

Piner High School

STEM Certificate



STEM beginnings

Campus wide focus:

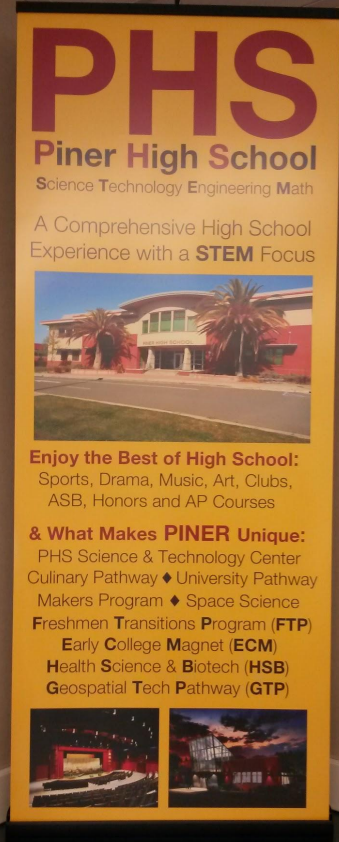
- ★ Graduation Banner
- ★ Principal declaration
- ★ Common Core & 21st Century skills

Science Department Focus:

- ★ Department Philosophy supports STEM
- ★ STEM attribute rubric: North Carolina (shared)
- ★ CTE classes on campus
 - Geospatial Information Systems (GIS)
 - Health Science & Biotechnology (HSB)
 - MAKE I and Physics Make


- ★ Next Generation Science Standards

- ★ Science SPARQ Center !



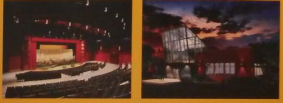
PHS
Piner High School
Science Technology Engineering Math

A Comprehensive High School
Experience with a **STEM** Focus



Enjoy the Best of High School:
Sports, Drama, Music, Art, Clubs,
ASB, Honors and AP Courses

& What Makes PINER Unique:
PHS Science & Technology Center
Culinary Pathway ♦ University Pathway
Makers Program ♦ Space Science
Freshmen Transitions Program (FTP)
Early College Magnet (ECM)
Health Science & Biotech (HSB)
Geospatial Tech Pathway (GTP)



PHS STEM Certificate

STEM Core Curriculum Classes

6 Total Year Long Classes are Required

Career Technical Education Classes: Make I, Make II, Health Science & Biotechnology I, II, III, Geospatial Technology I, II, III

Advanced Placement: Biology, Physics, Calculus, Statistics, Art

Academic : Chemistry, Physics, Trigonometry,

Business Technology: Web Design

Electives: Space Science, MESA

Level 1

Ongoing Personal Involvement

Select 2 Items **Per** Year

Grades 9-12

Acceptable Items May Include:

- STEM Cafe' (1/2 Share)
- SSU/SRJC Colloquium (1/2 Share)
- Exploratorium
- Leapfrog
- TrigStar
- Math Steeplechase
- Math Club
- PHAST Club
- HOSA Chapter
- Robotics Club
- ChemClub
- Athletic Training Club
- Make Club
- SRJC Calculus Camp
- Approved Alternative

Level 2

Community Involvement

Select 2 Items Total

Grades 9-12

Acceptable Items May Include:

- First Light
- Internships
- SSU Summer Genetics Lab Workshop
- Science Olympiad
- StarLab Outreach
- Specialized Lab/Aid Tutor
- Peterson Creek Stewardship Project
- Athletic Training Club Field Experience
- Bay Area Science Festival
- Approved Alternative

Level 3

Original Science or Engineering Inquiry Project

Complete 1 Item Total

Grade 11/12

Acceptable Items May Include :

- Make Fair
- CAMEOS
- S4
- SSU Symposium
- Synopsis County Science Fair
- Approved Alternative

Certificate Advantages

- Students will work with a faculty advisor to create a personalized learning plan to meet the STEM Certificate criteria. Upon completion of requirements, a compulsory presentation to the STEM Advisory Panel will be made that includes a synopsis of the STEM experience
- STEM Certificate graduates will be recognized individually at school commencement and presented with their certificate. Certificate holders will be provided with official documentation on his or her transcript and will also receive a letter of recommendation from the STEM Advisory Panel. Certificates will garner the recipient early admission review for non-impacted STEM majors at Sonoma State University.



