



*Who We Are*  
MAGRUDER HIGH SCHOOL



*Home of the*  
Colonels

5939 MUNCASTER MILL ROAD  
DERWOOD, MARYLAND 20855

[WWW2.MONTGOMERYSCHOOLSMD.ORG/  
SCHOOLS/MAGRUDERHS](http://WWW2.MONTGOMERYSCHOOLSMD.ORG/SCHOOLS/MAGRUDERHS)

**PHONE:** 240-740-5550

**FAX:** 301-840-4617

**COUNSELING OFFICE:** 240-740-5560

*Home of the*  
Colonels

# Academies

Who we are: Academies, Programs and Activities at Magruder High School

# THE BLUEPRINT

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GLENN.BROOKS@MCPSMD.ORG



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CHERYL.L.DEMBROSKI@MCPSMD.ORG



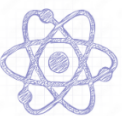
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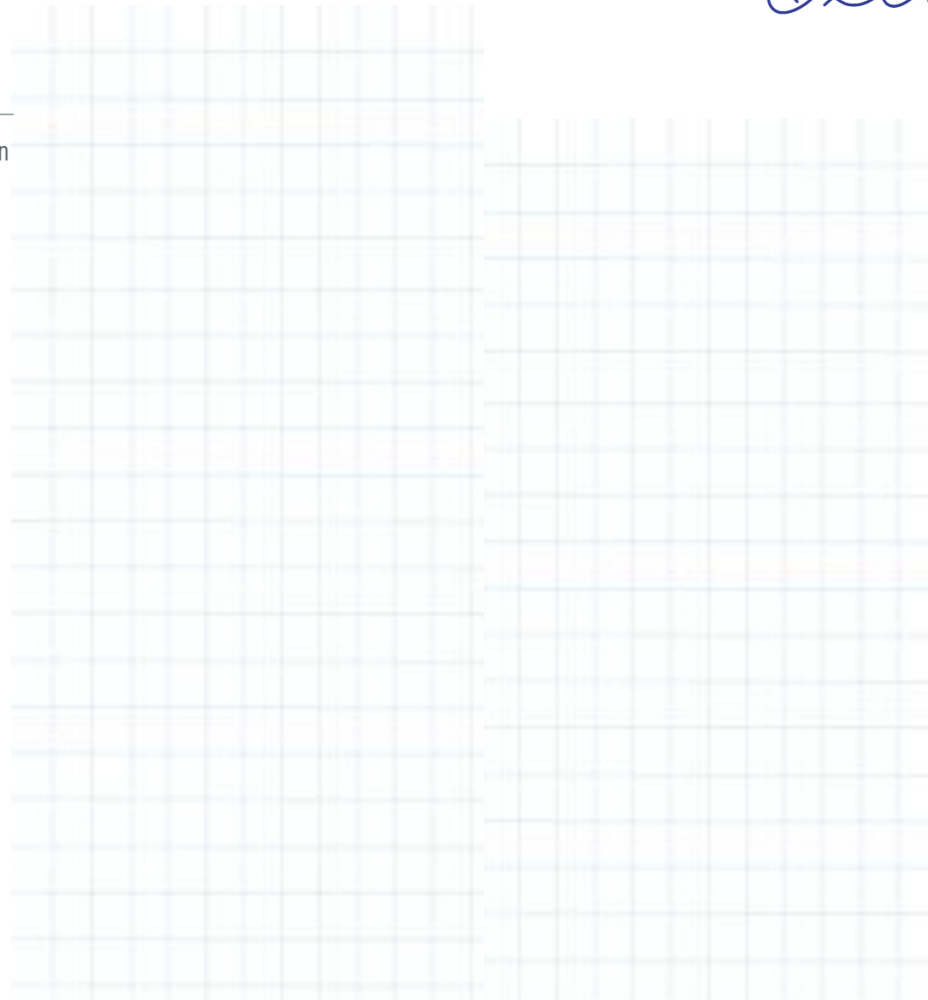
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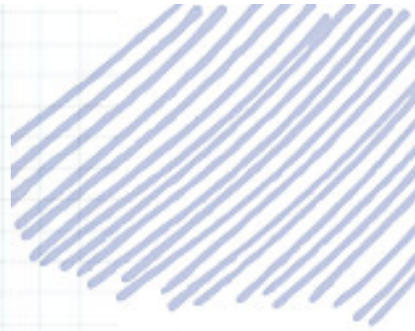
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# ACADEMY OF ENGINEERING



