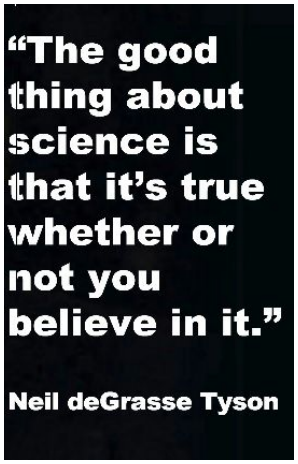
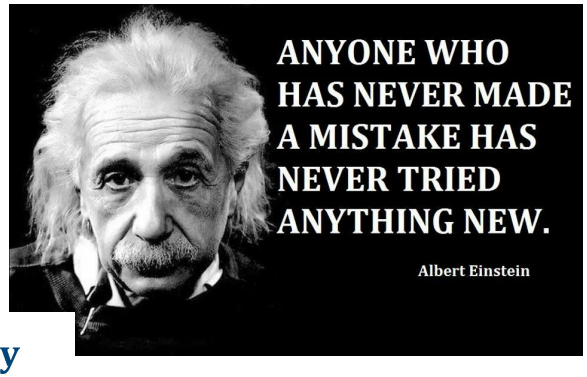
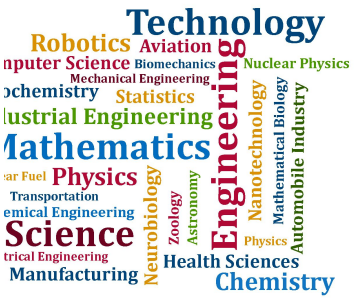


Science is simply the **word** we use to describe a method of organizing **our curiosity.**

Tim Minchin





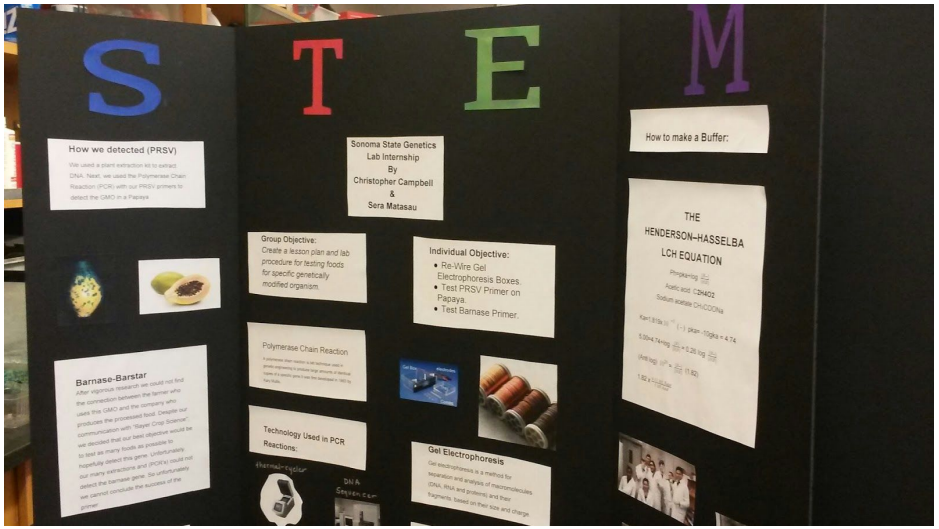
The object of education is ....

To prepare the young to educate themselves throughout their lives.

Robert M. Hutchins

PHS STEM

Certificate Program



Your STEM incentive will take you places….

From Piner High to Infinity

and beyond….

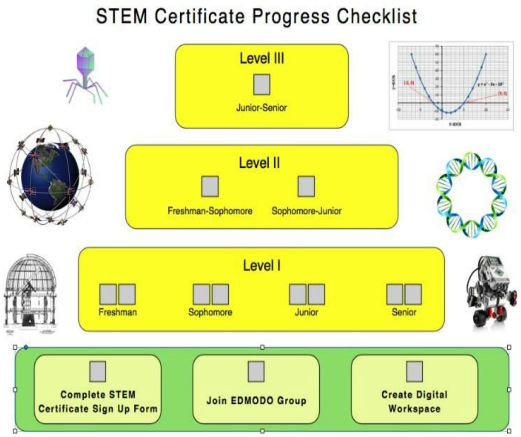
STEM Certificate Overview

This program, offered exclusively at Piner High, school is to publically recognize students who go above and beyond in their extracurricular exploration of **S**cience **T**echnology **E**ngineering and **M**ath
(we also include Art: **STEAM**!)

