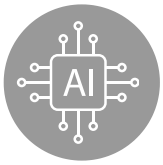
AMSE INSTITUTE



AMSE Junior High Program Catalog

2026/2027 AMSE AFTER SCHOOL PROGRAM OFFERINGS

Junior High Programs



<u>Artificial Intelligence (AI)</u>
Day & Time: Monday, 3:15 - 4:45 pm
Duration: Semester, August - November
Fee - $325

In today's rapidly evolving technological world, understanding artificial intelligence (AI) and machine learning is becoming an essential skill for the next generation of innovators. This hands-on program introduces junior high students to the exciting possibilities of AI through interactive projects, creative challenges, and real-world applications.

Students will explore foundational AI and machine learning concepts while using Micro technology to design, build, and test innovative solutions. Through engaging activities, students will learn how computers can recognize patterns, process information, and make decisions while developing essential skills in computational thinking, creativity, collaboration, and problem-solving.

This program encourages students to become creators—not just users—of technology as they explore how AI is shaping the future of science, engineering, and everyday life. No prior programming or AI experience is required; students of all experience levels are welcome.

Code Warriors - Explorers
Day & Time: Thursday, 3:30 - 4:45 pm
Duration: Semester, August - November
Fee: $425

Code Warriors Explorer students begin by exploring the fundamentals of programming through industry-standard languages such as C, C++, and Python. Throughout the course, they will learn real-world applications of each language while developing practical coding skills through hands-on projects. The program culminates in an engaging project and an immersive field trip, providing students with opportunities to apply their knowledge in meaningful ways.

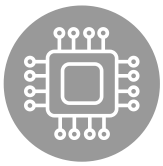
This program is designed for students of all experience levels—beginners are welcome! The only prerequisite is curiosity and a willingness to learn.

Repeat students are welcome and may benefit from reinforcing and expanding their coding skills. However, students seeking a completely new experience are encouraged to enroll in Code Warriors Questers, which offers an alternate curriculum and project-based learning opportunities.

Code Warriors - Questers
Day & Time: Tuesday, 3:30 - 4:45 pm
Duration: Semester, August - November
Fee: $425

Code Warriors Questers takes students beyond the fundamentals of programming through an interdisciplinary approach that connects coding with emerging technologies and real-world problem-solving. Using Python as the primary programming language, students will build practical coding skills while exploring its applications across a variety of fields. The program also provides a comprehensive introduction to artificial intelligence, examining its growing role in software development while teaching students how to use AI responsibly, ethically, and effectively as a coding tool. Throughout the semester, students will apply their knowledge through engaging, project-based learning experiences.

This program is recommended for students who have completed **Code Warriors Explorers** or who have some prior coding experience. However, there are **no prerequisites for enrollment**, and motivated beginners are welcome to register. A curiosity for technology and a desire to learn are the only requirements.



Electronics Fundamentals
Day & Time: Wednesday, 3:30 - 5:00 pm
Duration: Semester, August - November
Fee - $575

Electronics Fundamentals is a hands-on course that introduces students to the core principles of analog and digital electronics. Through a combination of direct instruction and project-based learning, students gain practical experience building and troubleshooting real-world electrical systems. Projects include wiring outlets, switches, motion detectors, doorbells, and appliance plugs, as well as creating digital LED displays, motor control systems, LCD message displays, and a solar battery charger.

Students will learn electrical safety, circuit design, schematic reading, series and parallel circuits, electrical measurements, AC/DC power, wiring techniques, and troubleshooting methods. The course also explores digital electronics, including binary systems, microprocessors, transistors, integrated circuits, motors, displays, and solar components. By the end of the program, students will have developed valuable technical skills such as wire stripping, crimping, testing circuits, programming microprocessors, controlling LEDs, and displaying information on LCD screens.



Health & Wellness
Day & Time: Monday, 3:30 - 4:45 pm
Duration: Semester, August - November
Fee - $325

The Junior High AMSE Health & Wellness program introduces students to the 11 major systems of the human body, including the structure and function of the human brain through engaging, hands-on learning experiences. Students will investigate how the body's systems work together to maintain physical health and explore the connections between physical, mental, emotional, and social well-being.

