Missouri’s STEM Occupations and Education
Occupations in the areas of Science, Technology, Engineering and Mathematics (STEM) are some of the most in-demand and highest paying jobs in Missouri. As innovations in the workplace continue to expand into the 21st Century, the need for employees with increasing STEM knowledge will grow as well. In Missouri, the projected job growth through the year 2022 for STEM occupations is higher (+10.2%) than the average expected combined growth for all occupations in the state (+8.6%).

The key to meeting the increased demand for STEM-skilled employees is education. Of the 100 plus occupations classified as STEM in the State of Missouri, all but one requires education or experience beyond the high school level, and 79% require a bachelor’s degree or more.
To meet the growing demand in education, some schools have begun to gear curriculum to the needs of STEM employment. Starting in middle school, educational programs focusing on project-based, hands-on learning experiences have become a part of a student’s everyday academic life. Organizations such as Project Lead The Way (PLTW) are helping schools not only in Missouri, but across the country, to better provide the collaborative educational programs needed for STEM employment. Through activity-, project-, and problem-based curriculum, PLTW gives students in kindergarten through high school a chance to apply what they know, identify problems, find unique solutions, and lead their own learning. Including University partnership and affiliated schools, there are 270 Missouri schools participating in the PLTW curriculum, 98 of which are PLTW certified schools. By starting STEM curriculum in primary school, interest in STEM skills may begin early and continue throughout high school and beyond.

The benefits of a STEM education can be immediately seen for students who continue their education beyond the high school level. Those earning associate degrees or certificates and gaining experience in the STEM disciplines out-earn their non-STEM counterparts. On average, persons with education or experience beyond the high school level, but short of a bachelor’s degree, earn $51,585 a year in STEM occupations. Conversely, individuals with the same education and experience in non-STEM occupations earn on average $40,975 a year. This means that in a typical year, persons who focused their education and work experience in areas related to STEM occupations earn 27% more than their non-STEM coworkers. These occupations tend to be of a more skilled entry-level, such as Technician, and concentrated in the areas of Drafting, Engineering, Life and Physical Sciences.

The advantages of a STEM education in Missouri continue at the bachelor’s degree level. Not only do those with a bachelor’s degree in STEM-related disciplines earn an average of 24% more than their non STEM counterparts, but the demand for STEM-related occupations at this educational level outpaces non-STEM occupations as well.
During the projections period of 2012-2022, STEM occupations requiring the completion of a bachelor’s degree is projected to increase by 10.4%, while similarly qualified non-STEM occupations are projected to grow by 9.1%.

Even at the highest degree levels, masters and doctoral degrees, a STEM education is valuable. Advanced degree STEM occupations earn an average of $75,752 annually and wages are expected to grow by 11% from 2012 to 2022. Postsecondary Teachers comprise the largest occupational group at the doctoral and masters degree educational level. Advanced degrees in Life, Physical and Social Science make up the second largest part of STEM occupations with doctoral or professional degrees.
STEM education needs to continue to be an important part of Missouri’s school curriculum from elementary school, to high school and beyond. This emphasis is supported by state cooperative programs such as the Missouri AfterSchool Network (MASN), a system designed to improve, support, and sustain high quality afterschool programs. In addition, national programs such as the PBS show SciGirls, encourage young girls to pursue a STEM education using a hands-on STEM approach in solving real world problems. A STEM-focused education continues into high school and is further supported by organizations such as the Midwest Afterschool Science Academy (MASA) as well as the Missouri Mathematics and Science Coalition, which works to bring educators, businesses, government agencies and community organizations together for the purpose of improving Missouri’s STEM education and employment. Beyond high school, scholarships and loan forgiveness programs have been established in Missouri to help those pursuing a degree in STEM-related fields.

Continuing and improving education in the fields of Science, Technology, Engineering and Mathematics is a key part of Missouri’s employment future. As more and more occupations place an emphasis on the experiences and knowledge found within these disciplines, the greater these skills will be in demand.

STEM definition developed by the Standard Occupation Classification Policy Committee using the 2010 SOC system. This report covers those occupations determined by the committee to be CORE STEM occupations in the fields of Life, Physical and Social science, as well as Engineering, Mathematics, and Information Technology.

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