The Academy of Engineering is a college preparatory program designed to prepare students who are interested in a career in the field of engineering. The Academy is affiliated with Project Lead the Way, which is a nationally recognized curriculum that challenges students of all abilities through hands-on learning experiences using math, science, and technology in order to solve real-world problems. Each PLTW Engineering course engages students in interdisciplinary activities designed to develop real-world skills while increasing their understanding of engineering principles.

## Program Highlights

- Project-based learning will help students develop essential skills such as problem-solving, critical and creative thinking, communication, collaboration, and perseverance.
- Students who complete the program will have a solid foundation in basic engineering principles.
- Students will be better prepared for college engineering programs and more likely to be successful in those programs.
- Students will have the chance to earn college credits while in high school.



# Coursework

## Introduction to Engineering Design

Students use the design process and industry standard 3D modeling software to design solutions to solve proposed problems.

## Principles of Engineering

Students explore major concepts like mechanisms, energy, statics, materials, and kinematics.

## Digital Electronics

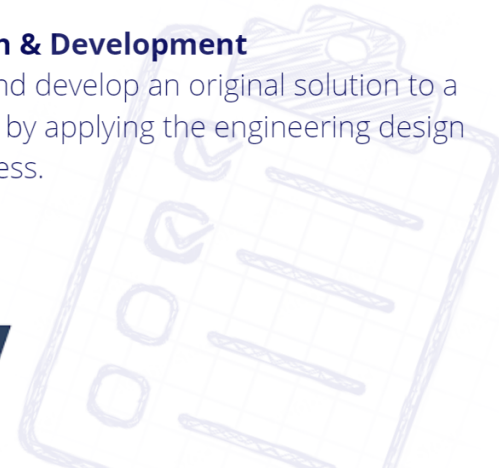
Students are exposed to programming integrated circuit kits and microcontrollers. They will learn how all electronics around us are designed and created.

## Aerospace Engineering

Topics of study include as aerospace information systems, astronautics, rocketry, propulsion, the biology and physics of space science, principles of aeronautics, structures and materials, and systems engineering.

## Engineering Design & Development

Students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process.



CLARK SCHOOL  
ENGINEERING  
SOURCE SCHOOLS



# PLTW

# ACADEMY OF FINANCE

The Academy of Finance is an invitation-only, college preparatory business program. The program offers a planned sequence of specialized elective academic and technical courses. The Academy's combination of educational excellence and work experience provides students with a competitive advantage in securing a job and advancing career goals. Many opportunities to explore career options are provided throughout the program, including career shadowing, working with mentors, and interacting with business leaders.

## Program Highlights

- Rigorous college preparatory courses provide students with both the knowledge and skills to succeed in college and in their future careers.
- Successful completion of the program allows students the opportunity to earn up to 11 college credits.
- Paid finance-related summer work experience to be completed the summer prior to the student's senior year.
- Academy-related field trips.
- Exposure to a variety of industry-related career options.
- Optional courses allow students to explore topics that most interest them.



# Coursework

## Grade 10 *Principles of Finance*

Principles of Finance begins with the basics of financial literacy and the function of finance in society. Students then study income and wealth, including budgeting, personal banking, credit and borrowing, and planning for retirement. Next, students examine financial institutions and the role of finance in organizations.

### *Financial Services*

This course gives students an overview of banks and other financial services companies. It introduces students to the origins of money and banking and examines the early history of banking in the United States. Students study the financial services industry and the types of companies it includes in depth. They learn about the services offered by such companies and analyze the ways these companies earn profits. Finally, students examine careers in financial services.

