Marsha Lenz

 4th grade

 South Bay School

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**The Decline of the Coho Salmon Population**

**in the Lagunitas (Or Klamath) Watershed**

6 Week Unit Outline

(The lessons typically take place 3 times a week

for 45 minutes for a total of 18 days)

standards:

 ESS2.A Earth Materials and Systems: Rainfall helps to shape the land and affects the types of living things found in a region.

 LS1.A Structure and Function: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior and reproduction.

Objectives:

· Understand how the components of a watershed need to be healthy to survive

· Express the interconnectedness of various parts of an ecosystem

· Understand the human impact (both positive and negative) on an ecosystem, including the value of stewardship.

Phase 1: Introducing and reviewing prerequisites (to support integrating multiple ideas)

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|   | activity | resources |
| ongoing | * setup salmon in classroom and spend time every day observing them and finally releasing them
* read books about salmon over the course of the unit
 | * http://www.troutintheclassroom.org/
 |
| 9/19/14Day 1(all day) | Coastal Cleanup Day:* Class field trip to local “adopted” beach to collect trash
* Sort and analyze trash
* Graph data
* create Salmon Journal
 | California Coastal Commission  |
| Day 2 | Observation Chart:* Pictures quotes of local historical salmon populations on paper hung around the room
* Students have written conversations about their observations or thoughts on pictures quotes
* write in salmon journal
 | Local website on salmonWritten conversation* <https://www.facinghistory.org/for-educators/educator-resources/teaching-strategies/big-paper-building-silent-con>
* students show learning by drawing what they
* use primary sources as well (journals, newspapers, etc)
 |
| Day 3 |  -Media video montage of current situation with written conversations* written conversation on why think these changes have happened.
* write in salmon journal
 | * various sources
 |
| Day 4 |  guest speaker from Clarke Historical Museum showing* importance of salmon on local tribes and history of Humboldt County
* draw a picture of what learned in nature journal
 | * <http://www.clarkemuseum.org/>
 |
| Day 5  | Input Chart of Salmon Life Cycle (structure and Function)* write in Salmon Journal
 | * <http://www.pbs.org/wnet/nature/lessons/the-lifecycle-of-salmon/enhanced-video-resource/7395/>
 |
| Day 6 | Input Chart of Water Cycle* review basic understanding of water cycle
 | * Magic School Bus video
 |
| Day 7 | Hooks and Ladders* reflect on what learned
* draw again what the coho needs in its ecosystem
* write in salmon journal
 | http://www.troutintheclassroom.org/teachers/library/hooks-and-ladders |

 Phase 2: Everything is Connected

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| day | Activity  | Resources |
| Day 8 | Oh Salmon! game* discuss basic needs of survival
* write about how their own needs are being met
* Reflect in Salmon journal if needs of Salmon are being met
 |  |
| Day 9 | Set up Stream Table* discuss a watershed
* illustrate how a watershed behaves
* write in salmon journal
 | http://urbanext.illinois.edu/rivers/buildst.cfm |
| Day 10 | stream Table (continued)* create “society” additions, such as farmers, industry, farmers, etc
* illustrate the effects on water on stream table
* write in salmon journal
 |  |
| day 11 | Impact of “Human Created Events” on Ecosystems* students write on their predictions that human events had on the ecosystem. (example: Hiroshima, BP Oil Spill, etc)
* Compare predictions to actual effects (written on back on cards)
* reflect in salmon journal
 | * various cards of human created events with environmental consequences on back
 |
| Day 12 | show Suzuki video on wolves* small group and then class discussion on what they think on thoughts
* draw new salmon ecosystem to add to what they learned
 | * <http://dailyoftheday.com/wolves-change-rivers/>
 |
| Day 13 | steam table activity:* put gummy fish in stream table to replicate the salmon run
* discuss observations
 |  |
| day 14 | Dams* discuss history
* pros and cons
* make predictions about what happens when dams in stream table
* put some dams in stream table
* Write in Salmon Journal
 | * show various videos on dams
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phase 3: stewardship

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| day | activity | resource |
| Day 15 | Make a Chart of cause of effects |  |
| Day 16 | revisit the data from garbage collected at Beach Clean up Day* analyze the garbage and the sources of them
* Connect it to stream table
* write in salmon journal
 |  |
| Day 17 | * (re)draw the ecosystem of the salmon
* Brainstorm ideas on what the class can do to have a positive effect on the ecosystem
 |  |
| Day 18 | * Write a letter to the our representative (or another class at the school) explaining why a clean healthy watershed is important. It can include one or more of the following:
	+ water cycle
	+ salmon life cycle
	+ impact of humans
* Continue discussion on a Project that the class will work on together.
 |  |
| Day 19 to the rest of our lives | Continue being Stewards of the Earth |  |