

NYS P-12 Common Core Learning Standards

The New York State Education Department has adopted Common Core Learning Standards for English Language Arts (ELA) and Literacy in History/Social Studies, Science, and Technical Subjects and Mathematics for Pre-Kindergarten through grade 12. These standards will define curriculum and instruction. They will also be the basis of the state assessments beginning with the 2012-2013 school year. The Common Core Standards have been adopted by most states across the nation.

WHAT ARE THE COMMON CORE LEARNING STANDARDS?

The Common Core Learning Standards are broad statements of outcomes that provide a consistent and clear understanding of what students are expected to learn so that teachers and parents can help them.

WHAT DOES THIS MEAN FOR MY CHILD?

Public school districts are changing what they teach and how they teach to align with these standards (so there is a common understanding of what students are expected to learn). Ultimately, the goal is to prepare your child to enter the college of his/her choice or to enter the workforce and be productive citizens in our democratic society.

WHERE DID THEY COME FROM?

The Common Core State Standards initiative was led by the National Governors Association for Best Practices and the Council of Chief State School Officers – this is a national body of all Commissioners of Education.



WHAT CAN I DO TO HELP MY CHILD WITH ENGLISH LANGUAGE ARTS AND LITERACY?

There are six changes in English language arts and literacy that can help you.

1. Children should read stories and informational text in grades P-K through 5. The shift is to have readers devote the same amount of time to story reading and informational text reading. Some examples of informational texts are newspapers, magazines, technical manuals, science, social studies, and other content texts books. Read different types of books and texts (e.g. magazines, technical manuals, biographies) to and with your child. Read newspapers to and with your child.
2. Children should have a deep knowledge of academic content areas: Science, Social Studies, Arts, etc. and learn from a variety of texts. Read science and social studies books with your child. Look for books that interest your child.
3. Children should read text that becomes more complex as they advance through the grades. Read books that become harder for your children as they progress through the PreK-12 grades. Ask your child's teacher for grade level appropriate texts, visit your local library and see links on appropriate reading lists.
4. Children should be able to answer questions based on the texts they read. Ask your child to find answers to questions in the text. Ask your child to write about a book he or she has read. Ask your child to take a position from a character's perspective.
5. Children should learn to write from sources they read. Children should write argumentative essays in addition to narratives. Have your child write essays using details to support the position taken based on texts they read.
6. Children should learn academic vocabulary in the content areas and apply vocabulary words correctly. Practice increases a child's comfort with academic words – school language. Provide opportunities for your child to explain new words and use them in a sentence. Look for ways to practice school vocabulary with your child at home. Examples of school language include such words as trace, analyze, infer, summarize, contrast, and predict. Ask your child's teacher what academic words will be covered in your child's grade level.



WHAT CAN I DO TO HELP MY CHILD WITH MATHEMATICS?

There are six changes in mathematics that can help you.

Focus: Teachers significantly narrow and deepen the scope of what is taught in the math classroom. They do so in order to focus deeply only on the concepts that are prioritized in the standards so that students reach strong foundational knowledge and deep conceptual understanding and are able to transfer mathematical skills and understanding across concepts and grades. Mathematics concepts, content and practice are taught to mastery at each grade level.

Coherence: Principals and teachers carefully connect the learning within and across grades so that, for example, fractions or multiplication spiral across grade levels and students can build new understanding onto foundations built in previous years. Teachers can begin to count on deep conceptual understanding in core content and build on it. Each standard is not a new event, but an extension of previous learning.

Fluency: Students are expected to have speed and accuracy with simple calculations; teachers structure class time and/or homework time for students to memorize, through repetition, core functions such as: multiplication tables so that they are able to understand and manipulate complex concepts.

Deep Understanding: Teachers teach more than “how to get the answer” and instead support students’ ability to access concepts from a number of perspectives so that students are able to see math as more than a set of mnemonics or discrete procedures. Students demonstrate deep conceptual understanding of core math concepts by applying them to new situations as well as writing and speaking about their understanding.

Application: Students are expected to use math and to choose the appropriate concept for application even when they are not prompted to do so. Teachers provide opportunities at all grade levels for students to apply math concepts in “real world” situations. Teachers in content areas outside of math, particularly science, ensure that students are using math – at all grade levels – to make meaning of and access content.

