

Garden of the Gods Park

Contact: Bowen Gillings
City of Colorado Springs
Parks, Recreation & Cultural Services
Email: gog1909@live.com
P: (719) 219-0108



Home School Program

Welcome! We look forward to sharing the Garden of the Gods with 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 (VNC).
1805 N. 30th St. Colorado Springs, CO 80904
- Check the weather forecast and dress appropriately. Docents may end a walk early if students are improperly dressed for the weather.
- The indoor portion of our program uses the public space of the Visitor and Nature Center. Our docents will focus on assisting your students, but may also assist the visiting public. Viewing the movie *How Did Those Red Rocks Get There?* will be accessible only to students and chaperones.
- The outdoor nature walk is separated into grade-appropriate groups. The usual breakdown is K-2, 3-5, Middle School, and High School.
- While the outdoor walk takes place almost entirely along the paved, ADA-compliant Gateway and Perkins Trails, please, let us know in advance if you have any students with special needs (e.g. wheelchairs, crutches, medical conditions, etc.).
- Please, **no pets**.
- Students, chaperones, and teachers are asked to silence cell phones during the field trip. Students should refrain from using any electronic devices. Taking photos on the outdoor walk is allowed 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 welcome. Please, make checks out to: *Garden of the Gods Visitor and Nature Center*.

Home School Program Description

We align with the 2020 Colorado Academic Standards for Life Science and Earth and Space Science.

Goals:

- Students recognize the exceptional natural and geological wonder of the Garden of the Gods.
- Students gain a broad understanding of and appreciation for the science of geology.
- Students identify the three rock layers experienced in the Park, their ages and composition.
- Students recognize how different ecosystems coexist within the Park, making the Garden a crossroads of plant and animal life.
- Students identify how the Garden's ecology has supported human habitation for the last 4,000 years.
- Students appreciate the Garden's historical role in the Pike's Peak Region.

Schedule:

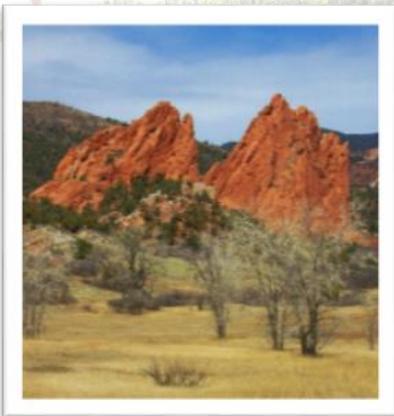
- Field trips run Tuesday thru Thursday beginning at 9:30 AM or 12:00 PM.
- Programs are available September 24-26, 2019.

Cancellations:

- We request a 48-hours notification of cancellation to allow us to contact names on the program wait list.
- We cannot guarantee rescheduling of any program cancelled due to weather or other emergency.
- We only cancel programs if the Visitor and Nature Center closes (i.e. weather emergency, etc.).

Daily Agenda:

- Check-in and tuition payment is at the Visitor and Nature Center gift shop.
- Your first hour consists of exploring the Visitor and Nature Center's museum galleries and optional GeoTrekker movie. Docents will operate interactive ecology and geology touch tables.
- City staff will organize groups for the walk based on age/grade. The walk is approximately one hour led by city staff or a volunteer docent.
- If you need to depart early, you are welcome to leave the outdoor walk and return to the VNC at your leisure.
- Average walking distance during this adventure is one mile.



Home School Program Overview

This program combines a self-paced exploration of the VNC's interactive galleries and movie *How Did Those Red Rocks Get There?* with a one-hour hike in the Garden of the Gods. Students have the opportunity for a broad experience covering ecology, geology, and history of the Park at the appropriate grade/age level.

Feel free to prepare your students with questions about Garden of the Gods Park. Questions will be discussed during the outdoor walk using reasoning skills, creative thinking, and sensory input to help students formulate answers. Older students are encouraged to research the Park prior to their visit, bringing with them thoughts and questions for discussion.