Although there are 3 levels of the STEM certificate, there is no particular order in which the levels need to be completed, and students can be awarded levels multiple times ! In order to get the **STEM Prospect Award** as a Senior..you must have completed Level 1 (all 4 years) Level 2 (two separate projects) and one Level 3 experience.

Here are the 3 levels with recommended grades:

Level I	2 for each of year @PHS
Level 2	2 projects grade 9 - 12
Level 3	1 project grade 11-12



STEM Resources:

2015 Ranking of college programs for STEM jobs:
http://stemjobs.com/2015-stem-jobs-approved-colleges/

http://www.usnews.com/education/blogs/college-rankings-blog/2013/06/18/top-ranked-universities-that-grant-the-most-stem-degrees

Very thorough website regarding careers and reasoning for STEM education. http://stemcareer.com/

Sonoma State

School of Science & Technology (SST)
STEM Majors

(http://www.sonoma.edu/scitech/departments/)

Biology
Chemistry
Computer Science
Engineering Science
Geology
Kinesiology
Math & Statistics
Nursing
Physics & Astronomy

Santa Rosa Junior College

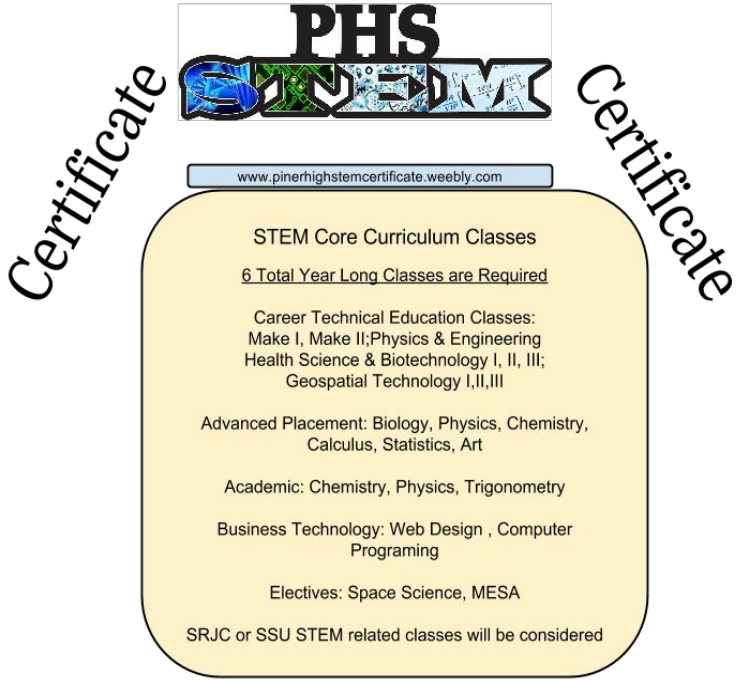
STEM opportunities

Applied Technology
Mathematics
Life Sciences
Earth & Space Sciences
Chemistry and Physics
MESA -

STEM Course Requirements

6 classes are required of all STEM students as part of the requirements for STEM certification on your transcript. As our STEM venue expands, we will accept classes that meet the criteria:

- Extra STEM related classes beyond graduation requirements



So now…

Sign up on Ed Modo: he6qga, complete the progress log, make a copy to give to your science teacher

Advantages of the STEM Certificate

This is a unique designation exclusively for Piner High students. That in itself will provide academic fodder for scholarship and advanced opportunities that set STEM students apart from the rest on paper !

