



Garden of the Gods Park
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Garden of the Gods Ecology Program

Welcome! We look forward to sharing the Garden of the Gods with you and your students. Here are a few things to bear in mind as you prepare for the field trip:

- Your field trip begins at the Garden of the Gods Visitor & Nature Center.
1805 N. 30th St. Colorado Springs, CO 80904
- Your field trip ends inside the Garden of the Gods Park at our *North Main Parking Lot (Lot #2)*. Maps are available in the Visitor and Nature Center. Our staff will coordinate with your bus driver on the pick-up location the day of your visit.
- This is a large group event intended for one class to participate together. Our posted maximum of 30 students is flexible. Details can be addressed at registration.
- All attending should be prepared to walk roughly three miles on a mix of dirt, gravel, and paved surface during their visit. Students should carry water with them. Restroom facilities will be available at the beginning and end of your visit.
- Check the weather forecast and dress appropriately! This is a two-hour, outdoor experience. We will end your adventure early if students are improperly dressed for the weather conditions.
- Please, let us know in advance if you have any students with special needs (e.g. wheelchairs, crutches, medical conditions, etc.).
- Parent chaperones are welcome, but not required.
- Please, no pets or student siblings allowed.
- Students, chaperones and teachers are asked to silence cell phones during the field trip. Students should refrain from using any electronic device save to take pictures or videos. Taking photos is acceptable provided it is not distracting.
- Payment is due the day of your trip. Cash, credit card, and checks accepted. The cost is \$2 per student. No cost for adults, but donations are recommended. Please, make checks out to:

Garden of the Gods Visitor and Nature Center

Garden of the Gods Ecology Program Description

We align with National STEM standards for grades 9-12 Life Science

We align with Colorado State Standards for Science: Life Science

Goals:

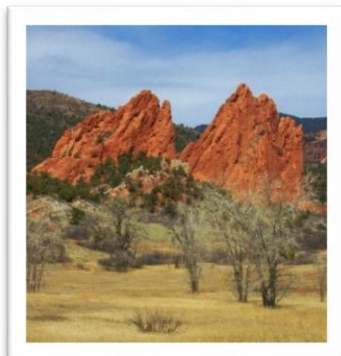
- Students become invested in understanding and caring for the exceptional wonder of the Garden of the Gods and the world around them
- Students gain an understanding of the various forces at work that shape and color the natural world
- Students gain an understanding of how humans use and shape natural surroundings
- Students are familiarized with the park's six ecosystems, how organisms have adapted to the conditions of these ecosystems, and how introduced species and human activity impact ecological balance
- Students understand responsible citizenship bolstered by knowledge of the region's history and how it shaped the world they've inherited

Schedule:

- Field trips run Tuesday thru Thursday from 9:30-11:30 AM or 12:00-2:00 PM. We will not start earlier or run later than scheduled times.
- Programs are available September 26, 2017 through May 10, 2018. Homeschool groups are welcome March 20-22, 2018.
- We follow Colorado Springs School District 11 schedule for Holiday and Spring Break closures. There are no programs offered in January and February.

Daily Agenda:

- Staff members greet you outside the Visitor & Nature Center near the flagpole at Bus Loading Zone #1. Teacher is escorted inside to complete payment for the program.
- After a brief orientation, your class is guided into the Park where staff and volunteer docents will address the area's ecosystems and student questions. This is a walking tour.
- The format is very open, allowing students to engage at their interest level.
- Your program ends at the Park's North Main Parking Lot (lot #2) off Juniper Way Loop. Staff will direct your bus driver where to park.



- If you need to depart the Garden earlier than your scheduled time, please let us know as soon as possible and we can adjust your program accordingly.

Garden of the Gods Ecology: Overview

- Ideal for students in grades 9-12 engaged in Life Science coursework.
- We guide students in exploring the vast resource that is Garden of the Gods Park with its ecology encompassing multiple ecosystems, climate, weather, disease, food web, natural crossroads, and human impact.
- The program takes place entirely outdoors. You are welcome to arrive early or stay late to let students explore the Visitor and Nature Center.
- Please call ahead if you need to cancel due to inclement weather. We will not cancel a scheduled program on our own unless the Visitor and Nature Center closes. District closures due to weather will result in cancellation of your trip.
- Should students prove inappropriately dressed for weather conditions, we reserve the right to end your visit early and return students to their bus/cars.

Teacher Reference Guide:

Ecology of the Garden of the Gods

The Garden of the Gods is a tapestry of plants and animals from six different ecosystems.

