

*PUBLIC SPACE SUPPORTING THE ECOLOGICAL COMMUNITY OF A WATERSHED*

<b>Teachers: Linda Righetti Judah</b>		<b>Duration: 2 semesters</b>
<b>Subject/Course: Biology</b>	<b>School: Petaluma High</b>	<b>Grade Level: 10</b>
<b>Collaborating Organizations: Point Blue (STRAW)</b>		
<b>Standards Met</b> (NGSS, CCSS, or otherwise) Please include full text of standards.	Because the plan is to take a place-based, project-based approach to learning we will be addressing all of the NGSS high school Life Science standards.	
<b>Project Summary</b> (include student role, issue, problem or challenge, action taken, and purpose/beneficiary)	The goal for this year is to create a strong NGSS program of study in which to learn biological principles through a focus on place, environmental change, evolution, and engineering to meet environmental change. Over the course of the school year biology students will practice 21 <sup>st</sup> century computing, research and engineering skills in order to use their understanding of biology to create solutions to environmental change within our watershed. Students will develop and work to implement a plan to create an outdoor classroom at our school site that will be resistant to climate change, and that will support the ecology of our watershed. The project is proposed to benefit the human population of our school community, and will also support wildlife.	
<b>Essential Question</b> Question students will explore throughout the course of the unit.	How do environmental changes to place serve as a selective pressure driving the ecology? How can we engineer an outdoor space that will support local wildlife & benefit our school community?	
<b>Key Learning Objectives and Assessments</b> Concrete objectives for student skill building and comprehension and how these will be measured.	Learning Objective	Assessment
	Design a proposal for the PHS Pond Yard that will improve the space in terms of wildlife accessibility & support, and utility as an outdoor learning space.	Students will complete written proposals, research summaries and create visual presentations for the space.

<b>Orientation</b>	In-Class Visit	x	Field Trip to River Heritage Center	x	Other	If other, describe in timeline how you will meet entry activity requirements
<b>Making Products Public</b> Include how student work will be shared with community members and/or organizations, who students will engage with during/at end of project, and which product(s) will be presented at the Watershed Classroom Student Showcase.	Students will present their proposal to the PHS staff & students first. After incorporating feedback from staff & students they will present their proposal to the school board, then to the PEF as part of a PEF Impact Grant application to implement the plan. Student can also make their proposal & presentation available to the Friends of the Petaluma River to share with the community at large.					

## PROJECT TIMELINE

Please list all activities which are part of the unit in the order they will be implemented. Timeline must include pre and post-assessments, other in-class assessments, an entry activity, at least three outdoor fieldwork activities, a plan for participation in the student showcase, and any other supporting activities and classwork.

Activity	Type of Activity (Field Work, In-Class, Presentation, Assessment)	Description	Resources Needed	Exact or Approximate Dates
<i>Name the activity</i>	<p><b>Field Work:</b> Any hands-on outdoor lesson or field trips</p> <p><b>In-Class:</b> Any in-class activity or project</p> <p><b>Presentation:</b> Any activity during which students share their work with each other or an outside audience</p> <p><b>Assessment:</b> Any written or oral exams given to assess student understanding and knowledge</p>	A thorough outline of the activity.	All reading materials, activity materials and equipment, transportation, third party help, or other resources needed to make the activity possible.	Please be as specific as possible so that we best know when to reach out with resources and tools to aid in implementation. Exact dates will be emitted from publicly shared version to protect student privacy.
Orientation	We would love an orientation either in our classroom or at the heritage center.			
Fall semester	<p>Field work: seed collection, &amp; propagation activities.</p> <p>Visiting our pond yard.</p> <p>Visit to or from professionals to help us with design aspects</p> <p>In class: drafting of design plan for PHS Pond Yard. Sharing of plan with school</p>	<p>Seed collection activity previously shared with FOTPR.</p> <p>Building on “community mapping” activity from Roots &amp; Shoots.</p> <p>TBD</p> <p>In class research, writing &amp; presentation skills/activities. Students present to staff meeting. Students present to Trojan Live &amp; Trojan</p>	<p>Connections to landscaping professionals who have a specialty in ecological landscaping.</p> <p>Connections to architectural professionals who can help with planning the layout for the space and any structural components that may be required.</p>	August 2018-December 2018

	community.	Tribune & accept public comment.		
Spring semester	Field work: habitat restoration field trip.  Complete work of design & engineering proposal for the PHS Pond Yard.	STRAW: to learn principles and skills of restoration.  Various activities TBD		

Please add more rows if needed. (Right click in last box, "Insert Row Below")

**Other Notes:**

Much of the activities are being developed. I will share them as they come together.