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Project Participants: Deanna Peake

School Site: River Montessori Charter School

Grade Level(s): Grades 1,2,3

Course Name:

Name of Unit/Project: We All Live in the Watershed

Integrated Academic Disciplines: Science, Language

Implementation Timeline: Timeline of Activities:

January 2017 Entry Event Trip to Schollenberger Park (wetlands)

February 2017 Trip to Schollenberger Park with Petaluma Wetlands Alliance bird-watching

March 2017 Trip to Adobe Creek to analyze water samples for Benthic macro invertebrates

April 2017 Butter and Egg Day Parade with float explaining watershed

May 2017 Trip to release steelhead at Russian River tributary stream

Key Learning Objectives: Key learning objectives include understanding of the interdependence of all living and nonliving aspects of the watershed habitats; understanding of life cycles of various species, especially steel head who require all parts of the watershed to complete their cycle; and understanding of the importance of protecting the watershed for the good of all. Students will also learn that they have a voice in our community and can help others understand how to protect the watershed as well.

Provide a brief (50 word max.) description of this curriculum proposal, including the essential question.: Students will ask, "How can we teach the people of Petaluma that the watershed requires all its living and nonliving aspects to be healthy?" and choose one topic area (watershed geography, human history, birds, fish, benthic macro invertebrates, water treatment and conservation), forming expert groups which will research and present to the rest.

Provide a brief description (100 words max.) of how this coursework will integrate the core concepts of Geoliteracy: Interactions, Interconnections and Implications: By organizing themselves into expert groups, researching one particular aspect of the watershed, then learning about the others, students will understand that all these components are interconnected, that when one population or resource is unhealthy, others are affected. Students will learn about the different habitats within the watershed (wetlands, riparian zone, estuary, saltwater marshes, river bed) and the importance to each area for the health of various species in various stages of life cycles. As students learn about past human use of the Petaluma River watershed, they will understand the importance of present and future care of this environment.

Describe the fieldwork activities involving the Petaluma River/Wetlands. Curriculum must include a minimum of three outdoor watershed educational experiences.: For each of the six units, students help choose and organize a field activity. Our entry event is a trip to Schollenberger Park wetlands to do an overview, ask questions, and form ideas about the project. Next we will do a bird watching field activity to understand life and migration of birds in the wetlands. To understand microscopic and invertebrate life, we will go to nearby Adobe or Ellis Creek to do a water sampling and study. We will take a tour of the Ellis Creek Water Treatment Facility to understand water use better. After we raise steel head salmon fry in the classroom, we will make a trip to an assigned tributary stream to release the fish back into their cycle of life through the watershed.

Describe any other hands-on learning activities: The final, culminating project will be to build a float for Petaluma's Butter and Egg Day Parade that will inform the community about our watershed's importance. Students will design and build a float to be entered into the parade. Third year students will also participate in the county water agency water conservation poster contest.

Content Standards addressed: 2-LS4-1. Make observations of plants and animals to compare the diversity of life I different habitats.

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve given problem.

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in

common birth, growth, reproduction, and death.

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some not at all.

2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.

2-ESS2-3 Obtain information to identify where water is found on earth and that it can be solid or liquid.

ELA.Literacy.W.1.2, 2.2, 3.2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

ELA.SL.1.1,2.1,3.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.

Reading Tasks: What primary documents and informational texts will be read/analyzed?: Students will read and study documents from Ellis Creek facility, Petaluma Wetlands Alliance, California Department of Wildlife, and Sonoma County Water Agency.

Writing Tasks: What kinds of writing tasks (Arguments and Drawing Evidence) will be required?: One of the writing tasks is to write pen pal letters to students in Yelapa, Mexico, who live along a river watershed. Students will urge them to take care of their watershed and provide detailed reasons about why its important.

Collaboration: How will students collaborate, communicate and organize together (Speaking and Listening/Discussion): Students will form "expert groups" based on their interests and have weekly meetings in which they will discuss their topic and collaborate to research and present out to the rest of the class. They will be responsible for communicating with the teacher about plans and needs for the field activities they will be in charge of.

Integration of Media Sources and Skills: How will students use technology for research, communication, documentation and or presentation purposes?: Students will choose power point or other presentation form to present their information. They will also utilize classroom chrome books to research topics and google docs to write their reports.

CA Core Standards-based Assessments: How will students demonstrate their acquisition of new knowledge and skills?: As each expert group presents their information to others, teacher will assess demonstrated knowledge. Their written arguments in the form of letters to pen pals will be assessed for understanding. The assignment will be to explain all facets of information about the watershed. Group self-evaluations will be filled out at the end of each weekly meeting, as well as individual self evaluations.

Presentation of Knowledge/Student Public Forum: The final, culminating project will be to build a float for Petaluma's Butter and Egg Day Parade that will inform the community about our watershed's importance. Students will design and build a float to be entered into the parade. On the float, they will represent animals and plants of the watershed as well as a model of the watershed itself.

Evaluation of Knowledge Mastery & Attitude Changes: For the 2015-16 school year we have added a pre- and post-assessment for students to take online before and after curriculum implementation. How will you integrate this evaluation into your implementation plan?: Students will take the online pre-assessment the day of our entry event. They will take the post-assessment the week after the Butter and Egg Day Parade.

Other Comments: My class is in the process of completing what has ended up to be a trial run of this proposed curriculum in 2015-16. As I learned of this project after the application deadline, I did not formally apply last year for a watershed classroom grant. I did participate in the June PBL workshop and was very inspired. I hope you will see our float of the watershed in the parade this weekend (April 23)!