

STEM Marin

Program Overview



Welcome 8th Grade Families

Why San Marin High School?

- 1 Focus on the whole student
- 2 Opportunity to excel in all areas
- 3 AP and Honors courses – academics
- 4 SmART – Arts and Technical Arts
- 5 Athletics
- 6 Clubs and activities
- 7 Community Service



Why STEM?

- Critical thinking and problem solving-transferrable skills
- Engages students in school by using student centered strategies
- The current demand for STEM-capable US workers surpasses the supply of applicants who have trained for those careers.
- 16 of the 20 occupations with the largest projected growth in the next decade are STEM related.



San Marin High School

What's the Difference in Academics?

Traditional Student	Biotech Student	STEM Student
1 science class per year	2 science classes per year	2 science classes per year
No application process	Application only	Application only
General science emphasis	Biotechnology and microbiology emphasis	Science and engineering emphasis

Why STEM Marin?

- Rigorous science, engineering and math curriculum
- Small community atmosphere
- Critical and Creative Thinking, Collaboration and Communication
- Project-based learning
- 2 science courses every year!!!



About STEM Marin

- 2 Programs: Biotech and STEM
- Award-winning staff
- 424 current STEM Marin students
- 84% + of STEM Marin graduates are pursuing STEM degrees at four-year colleges
- STEM Marin Fund is a 501c3 nonprofit organization that helps to fund the field trips, materials and opportunities at STEM Marin



STEM Marin is a comprehensive Science, Technology, Engineering, and Math program that is part of San Marin High School.

About Stem Marin

- College Preparatory
- The Six Tenets
 - Project-Based Learning
 - Integrated Curriculum
 - Using Technology
 - Small Program Environment
 - Empowering Students to manage their learning
 - Work-based learning opportunities



Our Amazing Faculty

- Jaime Lutz - Coordinator
- Nick Williams – STEM
- Michelle LaFevre-Bernt – Biotech
- Claudio Tronconi
- Melissa Havel
- Virginia Vogl
- Shea Mathews
- Jennifer Carlomagno
- Tim Blok
- Neesha Patel
- Rosa Herrera
- Adriana Lopez



UC Approved Curriculum

- 8 Science Courses
 - Engineering courses
 - Emphasis on physical and biological sciences
 - AP courses
- 4 Math Courses
 - Culminating with AP Calculus
- Technology-rich Coursework
- Project-Based Learning/Inquiry-Based Learning
- Student-Centered

STEM Core Course Progression

9th Grade

- Conceptual Physics, Principals of Engineering & Algebra 1

10th Grade

- Biology, Technology of Biology & Geometry

11th Grade

- STEM Chemistry, Science Elective & Algebra 2

12th Grade

- Senior Project Engineering, Science Elective & Precalculus

Biotech Core Course Progression

9th Grade

- Technology of Biology, STEM Biology & Algebra 1

10th Grade

- Applied Chemistry, Biotechnology/Physics & Geometry

11th Grade

- Biotech 1, Science Elective & Algebra 2

12th Grade

- Biotech 2, Science Elective & Precalculus/AP Calculus

SMHS Required Classes

9th Grade

- English 9, College and Career Readiness/Health & P.E.

10th Grade

- English 10, World History/AP Euro History & P.E. or waiver

11th Grade

- English 11, AP Language & Comp, US History/AP US History

12th Grade

- ERWC/ AP Literature, Government & Econ/AP Gov't. & AP Econ

Elective Options

STEM

- Biotech 2, AP Biology, AP Physics, AP Chem, Marine Biology, Stats, AP Stat, Cisco Academy, AP Computer Science, JC STEM Elective

Arts

- Music, Drama, Dance, Language Arts (Spanish & French)

Other

- Leadership, College Coursework

Successful STEM Marin Students

- Love math, science, and engineering
- Expect to go to a four year college
- Value learning and have high expectations for their academic progress and behavior
- Know how to work on projects with other people
- Do their **personal best** on all assignments
- Want to be part of a community within high school
- Participate in clubs, activities, sports



Project Based Learning

What is it?

- Entry Event
- Driving or Essential Question
- Need to know list
- In Depth Inquiry
- Revision and Reflection
- Public Audience



Project Based Learning

Why is it important?

- Engaging
- Provokes students to encounter (and struggle with) the central concepts and principles of a discipline.
- Teaches:
 - Communication and presentation
 - Organization and time management
 - Research and inquiry
 - Self-assessment and reflection
 - Group participation and leadership



Project Based Learning

Typical STEM Projects

- Rube Goldberg
- Physics of Sports Video
- Hybrid Car Design
- Passive Solar Home Design
- Build a band (of musical instruments)
- Robot Art Show



Project Based Learning

Typical Biotech Projects

- Forensics murder mystery
- Wat-er We Drinking?
- Field study
- Animal dissections
- Genetic engineering of bacteria and plants
- Study your own DNA
- Test foods for genetic modifications



Empowering Students

- Own your learning
- SMHS/STEM community
- High expectations
- Choice in decision-making



Application Available NOW!

- **STEMMarin.NUSD.org**
 - Short essay responses
 - Student should complete all sections independently to the best of their ability
- Due January 10th
- Offers sent February 24th
- Jaime Lutz, Jlutz@nUSD.org

STEM Marin Fund

- Created in 2014
- Non-profit, tax-exempt 501c3 organization
- Field Trips, Maker Space, Classroom materials
- All money donated goes directly to STEM Marin students at SMHS



Stay Informed!

- STEM Marin Newsletter
- Website
- Facebook
- Instagram





Thank You