Gulf Fritillary Pupa: Joseph LaForest, University of Georgia, Bugwood.org
Gulf Fritillary Adult: Dan Gill, LSU AgCenter
Passion Vine: Kathy Kramer, LSU AgCenter
Monarch Larvae: Kathy Kramer, LSU AgCenter
Monarch Pupa: David Cappaert, Michigan State University, Bugwood.org
Monarch Adult: Rebekah D. Wallace, University of Georgia, Bugwood.org
Millkweed: Rebecca Jones
Cloudless Sulfur Larvae: Dan Gill, LSU AgCenter
Cloudless Sulfur Pupa: Sturgis McKeever, Georgia Southern University, Bugwood.org
Cloudless Sulfur Adult: Kathryn Fontenot, LSU AgCenter
Cassia: Kathy Kramer, LSU AgCenter
Giant Swallowtail Larvae: Jonathan Armstrong, University of Southern California, Bugwood.org
Giant Swallowtail Pupa: Jonathan Armstrong, University of Southern California, Bugwood.org
Giant Swallowtail Adult: David Cappaert, Michigan State University, Bugwood.org
Citrus: Kathryn Fontenot, LSU AgCenter
Black Swallowtail Larvae: Dan Gill, LSU AgCenter
Black Swallowtail Pupa: Steven Katovich, USDA Forest Service, Bugwood.org
Black Swallowtail Adult: Dan Gill, LSU AgCenter Dill: Rebecca Jones
Dill: Kathryn Fontenot, LSU AgCenter
Parsley: Kathryn Fontenot, LSU AgCenter
Nectar Plants: Rebecca Jones, Dan Gill, Kathryn Fontenot
Eastern Tiger Swallowtail: Kathy Kramer, LSU AgCenter
Common Buckeye: Kathy Kramer, LSU AgCenter
Carolina Satyr: Sturgis McKeever, Georgia Southern University, Bugwood.org
Fiery Skipper: Rebekah D. Wallace, University of Georgia, Bugwood.org

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Other Common Butterflies

Eastern Tiger Swallowtail
Papilio glaucus
Wingspan: 3 5/8 - 6 inches
Life Cycle: Egg: Green, spherical, laid singly on host leaves. Mature larva: Green with rows of small blue spots; thorax enlarged with two prominent yellow-rimmed black eyespots and a narrow black and yellow transverse band. Chrysalis: Mottled gray-brown
Larval Host Plants: Wild cherry (*Prunus serotina*), sweet bay (*Magnolia virginiana*) and white ash (*Fraxinus americana*)

Common Buckeye
Junonia coenia
Wingspan: 1 5/8 - 2 1/2 inches
Life Cycle: Egg: Green, laid singly on host leaves
Mature larva: Black with white stripes marked with orange and numerous black branched spines. Chrysalis: Light brown with darker markings.
Caterpillar Hosts: Plants from the snapdragon family including snapdragon (*Antirrhinum*) and toadflax (*Linaria*); the plantain family including plantains (*Plantago*); and the acanthus family including ruellia (*Ruellia nodiflora*).

Carolina Satyr
Hermeuptychia sosybius
Wingspan: 1 1/4 - 1 1/2 inches
Life Cycle: Egg: Light green, laid singly on host leaves .
Mature larva: Green with numerous tiny pale spots and two short tails on the rear. Chrysalis: Green
Larval Host Plants: Various grasses: Carpet grass (*Axonopus compressus*), centipede grass (*Eremochloa ophiuroides*); probably St. Augustine grass (*Stenotaphrum secundatum*) and Kentucky bluegrass (*Poa pratensis*).

Fiery Skipper
Hylephila phyleus
Wingspan: 1 1/4 -1 1/2 inches
Life Cycle: Egg: White, laid singly on host leaves. Mature larva: Brown with numerous tiny, dark brown spots and a dark brown dorsal line. Chrysalis: Light yellow-brown with two dark brown longitudinal stripes.
Larval Host Plants: Various grasses (*Poaceae*) including Bermuda grass (*Cynodon dactylon*) and St. Augustine grass (*Stenotaphrum secundatum*).

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