## Grade 11 *Principles of Accounting*

Principles of Accounting provides students with an understanding of the accounting process and how it facilitates decision-making by providing data and information to internal and external stakeholders. Students learn that accounting is an integral part of all business activities.

### *Financial Planning*

Financial Planning provides students with an overview of the job of a financial planner. Students learn to consider how all aspects of financial planning might affect a potential client, and learn about the importance of financial planning in helping people reach their life goals.

### *Applied Finance*

Students learn to identify the legal forms of business organization and continue to develop an understanding of profit. They learn about various financial analysis strategies and the methods by which businesses raise capital.

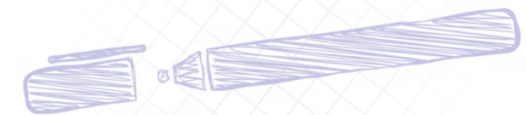
### **Summer Work Experience**

## Grade 12 *Advanced Accounting (Optional)* **Students choose from:** *AP Economics OR Entrepreneurship*

Entrepreneurship introduces students to the critical role entrepreneurs play in the national and global economy. Students learn the skills, attitudes, characteristics, and techniques necessary to become successful entrepreneurs. They explore starting a business and learn about the operational issues and financial risks that new businesses face.

### *Business in a Global Economy*

Business in a Global Economy provides students with an understanding of how and why businesses choose to expand their operations into other countries. This course exposes students to the unique challenges facing firms doing business internationally, and to the potential opportunities available to those businesses.



# HOSPITALITY MANAGEMENT PROGRAM



The Hospitality Management program offers students opportunities to pursue interests and gain proficiency in all aspects of the food industry, preparing them for a variety of career options. The need for dietary consultants, food scientists, nutritionists, chefs, food service managers, and educators continues to expand. Nutrition, food safety, and sanitation are emphasized as students practice all aspects of meal planning and preparation. ProStart™ outcomes have been infused into the curriculum, providing students with authentic work-based skills. Students have opportunities to take the ServSafe and ProStart™ examinations for certification. Course fees may apply.

## Program Highlights

- Gain proficiency in culinary, work-based, and management skills using the ProStart Curriculum from the National Restaurant Association.
- Refine your culinary and food service skills as you prepare for industry-recognized certifications.
- Earn one college credit at Montgomery College through the MCPS articulation agreement by earning a B or higher in the articulated courses and completing the entire high school plan.
- Complete work-based learning experience prior to graduation and work with industry business partners and other professionals during coursework.



## International Cultures and Cuisines

International Cultures and Cuisines examines the emphasis on food as it relates to the culture of other countries or cultural groups in the United States. Workforce trends, career paths, and postsecondary requirements are examined.

## Culinary Essentials

Students refine their culinary and food-service skills in a laboratory setting and build important skills for postsecondary education and careers. Attention is given to all aspects of careers in the hospitality industry.

## Internship

Students apply knowledge and skill sets acquired in their programs of study to an authentic internship. Collaborating with professionals and mentors in the related career field, students participate in program-specific learning, leadership seminars, networking opportunities, and relevant work experiences. This course code can be repeated to fulfill the 2.0 credit minimum requirement.

## Local Colleges offering a continuation of the program include:

George Washington University  
Howard University  
Montgomery College  
University of Maryland Eastern Shore  
at the Universities of Shady Grove

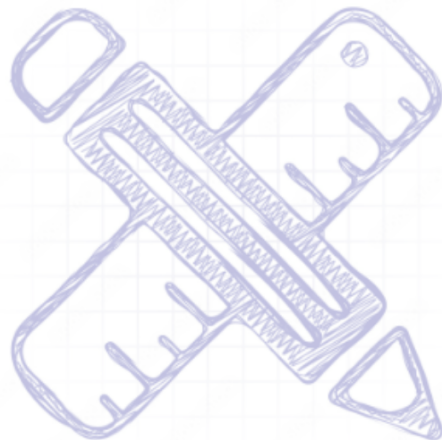


# ACADEMY OF EARLY CHILDHOOD EDUCATION

The Academy of Education is designed to provide students with a greater understanding of the teaching profession. The Academy of Education provides a wonderful opportunity for high school students to explore the physical, social, emotional, and cognitive development of young children. Students gain actual teaching experience by interacting with children in a variety of settings. Students study development from birth through early childhood to early adolescence years. Upon completion of this program, students will know Maryland and National teaching standards and certification requirements.