Reference Guide

The Garden of the Gods is a crossroads of plants and animals from six different ecosystems. Many animals successfully live in multiple ecosystems. Below is a list of common species we discuss:

- Prairie Grasslands
 - Animals – Prairie Rattlesnake, Coyote, Striped Skunk, Mule Deer, Magpie, Red-Tailed Hawk, Honey Ants
 - Plants – Prickly-Pear Cactus, Yucca, Paintbrush
- Wetlands
 - Animals – Black Bear, Red Fox, Gray Fox, Magpie, Red-Winged Blackbird, Prairie Rattlesnake
 - Plants – Common Fireweed, Cottonwood Tree, Cattail
- Mountain Shrublands
 - Animals – Rocky Mountain Bighorn Sheep, Cottontail Rabbit, Bobcat, Wild Turkey, Eastern Fence Lizard, Honeybee
 - Plants – Wild Rose, Mountain Mahogany, Piñon Pine, Three-Leaf Sumac, One-Seed Juniper
- Piñon and Juniper Woodlands
 - Animals – Mountain Lion, Mule Deer, Least Chipmunk, Spotted Towhee, Scrub Jay, Honey Ant
 - Plants – Prairie Coneflower, Pasque Flower, One-Seed Juniper, Gambel Oak, Piñon Pine
- Cliff Islands
 - Animals – Least Chipmunk, Rock Pigeon, White-Throated Swift, Violet-Green Swallow, Prairie Falcon, Common Raven
 - Plants – Yucca, Three-Leaf Sumac, One-Seed Juniper, Ponderosa Pine
- Montane Forests
 - Animals – Little Brown Bat, Pack Rat, Red-Tailed Hawk, Mule Deer, Mountain Lion, Tiger Swallowtail Butterfly
 - Plants – Rocky Mountain Penstemon, Butterfly Weed, Ponderosa Pine, Chokecherry, Mountain Mahogany

Animals and plants in the Garden depend on each other to maintain a healthy environment. Some of our plants and animals would disappear from the Park if this balance did not exist. For example:

The Tiger Swallowtail Butterfly (Colorado's largest) lays its eggs on the chokecherry shrub. The chokecherry is a *host plant* for the butterfly. 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. 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.

Not only is the Park a crossroads of plants and animals, it has long been a gathering place for many different peoples. Archaeologists have evidence of human habitation in the Garden for the last 4,000 years. Many American Indian nations have history in the Front Range. The Tabeguache Ute maintain that they have always lived here amongst the rocks of the Garden and we honor their tradition. Their name means "People of Sun Mountain." Sun Mountain (*tava*) is their name for Pike's Peak. They made great use of the area's natural resources and climate. They wintered here, sheltered by the rocks and hunted deer, turkey and bison. They utilized the yucca, three-leaf sumac, piñon pine, and other local plants for food and tools.

European presence in the area began with the Spanish in the mid-1500s. French fur trappers frequented the area through the late 18th century. American exploration began in 1806 with Lt. Zebulon Pike's expedition, followed by Major Stephen Long in 1820 and Brevet Captain John C. Fremont in 1840, settlement began in earnest with 1858's Pikes Peak or Bust gold rush.

The Garden of the Gods Park is composed of sedimentary rock layers. They are geologically remarkable due to their vertical and in some cases beyond vertical positions. This allows study of rock that in other areas has been buried by nearly a mile of sediment. Our program touches on the concept of rock formations. Our program will focus on two of these:

The Fountain Formation (320-300 million years old): Composed of sand, gravel, and mud that washed down from the Ancestral Rockies in alluvial fans. These sediments compacted and cemented into the conglomerates, sandstone, and mudstone (shale) of the Fountain Formation. This layer is over 4,500 feet thick. Formations in the western part of

the Garden are made up of Fountain Formation: Balanced Rock, Siamese Twins, and Three Graces.

Lyons Formations (300-260 million years ago): The local climate changed and this part of Colorado became a windswept desert filled with sand dunes. The formation is composed of three layers, two of which are visible in the Park (Red Lyons and White Lyons). The red color is from iron becoming iron oxide (rust), which helps cement the grains together. The Lyons formations are the tallest rocks in the Park and include: North gateway Rock, South Gateway Rock, White Rock, and Gray Rock.

There are other rock formations in the Park, including the Lykins and Morrison Formations, Dakota Sandstone, Niobrara Formation, and Pierre Shale. These exist in the eastern part of the park and will be experienced during this field trip as well.

