

# LUPINE AND BUTTERFLIES

**Project Skills:**

- Participants will be introduced to the concept that living things grow and develop.

**Life Skills:**

- Learning to learn

**Academic Standards:**

- Science: C.4.2 Use the science content being learned to ask questions, plan investigations, make observations, make predictions, and offer explanations.

**Grade Level:** 3

**Time:** 60 minutes

**Supplies Needed:**

Miss Rumphius Activity

- *Miss Rumphius* by Barbara Cooney
- Lupine seeds (see DNR web site)
- Peat pots
- Soil
- Warm water in a pouring container

Butterfly/Cocoon Activity

- Toilet paper tubes
- Markers
- Pipe cleaner
- Popsicle stick
- Construction paper
- Tissue paper
- Scissors
- Pencils
- Glue

**BACKGROUND**

Lupine is a plant that grows wild in Wisconsin. It is an important part of the grasslands and the oak savannas upon which it grows. Lupine is a plant that occurs early in the succession of grasslands, so it is specially adapted to survive on dry soils with low fertility.

Lupine is a member of the pea family and blooms from about from mid May until late June. Lupine, like other members of the pea family, is a nitrogen-fixing plant – it helps to improve the soil in which it grows.

We don't have nearly as much lupine in Wisconsin as we did many years ago because the habitat has changed. One of the reasons for habitat change has been the lack of wildfires which kept the oak savannas and grasslands from becoming too woody. This allowed plants like lupine to flourish.

The Karner Blue is a small blue butterfly whose life cycle is closely tied to the lupine plant. Because we don't have as much lupine as we once did, we also don't have as many Karner Blue butterflies. As a matter of fact, the Karner Blue butterfly is endangered in Wisconsin.



Photo by Thomas Meyer

**WHAT TO DO**

**Activity: Miss Rumphius**

Share the book, *Miss Rumphius*, with the children. Discuss the following with the group:

- What did Miss Rumphius choose to do to make the world a more beautiful place?
- How do you think that Miss Rumphius felt about what she did to make the world a more beautiful place?
- How do you think the people around Miss Rumphius felt about her decision?



Explain that we, like Miss Rumphius, will also be planting lupine seeds. **Note:** It is important to use seeds that were collected from wild lupines that grow in Wisconsin if you will be transplanting them to wild places.

Prepare peat pots by pouring water as directions indicate. When peat pots have swelled, have each child press three lupine seeds into a pot. Cover with soil. As you are planting the seeds, discuss with the group what plants need to grow (sunlight, water, and nutrients). Ask them where they will keep their plants to give them the things that they need to grow.

If you are using wild seed, remind the group that these seeds may take longer to sprout than seeds that you buy at the store. After your seeds have sprouted and there is no longer danger of frost, lupine may be planted outside in a sunny location.

**Source:**

- Created by Paula Rogers Huff, 4-H Youth Development Agent, UW-Extension, Oconto County

**Activity: Butterfly/Cocoon**

Review the life cycle of a typical butterfly, as shown below. Remind the participants that a cycle is something that happens over and over.

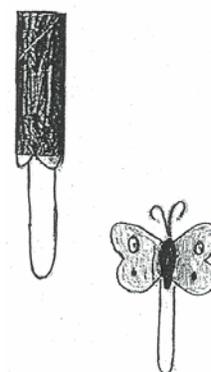
eggs----> larvae ---->pupa ---->butterfly

Make the connection between Karner Blue and this activity by explaining the dependency of the Karner Blue on lupine for its food source. Inform (or remind) the group that the larva (caterpillar) of a butterfly is a little eating machine.

When a caterpillar is done eating, it makes a cocoon (pupa). Out of the cocoon will emerge an adult butterfly.

**Procedure:**

- Each child will cut out a butterfly of his or her own design from heavy paper.
- Make a small hole in the butterfly's head.
- Shape a pipe cleaner like the letter "v." Put it through the hole in the head and twist to make the antennae.
- Glue the butterfly to one end of a popsicle stick. Let **dry**.
- Decorate the paper tube which will be the pupa.
- Curl the butterfly wings by rolling them on a pencil; slide into pupa.
- Pull the stick to make the butterfly emerge from the pupa.

**TALK IT OVER****Reflect:**

- What did you learn about butterflies today?
- What did you learn about Karner Blue butterflies?
- What is the connection between Karner Blues and lupine?

**Apply:**

- The caterpillar of Karner Blue butterfly eats only wild lupine. What do you think would happen to the Karner Blue butterflies if there was no lupine?

**ADDITIONAL WEB LINKS**

- [www.dnr.state.wi.us/org/land/er/invertebrates/karner.htm](http://www.dnr.state.wi.us/org/land/er/invertebrates/karner.htm). To order wild Lupine seeds, choose "Learn More" then "Growing Wild Lupine."

**Reviewed by Wisconsin 4-H Afterschool Team: September 2004.**