



Butterflies without Borders

ALABAMA OUTDOOR CLASSROOM ACTIVITY

Grade Levels

6-8

Overview

Students will study how monarch butterflies migrate to Mexico for the winter.

Subject Areas

Geography, Social Studies, Science, Math, Language Arts

Duration

Activity I: 60 minutes

Activity II: 60 minutes

Activity III: 60 minutes

(Activity III should be conducted in Sept/Oct)

Learning Objectives

Students will learn to 1) identify various types of butterflies including the monarch; 2) track/describe the migration path of the monarch; 3) locate Alabama, the United States, Mexico and Canada on a map; and 4) send a “Symbolic Monarch Butterfly” and letter to students in Mexico.

Alabama Course of Study Objective Correlations for Science

Sixth: 7 & 8

Seventh: 1, 4, 5, 6, & 7

Materials

- Paper
- Pencils
- Physical Map of North America (mountains, rivers, etc.)
- Political Map of North America (state & country borders)
- Monarch Field Data Form (optional)

Activity adopted from Journey North: www.learner.org/jnorth/.

Background Info

Most temperate insects can withstand the freezing temperatures of winter by entering a state called "diapause." Some do this as eggs, others as larvae, pupa or adults. Some insects, however, migrate during the winter to warmer climates – some traveling across the border into other countries. The monarch butterfly, a prime example, flies over 3,000 miles from the eastern United States and southern Canada to the mountains in central-western Mexico for the winter, most often arriving in Mexico around November 1.

Although scientists aren't sure how monarchs know where to go, we do know that it isn't something they learn; they are genetically programmed to go to the right place at the right time. Scientists also believe that they use the sun and the earth's magnetic field as a cue to direct them south.

It is unknown how far the monarchs travel on average per day, but one tagged monarch was recaptured 265 miles away from where it had been released the previous day. To make the full trip, it takes the monarchs approximately two months depending on the temperature and wind conditions. They are able to travel far distances by flying very efficiently, taking advantage of air currents and actually soaring like many birds do. They also store up lots of energy for these long trips from the food they eat as caterpillars and the nectar they drink from flowers as adults.

After over-wintering in Mexico, the monarchs mate; and by the end of March, they begin their journey north back to the U.S. and Canada. As they search out milkweed, each female will lay about 400 eggs and then her life cycle will end. Only one to two percent of the caterpillars will survive, but those who do will metamorphose into butterflies and continue their parents' northward migration. It can take as many as three or four generations to re-colonize their northern habitat range. The summer monarchs complete their life in about three weeks. The monarchs born in autumn have a life cycle of about ten months. In August and September, they begin their southward migration, as their ancestors have.

For more information about the monarch butterfly migration, visit www.learner.org/jnorth/search/Monarch.html or www.monarchwatch.org.

For more information about Michoacan, Mexico, where the monarchs overwinter, visit <http://butterflywebsite.com/michmon/>.

For more identification information about butterflies in Alabama including photos of each butterfly and its larva, chrysalis, and egg, visit www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/al/toc.htm or www.whatsthis caterpillar.co.uk/america/.

Preparation

1. Go to the Journey North website and download a Monarch Butterfly Migration Checklist – Field Data Form: www.learner.org/jnorth/tm/monarch/FieldNotes.html
2. Print the directions for sending your Symbolic Monarch Butterfly: www.learner.org/jnorth/tm/symbolic/Send.html.
3. Make copies of the maps of North America for the students.



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Outdoor Classroom Connection

Students will observe butterflies in your butterfly garden in the outdoor classroom site, while looking for migrating monarchs.