STEM certificate requirements

Documented participation in PHS STEM offerings

- ★ 6 STEM classes beyond University prep
- ★ 3 - 4 years of extracurricular STEM work
- ★ Create STEM portfolio as evidence
- ★ Review, reflect, regroup with advisor guidance
- ★ Final approval by STEM advisory panel



STEM Certificate : Level 1

Ongoing Personal Involvement

Students earning the PHS STEM Certificate must demonstrate a consistent commitment to STEM activities on campus. A wide variety of opportunities for ongoing involvement in STEM activities exists at Piner. Numerous science and engineering related clubs meet regularly on campus and host frequent fun and educational events for students. In addition, a number of regular events are sponsored by the PHS Science Department that allow PHS students to interact with professional scientists and give opportunities to learn more about STEM careers through guest speakers and field trips. Consistent participation in clubs and these STEM events will provide students with valuable learning experiences and will significantly shape their academic and professional work.

expected enrollment at this level: 200

Level 1

Ongoing Personal Involvement

Select 2 Items **Per Year**

Grades 9-12

Acceptable Items May Include:

- STEM Cafe' (1/2 Share)
- SSU/SRJC Colloquium (1/2 Share)
- Exploratorium
- Leapfrog
- TrigStar
- Math Steeplechase
- Math Club
- PHAST Club
- HOSA Chapter
- Robotics Club
- ChemClub
- Athletic Training Club
- Make Club
- SRJC Calculus Camp
- Approved Alternative



STEM Certificate : Level 2

Community Involvement

Many STEM careers include a strong community service component. Students completing the PHS STEM Certificate must demonstrate a strong commitment to interacting with and serving our local community. This involves two components: community service and interfacing with local professionals in a professional setting. Working with local elementary or middle school students and job shadowing are examples of the opportunities that exist at Piner. It is crucial that students completing the STEM Certificate are aware of the importance of community service and that they gain significant experience working alongside professionals in our local community.

expected level of enrollment 100

Level 2

Community Involvement

Select 2 Items Total

Grades 9-12

Acceptable Items May Include:

- First Light
- Internships
- SSU Summer Genetics Lab Workshop
- Science Olympiad
- StarLab Outreach
- Specialized Lab/Aid Tutor
- Peterson Creek Stewardship Project
- Athletic Training Club Field Experience
- Bay Area Science Festival
- Approved Alternative



STEM Certificate : Level 3

Original Science or Engineering Inquiry Project

Students completing the PHS STEM Certificate will demonstrate the ability to design and carry out an original, independent project. This project will allow students to experience science and engineering practices first hand. Students will design an original scientific study or engineering project while working closely with adult mentors on campus and/or in the community. Emphasis should be placed on addressing real-world problems. Students will present the results of their work publicly, demonstrating a deep understanding of scientific and/or design processes.

expected level of enrollment: 40

Level 3

Original Science or
Engineering Inquiry Project

Complete 1 Item Total

Grade 11/12

Acceptable Items May Include :

- Make Fair
- CAMEOS
- S4
- SSU Symposium
- Synopsys County Science Fair
- Approved Alternative



STEM Certificate Benefits to Students

- ★ Graduation recognition-certificate, cord- public acknowledgement at graduation
- ★ Transcript of record: * work in progress
- ★ Letter of recommendation from advisor or STEM committee (level dependent)
- ★ SRJC credits * work in progress- Community Involvement/Specific class credit
- ★ Sonoma State Acceptance to STEM major * work in progress: MOUS



Sonoma State : MOU beginnings

Piner High Responsibilities:

- Rigorous STEM curriculum
- Provide extracurricular STEM opportunities
 - Middle school liaison
- Tracking STEM student progress
 - Advisor- Learning plan
 - STEM project liaison
 - Piner STEM Passportfolio
 - where do you want to go?

Sonoma State Commitments

(* work in progress- working with Compact for Success model)

- Host STEM student visit on SSU campus
(provide transportation, lunch subs)
 - Early in program- 1st year /Level I & 8th graders
 - Later in program- 3rd year/Level II-III
- Guarantee admittance to STEM major
- Provide project assistance
 - opportunities
 - mentors\

