

Service Learning Inquiry Unit Template

Name: Wendy Snyder

Grade: 3rd Grade

Class: Life Science Trimester Unit (Ecosystems)

Essential Question:	How does your essential question invite student agency, connects to interests, is debatable, and accommodates real word application such as service learning.
<p>How do we create “win-win” relationships between plants, animals and humans in our Idaho ecosystems</p>	<p>My EQ is effective because it piques student interest through their natural curiosity and wonder about animals. Student’s interest will be piqued as they make connections to a recent social studies project where they interviewed members of various communities in order to compare/contrast the needs/wants of people living within a community and identifying the important factors that make a “good” community.</p> <p>My EQ is debatable as there are many opinions on what qualifies as a need vs. a want. This initial debate will lead to rich conversation regarding human needs and wants being more important or less important than other living things wants and needs. My EQ is real word because students will be researching the needs of living things in their own backyard (Idaho ecosystems) that may be affected by their own communities. Students will create a public awareness project to present to families and other invited guests (i.e. Idaho Fish & Game, BLM, Wildlife Biologists, and various Special Interest Groups).</p>
<p>Threshold Knowledge: (Disciplinary Core Ideas)</p> <p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience – When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.</p> <p>LS2.A: Interdependent Relationships in Ecosystems - The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (LS2-4-1)</p> <p>LS2.D: Social Interactions and Group Behavior – Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (LS1-3-1)</p> <p>LS4.C: Adaptations – For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p> <p>LS4.D: Biodiversity and Humans –</p>	

Populations live in a variety of habitats and change in those habitats affects the organisms living there. (LS2-2-1_		
Conceptual Knowledge:		Procedural Knowledge:
<p>A. Students will understand that all living things have similar basic needs</p> <p>B. Students will understand and be able to explain the effects of plants and animals competing for resources and space in ecosystems.</p> <p>C. Students will be able to explain how organisms adapt to their environment in order to survive</p> <p>D. Students will be able to explain how organisms affect their environment in helpful and harmful ways.</p> <p>E. Students will be able to explain how energy flows through a food chain from the sun to producers and from producers to consumers.</p> <p>F. Students will be able to describe how energy flow can be altered by human activity.</p>		<p>3.S.3.2.1 Students will be able to describe the energy needed for living systems to survive.</p> <p>3.S.3.2.2 Students will be able to compare and contrast the energy requirements of plants and animals.</p> <p>3.S.3.1.1 Students will be able to describe the adaptations of plants and animals to their environment.</p> <p>3.S.3.2.3 Students will be able to label a food chain that shows how organisms cooperate and compete in an ecosystem.</p> <p>3.S.3.2.4 Students will be able to diagram the food web and explain how organisms both cooperate and compete in ecosystems.</p>
Frontloading Activity(s):	How does the frontloading prepare students for success by activating pre-existing interests and background?	
<p>Opinion Survey: Students will complete an interest survey asking opinion related questions that pertain to the Idaho organisms they will be researching. Questions will include topics related to hunting, fishing, farming, recreation, etc.</p> <p>Four Corners Activity: Students will stand in the corner that best represents their beliefs for each question. Students will discuss their beliefs looking for similarities and differences between ideas.</p>	<p>My frontloading activities will require students to make and justify their beliefs regarding the effects of human activity on Idaho ecosystems. Doing so will help students activate their current background beliefs and experiences. We will return to the opinionnaire throughout the unit to notice changed or deepened beliefs based on new learning and text based evidence. Rich dialogue between students sharing their opinions supported by text based evidence encourages students to refine, change and/or deepen current and new beliefs thus promoting a growth mindset.</p>	
Scaffold of Activities:		
Activities	Connection to Knowledge	Formative Assessment
<p>Basic needs of plants and animals (Discovery Education Science Techbook) text, videos and virtual explorations.</p> <p>Modifications: Any source can be used in place of Discovery Education resources (throughout the</p>	<ul style="list-style-type: none"> ● Activate background knowledge while looking at pictures from books, magazines, internet and watching videos ● Ask students to describe each habitat and tell what food, water, and shelter can be observed 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion ● Students will find text evidence to support the needs of living things in a word web. ● Students will individually complete the