Dual Intensity: Students are practicing and understanding. There is more than a balance between these two things in the classroom – both are occurring with intensity. Teachers create opportunities for students to participate and make use of the skills through extended application of math concepts.



WHAT CAN I DO TO HELP MY CHILD WITH MATHEMATICS?

There are eight Standards for Mathematical Practice that describe skills and proficiencies that students should be able to develop along their schooling careers. These are explained below:

- 1. Make sense of problems and persevere in solving them.** Students who are mathematically proficient start by understanding the meaning of a problem and looking for entry points to its solution. For example, ask your child to explain a math word problem to you and how to solve it. Encourage them to draw and illustrate their solution.
- 2. Reason abstractly and quantitatively.** Students who are mathematically proficient make sense of quantities and their relationships in problem situations. For example, ask your child to explain how much money you will get back in change when paying for your groceries.
- 3. Construct viable arguments and critique the reasoning of others.** Students who are mathematically proficient understand and use stated assumptions, definitions, and previously established results in constructing arguments. For example, when your child shares an answer to a math problem, ask “Why is that true?” Listen carefully to the justification and ask questions. Don’t simply accept an answer.
- 4. Model with mathematics.** Students who are mathematically proficient can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another.
- 5. Use appropriate tools strategically.** Students who are mathematically proficient consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software.
- 6. Attend to precision.** Students who are mathematically proficient try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. For example, when measuring an object or drawing with your child, take time to position the ruler carefully.
- 7. Look for and make use of structure.** Students who are mathematically proficient look closely to discern a pattern or structure. Young students, for example, should notice that three and seven more is the same amount as seven and three more. They may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 is the same as $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property.
- 8. Look for and express regularity in repeated reasoning.** Students who are mathematically proficient notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students should notice that when dividing 1 by 3 they are repeating the same calculations over and over again, and conclude they have a repeating decimal.



WHAT ARE THE CHANGES TO CONTENT BY GRADES IN MATHEMATICS?

KINDERGARTEN: Instructional time will focus on two critical areas: (1) understanding whole numbers using concrete materials, including concepts of correspondence, counting, cardinality, and comparison; (2) describing shapes in their environment. You can help your child gain mastery in these areas by counting real objects with your child at home, practicing shapes that you find in your home or environment.

GRADE 1: Instructional time will focus on four critical areas: (1) understanding addition, subtraction, and strategies for addition and subtraction within 20; (2) understanding whole number relationships and place value, including grouping in tens and ones; (3) understanding linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes. You can help your child gain mastery in these areas by adding and subtracting real objects at home. For example, if I have 10 beans and I add 7 beans, how many beans will I have?

GRADE 2: Instructional time will focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes. You can help your child gain mastery in these areas by counting by 10's and 100's, and decomposing numbers as they come up naturally, for example if you have 36 lego bricks, you have three tens and six ones.

GRADE 3: Instructional time will focus on four critical 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 two-dimensional shapes. You can help your child by observing utilizing groups as they appear in your normal surroundings, like noticing that three rows of five tiles or five rows of three tiles on your wall or floor form a group of 15. For unit fractions, one strategy would be to partially fill two identical cups, discussing the difference in volume of the cup you fill $\frac{1}{2}$ way and the cup you only fill $\frac{1}{4}$.

GRADE 4: Instructional time will focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry. You can have your child track your purchases when shopping by using reasonable



WHAT ARE THE CHANGES TO CONTENT... *continued*

estimates of the prices to reinforce place value and fluency with multiplications. For example, if you've got two shirts that cost about \$20 each, two pairs of slacks for about \$40 each, and one coat for about \$100 in your cart your child should be able to tell you that \$200 will not be enough to make this purchase.

GRADE 5: Instructional time will focus on three critical areas:

(1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume. You can help your child "translate" decimal values into fractions. For example, if you need 2.5 candy bars your child could read the number as "two and five tenths" and understand that it is equivalent to two and a half candy bars.

GRADE 6: Instructional time will focus on four critical 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; and (4) developing understanding of statistical thinking. You can help your child by solving rate and ratio problems as they occur in your home life. For example, if it takes thirty five seconds to fill two glasses, how long would it take to fill six glasses? Or, if it takes three hours to travel one hundred fifty miles to the amusement park, how far could you go in five hours?