## Program Highlights

- Students will gain practical, hands-on experience planning lessons and teaching at our on-site preschool.
- Students will gain increased communication skills, management skills, and leadership experience.
- Internships
- 90+9 Clock Hours Certification upon course completion
- Articulated Credit (up to 9 credits) at Montgomery College



# Coursework

## Child Development 1

In this introductory course, students become part of an education team that has direct interaction with 4-year-olds in a lab school setting. After a rigorous training period, students become part of a team of teachers responsible for the day-to-day workings of a lab school.

## Child Development 2

Students will learn to be reflective practitioners using research-based methods of teaching and working with children. Students will analyze data, interpret and apply educational theories, use technology as a teaching tool, and apply developmentally appropriate teaching practices in classroom and field experiences. As they assume increased responsibilities for program management, students will develop and implement age-appropriate learning experiences for preschoolers.

## Internship

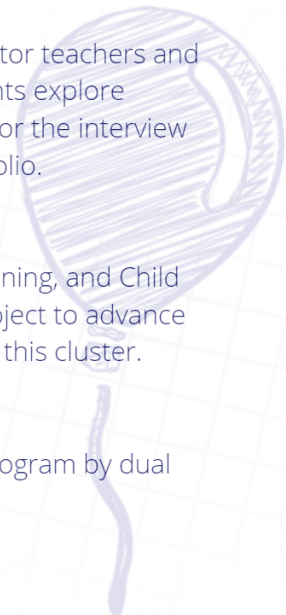
Students gain practical, field-based experience with mentor teachers and other professionals in educational settings. Students explore postsecondary education and career options, prepare for the interview process, and complete a professional portfolio.

## Guided Research

This course provides an opportunity for Education, Training, and Child Studies students to complete a structured research project to advance their knowledge and skills in career areas related to this cluster.

## Dual Enrollment

Students can complete an Early Child Development program by dual enrolling in a college education course.



# ARMY JROTC

The Army JROTC program at Magruder High School is designed for students who are interested in the practice of basic citizenship, leadership, physical fitness, and the exploration of opportunities for service to our nation. The program provides students with the tools necessary for success in high school and beyond. Students will develop leadership skills, discipline, and self-confidence.

## Program Highlights

- Students will develop valuable leadership, teamwork, and communication skills that will help them be successful throughout high school, college, and/or a chosen career.
- If students choose to join the military after graduation, they can earn advanced enlisted military pay grades. Reserve Officer Training Corps and military academy scholarships may be available for qualified students interested in pursuing a college degree and commission in the military as an Active or Reserve component officer.
- Opportunities exist to represent the program and compete regionally in co-curricular activities including Color Guard, Drill and Ceremony, Raider Athletic, and Academic teams.

***"To Motivate Young People to be Better Citizens"***



# Coursework



## Leadership Education and Training 1

Students study the history, organization, and functions of the Army along with leadership development, oral and written communications, drills, and customs and courtesies.

## Leadership Education and Training 2

Topics include first aid and hygiene, American military history, drug and alcohol abuse, maps and navigation, the importance of goal-setting, and time management.

## Leadership Education and Training 3

Students use leadership principles to negotiate and resolve situations and supervise subordinates. They are introduced to the principles of financial management and the importance of budget, credit, insurance, and investing. They will also have the opportunity to enhance their college or career preparation skills.

## Leadership Education and Training 4

Students learn the practical application of leadership duties and responsibilities by performing their assigned command or staff duties. They may also serve as a mentor, class instructor or assistant class instructor for selected subjects as they prepare to enter the workforce or college.





