

Kumon and the Common Core

Dominique Ciccarelli and Jonathan Nukpezah

GOALS OF THE KUMON PROGRAM

With over 50 years of experience, Kumon is internationally benchmarked and designed to contain the elements essential for studying calculus and advanced literary texts. Student advancement through self-learning and study of beyond-grade-level material is the most essential aspect of the Kumon Method. Kumon's goal is more than just students improving their knowledge in math or reading; Kumon instills in students the skills and mindset for learning, without being taught, material they have not yet encountered. As students build a strong foundation by mastering math and English language arts skills at their own pace, they also build critical thinking skills by analyzing example problems on the worksheets and reading difficult passages.

SELF-LEARNING

Cultivating this spirit of self-learning is the heart and soul of Kumon. This means enabling students to study new concepts without having to be taught. One studies willingly, solves problems independently, and corrects any mistakes. The Kumon Method gives students the opportunity to experience the joy of learning in previously unexplored

areas of knowledge. With the Kumon Method, well-organized worksheets are designed in a way in which content advances in small steps. Example problems in the worksheets guide students to learn independently especially when new concepts are introduced. Students develop the mindset that anything is within their reach when they try. Only topics suitable for self-learning and aligned with the Kumon curriculum goals are included in the programs.

ADVANCEMENT BEYOND GRADE LEVEL

Guiding students to advance beyond grade level pursues a student's full potential. When students study above grade level, they are introduced to new topics and concepts much earlier than at school. The aim for students is to reach the Kumon International Standard of grade level within one year of enrollment and then go beyond to study ahead of their grade level. Students can experience the full benefits of self-learning only after they study above-grade-level material.

INDIVIDUALIZATION

The curriculum is individualized for each student's learning situation to enable each student to achieve more on his or her own.

The role of the Instructor is to individualize instruction for each student to develop his or her abilities and skills at an appropriate pace. Instructors carefully monitor and guide each student to reach advanced study and achievement through self-learning.

AIM OF THE READING PROGRAM

The goal of the reading program is to cultivate a high level of reading ability, or in other words, to acquire the ability to read passages critically. There are many components of reading, such as vocabulary, comprehension, and fluency that need to be nurtured to develop a student's full potential. The reading curriculum was created on the premise that a student with good reading comprehension should be able to summarize and critique a passage. Kumon aims to develop the ability to read passages quickly and understand the meaning of each word and sentence, while grasping the underlying implications of what is written in the passage. This understanding of written language will enable a student to summarize, critique, dissect, and analyze more challenging literature. Toru Kumon believed it is reading ability that enables children to self-learn and improves the effectiveness of self-learning. *(UPI: Reading, p. 48)*

Kumon Instructors should emphasize the purpose of self-learning, the strengths of student advancement, and their role to individualize instruction.

The Common Core State Standards Initiative is a set of shared learning goals by grade-level blocks, but it is not a national curriculum.

Toru Kumon's goal in creating a Recommended Reading List, even before the reading materials in Japan were created, was to help build a lifelong love of reading. When students read books, they build a richer vocabulary, develop the skill to determine the meaning of an unknown word in context, and gain greater knowledge. Students with an extensive vocabulary are able to continue reading passages without asking questions.

A high level of reading ability also means being able to choose books for oneself, to read books at a good speed, and to read a large number of books regardless of their difficulty or genre. It includes being able to think deeply about the content of the books one reads and learn from them. Reading books is an important habit to establish as early as possible, because students who read many books have excellent self-learning ability.

AIM OF THE MATH PROGRAM

The Kumon Math Program is designed to help students reach calculus as quickly as possible through self-learning and make the study of high school-level math easy. The math worksheets were created with the aim of producing the greatest learning effect in the shortest possible time. As a result, the math worksheets—organized into levels from Level 6A to Level O, and the X levels—were designed to contain only those elements essential for the mastery of calculus and other high-level math topics. The Kumon Math Program

focuses on calculation ability from arithmetic through algebra to calculus. The development of calculation ability frees students to focus on the strategy of problem solving which grows in importance as students advance to high-level math in the Kumon Math Program or in school. The math worksheets incorporate methods for introducing new content in a way that enables students to understand it independently. The worksheets increase in difficulty in small increments in order for students to advance on their own more easily. This structure allows students even in elementary and junior high school to study fractions, equations, factorization, functions, and graphs, and then proceed onwards to the study of calculus.

