MOUNTAIN VISTA

Governor's School for Science, Math & Technology

Serving the counties of
Clarke, Culpeper, Fauquier, Frederick, Rappahannock,
Warren, and City of Winchester

Mission Statement

The mission of the Mountain Vista Governor's School is to present a research-based, technology-enhanced, integrated program in mathematics, science, and the humanities. The program will challenge students to reach their full potential as independent thinkers capable of assuming leadership roles in a constantly changing global society.

Curriculum Overview

The interdisciplinary curriculum design of Mountain Vista Governor's School challenges students to construct a highly integrated understanding of mathematics and designated sciences. The development of technology and research skills supports students in solving authentic problems in a scholarly and professional manner. The humanities component requires students to analyze the relationship between the arts and sciences and construct a personal philosophical basis for ethical leadership in applying scientific knowledge to challenging real-world issues.

Goals

The learning environment of Mountain Vista Governor's School is designed to provide students rigorous educational experiences to reach their fullest potential by:

1. Cultivating a collaborative, supportive regional community of academically talented and highly motivated learners that celebrates intellectual diversity
2. Providing investigative learning experiences that integrate disciplines
3. Engaging students in research and extended learning through a discovery approach patterned after activities of scholars and professionals
4. Developing producers of knowledge as well as consumers of knowledge
5. Preparing self-reliant, critical thinkers who excel at advanced levels of education and apply knowledge to real world challenges
6. Creating opportunities for service and leadership in both school and community
7. Establishing community partnerships to enhance learning opportunities

Vision

The Mountain Vista Governor's School community of learners will engage in the investigation of scholarly knowledge through an active, constructive learning environment. Students will be expected to become fluent in the processes of mathematics and science, reinforced by a deep understanding of the humanities.

- Through research, students will learn to use standard technological tools for data analysis and authentic problem solving.
- Through personal investigation and reflection, students will be challenged to derive meaning from learning.
- Through practical application, students will strive to reach their fullest potential.
- Through collaboration with peers, teachers, and mentors, students will generate and communicate useful solutions to problems of the local and global community.

Interdisciplinary Connectivity

The faculty of Mountain Vista Governor's School will collaborate to integrate knowledge and skills from all disciplines in the following ways:

- Scientific and mathematical knowledge will be examined in historical and cultural contexts.
- The mathematics courses and the science courses will be taught collaboratively.
- Environmental science will be a component of the physics and biology courses.
- Students will be challenged to see how the process of science and the knowledge gained through science impacts the cultures and politics of the world.
- Students will analyze and critique scientific thought against the background of Western philosophy, literature, and the arts.
- Students will utilize their technical writing skills while conducting scientific investigations and presenting their findings.
- Students will be challenged through research to see that all knowledge crosses multiple disciplines.

Technology Integration

The faculty of Mountain Vista Governor's School will integrate technology into all courses in the following ways:

- Students will carry out investigations using computer-aided, data-collecting probes and sensors.
- Students will use graphing software to manipulate and analyze data collected during laboratory investigations.
- Students will utilize internet resources to gather background information throughout the courses.
- Students will engage in distance learning via multi-site video conferencing and/or on-line instruction.
- Students will use technology to develop and deliver presentations of their research findings in a publishable format.
- Students will utilize web-based and technology assisted textbooks as possible.
- Faculty will use technology in instructional presentations.
- Faculty will utilize web-communication systems for off-site instruction, and students will utilize it to prepare and submit assignments. (e.g. weather-related or other scheduling issues negatively impacting on-site instruction)

Above and Beyond Regular High School

The Mountain Vista Governor's School provides for opportunities above and beyond regular high school by:

- Providing college-level curriculum designed to meet the unique needs of gifted learners.
- Creating a regional community of learners of academic peers.
- Providing a uniquely designed integrated science, mathematics, humanities, and research curriculum.
- Providing extensive research and real-world application opportunities.
- Using technology-enhanced instruction for delivery of instruction, data collection/analysis/processing, and effective communication of information/solutions.
- Focusing on community-based instruction through the themes of engineering, medical, environment, agribusiness, and animal sciences.
- Providing an especially designed Dual Enrollment **program** *(versus a course)* that enables college-bound students to:
  - be challenged with college-level content;
  - experience college-level research expectations, language, and procedures;
  - develop learner-centered skills needed by a self-reliant, life-long learner;
  - earn college credits in math, science, humanities, and research;
  - develop a two-year portfolio for the college application process;
  - relate core knowledge to real-world application skills;
  - interact with experts in the career area of their choice.
- Developing leadership potential by exploring and applying intellectual ideas through research and public action.