

Philosophy

“Mathematics is a language we use to identify, describe, and investigate the patterns and challenges of everyday living. It helps us to understand the events that have occurred and to predict and prepare for events to come so that we can more fully understand our world and more successfully live in it.

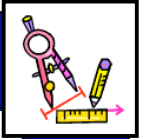
Mathematics encompasses arithmetic, measurement, algebra, geometry, trigonometry, statistics, probability and other fields. It deals with numbers, quantities, shapes and data, as well as numerical relationships and operations. Confronting, understanding and solving problems are at the heart of mathematics. Mathematics is much more than a collection of concepts and skills; it is a way of approaching new challenges through investigating, reasoning, visualizing and problem solving with the goal of communicating the relationships observed and problems solved to others.”

Illinois Learning Standards, adopted July 1997

The Sunset Ridge District 29 mathematics philosophy is based on the standards outlined by the National Council of Teachers of Mathematics, the Illinois Learning Standards, and research conducted by the First in the World Consortium. Success in mathematics lies in a firm foundation of number sense and facility with number manipulation. Major goals include concept attainment, skill development, and application in an environment of discovery and problem solving. Our teachers strive to ensure that learning experiences are meaningful and appropriate for all students. Mathematics lessons are designed to be motivating, enjoyable, and to simulate real life. Parents and families are considered partners in the development of a strong mathematics foundation for District 29 students.

Components

District 29 utilizes the Everyday Mathematics program as the foundation for mathematics instruction in kindergarten through sixth grade. Implementation of this program began with kindergarten in 1989, and by 1996-97 Everyday Mathematics was fully integrated in to the K-6 mathematics curriculum. Beginning in seventh grade, District 29 students transition into one of three possible strands. Approximately half of the junior high student body will use the Gateways program over the course of two years. The other half will participate in a Pre-Algebra/ Algebra sequence which involves Gateways in seventh grade and Algebra in eighth grade. A small number of students may be eligible to complete the New Trier Township math strand that incorporates algebra in seventh grade and geometry in eighth grade.

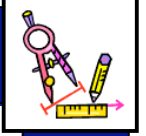


Program Overview

Everyday Mathematics, formerly known as the University of Chicago School Mathematics Project, has been at the forefront of mathematics instruction reform since 1983. Currently published by The McGraw-Hill Companies and now in its second edition, the Everyday Mathematics program is designed for children in kindergarten through sixth grade and includes innovative teaching methods that help to connect mathematics to children's daily lives. Its mission is to enable children in elementary grades to learn more mathematical content and become lifelong mathematical thinkers. A variety of approaches are used in order to best meet students' learning styles and ability levels. The curriculum, thoroughly researched and field-tested, is the result of the collaborative efforts of noted researchers, educators, mathematics professors, and classroom teachers.

Program Features

- Direct instruction
- Whole and group activities
- Small group activities and individualized instruction to meet varied needs and learning styles
- Use of manipulative and tools for problem solving and concept development
- Use of games for problem solving, practice, and enrichment
- Use of math boxes for daily review
- Use of "Home Links" for review and parent involvement
- Use of "Explorations" and math stations for problem solving and real-life applications
- Spiraling of concepts
- Use of technology to build conceptual understanding and reinforce basic skills
- Use of supplemental enrichment materials
- Emphasis on key mathematical themes: algorithmic and procedural thinking; estimation and number sense; mental math; and problem solving
- Ongoing formal and informal assessment
- Standards based



GRADE K

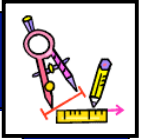
The kindergarten program provides playful mathematics activities emphasizing verbal interaction and manipulatives. These activities lay the foundation for symbolic understanding and help children develop confidence in their mathematical abilities. A full range of mathematical strands are explored in common life situations.

- Numeration and counting
- Operations and computations
- Problem solving and number models
- Measurement (including time and money)
- Exploring data and probability
- Geometry
- Rules and patterns

GRADES 1-3

In grades 1-3, students continue to develop as active problem-solvers and explorers. The Everyday Mathematics program links mathematics to other subjects, expanding the curriculum through a rich variety of instructional techniques. Increased attention is given in each grade to the developmentally appropriate content and skill strands listed below. First graders are introduced to addition math facts to 20, second graders memorize addition and subtraction facts to 20, and third graders learn multiplication facts.

- Numeration and counting
- Operations and computations
- Problem solving and number models
- Measurement (including time and money)
- Exploring data and probability
- Geometry
- Rules and patterns
- Calculator mathematics
- Algebra and uses of variables
- Fractions and decimals



GRADES 4-6

Students continue to explore mathematical concepts and solve real-life problems. Special emphasis is placed on making connections between previous knowledge and new concepts. As in grades K-3, students are encouraged to expand their knowledge of concepts and application throughout the program. The lessons and activities will shape students' ways of thinking about mathematics and lead to the development of students' mathematical intuition and understanding.

- Data and Chance
- Geometry
- Measurement
- Numeration
- Operations and computation
- Patterns, functions, and algebra
- Use of technology as a tool

GRADE 7

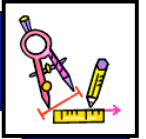
Approximately one-half of the students entering seventh grade participate in the Gateways mathematics program for two years. The other fifty percent of the class participates in a Pre-Algebra / Algebra sequence. A small number of seventh graders may be eligible to join the New Trier Township Mathematics Program that consists of Algebra in seventh grade and Geometry in eighth grade. The Gateways text is utilized for Pre-Algebra across the township schools. It is also supplemented in the areas of computation and practical applications using teacher-selected materials. Problem solving, critical thinking, and continual review and preview exercises are integrated throughout. Key strands in Gateways include:

- Probability
- Algebra
- Interdisciplinary Applications
- Geometry
- Patterns & Functions
- Measurement
- Number Sense
- Communicating Mathematics
- Technology Analysis & Statistics
- Data

GRADE 8

Eighth graders either complete the Gateways program or move into the equivalent of the high school Algebra curriculum. Goals of the program include:

- Becoming a mathematical problem-solver
- Understanding the structure of the real number system
- Solving equations and inequalities and graphing on both the number line and Cartesian plane
- Working with polynomial expressions and fractions
- Understanding basic trigonometry
- Proficient use of appropriate technology



Enhancements to the Everyday Math Program

Mathematics programs produced by publishing companies are employed used as guides and do not dictate district practices or curricular goals. Teachers have the flexibility to modify published programs to ensure that the unique learning styles and ability levels of all students are being met. The following enhancements have been made to the Everyday Math Program to best reflect the District #29 mathematics philosophy.

Teachers create supplemental activities for curriculum differentiation by providing instruction in various learning styles and addressing different areas of intelligence.

Student Services staff members offer support by: a) obtaining supplemental materials; and b) providing small group or individualized instruction at appropriate levels.

Teachers vary methods of instruction (i.e. whole group, small group, individual).

Teachers modify math boxes, journal pages, and practice activities to meet various learning levels and styles.

Teachers collaborate with staff members to share ideas regarding program modifications.

Teachers provide additional opportunities for math fact practice through drills, games, worksheets, math boxes, and computers.

Teachers communicate District 29's mathematics expectations and enlist parent support with home practice through parent nights, newsletters, and Everyday Math Family Letters.

Teachers conduct a parent meeting to assist in the understanding of program goals and methodology.

Teachers facilitate the transition between Everyday Math and the 7th & 8th grade Gateways program through the 4-6 "Hands on Equations" program and participation at math Curriculum Articulation and Planning meetings.