<p>unit).</p>	<ul style="list-style-type: none"> ● Discuss how animals get their needs met by their habitat. ● Students work in groups to read “The Needs of Animals” and “Food, Water, Shelter & Air” (DE) using text evidence to create a word web with “Basic Needs” in the center. ● Watch video segments from DE, pausing at stopping points allowing students take notes on ways habitats meet the needs of animals and plants that live there ● Discuss how living things are better able to survive in certain habits than others ● While observing the habitat around the school, students will diagram and label living/non-living things. ● Discuss the results of habitat observation and create a class chart. Organize findings into three columns labeled: description of habitat, living things, and nonliving things. Highlight items in the habitat that supported the needs of organisms by providing food, water, air or shelter 	<p>Discovery Education exploration “Organism Needs” while answering questions on note catcher</p> <ul style="list-style-type: none"> ● Students will complete a constructed response with scenarios of living things trying to get their needs met, how might they respond?
<p>Social Studies Wants and Needs</p> <p>Notes: Students previously conducted interviews of friends and family members living in a community over an extended period of time. Interview questions helped students understand various opinions regarding what makes a good community based on the needs/wants of community members. Students will later be challenged in considering the idea of balance and “win-win” relationship as they consider the needs of other living organisms co-existing together (plants, animals, other).</p>	<ul style="list-style-type: none"> ● Using notes from Social Studies presentations (How Communities Change over Time and What makes a good community) create a Needs vs. Wants anchor chart 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion
<p>Competing for resources (M&M’s)</p>	<ul style="list-style-type: none"> ● Tell students they will be competing to meet 	<ul style="list-style-type: none"> ● Students should be making observations,

<p>Notes: Repeat this lesson throughout the unit. Add variables each time (fire wipes out an ecosystem, certain species works as a partnership (cooperation), etc.</p>	<p>their need for food. If they are unable to meet their need, they will become observers. Repeat activity at later to allow students a different perspective.</p> <ul style="list-style-type: none"> ● Brainstorm a list of observations ● Brainstorm a list of questions ● Brainstorm a list of connections. Where have you seen similar events? Where might this happen? ● Discuss the effect on us as organisms while trying to meet the need for food. Ideas should include competition, cooperation, the choice to move to another environment or potentially not surviving (becoming an observer) 	<p>talking with partner groups and offering ideas and opinions to class discussion</p> <ul style="list-style-type: none"> ● Students will be completing a note-catcher with observations, questions and connections
<p>Competing for Space (Competing for resources continued).</p>	<ul style="list-style-type: none"> ● Tell students they will be competing to meet their need for space. Students are encouraged to move from habitat to habitat to meet their needs. Students who are unable to meet their needs will become observers. ● Play the game again this time adding constraints such as a forest fires, floods, or other natural disasters resulting in the loss of certain habitats/ecosystems ● Discuss the effect on organisms dealing with environmental changes to their environment (human related and natural causes) 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion ● Students will be completing a note-catcher with observations, questions and connections
<p>Adaptation reading and discussion.</p>	<ul style="list-style-type: none"> ● Use this as an initial text introduction of adaptations ● Use an anchor chart to make explicit observations about the various adaptations and how they help the organism to survive 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion
<p>Bird beak adaptations activity (Science A-Z)</p>	<ul style="list-style-type: none"> ● Tell students they will be using different tools that act similarly to different types of bird beaks. ● Have students work in small groups to select tools, make predictions and record data 	<ul style="list-style-type: none"> ● Students will observe, predict, collect data, communicate and draw conclusions ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion

