Charles County Public Schools (CCPS) has a vision to develop science, technology, engineering and math (STEM) courses for students. Each year, the school system builds on its vision to develop programs and partnerships that prepare students for careers in STEM-related fields.

Work began in the late 1980s with the assignment of a certified science teacher at each elementary school, which was innovative at the time and is still a rarity. North Point High School for Science, Technology and Industry, wireless schools and centers, advanced academic offerings and special STEM programs are propelling the system forward in its efforts to excite and interest students in STEM.

The STEM journey continues. CCPS is working with committed partners, colleges and universities, and the federal government to provide students with cutting edge technology and programs.

CCPS plans to include a digital classroom and Science on a Sphere in its next new high school. The digital classroom is a multi-use dome theater that uses high resolution and three-dimensional graphics to enhance learning experiences. Technology in the classroom serves as a teaching tool and focal point for students throughout the county in prekindergarten through grade 12. Plans include inviting well-known celebrated speakers from around the world to offer students and the community access to global content.

The mission of Charles County Public Schools is to provide an opportunity for all school-aged children to receive an academically challenging, quality education that builds character, equips for leadership, and prepares for life, in an environment that is safe and conducive to learning.
**STEM Programs**

**Rescue the Gulf Robotics**
Students are exposed to robotics, engineering design process, environmental issues and scientific investigations through a program called Rescue the Gulf. Students learn and investigate problems and solutions within the classroom. This is an in-school program for grades five and seven.

**Summer Robotics Program**
The summer robotics program offers students advanced robotics and engineering challenges. The week-long camp is sponsored by Charles County Public Schools and the Naval Surface Warfare Center, Indian Head Division. Students are engaged in a series of science and engineering problems, various engineering and robotics challenges and a research project.

**High School VEX Robotics**
The study of robotics captures all components of STEM, while a competitive environment increases motivation. VEX Robotics projects encourage teamwork, leadership and problem solving among groups. These teams compete at the high school level and each school has between three and five teams.

**Charles County High School FIRST Robotics Team (FRC)**
The FRC team is composed of students from all Charles County public high schools. FRC challenges teams of young people to solve a common problem in a six-week timeframe using robots. The teams then compete in games and challenges.

**Go Places with Math and Science**
“Go Places with Math and Science” is a partnership with the Indian Head Naval Surface Warfare Center (NSWC) and the College of Southern Maryland. It provides engineers and scientists who work with teachers to co-author and co-teach math and science classes. The hope is by sharing the expertise of professionals with students, CCPS can strengthen its math and science curriculum and begin to grow the county’s own skilled workforce in critical shortage areas like engineering and science.

**Project Lead the Way**
Project Lead the Way® (PLTW) offers a dynamic high school program that provides pre-engineering courses and hands-on experiences. This course sequence is offered to students interested in engineering, biomechanics, aeronautics, and other applied math and science fields. Upon completion of the course sequence, students have earned college credit to a two-year or a four-year college or university.

**Magic Planet**
Magic Planet is a 3-D digital globe that gives students an astronaut’s view of the Earth. The globe grabs students’ attention, making it easier for teachers to convey important information. Charles County is one of four school districts in the nation that owns and uses a Magic Planet in classrooms as part of the educational process.

**Mathematics, Engineering and Science Achievement (MESA)**
Maryland MESA prepares students for academic and professional careers in mathematics, engineering, science and technology. The program’s goals are to increase the number of engineers, scientists, mathematicians, and related professionals at technical and management levels. It also serves as a driving force in encouraging and assisting minorities and females in achieving success in STEM fields. CCPS has high student participation in MESA at all schools.

**Space Foundation Partnership**
Teachers learn about rockets, space transportation, black holes or if there is life on Mars through a summer Space Discovery Institute offered through a partnership between Charles County Public Schools and the Colorado Springs-based Space Foundation. The Space Foundation’s education programs support teachers and prekindergarten through grade 12 students using standards-based curriculum that integrates STEM concepts in all content areas. On-going professional development opportunities are offered to teachers and classroom support staff.

**Field trips**
STEM-related field trips enhance a student’s education by providing exposure to valuable community opportunities outside of the regular school experience with the support of a teacher. STEM-focused field trips students attend include:
- Baltimore Aquarium
- Maryland Science Center, Science on a Sphere
- MESA Day
- Inspiring Scholars Day, University of Maryland, Baltimore County
- Women in Engineering Day, University of Maryland, College Park
- Youth Technology Summit, College of Southern Maryland