Throughout the program, students will participate in interactive labs, dissections, scenario exploration, and collaborative activities that encourage scientific and critical thinking. They will also build research and presentation skills by investigating topics related to human biology and sharing their findings with classmates. This program seeks to foster curiosity regarding physical and mental health and cultivate an appreciation for the complexity of the human body and the importance of lifelong healthy habits.

Repeat students welcome.



Math Team
Day & Time: Friday, 2:35 - 4:00 pm
Duration: Yearlong, August - March
Fee - $250

The VCJH Math Team provides students with opportunities to deepen their mathematical understanding while connecting with peers who share a genuine passion for mathematics. Mentored by VCHS Math Team students under the guidance of VCHS Mathematics Instructor Dr. Theodore Shim, team members develop collaboration and teamwork skills, strengthen critical thinking abilities, and expand their problem-solving strategies through rigorous training and competition experience.

The VCJH Math Team is intended for highly motivated students who demonstrate strong academic performance in mathematics. It is designed not as a tutoring program, but as an enrichment opportunity for students seeking advanced mathematical challenges. Team members represent VCJH in a variety of prestigious regional, national, and international competitions, including Mathleague, ASMA, CAML, and MathCounts.

During the 2025-26 school year, 30 students qualified for the NorCal State Championship in Mathleague, and the team also earned First Place with Special Merit in the ASMA competition and ranked highly in Northern California in the CAML competition.

Repeat students welcome.



<u>Ocean Discovery - A</u>
Day & Time: Tuesday, 3:30 - 4:30 pm
Duration: Semester, August - November
Fee - $375

Dive into the wonders of the ocean with the Ocean Discovery program!

Students will explore the exciting worlds of marine biology and ocean engineering through hands-on activities, up-close encounters with marine life, and the opportunity to care for one of our many aquariums. Every day brings a new adventure—from discovering ocean ecosystems to investigating fascinating sea creatures. Best of all, this program features unique content not included in the in-class Ocean Discovery elective, including an engineering portion where students will design and build their own aquarium and all components needed to replicate an ocean environment.

Students can enjoy both elective and after-school program experiences without repetition!

The same program is also offered on Thursdays to accommodate interest in this popular subject.



<u>Ocean Discovery - B</u>
Day & Time: Thursday, 3:30 - 4:30 pm
Duration: Semester, August - November
Fee - $375

Dive into the wonders of the ocean with the Ocean Discovery program!

Students will explore the exciting worlds of marine biology and ocean engineering through hands-on activities, up-close encounters with marine life, and the opportunity to care for one of our many aquariums. Every day brings a new adventure—from discovering ocean ecosystems to investigating fascinating sea creatures. Best of all, this program features unique content not included in the in-class Ocean Discovery elective, including an engineering portion where students will design and build their own aquarium and all components needed to replicate an ocean environment.

Students can enjoy both elective and after-school program experiences without repetition!

The same program is also offered on Tuesdays to accommodate interest in this popular subject.



RoboQuest - Explorers
Day & Time: Wednesday, 3:35 - 4:50pm
Duration: Semester, August - November
Fee - $550

RoboQuest Explorers is a semester-long STEM robotics program that introduces students to the fundamentals of robotics through hands-on design, construction, and programming. Students work collaboratively to build and refine their own robot while developing engineering, coding, and problem-solving skills.

Throughout the semester, participants will have opportunities to put their robots to the test through competitive challenges. Because the curriculum covers foundational robotics concepts, this program is intended for first-time participants. Students who have previously completed RoboQuest are encouraged to continue developing their skills by enrolling in RoboQuest Questers, which offers more advanced challenges and learning opportunities.



RoboQuest - Questers
Day & Time: Monday, 3:35 - 4:50pm
Duration: Semester, August - November
Fee - $650

RoboQuest Questers is an advanced semester-long STEM robotics program designed for students who are ready to expand their engineering, programming, and problem-solving skills through increasingly complex robotics challenges. Participants will design, build, program, and refine their own robot while exploring more sophisticated strategies and mechanism capabilities. Throughout the semester, students will have opportunities to test their robots in a variety of challenges that encourage innovation, teamwork, and creative thinking.

This program is ideal for students with some prior robotics experience or a basic understanding of robotics concepts, though no prerequisites are required to enroll. Students seeking an introductory program are encouraged to join RoboQuest Explorers.