Life Science Frontloading Lesson

Teacher:	**Subject:**	**Grade:**
Wendy Snyder Boise State Writing Project	Life Science	3rd

Standards:

This is a frontloading lesson for a Life Science trimester inquiry unit. The goal of this lesson is to activate students background knowledge, experiences and beliefs. Students will repeat the frontloading activity during and at the end of the unit noticing the changes in their beliefs based on evidence and experiences gained hrough carefully sequenced inquiry lessons and activities.

LS4.D Biodiversity and Humans Populations live in a variety of habitats and changes in those habitats affect the organisms living there. (LS2-2-1)

Science Practices
Ask questions and defining problems
Analyzing and interpreting data
Constructing explanations and designing solutions
Engaging in argument from evidence
Obtain, evaluate and communicate information

Lesson Objective:

- Students will complete an opinion survey asking questions related to Idaho organisms. Questions will include topics related to farming, fishing, hunting, recreation, and logging
- Student will comminicate their opinions to others with reasons/evidence to support their thinikng.
- Students will record and compare their ideas to those of their peers.
- Students will use new ideas and evidence gained throughout the unit to revise and share new beliefs using evidence to support their claims.

Materials:

- **Opinion Survey with the following statements**: Farmers should be able to use pesticides to protect their crops, building dams to hold back water for recreation and irrigation is a good thing, People should be able to hunt when and wherever the chose, People should be able to ride four-wheelers and morotcycles (ATV's) where ever they want, It is good to cut down trees for houses, etc, and Families should be able to build a cabin wherever they want to.
- **Four corners note catcher**
- **Graphs of data collected from opinion survey's**

Engage Opinion Survey

Teacher Will:	**Students Will:**
• Ask students to complete an opinion survey before, during and after a life science unit on ecosystems. • Clarify the statements to students as they complete the survey (especially for the before survey) • Answer questions posed by students for clarification.	• Use background knowledge and experiences to complete an opinion survey related to human impacts on organismsn and environments • Identify their opinion as: strongly agree, agree, disagree or strongly disagree • Ask clarifying questions to ensure they understand the questions (do they know definitions of words such as pesticides, irrigations?)

Explore

Teacher Will:

- Have stuents complete a notecatcher one question at a time. Notes will include their opinion and reasonsn for their opinion.
- Encourage students to explain their justification their opinions/beliefs
- Encourage students discuss their opinions together
- Observe and listen as students interact
- Ask probing questions to clarify students thinking when necessary
- Encourage students to rethink their ideas based on ideas from peers
- Encourage students to use text or experiential evidence when possible.

Students Will:

- Complete note catchers based on their opinion survey's
- Include reasons/justifications for their ideas and beliefs
- Use text and experiencial evidence to support their ideas
- Discuss their beliefs and opinions with peers having the same opinion level as them (Strongly agree, agree, disagree, strongly disagree)
- Add notes to note cathcers based on what peers said
- Use ideas from others to consider revising their opinions and/or reasons for their opinions.

Explain

Teacher Will:

- Encourage students to explain claims using evidence from their discussions with peers
- Ask for justication (evidice) and clarification from students

Students Will:

- Small roups share their discussions with the class
- Use text and experiential evidence to support ideas/opinions
- Examine, argue and reason about differing opinions presented by small groups
- Backup reasoning with evidence from class discussions
- Confirm or revise previous claims related to opinions

Ellaborate

Teacher Will:

- Present graphical data for each question to the class
- Ask probing questions to students to consider similarities and differences between questions and within questions. (Discussions and data will vary slightly with each group of students and their level of experience with each topic
- Pose question, "Do you think this data is true for all 3rd graders/classes of students?")
- Share data from other groups of students
- Encourage students to explain their justification for the data (evidence)
- Observe and listen as students interact
- Share data from other groups of students
- Encourage students to explain their justification for the data (evidence)

Students Will:

- Analyze and interpret class data related to each question
- Pose questions and justifacations related to the data (why do so many agree/disagree with a particular statement)
- Examine, argue and reason about differing opinions
- Backup reasoning with text and experiential evidence

Evaluate	
Teacher Will: • Observe students as they: comminicate thinking with others, analyze data and make justifications to their opinions using text and experiential evidence • Look for evidence that students have changes in their thinking related to the issues being discussed • Ask open ended questions, such as: “Why do you think…? What evidence do you have…? What do you know about…? How would you explain…?”	**Students Will:** • Answer open-ended qestions by using observations, evidence and previously accepted explanations • Demonstrate an understanding of the effects of humans on organisms living in Idaho ecosystems • Evaluate and communicate their own progress and knowledge as they make initial claims (predictions) and in revising claims based text evidence from the life science unit and personal experiences