Tangible acknowledgements for this STEM endeavor are as follows:

- ★ Transcript recognition with STEM embossment
- ★ Public presentation of award commensurate with level of achievement (Level 1, 2 or 3: or any combination of) at STEM symposium in May
- ★ Inclusion in Sonoma State STEM events:
  - Fall Kick off on Piner campus
  - School of Science & Technology(SST) campus tour
- ★ STEM Advisory Panel group Letter of Recommendation
  - Level 1 & 2 PHS teacher exclusive
  - Level 3- Inclusive of STEM panel professionals
- ★ Early Admission Review to Sonoma State University
  - STEM portfolio may qualify as impaction criteria
  - All CSU prerequisites must be met as well

UC DAVIS BODEGA MARINE LABORATORY

Bodgea Marine Laboratories- Ocean research in our own backyard

Pepperwood PRESERVE
Inspiring conservation through science

Pepperwood pages
http://app.pepperwoodpreserve.org/pls/apex/f?p=514:14:11060170274499

Volunteer opps
http://app.pepperwoodpreserve.org/pls/apex/f?p=514:11:11060170274499

Pepperwood events for this fall
http://app.pepperwoodpreserve.org/pls/apex/f?p=514:2:11060170274499

Research projects happening on/with the Preserve
http://app.pepperwoodpreserve.org/pls/apex/f?p=514:10:11060170274499

Don't Know where to start……Join us at the

North Bay Discovery Day at the Fairgrounds
October 29th….Lots of possible mentors and ideas !!

STEM Certificate Sponsors

These agencies might be able to assist with your level 2 or 3 project and they respond best to students who show initiative and commitment...so here's how to get started…

1) Research the websites to see what projects are being done- learn about them decide where your interests align

2) Determine how you can get involved- volunteer, facility tour, on site classes….Show initiative !

3) Discuss prospective sites with STEM coordinator (available p 4 or after school by appointment) to formalize your initial contact

4) Continue to explore the literature and website

Environmental Field Studies-

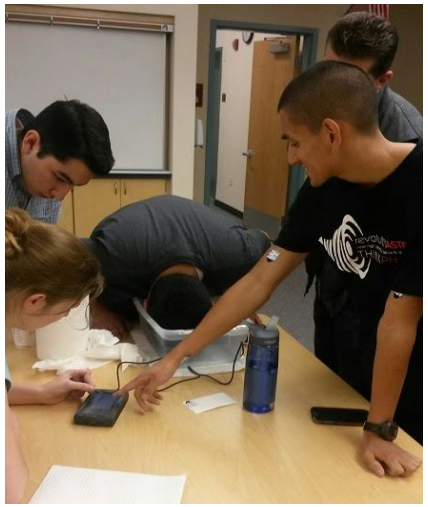
S4 Rockets..see Mr. Kruger !

Research Awards at SSU-

Waters Collaborative- Many water quality and watershed projects

Certificate Advantages

- Students will work with a Piner High faculty advisor to create a personalized learning plan to meet the STEM Certificate criteria.
- Upon completion of requirements for any particular level advisor will prepare documentation to acknowledge the following :
  - Certificate of completion to be awarded at May Symposium
  - Letter or recommendation according to level accomplished
  - Transcript designation of attained level of certification
  - Submission of name to SSU School of Science & TEchnology for early review (inclusive of all STEM majors)
  -
- As a STEM prospect-Upon completion of Level 3
  - a compulsory presentation to the STEM Advisory Panel will be made that includes Level 3 project and a synopsis of the STEM experience.
  - Subsequent Letter of Recommendation signed by all Panel members (teachers & professionals)
  - STEM portfolio compilation may serve as impaction criteria as determined by SSU Selection committee



STEM Certificate Level I

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.

