

# Exploring Local and Global Environments- Past, Present, and Future 2017-2018

<b>Names of Lead Contact:</b> Kirsten Franklin
<b>Additional Participants:</b> Eric Norstad
<b>Lead Contact Email:</b> <a href="mailto:kfranklin@petk12.org">kfranklin@petk12.org</a>
<b>Address where stipends can be sent:</b> 1105 Tomales Rd, Petaluma, CA 94952 USA
<b>Lead Contact Phone:</b> (707) 364-4880
<b>School Name:</b> McNear School
<b>Grade Level(s):</b> Fourth Grade
<b>Name of Project:</b> Exploring Local and Global Environments- Past, Present, and Future
<b>Implementation Timeline:</b> This is a year-long unit of study.
<b>Essential Question:</b> What environmental connections can we make between our local watershed and the Peruvian Amazon watershed?

## Timeline of Activities

September- December, 2017	January- April, 2018	May-June , 2018
---------------------------	----------------------	-----------------

Gather baseline data for water quality, soil and plant types in the creek area.

1. Conduct first Bioblitz survey of the creek and habitat areas.
2. Install Camera Traps; one recording device in the creek area and one device in the nearby section of schoolyard designated for wildlife habitat. Begin collecting data on the types and numbers of wildlife in the area.
3. Remove invasive plants and replant with climate smart plants.
4. Present project and data collected to school community at a school wide assembly. Include education about the importance of plant and wildlife biodiversity to support healthy natural environments. Inform the school community about actions they can take to support the health of the creek.

**Field Trips Related to Project:**

1. School Campus- first BioBlitz survey of plant and animal life on or near campus
2. Thompson Creek- I St access point- Fall Observations
3. Friends of the Petaluma

1. Repeat water quality testing and compare to first data set.
2. Conduct second BioBlitz and compare to first data set.
3. Design bird habitat enhancement in area adjacent to creek.
4. Build bird feeder and bird blind.

**Field Trips Related to Project:**

1. School Campus- second BioBlitz survey of plant and animal life on or near campus
2. Thompson Creek- I St access- Winter and erosion observations
3. Thompson Creek - I St access- Trash cleanup and analysis
4. Bay Model - Bay Area watershed big picture focus
5. Oaks to Acorns Discovery Center Tolay Regional Park program- how California Native Peoples interacted with the local watershed

1. Repeat water quality testing and compare to first two data sets.
2. Conduct third Bioblitz survey of the creek and bird habitat areas.
3. Present project at the Watershed Classroom Showcase in May, 2018.

**Field Trips Related to Project:**

1. School Campus- Third BioBlitz survey of plant and animal life on or near campus
2. Thompson Creek - I St access- Spring Observations, Crayfish population count
3. Warm Springs Fish Hatchery to release steelhead trout fry

River David Yearsley  
Heritage River Center

**Briefly describe some highlights of what you feel went well with last year's project.:**

1. The students participated in multiple, outdoor learning experiences and field trips that included 4-5 Walking field trips to Thompson Creek- I St access- to make observations of seasonal changes including erosion, trash cleanup and analysis, and crayfish population count. We also enjoyed our walk to the David Yearsley River Heritage Center to learn about watersheds and to do water quality testing.
2. Connections across the curriculum.
  - a. The students read and wrote about conservationists such as John Muir and Rachel Carson.
  - b. Some of them created an iMovie about our studies for presentation at the Watershed Classroom Showcase event.
  - c. Students organized two bake sales as well as designed notecards based on local and Amazon animals that were sold to raise money for the Adopt-A-School program for schools in the Amazon.
  - d. Students made a line plot graph of the types of trash they collected along the walk to and at Thompson Creek.
  - e. Students compared and contrasted local erosion and California gold mining practices with those in the Amazon watershed.
3. Student engagement
4. Foundations were set to develop access and future learning opportunities in the part of Thompson Creek that borders the McNear School campus.
5. Stronger working relationships were formed with environmental education providers- the Watershed Classroom, STRAW., and the NOAA Climate Stewards program. All three organizations offered overlapping support for my efforts to integrate content and skills with a focus on watersheds and the local environment. The Watershed Classroom program supported me to create a unit of instruction centered on the local watershed. The professional development they provided last year gave me tools for bringing students outside and for using science notebooks. They also provided us with trash grabbers to use for our Thompson Creek cleanup efforts. STRAW provided professional development and adapted to my site's desire to work towards providing access to the part of the local creek that borders our school campus. They provided personnel to help my students gather baseline data and to begin the process of creating a future restoration plan for the creek, The NOAA Climate Stewards program provided support for me to work on a grant that would tie the above efforts together under the umbrella of creating a ClimateSmart creek and schoolyard habitat. As a participant in a cohort of other teachers and community helpers, I was guided in the process of writing up a project that I will work on with my 2017-18 students.