Literature Connections

- ⇒ *Monarchs* by Kathryn Lasky (ISBN:10-0152552979)
- ⇒ *Monarch & Milkweed* by Helen Frost (ISBN:10-1416900853)
- ⇒ *Monarch Magic* by Lynn Rosenblatt (ISBN:10-1885593238)
- ⇒ *My Monarch Journal* by Connie Muther (ISBN:10-1584690054)

Butterfly Field Guides

- ⇒ *The National Audubon Society Field Guide to North American Butterflies* by Robert Michael Pyle (ISBN: 10-0394519140)

Other Related Conservation Education Activities

Project Learning Tree

- ⇒ *Charting Diversity*
- ⇒ *Planet Diversity*

Project WILD

- ⇒ *Which Niche*

Discovering Alabama Videos

- ⇒ *Alabama's Natural Diversity*

Procedure

Activity I: Observation & Journaling

1. Give each student blank paper for journaling and/or a Monarch Butterfly Migration Checklist – Field Data Form (from the Journey North website).
2. Take students to the butterfly garden in your outdoor classroom to observe the different species of butterflies.
3. Have students write and sketch their observations in a journal and/or fill out a Field Data Form for any monarch butterfly sightings.
4. When you return to the classroom, discuss the types of butterflies seen. Use field guides or the internet to identify the butterflies.

Activity II: Migration Study

1. Discuss what happens to butterflies in the winter. How do they survive? Explain how some stay in the U.S., while others migrate to overwinter in Mexico.
2. Hand out copies of physical and political maps of North America. Pinpoint where the monarchs overwinter in Mexico. What is the distance from your school to their winter grounds? Will they travel over rivers, mountains, etc? How many different states and/or countries will the butterflies travel thru during their migration?
3. Discuss what the butterflies need as they travel. What does your outdoor classroom's butterfly garden provide for migrating butterflies? What dangers do monarch butterflies encounter on their journey?
4. Have students research where the monarchs migrate to in Mexico and the types of forests in which monarchs overwinter. What are the lives of the Michoacan people like? How do they depend on the forests and land for their economy, food, etc? What happens when the fir forests of Michoacan, Mexico are logged? How does that affect our monarch butterfly populations in the U.S.?
5. Theorize where the butterflies are at the moment of your discussion. Are they on their fall migration to Mexico, overwintering in Mexico, returning to the U.S. for the spring, or reproducing in the U.S. during the summertime?

Activity III: "Symbolic Monarch Migration" Letter

1. Register on-line to participate in Journey North's programs: www.learner.org/jnorth/reg/index.html
2. Have students create a Symbolic Monarch Butterfly following the Directions and Migration Checklist: www.learner.org/jnorth/tm/symbolic/Send.html.
3. Write a letter to a student in Mexico on the back of their "butterfly" describing the butterfly's journey from Alabama to Mexico, including information that the student researched. Be creative, in addition to adding facts to the letter, and include Spanish phrases or sentences if possible.



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Activity III: “Symbolic Monarch Migration” Letter continued...

4. Mail the package with all of the students’ butterflies and the Migration Checklist before the Postmark Deadline (early to mid-October). Check the website for the Postmark Deadline.

5. Track the Symbolic Monarch as it travels to students in Mexico and then back to students in the U.S.: www.learner.org/jnorth/sm/

Assessment

- ▶ Did the students accurately identify the different butterfly species in their journals?
- ▶ Did the students accurately track the migration of the butterflies south and/or north between your school and Mexico?
- ▶ Did the students accurately describe the habitat where the monarchs overwinter and the people who live there?
- ▶ Did the students accurately describe the migration of the butterflies to the students in Mexico?

Extensions

- ▶ Help track the fall migration and report your observations on Journey North: www.learner.org/jnorth/orientation/PracticeReport.html
- ▶ Join Monarch Watch and tag monarch butterflies: www.monarchwatch.org/tagmig/tag.htm
- ▶ Raise monarch caterpillars and release them in your butterfly garden: www.monarchwatch.org/rear/index.htm

Notes

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The Alabama Outdoor Classroom Program is a partnership between:



Alabama Cooperative
Extension System



Alabama Wildlife Federation

www.alabamawildlife.org/classrooms/



Alabama Department of
Conservation & Natural Resources