

Natural & Cultural History



Life Cycles 2nd Grade



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This curriculum guide has been developed by the Placer Nature Center Curriculum Committee: Linda Desai, Stuart Yaffe, Bob Gloyd, and Dorothy Gloyd. January 1993. Revision 2009

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About Us & Our Programs

Started as a project of the Placer Land Trust in 1990, today Placer Nature Center functions alone as non-profit organization. We share our 60-acre Auburn site, which is owned by the State of California, with the California Conservation Corps.

Placer Nature Center's mission is to provide educational programs that evoke a sense of discovery and wonder about our place on earth. The work of Placer Nature Center helps us understand that our daily choices impact the environmental, social and economic well being of the planet. This is essential, because a healthy world means the world to us.

Upon request, Placer Nature Center will provide schools with field tips to Placer Nature Center's campus, meet you out in the field and/or deliver presentations in the classroom.

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Program Overview

A team of trained docents use a holistic perspective to present our programs. That is, the total environment – living and non-living – will be studied while students weave together the disciplines in relation to their program theme (represented schematically in Figure 1).

The Placer Nature Center provides a three-part program, including:

- Pre-visit activities
- ✤ Field trip
 ☑ Exhibit Hall theme orientation
 ☑ Hands-on activities
 ☑ Nature Walk
- Post-visit activities

Plus other relevant information is also provided to enhance the student's field trip experience.



Poison Oak

Description

Poison oak is a native shrub of the foothills and the Nature Center has many fine examples throughout the nature trail area and even atop the granite outcrop in our courtyard. Because many people react to the plant oil, it is important for our visitors to be able to identify this plant.



New Spring buds on Poison Oak, pretty but not nice to touch!

Poison oak is not actually an oak although its leaves have an oak-like appearance. It is found commonly among oak trees. Scientifically it is known as Rhus *diversiloba*. The species name was well chosen as it describes the diversity of lobe shapes and sizes one can find on a leaf. Here is an identification checklist for poison oak:

- 1. Stems are smooth. No spines.
- 2. Each leaf stem has three glossy leaflets.
- 3. Where the three leaves meet, there is a red spot.

A Nature Center docent will help you to identify this plant. Get to know the poison oak in all its forms: shrub, vine and seasonal variations (more pictures on the next page).

Foothill fauna depend on this native plant: deer browse on it; birds eat its berries; others den, burrow, nest or roost in it. Poison oak is an important part of the foothill ecosystem.

Reactions

Apparently only humans (and not all humans) react to urushiol, an oil found on the plant's stems, leaves, flowers and berries. Contact with this oil can result in a rash. The oil remains active for a long time. Thus, it can pass first onto clothing or animal fur before skin contact and still be capable of forming a rash.

The best prevention against contracting poison oak is to:

- 1. Learn to identify the plant
- 2. Avoid touching the plant
- 3. Wear long sleeves and long pants
- 4. Stay on the trail
- 5. Wash thoroughly and immediately upon returning home, both skin and clothes

Leaves of Three, Let them Be!



What Poison Oak looks like in each season



Fall

Mostly red – from bright crimson colors to brown dying leaves.

Winter

A little more tricky to spot! Look for bunches of straight, upright twigs growing near rocks, trees and amongst other shrubbery.

Spring

After the pretty red buds (see previous page), leaves turn a shiny green. May be inter mixed in black berry bushes and other shrubs, hiding under Oak Trees and around rocks.

Summer

Various shades of green, yellow and red all mixed together in the same bush and sometimes on the same leaf!

Pre-Visit Information

Before you arrive... Please take the time to go over the pre-visit information and activities. It helps the students and docents enjoy a more successful program!

In The Classroom.

- 1) If there is a special needs student in your group, let us know how we can best meet her/his needs.
- 2) Divide your class into groups of 10-12 students with one adult each if possible. Make sure the students know which group they are in so they can be divided quickly after exiting the bus/car.
- 3) Make name tags and wear them to the Nature Center. Following is an activity for making name tags. (see activity #1)
- 4) Have students do the Word Search and Word Match (if provided) to familiarize themselves with new vocabulary words. (see activity #2 and #3)
- 5) Review the information and accompanying sketch of poison oak. Although the docent will identify this native shrub for the students, it helps if they are aware of it before arriving.
- 6) Remind students to dress for the weather. The program will be conducted rain or shine. Closed toe walking shoes (no sandals) are a must.
- 7) Have a payment envelope ready to hand the docent as soon as you arrive. If possible, make payment by check. We are not able to make change.
- 8) If you choose to have lunch on site, all related garbage must leave with you. The Nature Center does not have a disposal service.
- 9) Please arrive 15 minutes before your scheduled time.

On The Trail

- 1) The docent will lead the group at all times on the trail, with a parent or other adult taking up the rear.
- 2) Stay on the trail.
- 3) No picking of plants or rocks or anything. Take only memories. Leave only footprints.

We are excited to share an enjoyable, educational experience with you and your students at the Nature Center. Have fun with the pre-visit activities!

Pre-visit Activities

Activity #1: Name Tags

OBJECTIVE:

Students will make name tags out of one of the four designs that symbolize a stage in the life cycle of a butterfly:

- Egg
- Caterpillar (larva)
- Chrysalis (pupa)
- Adult butterfly

MATERIALS:

Crayons/felt tip pens Index cards or other heavy tag board String or pins to attach to name tag Acorns or feathers to decorate name tag Glue Scissors

PROCEDURE:

- 1. Make copies of next page on index stock. Tell the students each picture represents a stage in the life cycle of a butterfly.
- 2. Have each student select and cut out a picture of the butterfly life cycle stage that he/she would like to represent.
- 3. The student should then write his/her name in the center of the picture.
- 4. Color or decorate name tags.
- 5. Be sure to wear name tags to the Nature Center.

