Bayport-Blue Point

NYSNGS Math Update and Transition

November 27, 2018

Presentation Aim:

- Review Current Progress of NYS Next Generation Math Standards
- Examine Crosswalk between current standards and the NYSNGS
- Discuss Timeline / Moving Forward

NYS Next Generation LEARNING STANDARDS

What you need to know!

What are the Next Generation ELA & Math Standards?

- Delineate the knowledge, skills and understanding that individuals can and do habitually demonstrate over time.
- Clarify educational expectations.
- Identify what a student should know and be able to do independently by the end of each grade.

How were the new standards created?

- The new standards are the result of a two-year collaborative revision process.
- More than 130 teachers, administrators, parents, higher education representatives and stakeholders reviewed each (Common Core) standard.
- Reviewers suggested modifications based on their own experiences, public comments and additional reviews from researchers and content specialists across grade levels, settings and the field.

Timeline for implementation

Phase I: Raise Awareness
Winter 2018-Winter/Spring 2019

Phase II: Build Capacity
Spring 2019-Summer 2020

Phase III: Full Implementation
September 2020-ongoing

New Grades 3-8 ELA/Math State Tests
Spring 2021

What should we be doing over the 2018-19 school year?

- Raise Awareness.
- Become familiar with the NYS Next Generation Learning Standards At-a-Glance and Next Generation Learning Standards Roadmap.
- Share and discuss the documents with your school community!

Where can I go for more learning & resources?

www.nysed.gov/next-generation-learning-standards

How are the new standards DIFFERENT?

- The new standards *clarify* vague and/or confusing wording in both ELA and math standards.
- Adjustments have been made to ensure the new standards are *appropriate* for the youngest students, English language learners and students with disabilities.
- Early-learning standards introduction provides in-depth guidance for *pre-K through second grade* implementation of standards.

Major organizational changes

- The 2017 Next Generation English Learning Standards are organized under the following major strands: Reading, Writing, Speaking & Listening and Language.
- The 2017 Next Generation Math Learning Standards reflect revisions, additions, vertical movement and clarifications to the Common Core Learning Standards for Math.

Roadmap & Implementation Timeline

- **September 2017:** Adoption of NYS Next Generation Learning Standards.
- **Phase I: Raise Awareness (Winter 2018-Winter/Spring 2019):** Professional development on NYS Next Generation Learning Standards; two-day assessments measuring the 2011 P-12 Learning Standards.
- **Phase II: Build Capacity (Spring 2019-Summer 2020):** Professional development continuing on NYS Next Generation Learning Standards; two-day assessments measuring the 2011 P-12 Learning Standards.
- **Phase III Full Implementation (September 2020-Ongoing):** Full implementation of the NYS Next Generation Learning Standards.
- **Spring 2021:** New grade 3-8 tests measuring the NYS Next Generation Learning Standards. The timeline regarding the full-implementation/assessment alignment at the high-school level has not yet been determined and will be forthcoming; however, full-implementation/assessment alignment will not be before the school year 2020-2021.

How to get there…

- NYSED.gov
- Standards & Curriculum
- Next Generation Learning Standards
- Mathematical Practices
- Mathematics Learning Standards Crosswalks

Changes per grade level

Grade	New Standards	Moved Standards	Highlights & Instructional Considerations
Kindergarten	2	None	10
1st Grade	3	None	6
2nd Grade	None	None	10
3rd Grade	2	None	11
4th Grade	None	None	10
5th Grade	None	None	9
6th Grade	8 (1-G & 7-SP)	None	21
7th Grade	1	3 (down to 6th grade)	14
8th Grade	None	1 (up to Algebra)	17
Algebra 1	3	6 (Standard Removed)	12
Geometry	2	1 (Standard Removed)	14
Algebra 2	5	12	5

New York State Next Generation Mathematics Learning Standards Crosswalks

The crosswalk documents are a reference tool for educators and parents to efficiently compare the changes between the 2011 New York State P-12 Common Core Learning Standards for Mathematics and the 2017 Next Generation Mathematics Learning Standards. The crosswalks can assist educators in the preliminary work required in assessing the scope of the content changes and the impact those changes will have on student learning, locally devised curriculum, instruction and instructional resources. While the crosswalks are valuable as a reference, they do not substitute for a deeper, more comprehensive understanding of the New York State Next Generation Mathematics Learning Standards.

The **Grade-level Crosswalk** uses the full text (no diagrams or charts) of both sets of standards so that readers can review and compare the two sets side-by-side. Strike-through and bolded text can be seen throughout in order to highlight content differences and wording modifications between the two sets of standards.

The **Grade-level Snapshot** provides a condensed one-page summary that lists standards that were added to the grade/course, standards that were moved, and any instructional considerations that need to be highlighted based on new standard clarifications or language modification.

Sample Crosswalk Document

New York State Next Generation Mathematics Learning Standards		
Grade 5 Crosswalk		
Operations and Algebraic Thinking		
Cluster	**NYS P-12 CCLS**	**NYS Next Generation Learning Standard**
Write and interpret numerical expressions.	**5.OA.1** Use parentheses, ~~brackets, or braces~~ in numerical expressions, and evaluate expressions with these symbols.	**NY-5.OA.1 Apply the order of operations to evaluate numerical expressions.** **e.g.,** • **6 + 8 ÷ 2** • **(6 + 8) ÷ 2** **Note: Exponents and nested grouping symbols are not included.**
	5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	**NY-5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. e.g., Express the calculation "add 8 and 7, then multiply by 2" as (8 + 7) × 2. Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921, without having to calculate the indicated sum or product.