Level 1

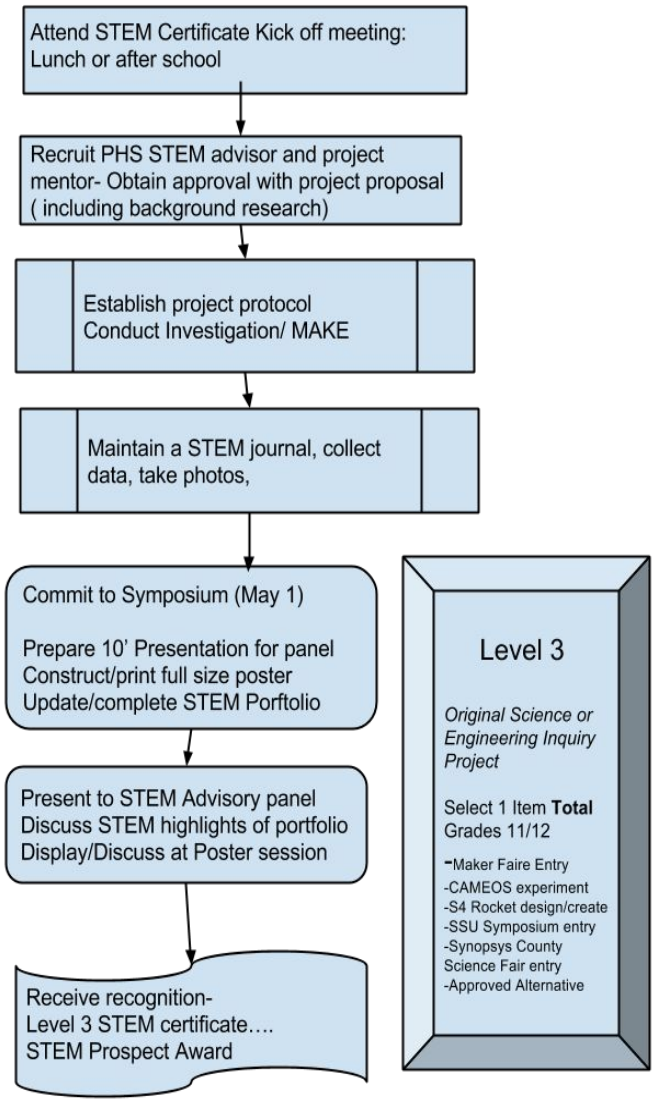
Select 2 Items **Per** Year
Grades 9-12

Acceptable Items May Include:

-Stem Cafe
-SSU/SRJC Colloquium
-Honors Math agreement
-Exploratorium
-Leapfrog
-TrigStar
-Math Steeplechase
-Math Club
-PHAST Club
-STEM Club
-HOSA Chapter
-GIS Day
-Chem /Physics Club
-Athletic Training Club
-SRJC Calculus Camp
-Approved Alternative

*** EdModo STEM code: he6qga....complete progress log turn that into science teacher and you are ready !!

Navigating the STEM Certificate: Level 3



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. Required for the STEM symposium are a 10 minute presentation with slides/graphics reviewing project and its findings to be presented to the STEM advisory panel as well as an official poster of results to be displayed and casually presented to