The lower levels of the math worksheets focus on the concepts of numbers, arithmetic and algebra. These topics form the basis for the study of mathematics at any level in school or college. In these lower levels, the worksheets aim for students to develop the ability to come up with answers to problems quickly. The higher levels of the Kumon Math Program emphasize problem-solving skills. The careful study of example problems at the start of each new concept helps students to form connections in their minds between the new concept and topics they have learned before in previous worksheets. This allows them to develop the logical and analytical skills necessary for the study of high-level math in high school and beyond.

GOALS OF THE COMMON CORE STATE STANDARDS INITIATIVE

This is a general introduction to the Common Core State Standards Initiative. There are many standards and subcategories, and www.corestandards.org provides the most detailed description of the Common Core Standards per grade level. It is important to note that the Common Core Standards are a work-in-progress, and may change as more information becomes known about the application of the standards.

The Common Core is an initiative meant to improve the U.S. educational system from kindergarten through 12th grade by establishing English language arts and mathematics expectations. The Common Core is a set of internationally benchmarked standards designed step-by-step to ensure students have the skills and knowledge they will need in college and beyond.

The vision of what educators should teach is expressed through these shared learning goals. The standards provide teachers and administrators with clear expectations of what skills students need to have and what knowledge students need to know at specific grade levels to be successful. The standards are not a national curriculum, and each school district may use its own discretion when making curriculum decisions.

By following the same academic path, students in all participating states will have standardized educational goals. Thus, this will

The Common Core pursues raising the minimum standards for all students; Kumon pursues developing each student's maximum potential.

diminish the disparity in proficiency across states. National standardized assessments of a consistent criteria are in the process of being created and are expected to be used by participating states in the upcoming years. As of February 2014, forty-five states have voluntarily adopted the standards, but the implementation timeline varies from state to state.

ENGLISH LANGUAGE ARTS

The English language arts standards are demarcated by grade level for kindergarten through grade 8. There are two bands in high school, covering two years each—grades 9-10 and 11-12—to offer states flexibility. There are four anchor standards throughout all grade levels: Reading, Writing, Speaking/Listening, and Language. Students are expected to read fluently, write persuasively using evidence, present complex information clearly, listen intently, and exhibit strong language skills through grammar and vocabulary.

The standards require “close reading” in specific types of content for all students, including classic myths and stories from around the world, foundational U.S. documents, seminal works of American literature, and the writings of Shakespeare. After reading or listening, students are expected to discuss and exhibit comprehension in the passage, topic, or book. Students need to use English grammar and carefully chosen vocabulary in their writing and speaking. Students are required to write opinion pieces, informational

texts, and persuasive arguments as they progress through the grades. Often, several standards can be addressed by a single rich task.

The standards also have two categories different by design, grades K-5 and 6-12. Students have more than one teacher in grades 6-12. Therefore, the standards are split into two content areas: English language arts, and literacy standards for the social studies and sciences. Grades K-5 place equal emphasis on literary and informational passages, and as the grades progress, a greater emphasis is placed on informational texts.

The Common Core sets standards for English language arts as well as literacy in social studies and sciences. Students are expected to have the literacy skills and understandings in multiple disciplines required for college and career readiness. Therefore, literacy standards for grade 6 and above were created for the social studies and sciences. States have the discretion to adopt the standards for content area or to incorporate these literacy standards within additional content areas. Because college and career readiness overwhelmingly focuses on complex texts outside of literature, these standards ensure students are being prepared to read, write, and research across curriculums.

LITERACY GOAL COMPARISON

Kumon and the Common Core Standards align particularly well in two of the anchor standards: Reading and Language. Both programs in the lower levels are

phonics based and share many of the same foundational skills. Both programs incorporate a variety of literature such as myths, autobiographies, and Shakespeare. As in the Common Core, the Kumon Program emphasizes critical thinking, comprehension, and knowledge related to grammar and vocabulary. As students progress in both programs, they accumulate the skills needed to read, examine a passage, summarize, form an opinion, and defend their thoughts. All students will be expected to read passages critically and draw evidence from informational or literary texts to support their analysis, reflection, or opinions.

