"Our future depends on reaffirming America’s role as the world’s engine of scientific discovery and technology innovation, and that leadership tomorrow depends on how we educate our students today, especially in math, science, technology, and engineering."

-Barack Obama, 44th president
**WHY STEM?**

St. Mary's County Public School System has developed a rigorous and unique program of study emphasizing the core areas of mathematics and science with an infusion of technology and engineering. This STEM program is offered to all SMCPs students and housed at three schools: Lexington Park Elementary School, Spring Ridge Middle School, and Great Mills High School. The proximity of these three schools to the Patuxent River Naval Air Station and the Technology Corridor make them ideal sites.

**WHY DO WE NEED STEM EDUCATION?**

**RIGOR**
- Extensive laboratory experiences using the most contemporary technologies for scientific inquiry, mathematical calculation, engineering design, and problem-solving techniques
- Exposure to numerous and diverse technological applications including: computers, simulation software, digital imaging, data acquisition, sensors, diagnostic, and other peripheral devices

**RELEVANCE**
- Curricula that integrates analytical reading and technical writing skill development
- Intensive communication assignments designed to refine verbal and visual communication abilities
- Participation in nationally recognized academic and engineering competitions

**UNDERSTANDING**
- Emphasis on critical and creative thinking in all academic coursework
- Interdisciplinary approach to curriculum, stressing complete understanding of systems

**APPLICATION**
- Culminating projects done cooperatively and individually to demonstrate and apply learned concepts
- Highly focused academic and career counseling to help facilitate transition to higher education and careers in science, technology, engineering, and mathematics
- An environment of intellectual and technical exchange with local business and industry mentors to promote awareness and interest in diverse careers in science and engineering

**OTHER KEY FEATURES OF STEM ACADEMY**

**PROJECT-BASED LEARNING**
The focus of STEM 6-8, along with the accelerated study of science and mathematics, allows students the opportunity to apply learned concepts through project-based tasks that emphasize application and synthesis. Students develop and refine research skills through science fair and Capstone presentations. Robotics and coding applications are also incorporated for student engagement.

**RIGOROUS STUDY**
Students in STEM 7 participate in a STEM pre-engineering course, exposing students to Engineering Design Processes and project-based assignments. STEM 8 students enroll in Foundations of Computer Science, laying the foundation for study in this critical field. Through Algebra, Geometry, Spanish, Foundations of Computer Science, and Pre-Engineering students are earning high school credits while still in middle school.

**SAMPLE FIELD EXPERIENCES**
STEM 6 students have the unique opportunity to attend Space Camp in Huntsville, Alabama. Students participate in state-of-the-art simulations, missions, rocket building and robotics to foster teamwork and self-confidence. Students also attend field experiences that may include Elms Beach, the Natural History Museum, Webster Field at St. Inigoes and NASA Goddard. STEM 7 will take a trip relevant to the focus of life sciences. STEM 8 studies American History in Williamsburg, VA.

*Field experiences are subject to change.*
HOW WILL STUDENTS BE ASSESSED?

Students in the STEM Academy are challenged at all levels to demonstrate mastery of concepts by applying them to real-world settings. Each academy will have a culminating CAPSTONE project that focuses on an approved problem that integrates mathematics, science, and technology as part of the solution. In middle school, the focus will be on developing each student’s specific talents. Students also take local assessments, state assessments, to include MCAP, and ongoing formative assessments to monitor student learning.

WHAT DOES SPRING RIDGE STEM ACADEMY LOOK LIKE?

The Spring Ridge Middle School STEM Academy offers tailored mathematics, science, and technology courses. The courses are designed to deepen understanding of STEM learning by exposing students to the most current trends in technology, engineering, and science.
APPLICATION PROCESS AND ACADEMY REQUIREMENTS

Access the online application form on the St. Mary’s County Public School website: http://www.smcps.org/academies

Each application will be reviewed by an admissions team comprised of educators and administrators who will, in turn, make acceptance recommendations to the academy for accepting members into the program. Candidates will be evaluated based on their past academic performance, dedication to learning, and desire to pursue STEM.

ADMISSION CRITERIA

- Local Assessment Measures
- Examination of Transcript
- Science & Math Grade Point Average
- Application Constructed Response
- MCAP ELA and MCAP Math Scores

For more information, please contact:

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SAMPLE STEM MIDDLE SCHOOL SEQUENCE

<table>
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<tr>
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<td>Spanish I*</td>
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*denotes a class that fulfills a high school graduation requirement

Foundation

A 501(c)3 tax exempt foundation will provide a vehicle for community members and business partners to donate funds to support the goals of the STEM initiative.