

LEARNING BLADE:

Innovative Curriculum Promotes STEM Careers

Learning Blade delivers an engaging supplemental online curriculum designed to raise awareness of STEM careers while helping students see the relevance of often-demanding math and science academics. Through “missions” such as helping an injured dolphin, building an orphanage after a major earthquake, or solving energy and transportation needs in a new city, students tackle interesting challenges while seeing how STEM skills are essential to finding solutions.

First adopted in Ohio schools in 2017, the program is geared toward middle school and early high school students, said Sheila Boyington, President of Thinking Media, the creators of Learning Blade. “Lack of awareness about STEM opportunities is the biggest barrier to getting more students to consider this career path,” Boyington said. “Learning Blade provides an entertaining forum for allowing them to explore a wide range of STEM careers, including advanced manufacturing.”

Research shows that, after using Learning Blade, students are 59 percent more likely to consider a STEM career and 84 percent more likely to consider a career that involves making something, Boyington said.

Each activity is connected to state and national academic standards with an emphasis on problem solving, critical thinking, teamwork and communications. For instance, students learn how to use modern manufacturing techniques to design and build a new concept car. Along the way, students must master concepts not only in math and science but also social studies and English.

Learning Blade launched in Ohio in the 2017 – 2018 school year with over 100 schools engaged. More than 4,000 students participated in the Learning Blade missions with over 43,500 STEM lessons completed. Usage is continuing to grow and data indicate tremendous increase of interest in STEM careers following use.

The curriculum system includes a mission focused on lightweight metals for airplanes that was created in collaboration with LIFT (Lightweight Innovations for Tomorrow), a public-private partnership that develops and deploys advanced lightweight materials manufacturing technology. LIFT also implements education and training programs to prepare the workforce. Other supporters of Learning Blade’s efforts include the Ohio STEM Learning Network, Battelle, The Ohio Manufacturers’ Association and the Ohio Small and Rural School Collaborative.

Learning Blade can be used as a self-paced activity and to complement project- or lab-based activities without extensive teacher training or classroom materials. For schools with 3D printers, Learning Blade includes some missions that include ready-to-print files that can be used to demonstrate STEM principles, such as adjusting a wind turbine design, designing a prosthetic hand or testing a structure on a seismic shake table.

“What I love is that Learning Blade gives kids the opportunity to be exposed to careers they may have never even heard of before and how they can apply their education to those careers down the road,” said Mike Sloan, 7th grade science teacher at Graham Middle School in St. Paris.



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