All the various sedimentary layers were gradually compacted and cemented into rock. Beginning about 70 million years ago these layers were broken and tilted upright. Erosion has exposed the ridges and carved out the valleys to what we see today.

Fossil evidence of dinosaurs and ancient marine animals has been found in the Park. The skull of a dinosaur named *Theiophytalia kerri*, a type of iguanodon, was found in the Garden of the Gods in 1878 by Colorado College Professor, James Kerr. The fossil dates to the early Cretaceous period and is the only evidence this species found anywhere in the world.

Supplementary Activity Ideas:

1. Have students do artwork, creative writing, or journaling based on something that impressed them about their experience at the Park.
2. Write a thank-you letter to the docent who led their guided walk.¹
3. Collect pictures of people, plants and animals of the area
4. Complete "Look What I Learned!" worksheet included in this packet

¹ Send letters to Garden of the Gods Visitor and Nature Center
Attn: Bowen Gillings
1805 North 30th Street
Colorado Springs, CO 80904

Look What I Learned!

Garden of the Gods Field Trip

Name _____

Home School Program

1. Name three of the six ecosystems that form a crossroads in Garden of the Gods Park?
2. What is an ecosystem?
3. Name the three rock types. Which rock type identifies all the rock layers inside the Garden of the Gods?
4. List three causes of erosion within the park.
5. What are the three geologic processes that shape the Garden of the Gods?
6. Do plants growing high on the rocks increase erosion of the rocks or decrease the erosion? What about the plants along the ground, do they increase or decrease erosion? How?
7. Name some things the Ute people used the yucca plant for.
8. Why does the black-billed magpie build a nest with a roof and two entrances?
9. Name some animals you might see if you visited the Park at night?
10. How did the Garden of the Gods get its name?
11. What are some reasons we do not feed wild animals in the Park?
12. On the back of this paper draw or write about your favorite experience at the Garden of the Gods today.

Look What I Learned! Answer Key

Garden of the Gods – Home School Program

1. Name three of the six ecosystems that form a crossroads in Garden of the Gods Park? **Prairie grasslands, wetlands, mountain shrublands, piñon and juniper woodlands, cliff islands, and montane forests**
2. What is an ecosystem? **All of the living things in a given area, interacting with each other, and with their environments (weather, earth, sun, soil, climate, atmosphere).**
3. Name the three rock types. Which rock type identifies all the rock layers inside the Garden of the Gods? **Igneous, Sedimentary, and Metamorphic rock. Our rock layers are sedimentary.**
4. List three causes of erosion within the park. **Human traffic, moving water, ice wedging, weathering**
5. What are the three geologic processes that shape the Garden of the Gods? **Uplift, Erosion, and Faulting**
6. Do plants growing high on the rocks increase erosion of the rocks or decrease the erosion? What about the plants along the ground, do they increase or decrease erosion? How? **Plants high on the rocks increase erosion by their roots working down into cracks and breaking up the rock. Plants along the ground prevent erosion as their roots hold down the topsoil.**
7. Name some things the Ute Indians used the yucca plant for. **Soap, shampoo, medicine, rope, paint brush, toothbrush, salad, sewing needles, weaving rugs/sandals, etc., roast pods and seeds for snack**
8. Why does the black-billed magpie build a nest with a roof and two entrances? **To protect the nest from the weather and to evade predators**
9. Name some animals you might see if you visited the park at night? **Little brown bat (in summer), raccoon, mountain lion, coyote, black bear, great horned owl**
10. How did the Garden of the Gods get its name? **In 1859, two surveyors came to lay out Colorado City. When they saw our sandstone formations, M. S. Beach, who related this incident, suggested that it would be a "capital place for a beer garden." His companion, Rufus Cable, a "young and poetic man", exclaimed, "Beer Garden! Why it is a fit place for the Gods to assemble. We will call it the Garden of the Gods."**
11. What are some reasons we do not feed wild animals in the Park? **It is dangerous to both the animals and people. Human food can make wild animals ill. Animals can get used to being fed by people and lose skills necessary to acquire food in the wild. Animals that associate people as a food source can become aggressive. Some animal diseases and parasites can be transferred between people and animals.**