Name Tags





Activity #2: Life Cycle Word Match

Cut out the words and paste them in the correct spaces:

chick	eggs	bear		
cub	quail	egg		
frog	embryo	tadpole		

Activity #3: Life Cycle Word Search

NAME_____

				Ĩ		R	5		
tadpole quail frog		embryo eggs egg			chick bear cub		Ça		
Η	Ι	Т	А	D	Р	0	L	E	0
В	V	L	K	Х	D	E	G	G	В
F	Р	W	0	Q	U	А	Ι	L	G
D	Н	Р	В	G	Ι	Х	Ζ	K	S
D	С	Η	Ι	С	K	С	Q	Р	Z
S	Т	V	D	Y	E	L	Μ	E	R
G	Х	E	E	J	G	В	Ι	Ι	А
G	D	F	Η	F	R	0	G	В	E
E	Μ	С	Η	D	А	Ζ	D	U	В
Р	U	E	Μ	В	R	Y	0	С	М

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Post-Visit Answers

Word Match:

Ρ	U	E	Μ	В	R	Y	Ο	C	Μ
E	Μ	С	Η	D	Α	Ζ	D	U	B
G	D	\mathbf{F}	Η	F	R	Ο	G	B	E
G	Χ	Ε	E	J	G	B	Ι	Ι	A
S	Τ	\mathbf{V}	D	Y	Ε	L	Μ	Ε	R
D	С	Η	Ι	С	K	С	Q	Р	Ζ
D	Η	Р	B	G	Ι	Χ	Ζ	Κ	S
\mathbf{F}	Ρ	W	0	Q	U	Α	Ι	L	G
B	\mathbf{V}	L	K	Χ	D	E	G	G	B
Η	Ι	Т	А	D	Р	Ο	L	E	0

Life Cycle Word Match:



Your Field Trip at a Glance

Common Core : SL 1a, b, c, 3 Next Generation Science Standards: 2-LS2-2, 2-LS4-1

A team of docents will meet your class in the parking lot, lead the group to the Nature Center courtyard, and point out restrooms and drinking fountains. Each docent will take a group of 10-12 students and begin their program at one of the following stations: WaterShed Exhibit Hall, Picnic Area for hands-on activities to reinforce the theme, or Nature Walk. The docent will rotate through all stations to complete the program. Following is an outline of what to expect at each program station during your field trip.

EXHIBIT HALL

The docent will introduce the theme of the visit. To stimulate thinking and further discussion, the docent will first play a game with the students. Each student will be given a card with a picture depicting a life cycle stage of an animal. The student will match their card to the appropriate adult animal. This activity includes life cycles of a mammal, bird, insect, amphibian, and fish. The docent and students will compare and contrast the life cycles of these animals.

Following the docent theme presentation, students will be given 10 minutes to explore and interact with the other exhibits. A docent will answer any questions and/or ask leading questions to enhance student involvement.

DISCOVERY ROOM

Having discussed animal life cycles in the Exhibit Hall, the Discovery Room activities are designed to augment the students' understanding of plant life cycles. The activities are described below.

1) Seed Dispersal

Students examine 5 different seeds on a plate and discover which are flyers, hitchhikers, those that need to be eaten or those that scatter themselves.

2) Viewing Hive

In late spring and early fall the Nature Center has an active viewing honeybee hive in the Discovery Room. Students will search for the life cycle stages of the honeybee and for the queen bee.

OUTSIDE ACTIVITY

Students will view the life cycle stages of pond organisms from our pond and view the life cycle of the gall wasp and acorn weevil.

NATURE WALK

The docent will guide the students on the nature trail, examining the foothill ecosystem. The docent will emphasize:

• Recognition of seeds and fruits, ascribing them to appropriate plants

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15 MINUTES

15 MINUTES

45 MINUTES

15 MINUTES

- Life cycles of native flora and fauna
- Seeds and their various dispersal methods
- Interrelationships of plants and animals in their life cycles.

Post-Visit Activities

Activity #1: Watch a Seed Grow

PROCEDURE

- 1. Have each student bring to school an old cotton sock and a meat tray.
- 2. Have the student slip the sock over his/her shoe (as we did at the Nature Center) and walk through a natural area, either at home or at school.
- 3. Have the student take the sock off and put it in the meat tray labeled with his/her name.
- 4. Keep the sock moist.
- 5. Watch the seeds grow.

Activity #2: Insect Life Cycle

Mealworms are easy to raise and allow the students to observe each stage of the grain beetles' metamorphosis. Mealworms are available at any pet store for starting your population.

MATERIALS

2 qt. canning jar or aquarium with screen or gauze cover Bit of shredded paper Mixture of rolled oats, bran and cornmeal Piece of apple, potato or carrot for moisture Mealworms

PROCEDURE

- 1. Put a small layer of shredded paper in the bottom of the container.
- 2. Fill half of the container with rolled oats mixed with a little of the other grains.
- 3. Put a piece of apple in the container
- 4. Add mealworms.
- 5. Remove apple if it gets moldy and replace with another.

Have fun watching the metamorphosis of the grain beetle!