



## 6th Grade - Fall/Spring Population Dynamics and Hiking Classroom Teacher Information

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

### Synopsis:

In this investigation, students will explore stability and change in the local ecosystem by looking at effects of resource availability on black bear populations and predicting patterns of interactions among organisms in different environments. Students will leave being able to argue from evidence that stability of populations is affected by changes in an ecosystem and will think as a Wildlife Manager to discuss how to manage changes in a local forest. Additionally, students will explore the National Forest by hiking and practice making observations and identifying what they find.

### Students will:

- **Analyze data** regarding the effects of resource availability on organisms and populations in an ecosystem
- **Construct an explanation** of patterns of interactions among organisms across multiple ecosystems
- **Construct an argument, supported by evidence**, that the stability of populations is affected by changes in an ecosystem
- Share their conclusions verbally in small and large groups
- Practice observation and identification skills

**Length of Program:** 2.5 hours

**Location:** Stokes Nature Center/River Trail

**Season Offered:** Fall, Spring

**Program Fee:** \$6 per student

### Logistics:

- The school bus should drop you off at the Stokes Nature Center trailhead of the River Trail in Logan Canyon (on the south shoulder of the highway), where you will be met by your Naturalist Educators.
- 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 Stokes Nature Center, meaning you will need to walk with your students back down the trail. Plan 7-10 minutes from the end of the program to walk back to the trailhead.
- Students should wear comfortable clothing that may get dirty.
- We will be outside for the entirety of this program, dressing in layers is advised.
- 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 (there is no charge for teachers or chaperones).
- Restrooms are available inside the Nature Center.
- 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 6.4 Stability and Change in Ecosystems**

**6.4.1: Analyze data** to provide evidence for the effects of resource availability on organisms and populations in an ecosystem. **Ask questions** to predict how changes in resource availability affects organisms in those ecosystems. Ex: could include water, food, or living space in Utah environments. (LS2.A)

**6.4.2: Construct an explanation** that predicts patterns of interactions among organisms across multiple ecosystems. Emphasize consistent interactions in different environments such as competition, predation, and mutualism. (LS2.A)

**6.4.4: Construct an argument supported by evidence** that the stability of populations is affected by changes to an ecosystem. Emphasize how changes to living and nonliving components in an ecosystem affect populations in the ecosystem. Examples could include Utah ecosystems such as mountains, Great Salt Lake, wetlands, or deserts. (LS2.C)

Science and Engineering Practices	Crosscutting Concepts	Disciplinary Core Ideas
Asking questions or defining problems Analyzing and interpreting data Developing and using models	Cause and Effect Patterns Stability and Change	Interdependent Relationships in Ecosystems Ecosystem Dynamics, Functioning and Resilience

## Additional Utah Core Curriculum Connections

Subject	Standard	Objective
Math	6.MP.1 6.MP.2 6.MP.3 6.MP.4 6.MP.5 6.MP.6 6.MP.7 6.MP.8	Make sense of problems and persevere in solving them. Reason abstractly and quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
ELA	6.SL.1  6.SL.3  6.SL.4	Engage effectively in a range of collaborative discussions with diverse partners on grade 6 topics and texts, building on others' ideas and expressing their own clearly. Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

PE	Strand 2 Strand 4	Students will apply knowledge to attain efficient movement and performance. Students will develop cooperative skills and positive personal behavior through communication and respect for self and others.
SEL	CASEL competencies	Self-Awareness, Self-Management, Social-Awareness, Relationship Skills, Responsible Decision-Making