



# Supporting Information for Utah's Hogle Zoo's Informal Science Education Enhancement (iSEE) Request to Move to Line Item Status



## The Zoo's Financial Request:

- After completing the three-year Request for Proposal (RFP) process, the Utah State Board of Education has approved the Zoo request to the Public Education Appropriations Committee to move from the (RFP) to Line Item Status.
- The Zoo is requesting an increase in funding from \$225,000 to \$350,000 as it moves to Line Item Status. The Zoo will continue the 1:1 match of the appropriated money
- This request is solely to support the iSEE education program and is not part of the Zoo's funding for animal care and food through the Natural Resources, Agriculture, and Environment Committee.

## Program Goal for Increased Funding:

At our current level of iSEE funding, we are able to visit every school district and charter school second-grade classroom in person every three years. In off-visit years, we offer these classrooms a free distance learning program. With the increased funding we would be able to visit each rural school district on a yearly basis and the districts along the Wasatch front every other year. Schools along the Wasatch front are more likely to participate in the Zoo's free field trip program as well as other outreach opportunities the Zoo offers. These schools would also be provided the free distance learning opportunity.



Likewise, we would be able to offer additional opportunities for teacher professional learning to rural districts during our visits. These teachers are often not able to travel as easily to the Zoo for our professional development programming.

## Our Objectives:

- To deliver engaging Utah Core Standards-based programs for 2<sup>nd</sup>-graders that complement and extend classroom learning throughout the state of Utah
- Increase the skills and understanding of students with regards to literacy and science, technology, engineering and math (STEM) practices and content so the students have an understanding of how they are connected and used together, rather than in unrelated applications
- Increase student appreciation for science, with an increased interest to pursue science-related topics, courses, and careers.
- Provide students with an enhanced ability to use the scientific process in making observations and decisions, and facilitate the development of problem-solving skills through real-world life science and conservation projects.
- To create programming that encourages hands-on inquiry and open-ended exploration, as well as productive teamwork and communication.
- To model best practices in science teaching and engage elementary school teachers in incorporating hands-on-inquiry and open-ended exploration multi-disciplinary science activities into their curriculum through free teacher professional development opportunities. Each workshop provides opportunities for teacher learning and resources focused on building confidence in science teaching.

## Program Information

Zoo educators deliver our *Habitat Investigations* outreach to second-grade classrooms across the state on a three-year rotational basis. The 60-minute standards-based inquiry program focuses on students using science processing skills to explore two Utah habitats — wetlands and deserts.

The educators are well-versed in inquiry-based teaching and manage and deliver these programs based on best practices in informal science education. The program uses cooperative learning and a student-centered approach. Zoo educators serve as facilitators by asking questions and encouraging the student's critical thinking skills.

Students are divided into small groups to analyze an assortment of samples collected by the Zoo's research team. The samples include (soil, plant, pelt, track and feather samples as well as temperature and rainfall data.)

and live animals. These serve as catalysts to provoke inquisitiveness in the students. Using the scientific process, the teams help the instructor understand and sort the habitat samples. The student teams make observations and inferences, measure, collect and record data and then share their observations with classmates. Ultimately, as a class, determining from which Utah habitats the research teams had collected their samples.

With this knowledge, they then observe living Utah animals. Students look at the physical adaptations of each animal (body covering, mouth shape, locomotion, eye location, etc.) and record their observations. The teams then use their habitat data and knowledge to make inferences about why the animals possess the adaptations they have, to survive in their Utah habitats.

The purpose of our Habitat Investigations iSEE educational programming is to help 2nd-graders throughout the state to develop questioning, investigating and analyzing skills, while acquiring knowledge of Utah habitats and wildlife while fostering an interest in science.

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### Intended Learning Outcomes

1. Use science process and thinking skills.
2. Manifest science interests and attitudes.
3. Understand science concepts and principles.
4. Communicate effectively using science language and
5. Reasoning

### Utah Grade 2 Science Standards Addressed

- **Standard 1**  
**The Processes of Science, Communication of Science, and the Nature of Science.** Students will be able to apply scientific processes, communicate scientific ideas effectively, and understand the nature of science.
  - Objectives 1, 2 and 3
- **Standard 4**  
**Life Science.** Students will gain an understanding of Life Science through the study of changes in organisms over time and the nature of living things.
  - Objectives 1 and 2



### Measures of Success

- Each outreach program and teacher professional learning opportunity delivered is evaluated by teachers for their content, core relevancy, materials and significance for student learning. All teacher input is reviewed and used to improve the program on a continual basis.
- On-going evaluation indicates that the teachers feel the program reinforces student learning regarding using and understanding the scientific process as well as gaining a greater understanding of habitats and plant and animal adaptations.
- We are currently working with a graduate student from the University of Utah to develop an evaluation project that will be launched in the fall of 2018 to assess student experience and measure student learning throughout the year. This will provide the Zoo's staff with additional information to make improvements to our programming as needed to ensure we meet our goals and objectives.

### Public Education Appropriations Funding Decision Tree

The iSEE program qualifies to remain a line item under the following guidelines:

6. **Does implementing it at the state level provide economies of scale and equity that cannot be accomplished through other means, i.e. UETN, regional service centers?** *The iSEE funding allows our organizations to provide equitable high-quality science learning opportunities to students across the state.*
- 6a. **Does the program receive a private match that might not otherwise be available to individual LEAs?** *Yes, each iSEE provider exceeds the 1:1 match required. The match for the 2016-2017 school year was \$1.75 to every \$1 provided by the legislature.*
7. **Is it serving a specific subgroup or regional population to provide reasonably equitable education opportunities, requiring a special distribution formula (not a grant) to reach targeted students?** *This funding allows the iSEE collective to provide science programming and teacher learning opportunities in rural districts and Title I schools that cannot visit our sites due to lack of funding.*
11. **Does it have existing ongoing funding or has it exceed 3 years?** *Yes, the iSEE program has been in existence for 11 years and has provided science education opportunities for over 4.4 million students.*
13. **Could any LEA provide and/or access the same or similar program, service or technology through local prioritization and with the existence of a line item?** *No, without the line item funding and match provided by the iSEE groups, the LEAs would not be able to provide or access this programming.*