

FAQ for the Autodesk VEX Robotics Curriculum

What is the new curriculum? The Autodesk VEX Robotics Curriculum is a 17-unit, flexible, modular curriculum that aligns classroom use of the popular VEX Educational Robotics System with powerful Autodesk Inventor software. Each unit incorporates a concept and a hands-on activity keyed to a principle of engineering and/or robotics, then tied to STEM education standards. It also includes a set of Instructor Resources. Each unit is structured to follow a typical design process, each including a *Think* (conceptualizing), *Create* (designing), *Build* (hands-on), and *Amaze* (assessment) phase.

What are some of the key features of this curriculum? The curriculum is designed specifically for classroom use with input and review from teachers. It curriculum is easy to use and flexible so that you can adjust its use to suit your academic focus or classroom pace. The curriculum clearly sets out and directly maps to STEM connections, national academic standards, and STEM standards. “Quick Start” tutorials make using Autodesk Inventor software easy and relevant, so that real-world concepts of digital design and digital prototyping can be learned along with core academics. The hands-on activities afford students a chance to see the results of their computer-based work by directly applying what they have learned to build an actual robot. Each unit of the curriculum is structured to cover the design process, including: scientific and engineering concepts; 3D solid modeling, digital prototyping & visualization; hands-on building of a robot; an engineering notebook and classroom challenges and presentations.

Who developed this curriculum? This curriculum is co-developed by Autodesk and VEX Robotics, based on requests and input from teachers and students –all of whom are involved with teaching or learning STEM or robotics, and many of whom are involved in various educational robotics programs and competitions. The development team includes robotics and software experts, industry specialists, education market specialists, classroom educators, and robotics education leaders. Teachers on the curriculum team have a track record of demonstrated success in curriculum design and in STEM or robotics, and they contributed ideas, actual content, connections with standards, and content around both instructor resources and tips for activities including robotics competitions. They also participated in curriculum review and critique. Together, Autodesk and VEX Robotics have a combined 50+ years in robotics education programs and competitions.

Who will use this curriculum? Educators and students – primarily in high school but also in middle schools, vo-tech education environments, and even early postsecondary engineering courses. They will use this curriculum in STEM courses, in robotics or foundation engineering courses, or in project-based/hands-on learning environments incorporating science, technology, engineering, math, or digital design. Currently, both VEX Robotics and Autodesk Inventor are used in middle- and high-school classrooms, in community colleges, and robotics competitions around the world, and in college/university engineering programs.

Why would I use this curriculum? Robotics has become a catalyst for inspiring and motivating students in schools around the world to learn more about science, technology, engineering, and math (STEM). In

fact, a recent study shows that 89 percent of students who participated in robotics better understood the role of science and technology in their everyday life, while 69 percent said that participating in robotics made them more interested in science and technology careers.*

As a platform for teaching and learning STEM and robotics, this curriculum has solid academic value and relevance for teachers, as well as engaging and fun learning for students.

This curriculum is designed to help students master the fundamentals of robotics and the engineering design process, while learning to use industry-leading Autodesk Inventor software and the leading classroom robotics solution, the VEX Classroom Lab Kit. The 17 independent units in the curriculum focus on fostering critical thinking, problem solving, and on core robotics and engineering principles – including Gears/Chains & Sprockets, Friction & Traction, Linkages, and Systems Integration.

At the same time your students are learning about robotics, science, technology, engineering, and math – they’re learning about design, problem solving, creativity, and teamwork.

How can I learn more about this curriculum? Call Visucate at 800-511-8022 or visit the website www.vexrobotics.com/vex-education.shtml.

How do I get this curriculum? This curriculum comes with the popular VEX Robotics Design System Classroom Lab Kits at no additional charge. You can also purchase the curriculum individually. To learn how call Visucate at 800-511-8022.

How many students are involved in classroom robotics and robotics events each year? It is estimated that approximately 140,000 students around the world participated in robotics programs in 2006. VEX Robotics is currently used in over 2,000 classrooms giving students a fun new way to learn academically rigorous STEM subjects.

How do I make sure to get Autodesk Inventor to use with my VEX Robotics kit? A full license of Inventor software is automatically included at no additional charge with the VEX Classroom Lab Four Bundle Package.

Can you tell me more about Autodesk’s Education programs? Autodesk is committed to supporting students and educators worldwide by providing them powerful 2D & 3D software and innovative programs and resources. By supporting educators to advance STEM knowledge and skills Autodesk is helping prepare students for future academic and career success in a challenging global economy and society. To learn more about Autodesk education programs and partnerships, visit www.autodesk.com/education.

How do I learn more about VEX Robotics? To learn more about VEX Robotics, visit www.vexrobotics.com. And to learn about a variety of different robotics programs, partnerships and events, visit: www.robotevents.com, a web community of educators, students, and robotics enthusiasts that is co-sponsored by Autodesk and VEX.

* American Society for Engineering Education, “ASEE Announces Newly Improved K-12 outreach Program Database,” American Society for Engineering Education (April, 2006)

