

Course: Biofitness (Biology, Health, Physical Education Integrated)

Year: 2017-2018

Student Profile: 9th Grade

Teachers: Tom Wolf ([TWolf@nvusd.org](mailto:TWolf@nvusd.org)) and Christie Wolf ([CWolf@nvusd.org](mailto:CWolf@nvusd.org))

[Course Syllabus](#)

Ongoing: [Personal Wellness Plan](#), Edible Napa

**Fall Semester - 14 weeks**

	Medical Mysteries	Ocean Project (REVISE)	Healthy Hometown, Edible Napa Launch (Humanities, Chemistry tie in?)
Driving Question	How can we use logic and evidence to diagnose our patients and prevent the spread of the communicable illness?	*TBD	How can we use our understanding of our body's systems to help prevent the spread of noncommunicable?
Issue (Authentic Context)	Communicable illness can spread quickly. We have tools to help prevent that spread (hygiene, vaccines, antibiotics) - however the tools rely upon community understanding and correct use. Part of the challenge in diagnosing patients is determining what is the relevant data.	Ocean acidification Water pollution Loss of biodiversity Coral reef degradation Climate change Rising sea levels Invasive Species Desalination Alternative Energy	Cardiovascular Disease & Type 2 Diabetes are among leading causes of death and disability in Napa County (and U.S.). Minorities are disproportionately affected by these noncommunicable diseases.
Project Overview	Students are presented with case files on patients. They must	Oceanography, biogeological cycle, climate & ocean	Students use the Napa County public health goals to choose a focus topic.

	use ongoing tests and medical information to diagnose the patients and present the logic of their diagnosis, how it affects the health of the patient, and develop a community prevention plan to prevent the spread of the illness. Blog provides students with ongoing patient data.	acidification, ecology, humans and the ocean (Summer Revision)	Design a working model of a body structure that demonstrates its function in healthy and diseased states. Develop a modified recipe with nutrition facts broken into the “building blocks of life”. Present models, recipes and research at Healthy Hometown. (Need to streamline this)
Project Timeline	4 weeks Approx August 21 - September 15th	4 weeks Approx September 18th - October 20th	6 weeks Approx October 23rd - December 6th
Final Products (link to <a href="#">Performance Expectation NGSS</a> )		Culminating Event:	Culminating Event: Community Health Fair (December 6th 4:30 - 6:30pm), Body Structure working model, Written Body Guide
Big Ideas	Patterns, Logic	Systems, Patterns, Relationships, Design	Systems, Change, Perspective, Relationships, Design
Formative Assessments	Quiz (NGSS), benchmarks (add in by plan w LOs, scaffolds and rubrics)	Quiz (NGSS), benchmarks (add in by plan w LOs, scaffolds and rubrics)	Quiz (NGSS), benchmarks (add in by plan w LOs, scaffolds and rubrics)
Lab Connection	Blood Antibodies Lab, Bacteria Lab, GloGel demo, Launch Personal Wellness Plan (and collect baseline personal health data)	CO2 Acidification Lab, Water Quality Testing - Pasco?, Wellness Plan data collection	Food Dissection Lab, Soil testing, Wellness Data Lab, Wellness Plan data collection
Field Learning		UC Davis Bodega Marine Lab	Walking Field Trip, garden

		(10/3 & 10/4), Oak Ecology Trips	
<a href="#">NGSS Standards</a> (Disc.Core Ideas - Life Sci & Earth Sci)	LS: <a href="#">Cell Structure</a> <a href="#">Evolution</a>	LS: <a href="#">Evolution</a> <a href="#">Ecology</a> ESS3.A: Natural Resources ESS3.C: Human Impacts on Earth Systems - a ESS2.D: Weather and Climate ESS1.C: The History of Planet Earth ESS2.E Biogeology	LS: <a href="#">Biomolecules</a> <a href="#">Membranes</a> <a href="#">Cellular Energy</a> <a href="#">Organ Systems and Homeostasis</a> <b>ESS3.A: Natural Resources</b>
Adult Connections	Doctor visits classroom, partner on test result blog, Gia Peralta	WICC Napa, Marine Lab, Eric McKee	Kirsten (Kaiser)
<a href="#">Math Connections</a>			
Key Academic Vocabulary			
Rubric Focuses (SWLO) - rubrics altered/combined for focus objectives *Add content standard summary to K & T rubric	Oral Communication, Knowledge & Thinking	Agency, Written Communication, Knowledge & Thinking	Written Communication, Knowledge & Thinking, Collaboration

