



# STEM Academy for Environmental Studies at Memorial Middle School

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@MemorialMS



**Rockdale County  
Public Schools**

*Specialty & Choice Options*

## Program Overview

Today's society has become increasingly complex and competitive. Success is not only based on what you know, but also on what you can do with what you know. It's more important than ever for our youth to be equipped with the knowledge and skills to solve tough problems, gather and evaluate evidence, and make sense of information. These are the types of skills that students develop by studying science, technology, engineering, and math—STEM.

STEM education is an integrated, interdisciplinary approach to learning that provides hands-on and relevant learning experiences for students. STEM teaching and learning goes beyond the mere transfer of knowledge. It engages students and equips them with critical thinking, problem solving, creative and collaborative skills, and ultimately establishes connections between the school, work place, community and the global economy. STEM also helps students understand and apply math and science content, the foundations for success in high school, college and careers.

### 6th grade - Introduction to Environmental Science and Engineering

While this is the first time students will have a dedicated research class and rigorous lab equipment set up to allow exploration in STEM, the primary focus of student learning coincides with 6th grade Next Generation Science Standards curriculum in Earth Science with an emphasis on weather, soil/water/air quality, and engineering.

### 7th grade - Citizen Science & Bioengineering

This grade level focuses on environmental factors that affect health and wellness with an emphasis on agricultural and bioengineering inquiry research. Students will be required to focus on enhancing their research skills in a fifth core class dedicated to that critical writing, critical thinking and problem solving experience in order to collaborate with our partner organizations. This class coincides with the 7th grade Next Generation Science Standards curriculum in Life Science.

### 8th grade - STEM College and Career Readiness

This grade level focuses on preparing for high school rigor and post-secondary STEM careers. Students will be provided a choice of competitions, projects, and problems that investigate the potential for alternative and green energy sources. They will work cooperatively with peers, community members and partner organizations to complete a project with the goal of applying research skills, content knowledge and interpersonal relationship skills to produce a solution that creates a change in their community or partner organization's mode of operation. This course coincides with 8th grade Next General Science Standards curriculum in Physical Science with an emphasis on Engineering fields of study.



## Components for Student Success

- Multiple opportunities to earn high school credit through a variety of learning platforms, such as virtual classes, high school certified teachers at the 8th grade level for Math and Science, and a partnership with Rockdale Career Academy.
- High School Offerings:
  1. Spanish (Rockdale Virtual Campus)
  2. Coordinate Algebra
  3. Physical Science
  4. Personal Fitness and Health (Rockdale Virtual Campus)
- Field Trip Agreements: Fernbank Museum, The High, Elachee, Gwinnett Heritage, Rock Eagle, and more
- Competitions/Challenges: Science Fair, Georgia Tech InVenture, Duke TIP, Buck Institute Problem-Based Learning
- Project mentors from UGA, Georgia Tech, RMSST
- Exposure to STEM professionals (GBI, AT&T, NASA)
- Math enrichment, mentoring, and after-school tutoring.
- Learning with meteorologists, Phet Colorado Interactive Program, Kennesaw State Maker Bus, Georgia Tech scientists, NASA astronauts/scientists, and more
- Hands on learning through All Things Earthly, two large campus gardens to cultivate STEM
- Industry partnerships with the Environmental Protection Agency (EPA), Georgia Tech, Georgia Power, NASA
- Georgia Tech D2D Student Programs
- Technology Skills (Microsoft Office Suite)
- Advanced Research Writing Courses

## Application, Eligibility, and Lottery

RCPS will use an electronic application process for 2019 - 20 School Choice programs. **No paper applications will be accepted.** Students may apply for one School Choice program only for the 2019-20 school year.

The application window is November 16 - December 21, 2018. The online application will be available on the district website at: [rockdaleschools.org](http://rockdaleschools.org)

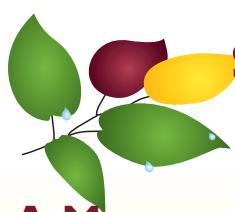
The Student Registration Office at 1143 West Avenue will provide assistance to access the online application if needed, Monday through Friday, 8:00 a.m. - 3:00 p.m., on a first come, first served basis. Only complete applications will be accepted.

## Eligibility Criteria

- Students must meet standards in ELA, Reading, Math, Science, and Social Studies on the Milestones assessment. If Milestones results are not available, other assessment data may be considered.
- Students with strong math and science skills are encouraged to apply.
- Students must meet the student registration requirement for Rockdale County Public Schools.
- Students and parents must agree to the Choice contract.

