Mathematics
Investigations

New York State Mathematics Core Curriculum

- Instructional Strategies
- Pacing Plan
- Assessments

BUFFALO PUBLIC SCHOOLS
DIVISION of TEACHING and LEARNING
DEPARTMENT of MATHEMATICS
http://www.buffaloschools.org

Superintendent
James Williams Ed.D.

Deputy Superintendent
Folasade Oladele, Ed.D.

Board of Education

Ralph Hernandez, *President – West District*

Mary Ruth Kapsiak, *Vice President of Executive Affairs – West District*

Christopher Jacobs, *Vice President of Student Achievement – Member-at-Large*

Florence Johnson – *Member-at-Large*

Vivian Evans – *East District*

John Licata – *Member-at-Large*

Catherine Nugent Panepinto – *North District*

Louis Petrucci – *Park District*

Pamela D. Perry-Cahill – *Ferry District*

Acknowledgment

The Buffalo Public Schools acknowledges the following individuals who substantially contributed to the development of the *Investigations 2nd Edition*.

Debra Sykes *Assistant Superintendent of MST* *Buffalo School District*	**Arlene Rosowski** *Director of MST* *Buffalo School District*
Claudette Rivera *District Mathematics Support Teacher* *Buffalo School District*	**Karen Murray** *District Mathematics Support Teacher* *Buffalo School District*
Caroline Parrinello *Building Mathematics Teacher PS 99* *Buffalo School District*	**Nicole Sperrazza** *Building Mathematics Teacher PS 99* *Buffalo School District*
Lynne Lystad *Building Mathematics Coach PS 31* *Buffalo School District*	**Jeanne Cheney** *Building Mathematics Teacher PS 54/69* *Buffalo School District*

OVERVIEW

Four Essential Questions

What do students need to know and be able to do?

How do we know they have learned it?

What will we do when they have not learned it?

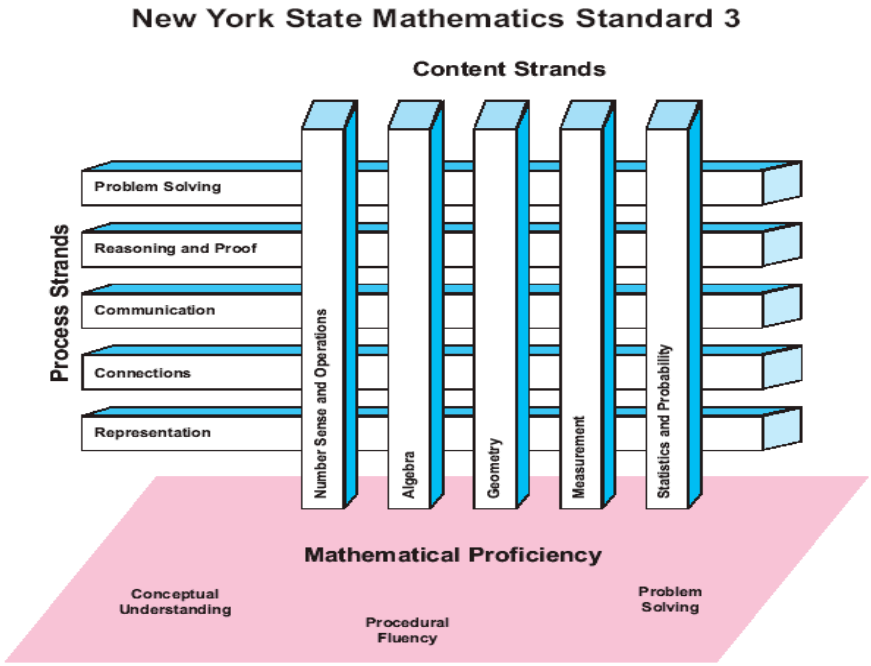
What will we do when they already know it?

The Buffalo Public Schools Academic Achievement Plan focuses on Four Essential Questions for teachers to consider when planning for teaching and learning. District-wide high school course pacing plans and scope and sequence documents have been developed that address these questions. These documents, in conjunction with the Academic Achievement Plan, are designed to ensue that every teacher understands and is committed to the essential knowledge and skills students are to know and be able to do. The essential knowledge and skills, as defined by the New York State Learning Standards and Core Curriculum, are used to guide the development of the local curriculum documents aligned with the adopted district adopted textbooks.

Teachers of Mathematics must become familiar with and implement the NYS Process and Content Strands.

The process strands (Problem Solving, Reasoning and Proof, Communication, Connections, and Representation) highlight ways of acquiring and using content knowledge. These process strands help to give meaning to mathematics and help students to see mathematics as a discipline rather than a set of isolated skills. Student engagement in mathematical content is accomplished through these process strands. Students will gain a better understanding of mathematics and have longer retention of mathematical knowledge as they solve problems, reason mathematically, prove mathematical relationships, participate in mathematical discourse, make mathematical connections, and model and represent mathematical ideas in a variety of ways.

The content strands (Number Sense and Operations, Algebra, Geometry, Measurement, and Statistics and Probability) explicitly describe the content that students should learn. This broad range of content, taught in an integrated fashion, allows students to see how various mathematics knowledge is related, not only within mathematics, but also to other disciplines and the real world as well. The performance indicators listed under each band within a strand are intended to assist teachers in determining what the outcomes of instruction should be. The instruction should engage students in the construction of this knowledge and should integrate conceptual understanding and problem solving with these performance indicators. The performance indicators should not be viewed as a checklist of skills void of understanding and application.



Adapted from *Mathematics Framework for the 1996, 2000, and 2003 National Assessment of Educational Progress.*