



## 4th Grade - Fall/Spring Fossil Exploration

### Program Description for Classroom Teachers

*Programs are subject to change based on weather, temperature, road conditions, public health and safety concerns.*

#### Synopsis:

This student-centered fossil exploration provides students the opportunity to search for, observe, and share discoveries about fossils.

Students will observe patterns in rock layers and fossils found in those layers. Students will collect\* and examine fossils, learning to ID them and recording their observations through scientific journaling.

Students will go on a hike to a local fossil bed to search for fossils, and will form arguments to support an explanation that the Logan Canyon and Cache Valley area has changed over time.

\*All collected organisms must be returned to where they were found.

#### Students will:

- **Analyze and interpret data** from fossils to provide evidence of the stability and change in the organisms living in Logan Canyon.
- **Engage in argument from evidence** based on patterns in rock layers and fossils found in those layers to support an explanation that Cache Valley area has changed over time (from Lake Bonneville to present day)
- Make close observations of fossils and other organisms.
- Use a simple field guide to identify fossils.
- **Communicate information** about the relationship between Lake Bonneville and the fossils found in Logan Canyon.
- Leave with a better understanding of how our local environment has changed over time.

**Program Length:** 2 hours

**Location:** Spring Hollow Campground, Logan Canyon

**Seasons Offered:** Fall and Spring

**Program Fee:** FREE (one free program per 4th grade class each school year)

#### Logistics:

- When the bus arrives, we will open the gate and instruct the driver to pull through to let off students. The bus driver will then drive up and park at group site A, where there is plenty of room to turn around. Please arrive at the site 5 minutes before your program starts. Programs will begin and end on time.
- Please have a plan for dividing your group in half. Each smaller group should include a teacher or staff from your school.
- Program will end at Campsite B, students and teachers will then walk down to the bus at Campsite A together.
- Students should wear comfortable clothing that may get dirty.
- We will be outside for the entirety of this program, dressing in layers is advised. Remember, weather and temperature in the canyon is often much different (and colder!) than in the valley.
- Closed toe shoes are appropriate. Please, **no flip flops!**

- Students should wear visible name tags at all times (packing tape over a name tag keeps them from falling off).
- Please bring one adult per five students.
- When the campground is closed, so are restrooms. SNC Staff will try to have keys on hand to access the on-site vault toilets.
- Running water will not be available at the site, so please plan ahead with water bottles.

### Classroom Teacher Pre-Program Preparation

- If multiple classrooms from your school are participating, please ensure that all teachers on your team receive the confirmation email which contains essential information about your scheduled field experience.
- See curriculum connections below.

### Curriculum Connections:

This program supports learning of **SEEd Strand 4.1: Organisms Functioning in Their Environment**  
**Standard 4.1.3: Analyze and interpret data** from fossils to provide evidence of the stability and change in organisms and environments from long ago. Emphasize using the structures of fossils to make inferences about ancient organisms. Examples could include comparing a trilobite with a horseshoe crab in an ocean environment or using a fossil footprint to determine the size of a dinosaur. (LS4.A)

**Standard 4.1.4: Engage in argument from evidence** based on patterns in rock layers and fossils found in those layers to support an explanation that environments have changed over time. Emphasize the relationship between fossils and past environments. Examples could include tropical plant fossils found in Arctic areas, rock layers with marine shell fossils found above rock layers with land plant fossils. (ESS1.C)

Science and Engineering Practices	Crosscutting Concepts	Disciplinary Core Ideas
Analyze and interpret data Engage in argument from evidence	Stability & Change Patterns	Evidence of Common Ancestry and Diversity The History of Planet Earth

### Additional Utah Core Curriculum Connections

Subject	Standard	Objective
English Language Arts	4.SL.1	Participate effectively in a range of conversations and collaborations, using age-appropriate vocabulary, on topics, texts, and issues.
	4.SL.2	Clearly summarize information presented in various formats and mediums and explain how the information pertains to the topic.
	4.SL.3	Use age-appropriate language, grammar, volume, and clear pronunciation when speaking or presenting.
Social Studies	4.2.1	Use evidence (for example, artifacts, texts, oral traditions, geographic inquiry) to make inferences about, and explain

		the importance of, the geography of the land that would become Utah in the culture of one or more prehistoric or historic Native American cultures.
Physical Education	Strand 4  Strand 5	Students will develop cooperative skills and positive personal behavior through communication and respect for self and others.  Students will appraise the personal value of physical activity as a tool for wellness, challenges, and interacting with appropriate social skills with friends and family.
Social Emotional Learning	CASEL Competencies	Self-Awareness, Self-Management, Social-Awareness, Relationship Skills, Responsible Decision-Making