

Math Academies

Intensive workshops for K–12 educators who want to turn their math classrooms into **LONG + LIVE + MATH** classrooms.

MATH ACADEMIES DESIGNED TO TRANSFORM

Grade-Appropriate and Stretch Content

Math Academies focus on implementing grade-appropriate content through coherent mathematics with grade span and stretch content to help teachers make connections to future concepts.

Problem-Solving in a Learner-Centered Environment

Math Academies are structured for educators to experience learning as students would, actively engaging in discourse and productive struggle with peers around the math.

Heightened Awareness of Teaching Practices

Math Academies facilitate teachers' meta-cognitive reflection on their own teaching practice and provide access points for them to change their instructional practices.

FOCUSED ON OUTCOMES

Carnegie Learning's Math Academies are intentionally designed to:

- Ensure all participants are active learners
- Help participants build a deep conceptual understanding of the math by solving hands-on, high-level cognitive demand tasks
- Engage participants in a wide variety of instructional strategies and connect them to their own classroom practice
- Help participants gain an increased level of confidence in delivering grade-level content

CUSTOM MATH ACADEMIES AVAILABLE!

In addition to our standard Academies, Carnegie Learning's Master Practitioners, which we call Transformers, will work with your leadership to design the just-right custom Math Academy for your teachers.



This workshop has really changed the way I view my teaching practices. Every day was loaded with great stuff and executed in a very engaging way.



EDUCATOR, MONTGOMERY CO, PA

Math Academy	Big Mathematical Ideas	Grades
Early Number Concepts	<ul style="list-style-type: none"> Investigate characteristics of the base-ten number system. Use physical models to explore number relationships. Develop number sense through number construction and deconstruction. Expand the base-ten number system to include very small and very large numbers. Use models to represent operations with whole numbers. Explore and model integers. 	K-3
Early Fraction Concepts	<ul style="list-style-type: none"> Investigate multiple representations of fractions. Develop a conceptual understanding of fractions as equal parts of a whole. Compare and order fractions and explore equivalent fractions. Determine fractional representations given parts of the whole. Use benchmark fractions and models of fractions to solve problems. 	K-5
Fraction Sense and Operations	<ul style="list-style-type: none"> Investigate multiple representations of fractions. Explore fractions as division. Explore and model fractions greater than 1. Model operations with fractions. 	K-5
Exploring Measurement	<ul style="list-style-type: none"> Build and use tools to understand, draw, and measure angles. Explore non-standard and standard measures for length, weight, capacity, perimeter, and area. Tell and show time; compute elapsed time. Estimate measures and determine appropriate units for attributes. Explore children's books used to enhance student understanding of measurement. 	K-5
Decimal Sense and Operations	<ul style="list-style-type: none"> Write, compare, and order decimals and decimal representations. Estimate and operate with decimals using models and make connections to fraction operations. Compare and identify equivalent forms of percents, fractions, and decimals. Estimate, create models for and calculate values in real-world percent applications. 	4-8
Geometric Thinking	<ul style="list-style-type: none"> Sort shapes to define attributes. Complete and describe basic geometric constructions using a variety of tools. Investigate quadrilaterals. Discover the Pythagorean Theorem. Perform transformations in a variety of ways. Construct nest nets and model geometric solids. Use manipulatives and technology to derive various formulas. 	6-8
Proportional Reasoning	<ul style="list-style-type: none"> Distinguish between fractions and ratios. Compare ratios and solve proportions. Compare proportional and non-proportional relationships. Explore a variety of informal strategies for examining proportional relationships. 	6-8
Algebraic Thinking	<ul style="list-style-type: none"> Explore the use of symbols to merge arithmetic and algebraic thinking. Investigate patterns to create generalizations. Model and solve contextualized problems using various algebraic representations. Use mathematical models to explore and analyze linear and non-linear relationships. 	6-8
Exploring the Structure of Functions	<ul style="list-style-type: none"> Define functions and their characteristics. Explore and analyze the multiple representations of function families. Understand the advantages of various algebraic and graphical forms of functions. Understand how new functions are built from other functions graphically and algebraically. Understand composition of functions and transformations of functions from a graphical perspective. 	8-12
Statistics and Probability	<ul style="list-style-type: none"> Differentiate mathematical and statistical reasoning. Investigate probability, informally, and formally, and conduct simulations. Compare data through displays and measures of center and spread. Explore quantitative bivariate data and best fit curves. Explore categorical bivariate data through frequency tables. Design surveys and experiments. 	8-12