



Santa Rosa City Schools Course Proposal

Middle School Science Academy Elective

Proposal Submitted By: Andrea Correia, Piner Principal, Sarah Kanga-Livingstone (Teacher), Kurt Kruger (STEM Coordinator)

Needs Statement: Discuss how this course fits into your Site and/or the District's goals. Attach minutes of meetings where this course was approved at site or district leadership meetings.

As Piner and other schools in SRCS transition to a Jr./Sr. High School model, it is essential that we provide a developmentally appropriate and engaging science pathway for our incoming 7th and 8th grade students. Currently, students at this level have limited opportunities to explore hands-on, inquiry-based science beyond the core curriculum. Offering a general science elective will help bridge this gap by strengthening foundational scientific skills, fostering curiosity, and preparing students for the rigor of high school science courses.

A general science elective will also serve as an early introduction to programs such as Piner's established 9–12 STEM pathways—including HSB, Engineering, GIS, and other advanced science offerings. By exposing younger students to scientific practices, lab skills, and problem-based learning early on, we can build a stronger pipeline of prepared, confident students who are ready to fully engage in these rigorous, future-focused programs.

This course will further support our district's commitment to improving STEM readiness, particularly for English Learners, Students with Disabilities, and socioeconomically disadvantaged students—groups often underrepresented in advanced science tracks. Through experimentation, collaboration, and real-world problem-solving, students will build confidence, deepen engagement, and strengthen their sense of belonging on our new 7–12 campus.

By implementing this elective, Jr./Sr. High Schools can ensure that all middle-grade students experience a rich and supportive introduction to scientific thinking, laying the groundwork for future success and increasing participation in robust STEM pathways.

Graduation Requirements: Specify which requirement is met. (High School only)

n/a

UC a-g Requirements: Specify which requirement is met. (High School only)

n/a

Explain the rationale for course addition or modification. How does this fit in with district/site goals. If this course is replacing a current course, which course is it replacing and why? Will this course require new sections? Be explicit.

The addition of a General Science elective for 7th and 8th graders aligns directly with both district and site goals to strengthen STEM readiness, increase student engagement, and expand equitable access to advanced learning pathways. As Piner transitions to a Jr./Sr. High School model, our middle-grade students must receive early exposure to hands-on, inquiry-based science that builds foundational skills and prepares them for the rigor of high school coursework.

This elective supports district priorities in several ways:

- **STEM Preparation:** It creates a coherent 7–12 science pipeline that leads into Piner’s established 9–12 STEM pathways, including HSB, GIS, and Engineering.
- **Equity and Access:** It provides meaningful entry points for English Learners, Students with Disabilities, and socioeconomically disadvantaged student groups identified in our Comprehensive Needs Assessment as needing additional academic support and engagement.
- **Belonging and Engagement:** Offering developmentally appropriate electives for 7th and 8th graders strengthens their connection to the school community, a key need identified in YouthTruth belonging and relationships data.

Course Replacement and Section Needs

This course does **not** replace an existing middle school elective, as Piner has not previously served 7th and 8th grade students. Instead, it fills a critical curricular gap by offering a science-focused elective option in addition to the core science course.

To effectively offer this elective, the school will need to create **new sections** specifically for 7th and 8th grade students. Based on projected enrollment, we anticipate the need for:

- **One to Two sections** of 7th/8th Grade Electives

These new sections ensure that middle-grade students have access to a developmentally appropriate elective that supports academic readiness and establishes a strong foundation for future participation in Piner's 9–12 STEM pathways.

Explain the measurable learning outcomes

Measurable outcomes for the General Science elective will be assessed through a combination of academic performance data, skill-based assessments, and engagement indicators aligned with district and site goals. Specifically, we will monitor:

- **Foundational Science Skills:** Pre- and post-assessments aligned to NGSS practices (e.g., modeling, data analysis, lab skills) to measure growth in scientific thinking.
- **Course Performance:** Analysis of student grades, completion rates, and common formative assessments to determine mastery of course standards.
- **STEM Pathway Readiness:** Tracking the number of students who successfully transition into 9–12 STEM pathway courses (Biomed, Engineering, NGSS Biology) after participating in the elective.
- **Equity Indicators:** Monitoring outcomes for English Learners, Students with Disabilities, and socioeconomically disadvantaged students to ensure increased access and reduced gaps in STEM readiness.
- **Student Engagement and Belonging:** Student surveys and YouthTruth indicators to assess improvements in engagement, interest in science, and sense of belonging on the 7–12 campus.

Collectively, these data points will help evaluate whether the course is achieving its goals of strengthening foundational science skills, improving STEM readiness, and increasing engagement among middle-grade students.