Field Trips:

- Vineyard Trip → Issues facing agriculture in Napa
- Bodega Bay Marine Lab
- RCD Service Trips

**Fall Semester - 18 weeks**

	Who Owns the Seeds? & Agricultural Roots Launch (Humanities tie in?)	Agricultural Roots (Humanities tie in?)	Revise - Evolution (Space Invaders? Antibiotic arms race?)	Selling Wellness
Driving Question	Should patenting of seeds be legal? (Broaden to patenting of genes?)	How can we design an experiment that will shed light on sustainable agriculture so that we can locally grow food that is ethical, nutritious, and economical?		How can we develop ads to support research-based low or no cost wellness strategies for fellow teens throughout Napa Valley Unified School District?
Issue (Authentic Context)	Controversy over patenting genetically engineered seeds	Sustainable agriculture (water, pests, invasives, space, worker quality of life, cost, etc.) & Understanding of scientific process		Advertising influences our values and behavior. Who is it benefiting? Is it in line with your health/wellness goals?
Project Overview	Students debate patenting of GE seeds. Students write a debate strategy outlining logic and evidence.	<a href="https://docs.google.com/document/d/1qxLGTDRBdB_tZH59WLXH6oeHw6eXPROJqyXHPpNxfVg">https://docs.google.com/document/d/1qxLGTDRBdB_tZH59WLXH6oeHw6eXPROJqyXHPpNxfVg</a>	SI: Invasive species influence on local ecosystem evolution  AAR: How do different strategies impact bacterial growth? ← <i>Would need access to an autoclave</i>	Students will design an ad for wellness boosters that we don't often see ads to support/don't require purchasing special equipment or products. Must have at least one academic article that supports what they're selling. Exemplar ads will be shared with other teachers in the

				district and printed/displayed in Biofitness and the school gym for next year. Use wellness plans to identify a wellness ad focus.
Project Timeline	6 weeks	4 weeks	6 weeks	Last 1.5 Weeks - add in learning showcase
Final Products (link to <a href="#">Performance Expectation NGSS</a> )	Debates			Wellness Ad and cited scientific journal article
Big Ideas	Change, Perspective, Logic	Systems, Patterns, Relationships, Design	Change, Perspective, Relationships, Logic	Design, Perspective, Logic
Formative Assessments	Quiz (NGSS), benchmarks (add in by plan w LOs, scaffolds and rubrics)	Quiz (NGSS), benchmarks (add in by plan w LOs, scaffolds and rubrics)		Ad draft, scientific article review
Lab Connection	pGLO Genetic Engineering Lab, Strawberry Lab, PTC Lab, Wellness Plan data collection	Individual Experiments (varies) - use Pasco tools, soil & water test kits, Wellness Plan data collection		Wellness Plan final data collection
Field Learning	Monsanto?	Ad Experiments in school garden	Oak Ecology Trips	

<a href="#">NGSS Standards</a> (Disc.Core Ideas)	LS: <a href="#">Cell Structure Cellular Reproduction Genetics DNA Structure &amp; Function Ecology</a> ESS3.A: Natural Resources ESS2.D: Weather and Climate ESS3.B: Natural Hazards	LS: <a href="#">Cell Structure Cellular Reproduction Ecology</a> ESS3.A: Natural Resources ESS2.E Biogeology ESS2.D: Weather and Climate	LS: <a href="#">Genetics DNA Structure &amp; Function Evolution Ecology</a> ESS1.C: History of Planet Earth ESS2.E Biogeology ESS3.B: Natural Hazards	
Adult Connections	Monsanto, Napa Farm B., Need a local organic farmer	Need local organic farmer	Eric McKee	Stevie
<a href="#">Math Connections</a>				
Key Academic Vocabulary				
Rubric Focuses (SWLO) - rubrics altered/combined for focus objectives *Add content standard summary to K & T rubric				

Field Trips:

- RCD Service Trips
- Walking field trip sustainable ag

Resources:

[Student Facing NGSS](#)

[Teacher Reflections 2016-17](#)

[Presentation & PE clothes](#) letter home

[Academic Vocabulary](#)

[NVUSD 2017-18 Calendar](#)

Outline & track skill badges, incorporate a showcase of learning each end of semester