

# FLUSH

**Teachers:** Matt Jackson and Jovanna Ayala

**Duration:** Jan.-May  
2017 (5 months)

**Subject/Course:** Science and English

**School:** PACS at McKinley School

**Grade Level:** 7th

**Collaborating Organizations:** Petaluma Library

**Standards Met**

(NGSS, CCSS, or otherwise) Please include full text of standards.

**MATH**

Alg 1: 25.0: Students use the properties of the number system to judge the validity of results, to justify each step of a procedure, and to prove or disprove statements.

Alg 1.0: Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable.

Alg 1.1: Students use properties of numbers to demonstrate whether assertions are true or false.

**NGSS**

**MS ESS3-3**

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

**MS LS2-1**

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

**MS LS2-4**

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

**MS LS2-5**

Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

**ENGLISH LANGUAGE ARTS**

CCSS.ELA-Literacy.RL.7.1

	<p>Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p> <p>CCSS.ELA-Literacy.RI.7.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p>CCSS.ELA-Literacy.W.7.1 Write arguments to support claims with clear reasons and relevant evidence.</p> <p>CCSS.ELA-Literacy.W.7.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>CCSS.ELA-Literacy.RL.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p> <p>CCSS.ELA-Literacy.RI.7.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p>CCSS.ELA-Literacy.W.7.1 Write arguments to support claims with clear reasons and relevant evidence.</p> <p>CCSS.ELA-Literacy.W.7.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p>
<p><b>Project Summary</b> (include student role, issue, problem or challenge, action taken, and purpose/beneficiary)</p>	<p>Students will read the novel, FLUSH, learning about contamination in Monroe County, Florida and will then make various trips to the Petaluma Watershed to perform water sampling which will help them draw parallels between the two watersheds and some of the ways in which our watershed is negatively impacted. At the conclusion of the unit, students will individually research and develop a Public Service Announcement with the purpose of bringing awareness to a specific water contaminant.</p>

<b>Essential Question</b> Question students will explore throughout the course of the unit.	-What are the similarities and differences between the watershed in Key West in Monroe County, Florida and the Petaluma Watershed? How do specific contaminants enter and affect the Petaluma watershed and how can these contaminants be mitigated?						
<b>Key Learning Objectives and Assessments</b> Concrete objectives for student skill building and comprehension and how these will be measured.	Learning Objective				Assessment		
	Students will read the novel Flush, and be able to cite the similarities and differences between contamination in the Florida Keys and the Petaluma River.				Students will write a compare/contrast piece using information found in Flush and the data they collected from testing the Petaluma River water as evidence.		
	Students will be able to effectively test the water in the Petaluma River on four different occasions, recording the data from a variety of tests on each visit.				Students will work in groups of four to develop a graph comparing the testing results from the four Petaluma River visits.		
	Students will be able to identify and research a specific water contaminant and identify steps that might improve/eliminate the contamination.				Students will work individually to create PSAs addressing a specific water contaminant and how pollution might be improved/eliminated.		
<b>Orientation</b>	In-Class Visit  X	TBD	Field Trip to River Heritage Center	TBD	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	At the conclusion of the unit, a few students will be selected to share their PSAs at the Student Showcase. These will take the form of iMovie productions.  The students will also showcase their PSAs at Open House to parents and other students.						

Watershed Classroom Student Showcase.	
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## 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>	<i>A thorough outline of the activity.</i>	<i>All reading materials, activity materials and equipment, transportation, third party help, or other resources needed to make the activity possible.</i>	<i>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.</i>
Orientation	In-Class	Individuals from Friends of the Petaluma River will visit the classroom and introduce the watershed and the various water tests.	Watershed model and water testing kits.	TBD Late January or Early February?
Read Novel <i>Flush</i>	In-Class	Students will read and discuss the novel <i>Flush</i> in the classroom.	Novel	Month of February
Visit from a Professional	In-Class	The students will be visited during the unit by Eric Byous, who works for the EPA. He will provide additional interaction and information for the students in respect to water quality and	Powerpoint Presentation	One day in February, depends on his schedule

Form adapted from Buck Institute for Education's Project Design: Overview tool. Original form available at [bie.org](http://bie.org)

		contaminants.		
Essay	Assessment	The students will write a compare/contrast piece using information found in <i>Flush</i> and the data they collected from testing the Petaluma River water as evidence.	Data from initial testing	End of February
Testing Visits to the River	Field Work Assessment	Students will be able to effectively test the water in the Petaluma River on four different occasions, recording the data from a variety of tests on each visit. They will create a graph comparing the data from their four visits at the conclusion of the testing.	Water testing kits	TBD Once per month, February-May
Public Service Announcement	Presentation	Students will work individually to create PSAs addressing a specific water contaminant and how pollution might be improved/eliminated.	iPads	Mid-May

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

**Other Notes:**