

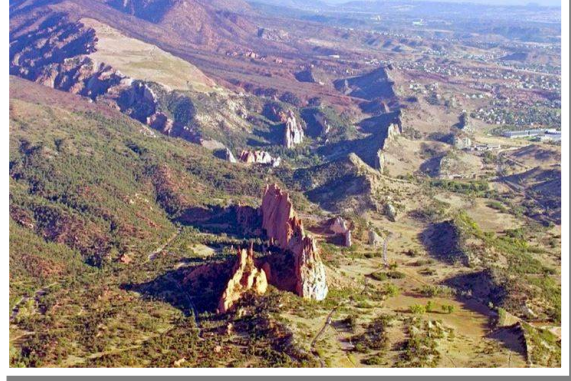
## **Garden of the Gods**

City of Colorado Springs

Parks, Recreation & Cultural Services

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**Program updates can be found at:** <https://gardenofgods.com/events/school-field-trips/>

### **Land Use Acknowledgement:**

We gratefully acknowledge the native peoples on whose ancestral homeland we gather, as well as the diverse and vibrant Native communities of Colorado who thrive here today and tomorrow.

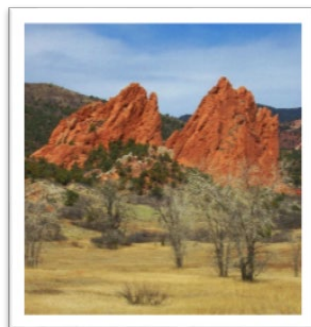
### **Welcome!**

We look forward to sharing the story of Garden of the Gods with your students.

We align with current Colorado Academic Standards for K-12 Life Science, Earth and Space Science, Earth Systems, and Earth and Human Activity

### **Goals:**

- Students recognize the natural, historical, and geological wonder of the Garden of the Gods.
- Students gain a broad appreciation for the sciences of geology and ecology.
- Students gain a basic understanding of the geological processes that shape the park.
- Students recognize how different ecosystems coexist within the Park, making the Garden a crossroads of plant and animal life.
- Students appreciate how the Garden's ecology has supported human habitation for over 5,000 years.
- Students appreciate the Garden's historical role in the Pike's Peak Region.



## Teacher Reference Guide

### Ecology

An **ecosystem** is all the living and non-living things in a single environment. This means an ecosystem is more than just the plants and animals in an area. An ecosystem is also defined by the type of soil and rocks, the amount of precipitation, the elevation, and several other factors.

The Garden of the Gods is a crossroads of six different ecosystems. Below is a list of common plant and animal species found in the park and their corresponding ecosystems. Note that some are found in multiple ecosystems, which is indicative of the park's special biological diversity.

- Prairie Grasslands
  - Animals – Prairie Rattlesnake, Coyote, Striped Skunk, Mule Deer, Magpie, Red-Tailed Hawk
  - Plants – Prickly-Pear Cactus, Yucca, Paintbrush
- Wetlands
  - Animals – Black Bear, Red Fox, Gray Fox, Magpie, Red-Winged Blackbird, Garter Snake
  - Plants – Common Fireweed, Cottonwood Tree, Cattail, Chokecherry
- Mountain Shrublands
  - Animals – Rocky Mountain Bighorn Sheep, Cottontail Rabbit, Bobcat, Wild Turkey, Eastern Fence Lizard, Honeybee
  - Plants – Wild Rose, Mountain Mahogany, Three-Leaf Sumac, Wax Currant
- 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, Mountain Mahogany
- 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

### History

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 5,000 years. Many American Indian nations have history in the Front Range. However, we honor the Ute as the aboriginal people of Colorado and partner with them for education and park maintenance. *Nuu-ciu* means “the people” in the Ute language and we use *Nuu-ciu* in our interpretation when referring to the Ute.

Garden of the Gods is part of Nuukanigyatutuvupu (the Ute Homeland). Nuu-ciu have always lived here amongst the rocks and we honor their tradition. Sun Mountain (*tava-kavvi*) is a Nuu-ciu name for Pikes Peak. Prior to 1870, Nuu-ciu thrived here, coming down in the winter from further west to shelter among the rocks and hunt deer, turkey, elk, and bison. They utilized the yucca, three-leaf sumac, piñon pine, and other local plants for food, medicine, and amenities. After 1870, with the build up of homesteads and townships in the area, the territorial and federal governments forced Utes onto a series of reservations.

Today, Nuu-ciu people still live, work, and thrive in this part of Colorado. In fact, no construction, demolition, or large development projects can take place in the Garden of the Gods without consultation with and the blessing of elders from our Nuu-ciu partners. For more information on Nuu-ciu today, their lifestyles, traditions, and tribal government, check out *Nuu-ciu Strong*, an outstanding resource and curriculum developed by the State of Colorado in partnership with all three Ute Nations, and History Colorado. Go to <https://ccia.colorado.gov/fourth-grade-ute-resource-guide>.

European presence in the area began with the Spanish in the mid-1500s. French and English fur trappers frequented the area through the 18<sup>th</sup> and early 19<sup>th</sup> centuries. 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 the 1840's. Settlement began in earnest with 1859's Colorado (Pikes Peak or Bust) gold rush.

Several homesteaders claimed land that would eventually become today's Garden of the Gods. However, it was a good friend of Colorado Springs' founder General William Jackson Palmer who is credited with the origins of this city park. Charles Elliott Perkins purchased the land around the big rocks of the park's Central Garden between 1879 to 1899. His vision was to turn this into a park people could enjoy for all time. However, he passed away in 1907, leaving the land to his children. They understood their father's dream and worked for two years to make it come true. So, on December 22, 1909 the Perkins family gave Colorado Springs a "grand Christmas gift" when they deeded their 480 acres to the city. The park has since grown to its current size of 1343 acres or just over two square miles.

### Geology

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 rocks that in other areas are miles underground. Two of these formations found in the popular Central Garden area include:

The Fountain Formation (320-300 million years old): Composed of sand, gravel, and mud that washed down from the Ancestral Rockies in alluvial fans (like a river delta but on land). 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 (the Upper and Lower Members of the Lyons Formation). The red color is from iron oxide (rust), which helps cement the sand grains together. The white Upper Member is missing that rust. 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, younger rock formations in the Park, including the Lykins and Morrison Formations, Dakota Sandstone, Benton Group, Niobrara Formation, and Pierre Shale.

It took millions of years for the Park's sedimentary layers to compact and cement into the rock we see today. Beginning about 70 million years ago these layers were broken and tilted upright as the Rocky Mountains grew to the west. Erosion and weathering 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 impresses them about the Park.
2. Explore <https://exhibits.historycolorado.org/ute-tribal-paths> with the class. Have students compare how Colorado's longest continual inhabitants lived up to the 1870's and how they live today. Have students write a letter to a distant friend, talking about their daily lives as if they are Nuu-ciu children spending the winter in the Garden of the Gods a century before European's came to the region.
3. Have students build a model showing how the park was formed. This could be done with layers of foam showing how the rocks were tipped up on edge or piles of sand that get weathered and eroded by sprinkled or poured water. Let them get creative.