# AVIATION PROGRAM

The Aviation Program is a four-year program for students interested in flight and aircraft systems. Students have two pathways from which to choose, both of which align with rigorous math and science standards. The pilot pathway introduces students to safety, aerodynamics, aircraft systems, instrumentation, flight physiology, and flight planning. The Unmanned Aircraft Systems pathway exposes students to “drones” as they are used in operations such as security, search and rescue, disaster management, drone design, maintenance programming, and systems automation.

## Program Highlights

- Rigorous coursework developed by AOPA (Aircraft Owners and Pilots Association) to provide high-quality stem-based aviation education in high school
- Extensions of classroom learning experiences to support in-class learning
- Project-Based Learning
- Panel Discussions with experts in the industry
- Ability to earn a private pilots license or remote pilot certificate upon completion of the program
- Access to AP and Honors coursework



# Coursework

## Grade 9

Semester 1: Launching into Aviation  
Semester 2: Aviation and Aerospace

## Grade 10

Semester 1: Introduction to Flight  
Semester 2: Aircraft Systems and Performance

## Grade 11

### ***Pilot Pathway***

Semester 1: Private Pilot Fundamentals I  
Semester 2: Private Pilot Fundamentals II

### ***UAS Pathway***

Semester 1: UAS Operations 1  
Semester 2: UAS Operations II

## Grade 12

### ***Pilot Pathway***

Semester 1: Aviation Safety  
Semester 2: Internship/Capstone Project

### ***UAS Pathway***

Semester 1: UAS Design and Application  
Semester 2: Internship/Capstone Project





PEAC Scholars is an inter-disciplinary, four-year college-preparatory cohort. It is focused on independent learning and the development of sophisticated written and oral communication skills with an emphasis on critical thinking.

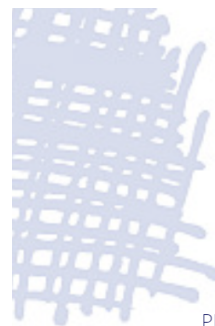
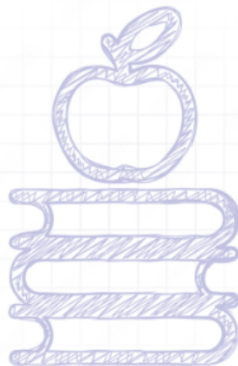
### Program Highlights

- Guest speakers and extended learning opportunities
- Recognition at graduation
- Letter of program participation sent with transcripts when applying to college
- Preparation for the rigors of college
- Cohort classes with other PEAC students to develop community
- Potential to earn college credit through AP courses

### Requirements

- Have an A or B average in 8th-grade core courses.
- Maintenance of a 3.5 weighted GPA over the four years at Magruder High School.
- Successful completion of required PEAC courses.
- Successful completion of a capstone project senior year,
- Adherence to MCPS and Magruder attendance policies and codes of conduct.

***Pursuing Excellence in the Academic Curricula***



# Coursework

## PEAC Humanities

PEAC Humanities students complete the following required courses and need a total of 7 AP courses before they graduate.

### Freshman Year:

PEAC Honors English 9 (Cohort)  
AP US Government (Cohort)

### Sophomore Year:

PEAC Honors English 10 (Cohort)  
AP US History (Cohort)

### Junior Year:

AP English Language (Cohort)  
Student choice of AP courses to meet required total

### Senior Year:

AP English Literature  
Student choice of AP courses to meet required total  
Independent Study Research Capstone



## PEAC STEM

PEAC STEM students complete the following required courses and need a total of 7 AP courses before they graduate. 4 of the 7 AP courses need to be in the STEM fields

### Freshman Year:

PEAC Honors English 9 (Cohort)  
PEAC Honors Biology (Cohort)

### Sophomore Year:

PEAC Honors English 10 (Cohort)  
PEAC Honors Chemistry or AP Physics 1

### Junior Year:

Student choice of AP courses to meet required total.  
Students are STRONGLY encouraged to take AP English Language to develop writing for the senior capstone.

### Senior Year:

Student choice of AP courses to meet required total.  
Independent Study Research Capstone

## PEAC STEM + Academy

PEAC STEM + Academy students complete the following required courses, 4 AP courses, and complete one of the STEM-focused Academies.

