



STEM at Westridge

Girls' school graduates are six times more likely to consider majoring in science, technology, engineering, and math (STEM) than their coed peers.

At Westridge, girls are all-in for STEM and see these are fields where women excel. We work to ensure that every student has a command of the fundamentals as well as exposure to a range of advanced ideas that will challenge and inspire them to engage deeper. Across the disciplines, classes are hands-on and lessons are inquiry-based, asking students to think like scientists and create and solve problems like engineers.

Our faculty are experts in their fields who ensure that learning remains connected to real world problems, and we help students understand how new technology can be leveraged and integrated into complex decision-making.

Beginning in Lower School, work is lab-based, and students learn how to analyze data, evaluate sources, collaborate, and problem-solve alone and in teams. By Upper School, students have a full range of challenging STEM curriculum opportunities—ranging from Anatomy and Physiology and Advanced Physics to Advanced Aerospace Engineering and Research in Science, which places seniors in research labs at institutions including City of Hope and Caltech.

Our purpose-built facilities include dedicated science labs for Lower School; seventh grade, eighth grade, and Upper School biology, chemistry, and physics courses; the STEAMWork Design Studio makerspace; and the Westridge Permaculture Lab.





Science

Our program in the natural and physical sciences provides students with fundamental and advanced scientific skills. We prioritize inquiry-based explorations and evaluating and applying information above content memorization, while fostering a love for the discipline and curiosity about the natural world.

LOWER SCHOOL

Inquiry-based, hands-on, and collaborative with an emphasis on developing scientific thinking skills, our integrated science program helps students learn scientific concepts in life, earth, and physical science along with engineering design process principles. Classes meet every other day.

MIDDLE SCHOOL

Students take Life Science in seventh grade and Earth and Physical Science in eighth grade. Experimental design and analysis and communication of scientific conclusions are emphasized, and students conduct independent experiments. Students explore topics relevant to their lives, such as climate change and DNA research. A STEAM Oceans elective is also available for those who want to dive deeper.

UPPER SCHOOL

All students in ninth grade take Biology I, and in tenth grade, Chemistry I or Honors Chemistry I. After that, offerings expand to include many electives and Westridge Advanced Courses in physics, chemistry, biology, and environmental science. In the Research in Science elective, seniors are paired with institutes such as Caltech and Carnegie Observatories for hands-on research in fields ranging from structural biology to control and dynamical systems engineering.



Computer Science & Engineering (CSE)

Our robust CSE program provides students with skills to create solutions in digital and physical realms. We teach design thinking, provide tools students need to be facile creators, and use collaborative/iterative processes students will use in college and beyond.

LOWER SCHOOL

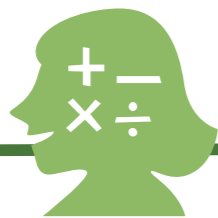
Students begin their journey in fourth grade with a STEM course exploring a variety of topics in science, technology, and engineering, including coding, robotics, and environmental science and sustainable practices. In fifth and sixth grades, students continue technology education through the lens of digital literacy, rocketry, and robotics.

MIDDLE SCHOOL

Girls learn how to code in Scratch and Processing in seventh grade. They design and 3D print using OnShape, focusing on the engineering design process. In eighth grade, students code in Python, build and code computers in Arduino, and design their own apps. All students can also enroll in Coding and Game Design, Rocketry, or STEAM: Permaculture as elective courses.

UPPER SCHOOL

Beginning fall 2025, the CSE department will offer a four-year computer science pathway, which will take students from the basics to building enterprise-grade software in the CSE Capstone course. We also offer students up to four years of aerospace engineering with topics including rockets, satellites, aircrafts, and landing vehicles and with student responsibilities growing to include systems engineer and project manager roles. Elective options include Rocketry, Robotics, Permaculture, and Sustainable Building and Design.



Math

Our program provides a foundation in fundamental and advanced skills and conceptual understanding. Courses balance discovery-based learning and direct instruction, devote significant time to collaborative work, and emphasize broad applications of math, so students understand the many ways of being mathematical.

LOWER SCHOOL

Math classes in Lower School meet every day because we believe that more frequent practice is crucial for younger students' success. We provide structured opportunities for support outside of class and offer a highly popular after-school Math Club and Math Field Day.

MIDDLE SCHOOL

In Middle School (and Upper School), we follow a block schedule, which allows for longer meeting periods every other day. Seventh graders take Pre-Algebra, and eighth graders take Algebra. In addition to more varied work in the classroom, we also provide a teacher-run Math Lab to support Middle School students. Teachers are available for extensive support outside of classroom time.

UPPER SCHOOL

In Upper School, students have a wide range of courses available to them—beginning with Geometry and moving through Algebra II, Pre-Calculus, Advanced Calculus, Advanced Statistics, and more. They can apply to be Math Fellows, who provide homework help and skill development support in our Math Center (available to all students in all levels). The student-run Math Club has spanned both math competitions and explorational activities.