

# Elementary School Science Enrichment Offerings 2019-2020 Academic Year

## Children Discovering Nature: a Two-part Experiential Program for Elementary Students

Children Discovering Nature (CDN) is a 4-hour, two-session science and nature education program for grades K-5 in which students learn about science topics and local habitats through hands-on activities in the classroom and field. Topics covered correlate to Colorado and national science education standards for each grade.

First, an SJMA educator visits each classroom for an hour-long lesson to introduce science concepts that prepare students for a field trip. The following week, your class visits the Durango Nature Center for a half-day field trip. Instructors guide small groups through a variety of habitats, engaging students with activities, science games, experiments, and guided explorations. These field trips solidify science standards and a sense of place through inquiry based learning in nature.

### **CDN Topics:**

#### ***CDNK: Kindergarten Program Overview (Spring Season--April through end of May)***

*“Vertebrates Have Backbones”*

**In the Classroom:** We will examine the five classes of vertebrates: mammals, amphibians, reptiles, birds, and fish. Students will then help the instructor group the creatures into their proper class.

**At the Nature Center:** Students will look for all types of evidence of vertebrates as well as catch some invertebrates to compare and find differences. Included will be information on the habitats in which our local vertebrates live.

**Standard:** Meets 9R Science Graduation Standard 3

#### **Performance Indicator:**

**3.a** Sort sets of living objects based on their observable characteristics and explain how and why the objects are sorted the way they are.

***CDN1: 1st Grade Program Overview (Spring Season--April through end of May)***

“All Living Things Grow and Change”

**In the Classroom:** Students will examine how all organisms change over their lifetime. Some look similar when they are a juvenile and when they are an adult, like humans, mammals, fish, reptiles, and birds, and plants. Other organisms, like amphibians, insects, and plants, can look very different throughout their life stages.

**At the Nature Center:** Students will have an opportunity to learn about native species of southwest Colorado, through observing signs of wildlife and plant species. Key questions will focus on how and why a particular organism has changed in its lifetime, considering the various habitats we will explore.

**Standard:** Meets 9R Graduation Standard 4

**Performance Indicator:**

**4.a** Analyze scientific evidence on the similarities and differences between parents and offspring in a variety of organisms, including both plants and animals.

**4.b** Make observations of plants and animals to compare the diversity of life in different habitats.

***CDN2: 2nd Grade Program Overview (Spring Season--April through end of May)***

“Animal Adaptations”

**In the Classroom:** Students will study animal skulls and pelts to provide explanations as to why certain animals have specific structures, or adaptations, and how these structures help them interact with their environments and climates.

**At the Nature Center:** Students will focus on looking for clues of specific native animals. Exploration will help them understand why certain animals have specific adaptations to survive within their habitats.

**Standard:** Meets 9R Graduation Standard 3

**Performance Indicator:**

**3.a** Compare and contrast the different structures or behaviors that organisms have that serve specific functions.

***CDN3: 3rd Grade Program Overview (Fall Season--late September through mid-November)***

“Weathering, Erosion, and Deposition”

**In the Classroom:** Students will predict, discuss, test, and observe the forces that drive

weathering, erosion, and deposition.

**At the Nature Center:** Students will recognize active weathering, erosion, and deposition, design and test erosion mitigation structures, and synthesize the importance of soil to a healthy ecosystem.

**Standard:** Meets 3rd grade CO Science Standard 3.1

**Performance Indicator:**

**Primary Elementary 5.f** Compare and contrast multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

**Intermediate Elementary 5.b** Develop a model to illustrate one or more processes that break down and/or combine Earth's materials.

**Intermediate Elementary 5.d** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation

**CDN4: 4th Grade Program Overview (Winter Season--mid-January through mid-March)**

“Surviving and Thriving in Winter”

\*This program is designed for 4th grade, but can be modified to suit 3rd-8th grade.\*

**In the Classroom:** Students will study the transfer of thermal energy, or heat loss, in the environment through participating in hands-on activities to fully understand conduction, convection, radiation, and evaporation.

**At Haviland Lake:** While hiking on snowshoes, students will take scientific measurements to help them better understand the non-living components at play in a Ponderosa Pine dominated ecosystem. Using this data, students will step into the paws of a Tassel Eared Squirrel and through a simulation, learn how the squirrel is able to survive in this environment.

**Standards:** Meets 9R Graduation Standards 3 and 6

**Performance Indicators:**

**Intermediate Elementary 3.b** Develop models of the interactions and interdependence between and among living and nonliving components of ecosystems.

**Intermediate Elementary 6.b** Build, use, and revise simple models to represent events or design solutions.

**CDN5: 5th Grade Program Overview (Fall Season- late September through mid-November)**

“Weather: Under Pressure”

**In the Classroom:** Students will explore the relationships between temperature and pressure through hands-on experiments that reveal the driving forces of global weather patterns.

**At the Nature Center:** Students will measure local weather conditions and make inferences regarding how weather affects the living and nonliving things at the Nature Center.

**Standard:** Meets 9R Graduation Standard 5

**Performance Indicator:**

***Intermediate Elementary 5.f*** Gather, analyze, and interpret data such as temperature, air pressure, wind, and humidity to make predictions about daily weather.

### **CDN Pricing:**

Our cost to provide this program is \$20/student, but we will continue to leverage half the cost, so that **it is only \$10/student for your school**. For many years, we have offered the program at no more than \$5/student, but we simply haven't been able to cover costs at that rate, so we are increasing our fee for the 2019-20 school year.

### **CDN Mileage Fee:**

A mileage fee of \$0.55/mile which is the 2019 Colorado AWD mileage reimbursement rate will be applied to programs outside Durango.

### **Scheduling:**

For all programs, call 970-385-1256. We recommend that programs be scheduled at least 30 days prior to the start of the season in which you wish to do the program (Fall, Winter, or Spring). DNS program seasons are listed below:

**Fall Season**--late September through mid-November

**Winter Season**--mid-January through mid-March

**Spring Season**--April through end of May