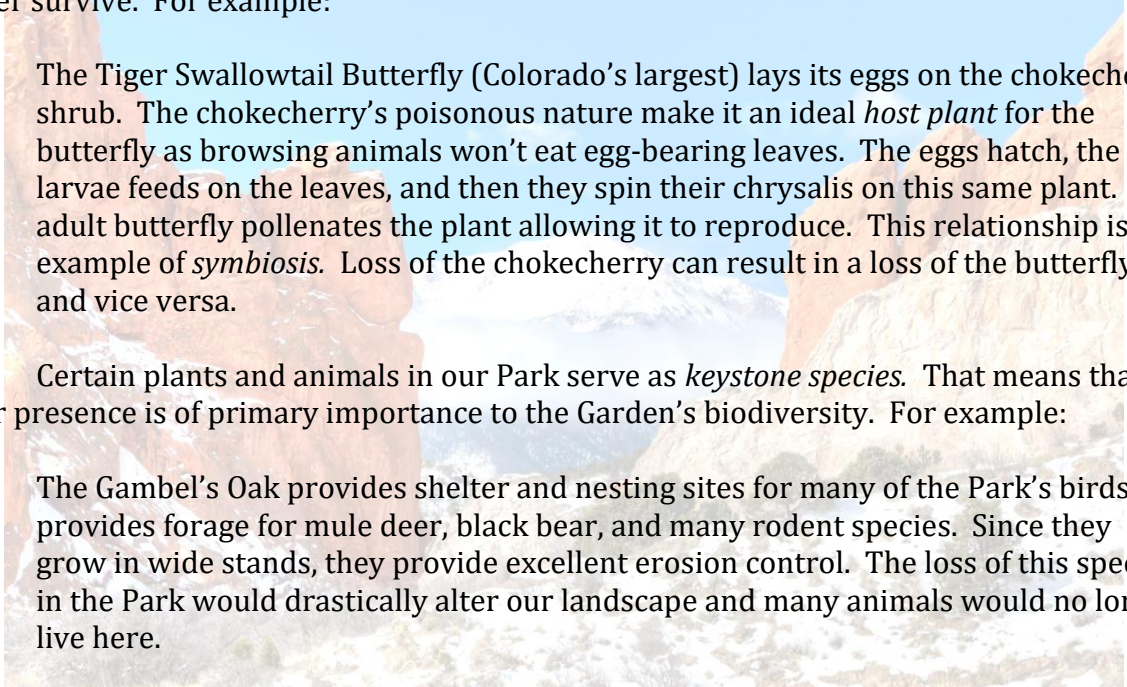
- **Prairie Grasslands**
 - Animals include: Prairie Rattlesnake, Coyote, Striped Skunk, Mule Deer, Magpie, Red-Tailed Hawk
 - Plants include: Prickly-Pear Cactus, Yucca, Paintbrush, Buffalo Grass
- **Wetlands**
 - Animals include: Black Bear, Red Fox, Gray Fox, Magpie, Red-Winged Blackbird, Prairie Rattlesnake
 - Plants include: Common Fireweed, Cottonwood Tree, Cattail
- **Mountain Shrublands**
 - Animals include: Rocky Mountain Bighorn Sheep, Cottontail Rabbit, Bobcat, Prairie Falcon, Wild Turkey, Eastern Fence Lizard, Honeybee
 - Plants include: Wild Rose, Mountain Mahogany, Piñon Pine, Three-Leaf Sumac, One-Seed Juniper
- **Piñon and Juniper Woodlands**
 - Animals include: Mountain Lion, Mule Deer, Least Chipmunk, Spotted Towhee, Scrub Jay, Honey Ant
 - Plants include: Prairie Coneflower, Pasque Flower, One-Seed Juniper, Gambel Oak, Piñon Pine, Rocky Mountain Juniper
- **Cliff Islands**
 - Animals include: Least Chipmunk, Rock Pigeon, White-Throated Swift, Violet-Green Swallow, Northern Goshawk
 - Plants include: Yucca, Three-Leaf Sumac, One-Seed Juniper, Ponderosa Pine

- Montane Forests

- Animals include: Little Brown Bat, Pack Rat, Red-Tailed Hawk, Mule Deer, Mountain Lion, Prairie Falcon, Tiger Swallowtail Butterfly
- Plants include: Rocky Mountain Penstemon, Butterfly Weed, Ponderosa Pine, Chokecherry, Mountain Mahogany

Ecosystems are influenced by biotic and abiotic factors including: climate, weather, disease, population density, resource availability, predators, competition, and human impact. Human impact greatly affects the health of an ecosystem and our park holds many examples of this.

Animals and plants in the Garden exist as part of delicate food webs and numerous other forms of relationships, such as symbiosis. Organisms adapt to the unique conditions of their environments and ecosystems and develop a variety of survival strategies. All compete for resources. Some organisms have developed cooperative relationships to better survive. For example:



The Tiger Swallowtail Butterfly (Colorado's largest) lays its eggs on the chokecherry shrub. The chokecherry's poisonous nature make it an ideal *host plant* for the butterfly as browsing animals won't eat egg-bearing leaves. The eggs hatch, the larvae feeds on the leaves, and then they spin their chrysalis on this same plant. The adult butterfly pollinates the plant allowing it to reproduce. This relationship is an example of *symbiosis*. Loss of the chokecherry can result in a loss of the butterfly and vice versa.

Certain plants and animals in our Park serve as *keystone species*. That means that their presence is of primary importance to the Garden's biodiversity. For example:

The Gambel's Oak provides shelter and nesting sites for many of the Park's birds. It provides forage for mule deer, black bear, and many rodent species. Since they grow in wide stands, they provide excellent erosion control. The loss of this species in the Park would drastically alter our landscape and many animals would no longer live here.

The relationships between plants and animals in Garden of the Gods allow students to investigate food webs and food chains, trophic levels, and apex predators. Students will also study invasive species, and how they impact native species in our park.

Supplemental Activities:

- Collect pictures to identify animals and plants from the Garden of the Gods.
- Research resident plants and animals and identify adaptations that allow them to exist in the Garden's crossroads of ecosystems.
- Identify keystone species in the park and what could result should they be removed.
- Complete artwork or creative writing projects based on your experience in the Garden of the Gods.
- Write a thank you letter to the staff member or volunteer who led your adventure.
- Address letters to: Garden of the Gods Visitor & Nature Center
ATTN: Bowen Gillings
1805 N. 30th St.
Colorado Springs, CO 80904

Additional Resources:

Official Guide to Garden of the Gods and Rock Ledge Ranch Historic Site. 2012.

Young, Mary Taylor, Colorado Wildlife Viewing Guide, Watchable Wildlife, Inc.; 2007

Veblen and Lorenz, The Colorado Front Range: A Century of Ecological Change, University of Utah Press, Salt Lake City, UT; 1991