### Freshman Year:

PEAC Honors English 9 (Cohort)  
PEAC Honors Biology (Cohort)  
\*Required Academy Courses

### Sophomore Year:

PEAC Honors English 10 (Cohort)  
PEAC Honors Chemistry or AP Physics 1  
\*Required Academy Courses

### Junior Year:

Student choice of AP courses to meet required total.  
Students are STRONGLY encouraged to take AP English Language to develop writing for the senior capstone.

\*Required Academy Courses

### Senior Year:

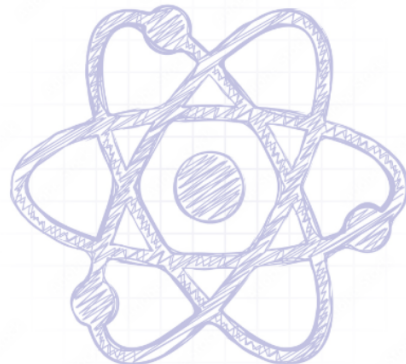
Student choice of AP courses to meet required total.  
Independent Study Research Capstone  
\*Required Academy Courses

# SCIENCE RESEARCH ACADEMY

It is the objective of the Science Research Academy to provide a rigorous honors program for students who have a strong interest in a career in science. Students in the program will be provided with enriching activities in the field of science, including having the opportunity to compete in county, state, and national science competitions. An important aspect of this program is to provide students with an internship experience in a scientific field of interest to them. The capstone experience of this Academy is a choice to complete an independent research project that will be entered in the Montgomery County Science Fair or participate in an internship at a local laboratory.

## Program Highlights

- Completion of these college preparatory courses will prepare students for college-level science courses.
- Students will have the opportunity to earn several college science credits.
- Students will be exposed to a variety of different fields of scientific study.
- Students will gain practical experience in a scientific field of their choosing.



## Coursework

Must earn a minimum of 6 credits of science coursework and complete a research project or internship.

**Honors Biology**

**Honors Chemistry**

**Honors Physics**

**AP Chemistry**

**AP Physics**

**One of the following electives:**

AP Biology

AP Statistics

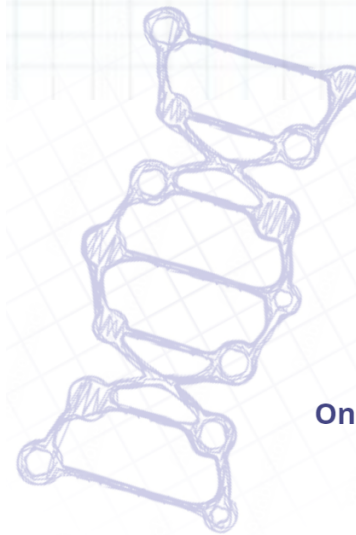
AP Calculus

AP Environmental Science

Honors Anatomy OR

Physiology

**Research Project or Internship**



# ACADEMY OF HEALTH PROFESSIONALS

The Academy of Health Professionals utilizes project-based learning, clinical experiences, as well as classroom and lab instruction to teach students about the field of health care. After completing foundational courses in basic healthcare knowledge and skills, students will then apply their knowledge to real-life healthcare situations. Students in this academy are also strongly encouraged to complete 4 years of science, including biology and chemistry.

## Program Highlights

- Students will graduate high school with medical skills and knowledge necessary for success in college and their future careers,
- Students will gain valuable real-world experience within the medical field.
- Upon completion, students will have the opportunity to earn state and/or nationally recognized certifications.
- Students will have the opportunity to earn college credit through articulation agreements with local colleges.



# Coursework

## Foundations of Medicine and Health Science

This course is designed to provide students with an overview of the therapeutic, diagnostic, environmental, and information systems of the health care industry. This course includes medical terminology, medical ethics and documentation, health care delivery systems and agencies, and an introduction to the human body system.

## Structures and Functions of the Human Body

Students investigate the body's responses to the external environment, maintenance of homeostasis, electrical interactions, transport systems and energy processes. Upon completion of this course, students will be eligible to take a medical terminology exam for college credit.