Course Description (To be used in the course catalog)

This hands-on, exploratory science elective introduces students to the fundamental concepts and practices of scientific investigation. Through engaging labs, experiments, and real-world problem-solving, students will explore topics across life, physical, and earth sciences while building core skills such as data analysis, modeling, and scientific communication. The course is designed to spark curiosity, strengthen foundational science skills, and prepare students for Piner's 9–12 STEM pathways, including HSB, GIS, and Engineering. This elective supports students of all backgrounds in developing confidence, collaboration skills, and a deeper understanding of how science connects to everyday life.

Detailed Course Design

(Course design should include the objectives, activities, assessments, and standards to be addressed in this course.)

Unit 1: Scientific Inquiry & Lab Skills

Focus: Introduction to science practices

Key Skills:

- Scientific method and experimental design
- Lab safety and proper tool use
- Measuring, graphing, and analyzing data
- Claim–Evidence–Reasoning writing

Sample Activities:

- “Mystery Powder” investigation
- Designing simple controlled experiments

Unit 2: Forces, Motion & Engineering Design

Focus: Physical science foundations connected to engineering pathways

Key Concepts:

- Newton's Laws
- Motion, speed, velocity
- Energy transfer
- Engineering design process

Sample Activities:

- Build-and-test mini catapults
- Marble roller coaster energy challenge
- Motion tracking with simple sensors or apps

- Rockets

Unit 3: Life Science & Human Systems

Focus: Foundations that support Biomedical Science pathways

Key Concepts:

- Cells, tissues, and body systems
- Homeostasis
- Structure and function
- Disease prevention and health science connections

Sample Activities:

- Virtual or hands-on cell model creation
- Pulse and breathing rate experiment
- Simple dissections or simulations (as appropriate)

Unit 4: Earth Systems & Environmental Science

Focus: Earth processes and human impact

Key Concepts:

- Weather and climate
- Water cycles and ecosystems
- Plate tectonics
- Human impact and sustainability

Sample Activities:

- Mini greenhouse effect lab
- Watershed model and erosion investigation
- Designing solutions for local environmental issues

Unit 5: Chemistry in Our World

Focus: Introductory chemistry concepts through safe, hands-on activities

Key Concepts:

- Properties of matter
- Physical vs. chemical changes
- Basic atomic structure
- Mixtures and solutions

Sample Activities:

- Endothermic/exothermic reactions
- Solubility and mixtures lab (“Rainbow liquids”)
- Investigating pH using household substances

Unit 6: STEM Projects & Capstone Exploration

Focus: Synthesis of skills; connection to high school STEM pathways

Key Components:

- Student-driven investigation or engineering challenge
- Presentation of findings
- Career exploration in STEM fields
- Site-based connection to Piner’s Biomed and Engineering programs

Sample Capstone Options:

- Design a prototype to solve a community problem
- Conduct an independent experiment and share results
- Create a digital or physical model of a scientific phenomenon
- Create a project designed after the PINER STEM Goal (UN GOAL)

Budget- budget figures must be included even if they are an estimate.

Projected Costs	Start-up	Ongoing
One (1) section from the general allocation		
	None	None
	None	Training as needed.
	None	None
Total Projected Costs		

Instructional Materials- must include estimates for new materials even if none have been selected. Place in the chart above.

Type	Publisher	Title	ISBN	Author	Copyright	# Have/Need

Funding Source(s) for Costs and Instructional Materials

Grants (indicate specific grant and grant timeline)	
Categorical Funds (include related programs)	Site Title 1/LCAP funds as needed for PD
Career Technical Education (must be for an approved CTE course)	n/a
Department Funds	Site Science (Middle grades)
Other (be specific)	






Appendix of Additional Documents

<u>* Required additional documents include meeting minutes where the course was discussed and approved</u>

District Department Chair Review and Approvals: Science Academy Elective

Department Chair Signatures	Site	Approved / Not Approved
<i>John Lundblad</i>	HCMS	Approved
<i>Katie-Lauren Dunbar</i>	SRMS	Approved
<i>Logan Kaper</i>	MJHS	Approved
<i>Jessica McNiff</i>	CCLA	Approved
<i>Lindsey Qualls</i>	RVMS	Approved

District Principal Review and Approvals: Science Academy Elective

Principal's Signatures	Site	Approved / Not Approved
	RVMS	APPROVED
	Montgomery Jr High	Approved
	Santa Rosa Jr High	Approved
	Comstock Jr High	Approved
	CCLA	Approved.
	Charter School for the Arts	

Course Catalog Information (To be filled by the District Office):

Course Number	
Course Short Title:	
Course Title:	
Number of Credits:	
Grade Span:	
Graduation Requirement:	
Prerequisites:	
Course Department:	
State Course Code:	
A-G Subject:	
CTE Pathway:	
Other Information:	
Projected board meeting date	