

Brooks School Mathematics Department Vision

Mission Statement

The Brooks School Mathematics Department shall seek to provide the most meaningful educational experience our students will have in their lives.

I. Curriculum

In order to ensure the most meaningful mathematics education for every student, the mathematics department must recognize that curriculum, instruction, and assessment are dynamic, intellectually challenging, and meets the diverse needs of students. The mathematics department will dedicate itself to collaboratively develop and implement a clearly articulated curriculum focused on important and meaningful mathematics. To attain this vision:

- A. The Brooks School mathematics curriculum ought to balance the development of procedural skills, conceptual understanding of mathematical ideas, appropriate use of technology, and opportunities for critical thinking and problem solving.
- B. Teachers help students develop the reasoning and problem solving skills necessary to think critically in an information age. We ought to encourage mathematical modeling in which students make choices about how to use mathematics to create representations of a real-world process. Modeling helps us to understand a phenomenon while using mathematical concepts and the principles and language of mathematical symbolism.
- C. Teachers make decisions about the appropriate use of technology to improve instruction such as graphing calculators, Desmos, Geogebra, Excel spreadsheets, Logger Pro, and other technological tools. Technology reaches visual learners and can help engage students in the problem solving process. It is most effective when used to allow students to solve problems that we otherwise could not. Teachers will motivate each other to maintain a growth mindset and remain current on best practices regarding the use of technology.
- D. The Brooks Mathematics department must produce, through a collaborative process, standards and competency documents that explicitly state our goals for the Brooks School mathematics program. Teachers ought to continually evaluate and revise curriculum to insure mathematical ideas are connected and integrated across courses. Teachers continuously create and implement assessments to monitor student learning and progress towards explicit learning targets, guide instruction, and support programmatic decisions.

II. Equity and Access for All Students

In order to ensure the most meaningful mathematics education for every student, the Mathematics Department establishes high expectations for all students and provides the support necessary to help them meet those expectations. Teachers understand the importance of pursuing equity and provide each individual student with appropriate levels of support to meet or exceed expectations. To attain this vision:

- A. Teachers provide all students with opportunities and resources to meet high expectations for learning mathematics.
- B. Teachers provide all students with necessary support and interventions to ensure achievement of academic expectations.
- C. Teachers encourage all students to be responsible, persevere through difficulty, and achieve as they actively engage in learning mathematics.
- D. Teachers provide all students access and encouragement to explore and take advantage of the variety of opportunities in the mathematics curriculum.
- E. Students' experiences in mathematics provide the skills and knowledge necessary to be able to select from a variety of post-secondary options and future career choices.

III. Building a Professional Learning Community

In order to ensure the most meaningful mathematics education for every student, the Mathematics Department must operate as a highly functioning team complete with collaborative practices and a passionate commitment to grow as professionals in a supportive environment. To attain this vision:

A. Teachers take a long-term view regarding their career at Brooks School. A commitment culture prioritizes slow and steady growth while being characterized by high levels of teamwork and psychological safety.

B. Teachers will participate actively in a team atmosphere in which members address each other with a social sensitivity that promotes an environment conducive for professional risk taking, near equal department contribution in departmental discussion, and member opinions are valued and sought.

C. Teachers take advantage of opportunities to work in collaborative teams that will work to best serve our students in the learning of mathematics.

D. Teachers commit to continuous improvement, professional development that focuses on personal and professional goals that lead to continued learning and growth. Teachers ought to feel a part of a support system that monitors progress toward the shared mission.

IV. Culture of Learning

In order to ensure the most meaningful mathematics education for every student, the Mathematics Department must establish a safe, caring environment that enables all students to engage in ongoing learning through a collaborative environment. The Mathematics Department will dedicate itself to meaningful teaching and learning of mathematics. To attain this vision:

A. Teachers will promote a culture that accepts students where they are and then help each student grow in their achievement. We must ascertain what students know and need to learn, and then challenge and support each student.

B. Teachers support a culture in which teachers and students understand that learning is dynamic and requires student engagement and collaboration in an environment that fosters positive relationships. To achieve this, teachers must stay current in best practices in mathematics pedagogy.

C. Teachers design learning activities in ways that promote the investigation and growth of mathematical ideas. Teachers create a culture of inquiry where students ask questions and reflect on their own progress and growth.

D. Teachers and students ought to engage in the learning of mathematics outside the classroom. Teachers participate in a departmental program that collectively supports kids by offering a math only tutoring center a few days per week during school.