MATHEMATICS

The Common Core Math Standards define what students should understand and be able to do in their study of mathematics. The standards set grade-specific standards, but they do not define specific methods or materials necessary to support students who are below or above grade-level expectations. The standards aim to allow for students with the widest possible range of abilities to study mathematics. To accommodate that goal, the standards stress not only procedural skills, but also conceptual understanding of key concepts and topics, which are defined throughout the standards.

The Common Core Math Standards are separated into K-5, Middle School, and High School. The K-5 math standards equip students with a solid foundation in whole numbers, addition, sub-

traction, multiplication, division, fractions, and decimals to give them the foundation for more demanding math concepts and procedures.

The middle school standards, building on the core topics in K-5, stress hands-on learning for students in the areas of geometry, algebra, probability, and statistics, and aims to prepare students for algebra in grade 8. The high school standards place emphasis on mathematical modeling, specifically on the use of mathematics and statistics to analyze empirical situations and improve decisions. They aim to help students practice applying mathematical ways of thinking to real world issues and challenges.

MATH GOAL COMPARISON

The table here is a general comparison of the Common Core Standards for grades K-12 and the Kumon Math Program. The table gives an overview of the material covered in the Common Core Standards arranged in the following grade level blocks: K-2, 3-5, 6-8 and 9-12. The blue highlighted areas show the topics in the Common Core Standards that align with the Kumon Math Program. The light blue highlighted section on top of the grades 9-12 block shows Kumon reaching calculus and other high-level math topics that are not covered by the Common Core Standards.

		TOPICS				
		Advanced Differentiation			Applications of Differential Calculus	
		Continuity of Functions	Sequences & Series <small>(beyond Arithmetic & Geometric Sequences)</small>	Differential Equations		
		Limits & Derivatives		Indefinite & Definite Integrals		
GRADES 9 - 12	Volume Formulas	Matrices	Vectors	Probability		
	Modeling	Circles	Trigonometry	Conic Sections		
	Single & Bivariate Data	Quadratic & Rational Expressions	Irrational Numbers	Arithmetic & Geometric Sequences		
	Transformations	Graphing Functions		Real & Complex Numbers		
		Linear, Quadratic, Exponential, Logarithmic & other Functions				
GRADES 6 - 8	Bivariate Measurement Data	System of Equations	Equations & Inequalities	Arithmetic with Polynomials		
		Integer Exponents	Absolute Value	Probability		
	Statistical Variability	Proportions	Ratios	Radicals		
		Irrational Numbers		Pythagorean Theorem		
	Angles	Simultaneous Linear Equations			Geometric Constructions	
Unit Rates	Linear Equations	Functions	Inequalities			
	Algebraic Equations & Expressions		Positive & Negative Numbers			
	Four Operations with Rational Numbers		Common Factors & Multiples			
GRADES 3 - 5	Place Value	Graphing Points on the Coordinate Plane			Two-Dimensional Figures	
		Four Operations		Numerical Expressions		
	Angle Measurement	Decimal Notation for Fractions			Mass	Volume
	Units of Measurement	Factors		Multiples		
Division		Multiplication	Fractions			
GRADES K - 2	Place Value	Addition		Subtraction		
		Number Reading		Number Writing		
	Time	Counting Objects	Count Sequence			Length
	Data				Shapes	Weight

PROGRAM GOAL COMPARISON

Kumon is a supplement to the school curriculum and can complement the Common Core, which share many academic competencies. As such, Kumon has its own specific goals of mastery. Material that falls outside of the scope of the Kumon Method may not always synchronize with other educational programs. Although Kumon and the Common Core

might not correspond at every grade level, Kumon's goal is for students to advance beyond their school grade level, while building the math and reading skills necessary to succeed in any program or standards-based curriculum. Kumon fosters in students the skills and confidence to study any school curriculum and become a life-long learner. We will have regular updates about the Common Core Standards in subsequent articles in *Voices* and on iKumon. ■