## Lottery

In the event there are more eligible applicants than space available, students will be selected via a random lottery drawing. If needed, a lottery will be held in January.



# STEM Academy for Environmental Studies at Memorial Middle School

## A Message from the Principal

The rigors of middle school present challenges for students every day. The Memorial Middle School faculty and staff is committed to helping students navigate these challenges successfully. Our recipe for success requires our students to be respectful, responsible, and resourceful. Treating others with respect fosters the creation of positive relationships. Developing and maintaining these relationships leads to success inside and outside of the classroom. A responsible student takes ownership of personal success academically and behaviorally. The intentional act of meeting or exceeding expectations is a key component to student success. The daily challenges of life often present new and different problems to solve. The resourceful student uses knowledge, skills, abilities, and relationships to overcome these difficulties.

The focus of the MMS STEM Academy for Environmental Studies is to expose students to the skills, knowledge, and methodology required for success in a variety of STEM focused careers. Students accepted into the program engage in authentic learning experiences via outdoor classroom activities, research, educational field trips, STEM lab exposure, on-sight/ distance learning from STEM professionals, and STEM focused extracurricular activities. Along with increased academic rigor, the program focuses on soft skills that are critical to success in the workplace. STEM methodology is infused in all content areas. This early exposure will prepare students to make informed decisions regarding possible STEM pathways at the high school level.

We look forward to accepting our new group of students and working with you to ensure that the program is a benefit to your child in the Memorial Middle School Community.

We are Making Memorial Shine! One tribe...One beat  
---Fred Middleton

***Our students are well informed to make decisions that will help them progress in STEM in the following RCPS high school options:***

**Rockdale Magnet School for Science & Technology**  
Advanced Science Research, Engineering, Ivy League College and Career Preparation

**Rockdale Career Academy**  
Healthcare, Biotechnology, Agriculture, Engineering

**Rockdale Institute for Advanced Technology**  
Computer Programming and Gaming Design

**Heritage High School**  
Computer Graphic Visual Arts, Engineering Pathway Courses



*Conducting comparison analysis of cellulose fibers*



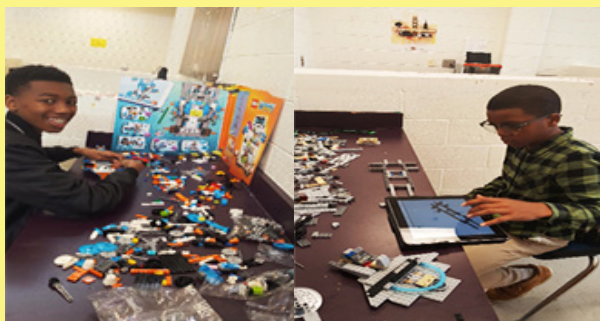
*Engaged in the Engineering Design Process*



*Marshmallow Challenge Engineering Design Process*



*Exploring aquaponic and hydroponic systems*



*Robotics and Coding*

## Recent MMS Accolades

- 3M Young Scientist State Award winner
- Broadcom Masters Awards at Regional Science Fair; winners eligible to apply for nationals
- Duke TIP state and national recipients – scored 3rd in the nation in English/Language Arts
- Numerous placings at Regional Science Fair
- Grand Champions at Regional Science Fair advancing to state competition
- DART Grant Recipient
- Recipients of Dyson Foundation Program
- Recipients of Bird Brain-Finch Robotics Program
- Recipients of PBS Kids SciGirls-STEM Program Curriculum
- Recipients of Snapping Shoal Grant
- RCPS Tech Fair Awards and Recognitions

## Exploratory, Extracurricular, Additional Academic Services

4-H	National Junior Beta Club
Art Club	News Club
Advanced Art	Reading Bowl Club
Chorus	Robotics
Student Council	Yearbook Club
Cheerleading	TSA
Football	Green Team
Softball	Recycle Rally
Basketball	Math Competition Team
Wrestling	100 Girls of Code
Track	Spelling Bee
Teen Girls in Technology	Young Author's Club
Intramurals	Design Squad

## Mentoring Programs

- Take Charge
- Individual Mentoring
- Small Group Mentoring
- Community Based Partners
- The Journey Boys/Girls



*Georgia STEM Day — Investigating Density*