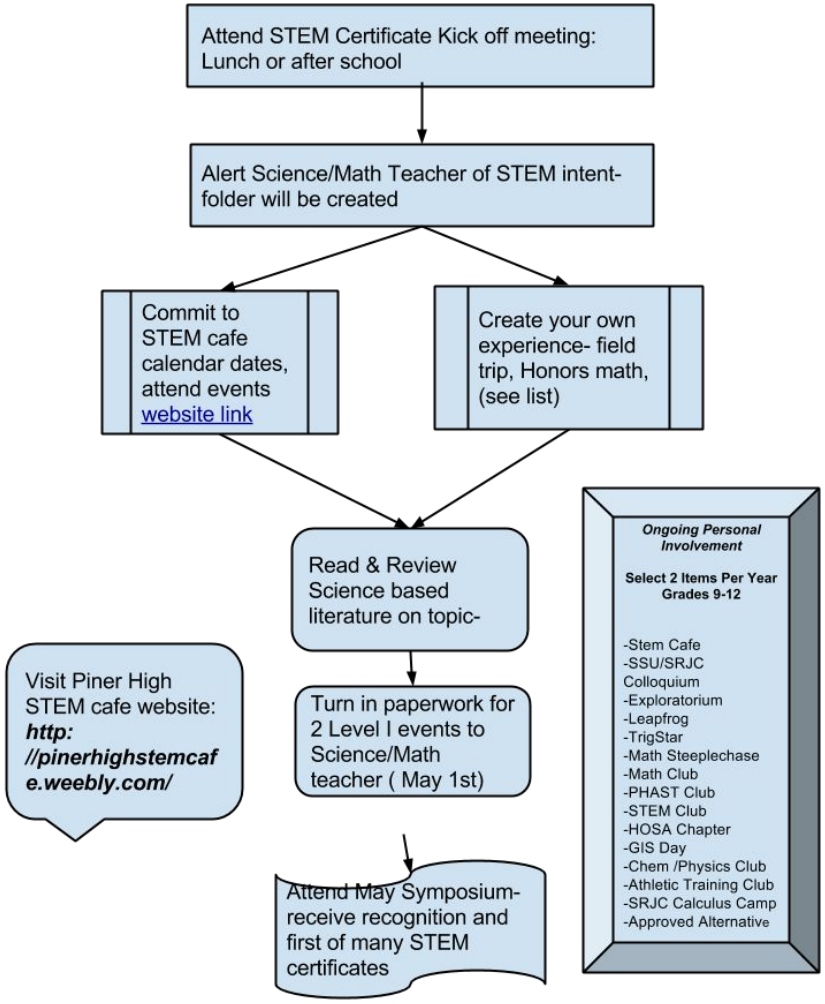
Level 3

Original Science or Engineering Inquiry Project

Select 1 Item **Total**
Grades 11/12
Acceptable Items May Include:

-Maker Faire Entry
-CAMEOS experiment
-S4 Rocket design/create
-SSU Symposium entry
-Synopsys County Science Fair entry
-Approved Alternative

Navigating the STEM Certificate: Level I



public. Written work for STEM portfolio can be reformatted poster pages.
10

STEM Certificate Level 2

Level 2: Community Involvement

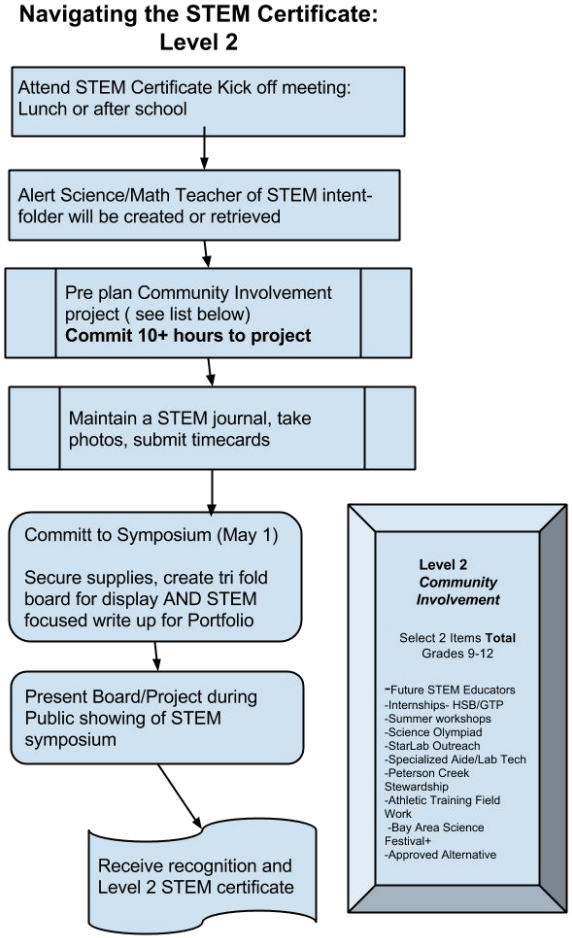
Many STEM careers include a strong community service component. Students completing the PHS STEM Certificate must demonstrate a strong commitment to interacting with and serving our local community. This involves two components: community service and interfacing with local professionals in a professional 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. Project hours will vary but no less than 10 hours are required. Students

Level 2
Community Involvement

Select 2 Items **Total**

Grades 9-12
Acceptable Items May Include:

-Future STEM Educators
-Internships- HSB/GTP
-Summer workshops
-Science Olympiad
-StarLab Outreach
-Specialized Aide/Lab Tech
-Peterson Creek Stewardship
-Athletic Training Field Work
-Bay Area Science Festival+
-Approved Alternative



must write up their experience with a STEM focus and submit documents to their STEM portfolio.