

FULL S.T.E.A.M. AHEAD AT MADEIRA

By Sean Brunett, Madeira School



The world is changing, and Madeira graduates are ready for it. The increasing emphasis that Madeira has placed on its S.T.E.A.M. program ensures that its students will be able to compete and flourish in fields that have traditionally been male-dominated.

Incorporating the “A” (for “Arts”) into the more technically driven S.T.E.M. concept, Madeira recognizes that artistic elements lie at the heart of creativity, not just in the humanities but in technical endeavors as well.

Learning Resilience through Failure

Madeira believes it is vital for students to learn critical thinking skills that are applicable in every industry. Ninth-graders are required to take a course titled “Fundamentals of S.T.E.A.M.,” which develops research and critical thinking skills as well as techniques of measurements and data. Students become project managers and work as a group to design a product that overcomes an engineering challenge. Students are expected to fail in their initial attempts. Learning from failure and developing resilience is a key component of the class because students use critical thinking to determine what went wrong and why.

The Latest Tools and Technology

To facilitate interdisciplinary problem solving, Madeira installed a Maker Space and Fab Lab. The Maker Space is a creative space that hosts materials and tools and is the perfect shop for students to build their projects. The Fab Lab, a “clean room,” contains a 3D printer and laser cutter so that students can take full advantage of emerging technologies. High school internships for real-world experience/experiential learning is especially important in the S.T.E.A.M. disciplines, where a

hands-on approach enables students to understand complex ideas and make connections between abstract concepts and real-world applications. Madeira’s co-curriculum internship program has been providing valuable experiential learning to students for more than 50 years, and each year, Madeira secures more placements in S.T.E.A.M.-related fields.

Medical, Engineering, Computer Science, and Design Internships

This year, for instance, a student interned at the George Washington University Hospital Cancer Center, where she worked on a project testing ovarian cancer cells. Another Madeira student just completed her senior year internship in Portland, OR at Oregon Health and Science University. She shadowed a plastic surgeon, following the patient process from beginning to end. In a more design-oriented placement, a student worked at Illustrate My Design on computer modeling and interior design. In the engineering world at K2M, Madeira students have helped in designing artificial spines. Another avid computer science student interned at General Dynamics, working on various stages of application design and development.

New LEED S.T.E.A.M. Center

Madeira has a long history as an innovator. The school’s proposed new S.T.E.A.M. Center for Innovation and Collaborative Learning will bring all of the departments involved in S.T.E.A.M. together under one roof and is designed to meet LEED standards for environmental sustainability.

Madeira’s matchless program, which features a solid academic foundation plus real-world work in experiential internships, uniquely prepares its students for success.