**Now briefly describe some areas in which you encountered obstacles or feel last year's project could be improved on.:** None- the project set the course for future developments and expansion of the project. The 2017-18 project will move forward with a focus on the development of climate-smart creek restoration and wildlife habitat enhancement on and/or near our school campus.

**Please describe any changes taking place in the following areas of curriculum. If there are no intended changes to a particular curricular area, please indicate "no change."** : The project will extend to include students helping to restore the part of Thompson Creek that borders the McNear School campus as well as to work towards supporting and developing wildlife habitat on a designated area of the school campus.

**Content Standards:** The following Common Core and NGSS standards were addressed in this unit of study:

CCSS.ELA-LITERACY.RI.4.7

Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

CCSS.ELA-LITERACY.RI.4.10

By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Identify evidence from patterns in rock formations and fossils in rock layers for changes in a landscape over time to support an explanation for changes in a landscape over time. 4-ESS1-1

Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. 4-ESS2-1

Analyze and interpret data from maps to describe patterns of Earth's features. 4-ESS2-2

Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. 4-ESS3-2

**Fieldwork activities involving the Petaluma River/Wetlands:** Students engaged in numerous field study activities on campus and on various field trips. They took several walking field trips to nearby sections of Thompson Creek to do nature journaling, make observations of erosion, conduct water quality testing, and creek clean-ups. They visited the David Yearsley River Heritage Center to learn more about the Petaluma River Watershed and the Warm Springs Fish Hatchery to release steelhead trout. In addition to the above fieldwork activities, the students in 2017-18 will conduct 3 BioBlitz wildlife surveys on the school campus

**Reading and Writing Tasks :** Informational texts from the FOSS science curriculum, Newsela, ReadWorks, and other sources were used to support student investigations.

Students used their science notebooks to record observations and to construct explanations of observed phenomena. The class of 2017-18 will do the same reading and writing tasks as well as write up their observations, conclusions, and recommendations for public presentations.

**How students attain CA Core Curriculum Skills through the integration of media sources, media skills, and collaboration:** Students regularly worked in pairs and in collaborative groups when doing field observations, FOSS science investigations, and during content reading, writing, and academic discourse. The class of 2017-18 will continue to collaborate in like manners.

Students used their iPads to research information about the local watershed and the Amazon watershed/rainforest, to photograph observed phenomena during field study outings, and to create public presentations via slideshows, iMovies, etc. Technology will be utilized in similar ways during the 2017-18 school year.

**How students demonstrate their acquisition of new knowledge and skills or how students will present their learning to the public:**

Students publicly presented their projects and learning at the Watershed Classroom Showcases in 2016-17. Students in the 2017-18 will do the same and possibly present at school assemblies and school board meetings.

Watershed Classroom assessments will be utilized as previously mentioned. Student public presentations will be evidence of their increased interest in being good stewards for local and global watersheds.

**When do you plan to implement the pre and post assessments, which can be found on the assessments page of our website within teacher resources?:** The Watershed pre test will be administered by the end of September, 2017 and the post test will be administered by the end of May, 2018.