

PHILOSOPHY OF MATHEMATICAL INSTRUCTION

As educators of mathematics in Cliffside Park, we believe that instruction in mathematics is vital to the preparation and success of every student who will soon be a contributor to the globalized society and workforce of the 21st century. In order to best prepare our students for their future, we are using the recommendations of *The National Mathematics Advisory Panel (2008)* as an aid to improve our curriculum and instruction of critical mathematical topics, and for “preparation, entry into, and success in, Algebra” (U.S. Department of Education, p. xv).

Our students will progress through mathematical learning and achieve proficiency with the topics outlined in the units of study. In being “proficient,” we believe that our students will achieve automaticity, in addition to becoming flexible and accurate in using these competencies to problem-solve. We further believe that the “transfer” of knowledge is vital to their mathematics learning, as is the infusion of positive goals and beliefs about their learning and performance in order to reduce anxiety and, consequently, improve mathematic achievement.

We believe that every child is an individual with varying mathematical experiences, areas of weaknesses and strengths. In an effort to meet the needs of all children, teachers should employ, in addition to standard instruction, the Team Assisted Individualization (TAI) approach, as well as that of explicit instruction, especially in the case of those having difficulty. Such instruction should involve think-alouds using clear models and many examples, guided instruction, independent practice, and feedback in order to master the skills and strategies at each grade level and in accordance with the New Jersey Core Curriculum Content Standards and the standards set for by the National Council of Teachers of Mathematics (NCTM). Students will be afforded opportunities to comprehend mathematical concepts through the use of manipulatives, apply these skills to mathematical problems, and continue to practice and utilize skills through spiraled instruction. Students who achieve proficiency at a faster pace will be encouraged to continue their learning.

Additionally, in meeting the needs of every child, we believe in the regular use of on-going, formative assessments. In addition to performance in computation, students will be encouraged to write their strategies and to show representations of their problem-solving. Students should be given opportunities to demonstrate proficiency through various modes. In order to ensure deep understanding and the ability to transition skills, instruction and practice will also promote higher order thinking and application to everyday situations.

Technology is a major component of the acquisition of skills and should be incorporated into instruction whenever possible as long as the technology is enhancing students’ mathematical thinking. We also believe in linking mathematical concepts into the other content areas to demonstrate the importance and everyday uses of math, as well as its impact on all aspects of life.

Furthermore, we believe that “all students, regardless of their personal characteristics, backgrounds, or physical challenges, must have opportunities to study – and support to learn - mathematics”. (NCTM, *Principles and Standards for School Mathematics*).