Next Generation Mathematics Learning Standards

S/CDN
September 2017

New York State
EDUCATION DEPARTMENT
Knowledge > Skill > Opportunity

Next Generation Learning Standards and Assessment Time Line

The projected time line for standards and assessments over the coming years is:

- **September 2017**: Adoption of Next Generation Standards
- **Awareness Building 2017-2018 School Year**: Two-day assessments measuring the current standards; professional development on Next Generation Standards;
- **Capacity Building 2018-2019 School Year**: Two-day assessments measuring the current standards; professional development continuing on Next Generation Standards;
- **Capacity Building 2019-2020 School Year**: Two-day assessments measuring the current standards; professional development continuing on Next Generation Standards;
- **Full Implementation September 2020**: Full implementation of the Next Generation Standards;
- **Spring 2021**: New grade 3-8 tests measuring Next Generation Standards.
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- **Awareness Building 2017-2018 School Year**: Two-day assessments measuring the NYS P-12 CCLS standards; professional development on Next Generation Standards;

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*Autumn is the season to find contentment at home by paying attention to what we already have - Anonymous*

NYS P-12 CCLS for Mathematics

- Focus
- Fluency
- Rigor
- Coherence
- Deep understanding of application

- Mathematical Content
- Look for and make use of structure
- Model with mathematics
- Use tools strategically
- Look for and express regularity in repeated reasoning

- Making sense/perserverance
- Reason abstractly/quantitatively
- Construct viable arguments/critique reasoning
Standards were added.
- Grade 6 standard NY-6.G.5 Using area and volume models to explain perfect squares and perfect cubes was added to help connect work with other grade-level standards that deal with exponents, as well as strengthen the progression of skills with exponents and irrational numbers at the middle level, and work with radicals (new standard A1-N.RN.3a) and completing the square in Algebra I.
- Grade 3 standard NY-3.NBT.4b Read and write four-digit numbers using base-ten numerals, number names, and expanded form, strengthens place value progression from NY-2.NBT.1 and 3 to NY-4.NBT.2.

Added language “Explore”
- Explore indicates that the topic is an important concept that builds the foundation for progress toward mastery in later grades. Repeated experiences with these concepts, with immersion in the concrete, are vital.

Maintain the balance of procedural fluency, conceptual understanding and application.
- Operations and Algebraic Thinking, for grade 3 standard NY-3.OA.8a Solve two-step word problems...represent these problems using equations or expressions...two-step problems need not be represented by a single expression or equation. (NY-4.OA.3, NY-5.OA.1, standards from Grade 6 cluster from Expressions and Equations “Apply and extend previous understandings of arithmetic to algebraic expressions.”)
The Introduction...

The high school courses are now listed in the Standards document by course (Algebra I, Geometry, Algebra II) with the standards that make up the course.

- Changing expectations for mathematics achievement
- Diverse Learner Populations
- How to Read the Standards for Mathematical Content
- Connecting the Standards for Mathematical Practice to the Standards for Mathematical Content

Updated/added Prekindergarten-8th grade-level and high school course introductions that highlight areas of focus.

Grades Overview

1. Through the context and application of the concept, students will be able to:
   - Understand the meaning of the meaning of multiplication and division of whole numbers through activities and problem solving that reflect groups, rows, and arrays.
   - Use properties of operations to multiply whole numbers, using increasingly complex strategies based on their properties to solve multiplication and division problems.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Links:

- Page 4 of 16
- Math Common Core State Standards Initiative
- Common Core State Standards for Mathematics
- Standards for Mathematical Practice
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Next Steps

- Resources/training/professional development
- Supporting resources for guidance. For example, grade by grade crosswalks of what is different in the revised standards
- Guidance for students with disabilities and English language learners
- Development of roadmaps that guide the implementation process
- Ongoing discussions with S/CDN and ELA and Mathematics Professional Development groups to provide resources and guidance to ensure successful implementation

Questions?

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### Crosswalks

**One-page snapshot**

<table>
<thead>
<tr>
<th>Two-column side by side</th>
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</thead>
<tbody>
<tr>
<td><strong>New York State Next Generation Mathematics Learning Standards</strong></td>
</tr>
<tr>
<td><strong>Grade 1 Snapshot</strong></td>
</tr>
<tr>
<td><strong>Instructional Conversion</strong></td>
</tr>
<tr>
<td><strong>Table</strong></td>
</tr>
</tbody>
</table>

**Detailing Conversion**

<table>
<thead>
<tr>
<th><strong>Operational Standard</strong></th>
<th><strong>New York State Next Generation Standards</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>1.NBT.1</strong></td>
<td><strong>1.MD.1</strong></td>
</tr>
<tr>
<td><strong>1.NBT.2</strong></td>
<td><strong>1.MD.2</strong></td>
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<tr>
<td><strong>1.NBT.3</strong></td>
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</tr>
<tr>
<td><strong>1.NBT.4</strong></td>
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</table>

**Instructional Conversion**

- **1.NBT.1**: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
- **1.NBT.2**: Compare two numbers between 10 and 120 presented as written numerals.
- **1.NBT.3**: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- **1.MD.1**: Order three objects by length; compare the lengths of two objects indirectly by using a third object.
- **1.MD.2**: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is a whole number of length units long.

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