## Fundamentals of Pharmacy

Students are exposed to the many career options in pharmacy and pharmaceutical science. Students experience relevant activities that engage them in a rigorous curriculum integrating academic and technical standards.

## Choice of :

### Allied Health Internships Option

Students will receive supervised practical application of previously studied theory in a professional healthcare setting. This internship course includes work based learning experiences and school based instructional requirements, including seminars, portfolio development and research.

### Dual Enrollment Course Option

Opportunity to enroll in a college science course.



# Clubs

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We are proud to offer many different clubs and activities at Magruder High School. They include:

# RecZone

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RecZone lets students get away from the pressures of school work, hang out with friends, get active, and even get to know some cool adults.

RecZone is open to everyone. RecZone wants all kinds of young people to get into RecZone, which is why we've provided a wide variety of activities.

Some of the opportunities of RecZone are listed below:

- Sports
- Creative Arts
- Cooking
- Dance
- Leadership
- Mentoring
- Homework Help
- Field Trips
- College Tours
- and more!



# EXTRACURRICULAR ACTIVITIES

## Athletics

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### FALL

- Varsity Co-ed Cross Country
- Varsity Co-ed Golf
- Varsity Co-ed Handball
- Varsity and Junior Varsity Football
- Varsity and Junior Varsity Boys Soccer
- Varsity and Junior Varsity Girls Soccer
- Varsity and Junior Varsity Girls Field Hockey
- Varsity and Junior Varsity Girls Volleyball
- Varsity and Junior Varsity Sideline Cheer
- Varsity POMS

### WINTER

- Varsity Co-ed Bocce
- Varsity Co-ed Indoor Track
- Varsity Co-ed Swimming
- Varsity and Junior Varsity Co-ed Wrestling
- Varsity and Junior Varsity Boys Basketball
- Varsity and Junior Varsity Girls Basketball
- Varsity and Junior Varsity Sideline Cheer
- Varsity POMS

### SPRING

- Varsity Co-ed Track
- Varsity Co-ed Volleyball
- Varsity Boys Tennis
- Varsity Boys Volleyball
- Varsity and Junior Varsity Boys Baseball
- Varsity and Junior Varsity Boys Lacrosse
- Varsity and Junior Varsity Girls Lacrosse
- Varsity and Junior Varsity Girls Softball
- Varsity Girls Tennis



## School Initiatives

We are proud to offer many different clubs and activities at Magruder High School.

### **BIENVENIDOS**

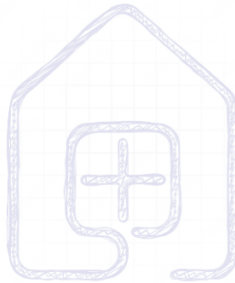
The Montgomery County Newcomers initiative "Bienvenidos - ¡Aqui Para Ti!" is a joint effort between Montgomery County Government, Montgomery County Public Schools, and community service providers. Functioning as a true network, we support foreign-born individuals and families who have recently arrived in the United States through the provision of culturally and linguistically competent interdisciplinary services and supports. Our County serves any and all newcomers regardless of their nationality or legal status.

This initiative was propelled by the unprecedented increase in the number of unaccompanied migrant children and asylum-seeking families approaching the southern U.S. border and arriving in Montgomery County. As such, using an equity lens, the launch of the Newcomers initiative has focused on expanding our capacity to address the unique needs of this subset of the newcomer population.

### **IDENTITY, INC.**

In pursuit of a just equitable and inclusive society, Identity's mission is to create opportunities for Latino and other historically underserved youth to realize their highest potential and thrive.

Identity youth report real improvements in their ability to resolve conflict; speak up for themselves; connect to school, the workforce, and the community; and avoid substance abuse and delinquent behavior. Identity youth show improved school attendance and achievement, and their families report improved communication and more involvement in their children's lives after participating in our programs. Lifesaving safety-net support and caring human connections stave off hunger, homelessness and despair in families during times of extreme crisis.



# INITIATIVES

## Well-Being Initiatives