	<ul style="list-style-type: none"> ● Students will meet with other groups who tested different tools to compare data ● Discuss the results of different types of beaks. What foods would each tool work best (fish, nuts, seeds, plants, insects, etc.) ● 	<ul style="list-style-type: none"> ● Students will draw conclusions as they analyze their own data
Plant leaf (controlling water loss) adaptations activity (Science A-Z)	<ul style="list-style-type: none"> ● Students will work with partners using plastic bags, sponges and water to make three leaf models. Each model will have a different number of puncture holes. ● Have students record predictions of what will happen. ● Students will make observations over 3 consecutive days and record their data ● Discuss the results of the water loss in each bag. Connect to parts of a leaf, which part of the leaf did the sponge, bag and holes in the bag represent. ● Discuss how the opening of the stomata is an effective adaptation for plants. Where would we find the different types of plants from our experiment? 	<ul style="list-style-type: none"> ● Students will observe, measure, collect data, interpret data, identify and control variables and draw conclusions ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion
Wants and needs of Idaho organism research and writing	<ul style="list-style-type: none"> ● Students will read and watch videos related to their Idaho organism. ● Students will use a note-catcher to record and share with group partners ● Students will use notes to plan and write a first draft paragraph ● Students will conference with peers for revision of paragraphs 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion ● Students will find text evidence to support the needs of their Idaho plant/animal ● Students will be completing a note-catcher with text evidence ● Students will write a paragraph describing the needs of their Idaho organism
Food Chain reading and discussion	<ul style="list-style-type: none"> ● Use this as an initial text introduction of adaptations ● Use an anchor chart to make explicit observations about the various adaptations and how they help the organism to survive 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion
Food Chain of Idaho organism research and	<ul style="list-style-type: none"> ● Students will read and watch videos related 	<ul style="list-style-type: none"> ● Students should be making observations,

<p>writing</p>	<p>to their Idaho organism.</p> <ul style="list-style-type: none"> ● Students will use a note-catcher to record and share with group partners ● Students will use notes to plan and write a first draft paragraph ● Students will conference with peers for revision of paragraphs 	<p>talking with partner groups and offering ideas and opinions to class discussion</p> <ul style="list-style-type: none"> ● Students will find text evidence to support the needs of their Idaho plant/animal ● Students will be completing a note-catcher with text evidence ● Students will write a paragraph describing the food chain for their Idaho organism
<p>Building Food Chains</p>	<ul style="list-style-type: none"> ● Students will use their research to build a food chain for their Idaho Organism ● Chain links will be color coded to represent decomposers, producers, herbivores, carnivores and omnivores ● Discuss the unintentional effects across food chains and food webs 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion
<p>How Food Chains are Connected to make Food Webs in our Ecosystems</p>	<ul style="list-style-type: none"> ● Students will with their group to identify connections with their food chain to those of other Idaho organisms ● Students will use string to connect the different chains to create food webs ● Students will notice the many connections between Idaho organisms 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion ● Students will write a reflection (exit ticket) about their observations
<p>Living Thing research and writing – What issues are affecting your organism?</p>	<ul style="list-style-type: none"> ● Students will read and watch videos related to their Idaho organism. ● Students will use a note-catcher to record and share with group partners ● Students will use notes to plan and write a first draft paragraph ● Students will conference with peers for revision of paragraphs 	<ul style="list-style-type: none"> ● Students should be making observations, talking with partner groups and offering ideas and opinions to class discussion ● Students will find text evidence to support the needs of their Idaho plant/animal ● Students will be completing a note-catcher with text evidence ● Students will write a paragraph describing human impact on their Idaho organism
<p>Culminating Project/Rich Performance Tasks</p>		
<p>Project Description</p>	<p>Sequence of Project</p>	

Students will work in small groups to create a public awareness project of their choice. Choices might include brochures, commercials, billboard advertisement, or written proposed policy change/argument.

Students will individually write an informational essay to communicate their new knowledge in writing (fulfilling CCSS writing standards)

Students will work in small groups to research an Idaho plant or animal of their choice. Research topics will include needs, competition/cooperation, adaptations, food chain, food webs and the interactions between other living things within specified ecosystem. Students will identify a problem affecting their “living thing” and begin to consider possible solutions that address the idea of creating “win-win” relationships. Teacher will model each concept throughout the unit using the bald eagle as an example.

The culminating projects are scaffolded so students will have the support of their peers while researching and exploring a specific Idaho ecosystem. They will need to work together as they engage in meaningful dialogue and debates in order to come to a collective agreement on how and what they will present to their audience. Audience will include families, community member and special interest groups (i.e. Idaho Fish & Game, BLM, Wildlife Biologists, etc.)