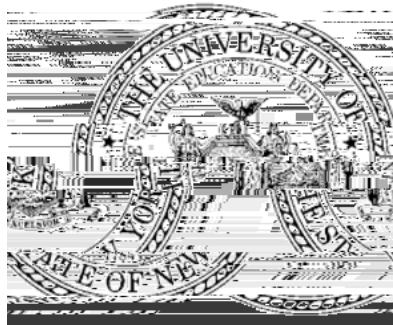


# Next Generation Mathematics Learning Standards: Suggested Breakdown of Instructional Time



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## Introduction:

The \_\_\_\_\_ define what students in each grade should know and be able to do as a result of their study of mathematics. The NGMLS, collectively, are focused, cohesive, and designed to support student access to the knowledge and understanding of the mathematical concepts necessary to function in a world dependent upon the application of mathematics, while providing educators the opportunity to devise innovative programs to support this endeavor.

**Curriculum and instruction that support the content of the learning standards and the unique learning needs of students are locally determined by each individual district in New York State.** Teacher preference and flexibility in planning units of study continue to play vital roles to both meet the needs of the students and align with the



making as educators transition their instruction to support the learning expectations reflected in the NGMLS document.

For additional information regarding the NYS Next Generation Mathematics Learning Standards, please see the \_\_\_\_\_ document. Additional resources pertaining to the Next Generation Mathematics Learning Standards can be found on our website, including the [Snapshot and Crosswalk documents](#) as well as the \_\_\_\_\_.

For additional information regarding the post-test standards designation for NGMLS, please see the \_\_\_\_\_ webpage.

Additional information regarding the [Next Generation Mathematics Learning Standards Performance Level Descriptions](#) can also be found on the website.

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## Kindergarten:

In Kindergarten, instructional time should focus on two areas:

- (1) developing a sound sense of numbers by representing and comparing numbers, initially using sets of objects;
- (2) recognizing and describing shapes and using spatial relations.

More learning time in kindergarten should be devoted to number than to any other topic.

### Suggested Instructional Time Percentages for Kindergarten by Domain:

#### Notes/Considerations:

The suggested instructional time percentage ranges for **Number and Operations in Base Ten**, **Measurement and Data**, and **Geometry** domains do not indicate that the standards in these domains are less important. The standard in the **Number and Operations in Base Ten** domain assists in tying together the domains of **Counting & Cardinality** and **Operations and Algebraic Thinking**. The **Measurement and Data**, and **Geometry** domains work together cohesively to allow students to achieve deep understanding for the grade-level. They allow students to attain the second focus of the grade level; recognizing and describing shapes and using spatial relations, while also supporting **Counting & Cardinality** by providing concrete objects for counting. These two domains provide support for students to achieve strong foundational knowledge and ds10 ( u-2 (r)

## **Grade 1:**

In Grade 1, instructional time should focus on three areas:

- (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20;
- (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; and
- (3) developing understanding of linear measurement and measuring lengths as iterating length units.

### **Suggested Instructional Time Percentages for Grade 1 by Domain:**



## Grade 2:

In Grade 2, instructional time should focus on four areas:

- (1) extending understanding of base-ten notation;
- (2) building fluency with addition and subtraction;
- (3) using standard units of measure; and
- (4) analyzing and classifying two-dimensional shapes as polygons or non-polygons.

### Suggested Instructional Time Percentages for Grade 2 by Domain:

Operations and Algebraic Thinking	Number and Operations in Base Ten	Measurement and Data	Geometry
30% - 40%	25% - 35%	25% - 30%	5% - 10%

#### Notes/Considerations:

The suggested instructional time percentage range in the **Geometry** domain does not indicate that the standards in this domain are less important. These standards lay the foundation for cohesive work (such as understanding area) in future grade levels in multiple domains: **Number and Operations – Fractions, Measurement and Data, and Geometry.**

## Grade 3:

In Grade 3, instructional time should focus on four areas:

- (1) developing understanding of multiplication and division and strategies for multiplication and division within 100;
- (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1);
- (3) developing understanding of the structure of rectangular arrays and of area; and
- (4) describing and analyzing polygons based on the number of sides and vertices.

### Suggested Instructional Time Percentages for Grade 3 by Domain:

#### Notes/Considerations:

The suggested instructional time percentage ranges in the **Number and Operations in Base Ten** and **Geometry** domains do not indicate that the standards in these domains are less important. Student work in the **Number and Operations in Base Ten** domain in Grade 3 continues work from previous grade levels with place value while preparing students for the foci in grade 4 with the addition of standards NY-3.NBT.4a and NY-3.NBT.4b. The grade 3 **Geometry** standards continue to focus on polygons (1s) 13 (y) 11/TT2 1 Tf0





## **Grade 6:**

In Grade 6, instructional time should focus on five areas:

- (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems;
- (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers;
- (3) writing, interpreting, and using expressions and equations;
- (4) deepening understanding of area, surface area and volume; and
- (5) developing understanding of simple probabilities and statistical thinking.

### **Suggested Instructional Time Percentages for Grade 6 by Domain:**

#### **Notes/Considerations:**

The standards in the **Geometry** domain should not be overlooked as they continue to expand the progression started in earlier grades with area and as students begin working with volume. This work is also supported by the new added standard pertaining to area and volume models which in turn supports the **Expressions, Equations, and Inequalities** and **The Number System** domains. Additionally, there



## Grade 8:

In Grade 8, instructional time should focus on three areas:

- (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations;
- (2) grasping the concept of a function and using functions to describe quantitative relationships;
- (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

### Suggested Instructional Time Percentages for Grade 8 by Domain:

	Expressions, Equations, and Inequalities		Functions		Geometry		Statistics & Probability		The Number System	
Percentage	25%	25%	15%	20%	20%	10%	5%	15%	5%	10%

#### Notes/Considerations:

The standards in **Statistics & Probability** tie into one of the main foci for this grade level and work in conjunction with and provide a context for the standards in the **Expressions, Equations, and Inequalities** and **Functions** domains. Therefore, these standards should not be overlooked or considered less important. The standards in **The Number System** domain work to support concepts in both the **Expressions, Equations, and Inequalities** and **Geometry** domains as well as the three high school courses (Algebra I, Geometry, and Algebra II).

#### Please Note:

The Grade 8 Suggested Percentage of Instructional Time Ranges consider instruction for a complete school year from September – June.

Certain concepts may take more instructional time to develop within a classroom to achieve the expectation of the standards than may be evidenced on a grade-level State assessment.





## **Geometry:**

For the high school course of Geometry, the suggested instructional time percentage ranges are provided at the domain level, as all the standards are contained within the conceptual category of **Geometry**. The suggested instructional time percentage ranges below may lead an educator to think the **Congruence** domain is the focus domain of the course, but this is **not** the case. Although many fundamental concepts begin within the **Congruence** domain, these concepts are expanded upon and applied throughout the other domains found in the Geometry course. All the domains work together cohesively to develop a student's geometric knowledge, allowing them to function in a world dependent upon the application of mathematics, specifically, geometry.

### **Suggested Instructional Time Percentages for High School Geometry by Domain:**

#### **Notes/Considerations:**

The foundation of knowledge built in elementary and middle school is expanded in the **Congruence; Similarity, Right Triangles, and Trigonometry; Circles; and Expressing Geometric Properties with Equations** domains. Two of these domains, **Similarity, Right Triangles, and Trigonometry** and **Expressing Geometric Properties with Equations**, have an added standard that may require additional instructional time for students to master. In addition to the work in the domains listed above, students continue their study of the attributes of two- and three-dimensional geometric shapes from



