

## LCM Formal Loop

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| <p><b>LCM Lesson Plan:</b> Headwaters Forest</p> <p><b>Unifying Concept:</b> Systems, Order, and organization</p> <p><b>Standards:</b> Cultural Stand. B3 (long-term choice), D2 (worldview), E3 (global thinking).<br/>Language Arts D1 (explain position based on evidence)<br/>Science D1 (understanding issues and events); A1 (processes of science)</p> <p><b>Science concept:</b> To begin to understand the cycle and systems of ecology and human influences. Realization that the issues concerning our environment and natural resources are multi faceted and require a solid background of the various sides of the controversy. To take a position on an issue and back it up with sound logic/evidence.</p> | <p><b>Name</b> Tate Gooden<br/><b>Grade level</b> 9-12 (Ecology 11/12)<br/><b>School:</b> RMHS, Goodnews Bay</p> |   |
| <p><b>Gear- Up:</b> Display photo of old growth Redwood with a car driving through the buttress. Discuss old growth forests (background knowledge) and the history of Forestry use in the US (See pg. 26-27).</p>  | <p><b>Process Skills</b></p>   | <p><b>Materials</b></p>   |
| <p><b>Explore:</b> Explore 2 local ecosystems. One that is intact and one that has been influenced by human use (Preferably Uncut Forest and Logged area). Students will note and take samples of anything they notice between the two locales Read in A New World View Ch.3 about the differing views concerning the Headwaters Forest. Environmentalist vs. Logging Industry</p>   | <p>Observation</p>   | <p>Photos<br/>Digital Display<br/>New World View<br/>Booklet Ch. 3 from<br/>Lawrence Hall of Sci.</p> |
| <p><b>Generalize:</b> What differences did you notice between the intact and human disrupted sites? Are there different floral and faunal representatives between the two sites? Any interactions that you noticed? Classroom Discussion on the differing viewpoints from the reading. List the points made by Pacific Lumber Representative and Environmentalist. What are the major points listed on each side? Interpret and rank the points made by the lumber rep. And environmental rep. Have kids roleplay (roles: environmentalist, logger, taxpayer, politician). Construct a T-chart. Begin to think about your own opinion and the evidence you can use to back up your opinion</p>                             | <p>Observation<br/>Interpret</p>   | <p>UC Berkely<br/>Tranparent Grid Paper</p>   |
|  | <p>Observation<br/>Interpret<br/>Communication</p>   | <p><b>Vocabulary</b><br/>sustainable</p>  |

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| <p><b>Experiment:</b> Using the 4 time sequence maps of old growth on page 26-27 students will hypothesize how much old growth forest has been lost in particular US States. Then, students will overlay transparent grid paper to analyze the percent change in a particular State.</p>   | <p>Observation<br/>Measurement<br/>Investigation<br/>Communication<br/>Interpret</p> |  |
| <p><b>Interpret:</b> How did your grid analysis compare to your estimation. Optional: Make a line graph (Excel) showing the percent change.</p>  | <p>Interpret(Data)<br/>Graphing</p>  |  |
| <p><b>Apply/Assess:</b> Write a letter to the editor stating your opinion on the Headwaters Controversy. Urge voters to vote for or against using \$130 million of taxpayer money to help purchase the forest.</p>   | <p>Interpret<br/>Communication</p>   |  |
| <p><b>Extensions:</b> Local Debates over Natural Resources: Salmon harvests: subsistence and sport fishing. Mining at Donlin and Pebble: what are the issues for and against the mine. What is the Science behind it all? Forest Ecology. Sustainable Harvests. Social Studies – The rise and fall of empires and their relations to forestry.</p> |  |  |

Letter to the Editor concerning the Headwaters Forest Scoring Rubric

Name \_\_\_\_\_ Date \_\_\_\_\_

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| <p>Trout 4<br/>(Advanced)</p>                        | <p>The letter <i>effectively communicates</i> the opinion of the student concerning the Headwaters Forest. This opinion is backed up with 3 or more well explained supporting details that may include scientific evidence/principles, sound logic, and/or systems based reasoning. The letter has been edited using the Six Traits writing guide and scores at least a 5 in all categories. Letter is typed in size 12, Times font, and written in letter format.</p> |
| <p>Aquatic Macro invertebrate 3<br/>(Proficient)</p> | <p>The letter <i>communicates</i> the opinion of the student concerning the Headwaters Forest. This opinion is backed up with 2 well-explained supporting details that may include scientific evidence/principle, sound logic, and/or systems based reasoning. The letter has been edited using the Six Traits writing guide and scores at least a 4 in all categories. Letter is typed in size 12, Times font, and written in letter format.</p>                      |
| <p>Protozoa 2<br/>(Below Proficient)</p>             | <p>The letter <i>attempts to communicate</i> the opinion of the student concerning the Headwaters Forest. The opinion has some supporting details, but the details are not well explained or logical. The letter is in need of editing and scores a 2 or 3 in all categories of the Six Traits writing guide. Letter is not typed or, if typed, does not use Times size 12 font.</p>   |
| <p>Algae 1<br/>(Far Below Proficient)</p>            | <p>The letter <i>does not communicate</i> the student's opinion. The opinion is vague, does not address the topic, or does not include supporting details. The letter scores a 2 or less in all categories of the Six Traits writing guide. Letter is not typed or, if typed, does not use Times size 12 font.</p>   |

Comments: