Name of Main Contact: Jan Brogan

Main Contact Email: jbrogan@trusd.org

Additional Participants: Pat Godoski

School Name: Two Rock Elementary School

Grade Level(s): TK-6 We are teaching garden to all the grade levels. Each month we give direct instruction to all the grade levels and they will be participating in the Three Sisters Garden, as appropriate.

Course:

Name of Watershed Classroom Unit/Project: Three Sisters Garden Project

Integrated Academic Disciplines: Social Studies/Science/Math/Nutrition

Implementation Timeline: This is a three to four months project. Beginning in March we will prepare the soil and plan the watering system. In May we will plant and prepare for summer watering. In September, we will harvest and prepare food from the harvest.

Key Learning Objectives: Students will learn about:
1. The traditional Native American practice of planting beans, corn and squash together in the same plot.
2. How the growth habits and biology of certain plants can complement each other to form a symbiotic or mutually beneficial relationship.
3. How to design a watering system that will maintain plant growth with the minimal amount of water.

4. Learn about what a watershed is and how it is influenced by pollution, especially fertilizers and pesticides.

5. Learn how the Stemple Creek watershed impacts the Petaluma River Watershed

6. Compare and contrast local native population, the Coast Miwok, and the Iroquois practices.

Provide a brief (50 word max.) description of this curriculum proposal, including the essential question.: How will plants co-habitat in an effort to conserve water and produce food for sustainability? The three sisters all complement each other nutritionally, providing people with sources of both starch, and proteins along with diverse vitamins and minerals. Corn supports bean vines, beans put nitrogen back into the soil while squash benefits from both.

Provide a brief description (100 words max.) of how this coursework will integrate the core concepts of Geoliteracy: Interactions, Interconnections and Implications: Key Learning Objectives: Students will learn about:

1. The traditional Native American practice of planting beans, corn and squash together in the same plot.

2. How the growth habits and biology of certain plants can complement each other to form a symbiotic or mutually beneficial relationship.

3. How to design a watering system that will maintain plant growth with the minimal amount of water.

4. Students will understand the function of a watershed and the benefits of protecting our soil and preserving the ecosystem for future generations.

Books: Keepers of Life: Discovering Plants Through Native American Stories and Earth Activities for Children by Michael Caduto

In the Three Sister's Garden by JoAnne Dennee, Jack Peduzzi, Julia Hand, Carolyn Peduzzi

Describe the fieldwork activities involving the Petaluma River/Wetlands. Curriculum must include a minimum of three outdoor watershed educational experiences.: We will make at least three visits to the garden. One visit to observe and prepare soil for planting, another visit or two for design of the watering system, and many more for planting and continued observations of the growing process.

Describe any other hands-on learning activities:

Students will prepare the soil for planting by introducing worm castings to existing soil.

Students will make and demonstrate how a watershed functions.

Students will design and implement an effective watering system.

Students will start and plant the seeds.

Students will harvest and preserve crops.

Content Standards addressed: Developing and using models
Analyzing and interpreting data
Using mathematics and computational thinking
Obtaining, evaluating and communicating information

NGSS:

ESS3-3: Communicate solutions that will reduce the impact of humans on the land, water, air, and or other living things in the local environment.

ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the earth resources and environment.

CA Common Core:

SL6: Produce complete sentences when appropriate to a task and situation in order to provide requested detail or clarification.

SL4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant descriptive detail speaking clearly at an understandable pace.

RI7: Integrate knowledge and ideas of informational text.

SL1: Participate in collaborative conversations with diverse partners about grade level topics and text with peers and adults in small and larger groups.

W7: Participate in shared research and writing projects.

Reading Tasks: What primary documents and informational texts will be read/analyzed?: Science/Social Studies textbooks as well as classroom books on gardening. Students will use internet resources to research, develop and plan watering systems.

Writing Tasks: What kinds of writing tasks (Arguments and Drawing Evidence) will be required?: Science journals with sketching
Prepared presentation of observed activities. As students develop plans for a watering system they will prepare a presentation as well as a log of they're design experiences, success and failures.

Collaboration: How will students collaborate, communicate and organize together (Speaking and Listening/Discussion): Class buddies will meet and prepare a joint information presentation to their classes. The students will use video, slides and poster board presentations on specific topics of interest that each student discovered during the year. What will these presentations be on? Will the planning process for the watering system be collaborative?

Integration of Media Sources and Skills: How will students use technology for research, communication, documentation and or presentation purposes?: Use of Chromebooks and ipads for the research of information as well as use for informational presentations

CA Core Standards-based Assessments: How will students demonstrate their acquisition of new knowledge and skills?: Presentation of learned information to their class.

Presentation of Knowledge/Student Public Forum: Students will provide a slide show, video or poster board of their topic of interest. They will broadcast their discoveries on our Two Rock Broadcast Station.How will the students connect to their broader community? Do they have a way of sharing their work with people outside of the school?

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?: We will do both pre and post test of knowledge.

Other Comments:

(Sent via *Watershed Classroom*)