Sample Snapshot Document

Grade 5 Snapshot 

Standards New to Grade 5

No new standards.

Standards Moved from Grade 5

No standards moved.

Highlights/Instructional Considerations

NY-5.OA.1 This is the first formal experience with order of operations (see modifications to standards NY-3.OA.8 and NY-4.OA.3) and links to work with writing simple expressions in standard NY-5.OA.2. There is no expectation of nested (use of brackets) order of operations problems or order of operations problems that involve exponents at this level.

NY-5.NBT.3a Introduction of the use of ( ) when writing a number in its expanded form. Work is linked to standards NY-5.OA.1 and 2, and NY-5.NBT.2.

NY-5.NBT.5 Students may use any standard algorithm for the multiplication of multi-digit whole numbers

Updating Our Scope & Sequences

▪ Multiplying polynomials ▪ Dividing polynomials **Next Generation Standards:** **Unit 1A:** ▪ Categorize the sum or product of rational or irrational numbers. **Unit 1B:** ▪ Simplifying Radicals ▪ Adding and Subtracting Radicals ▪ Multiplying and Dividing Radicals ▪ Rationalizing in the form of a/√b	▪ Solving linear equations with decimal and fractional coefficients ▪ Excluded Values and Rational Equations ▪ Explaining the solving process line by line ▪ Solving literal equations	interval notation **Next Generation Standards:** ▪ Remove compound inequalities.	▪ Ratio word problems ▪ Inequality word problems

Updating Our Curriculums

Math - Algebra One Unit 1: The Structure of Expressions (9 days)

Standards: A-APR.1, A-SSE.1-2, 6.EE.1-2, 7.EE.1, 8.EE.1

Red indicates Next Generation Standard Changes

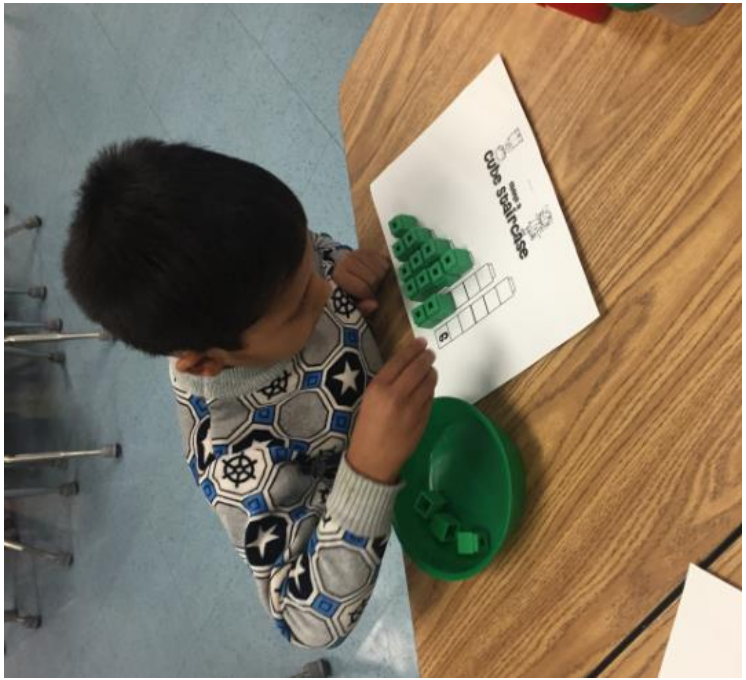
Enduring Understandings *(students will understand that ...)*	Learning Objectives *(students will be able to ...)*	Essential Knowledge *(students will know that ...)*
EU 1.1 - The structure of expressions can be used to define what it means for two algebraic expressions to be equivalent.	**LO1.1A** - Classify numbers in the real number system. Categorize the sum or product of rational or irrational numbers.	**EK 1.1A1** - Rational numbers can be expressed as a ratio of two numbers. Irrational and rational numbers make up the real number set. **ESSENTIAL QUESTION:** Are there non-real numbers? How can we identify them?

Mathematical Practices

i.e. great math teaching practice

1. Make sense of solving 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. Look for and make use of structure.
7. Look for and express regularity in repeated reasoning.

Elementary Schools Learning Base 10



Middle School Connections

Name:_____Date:_____8R Unit 10 - Lesson 1

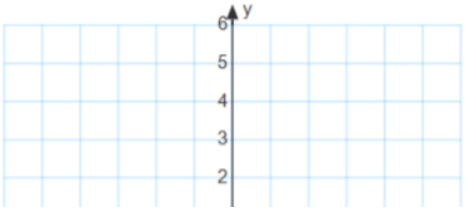
Today we will determine what makes an expression or equation linear or non-linear in order to explain what it would look like on the coordinate plane.

Warm-up those brains! 

1a) Fill out the table for the x-values that are given. The first one is done for you as a guide.

x	y = 2x	y
-2	y = 2(-2)	-4
-1		

b) After your table is complete, graph the points on the coordinate plane below. Flashback to 7th grade!!



High School Classrooms

Intro to Computer Science

Algebra TWO

Moving Forward…

- Continue to update and revise curriculum
- Devote common planning to updating and aligning lessons and assessments
- Continually analyze performance
- Start OODA Cycle over (Observe, Orient, Decide, Act)

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