GRADE 7: Instructional time will focus on four critical areas:

(1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples. You can help your child by asking for help in situations when going out to eat by calculating the 15% or 20% of tip based on the check. You can also have your child figure out the sale price of an item based on the ticketed price and advertised percentage (%) discount.



WHAT ARE THE CHANGES TO CONTENT... *continued*

GRADE 8: Instructional time will focus on three critical 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. You can help your child by asking your child to describe a situation you might encounter using mathematical concepts. For example, if you are planning a trip, your child could graph the cost of the flight based on the base ticket price and the total cost depending on the amount per bag you'd pay to travel with one or more bags.

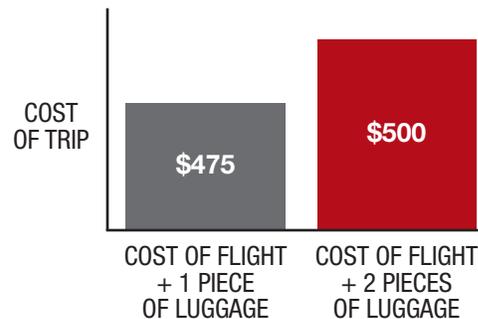
Total cost of trip: **X**

Cost of flight: **Y** = \$450

Cost of luggage: **N** = Number of luggage

(C) = Cost per luggage, \$25 per bag

$$X = Y + N(C)$$



HIGH SCHOOL: The high school standards specify the mathematics that all students should study in order to be college and career ready. Additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics. The high school standards are listed in conceptual categories:

- Number and Quantity
- Algebra
- Functions
- Modeling
- Geometry
- Statistics and Probability



WHAT ELSE CAN I DO TO HELP MY CHILD?

Help your child with his/her homework. By helping your child with homework, you get an idea of the topics that your child is studying in class.

WHERE CAN I FIND RESOURCES ON THE COMMON CORE?

The NYS P-12 CCLS for English Language Arts and Literacy:

http://www.p12.nysed.gov/ciai/common_core_standards/pdfdocs/p-12_common_core_learning_standards_ela_final.pdf

The NYS P-12 CCLS for Mathematics:

http://www.p12.nysed.gov/ciai/common_core_standards/pdfdocs/nysp12cclsmath.pdf

The Common Core State Standards:

<http://www.corestandards.org/>

National PTA website:

<http://pta.org/>

EngageNY (resources for teachers, administrators, parents, and other stakeholders):

www.engageny.org

APPROPRIATE READING LISTS BY GRADES:

<https://publish.comcast.net/splash/>

<http://www.udel.edu/ETL/RWN/ReadingLists.html>

<http://www.teacherfirst.com/read-sel.cfm>

<http://www.haisln.org/recommendedreadinglists.html>



MATH WEBSITES:

Multiflyer is a space-age adventure where you accomplish missions and explore the galaxy by knowing your multiplication facts. The direct link to this game is: www.brainormous.com/online/loader_multiflyer.html. www.brainormous.com provides other quality games as well for math and other academic areas, some free and some for sale.

Math magician is one example of the quality games you will find at Oswego City School's website, the link to the list of math games is: <http://resources.oswego.org/games>. The math games provide fun opportunities to reinforce fact fluencies, there are also resources for literacy skills on the home page.

www.aplusmath.com. A+ Math provides everything from flash cards to homework help in a free, user friendly format.

www.mathplayground.com. Math Playground provides resources by grade level and topics, including interactive resources for model drawing (a cornerstone method in Singapore mathematics).

www.learningplanet.com. Learning Planet has several free games available under the student and teacher tabs. I highly recommend Math Mayhem for fact practice on the student page.

www.AAAmath.com. Customized by grade level and topic, AAA Math features explanations of various mathematical topics, practice problems and fun, challenging games.

www.coolmath.com. This fully interactive site and allows the user to sharpen basic math skills, play games and explore new math concepts.

www.figurethis.org. Created by the National Council of Teachers of Mathematics, this site helps families enjoy mathematics outside school through a series of fun and engaging challenges.

www.easymaths.org. This South African Community website for teachers, parents and students is complete with lessons, tests, exams, worksheets, study skills and much more.

www.funbrain.com/numbers.html. This site includes 17 original games based on soccer, car racing and much more Other games include Math Baseball, where a child can score runs with correct answers and Operation Order, where students can build pyramids with their knowledge of algebra.

QUESTAR III
PUTTING STUDENTS FIRST

Developed by the Office of School Improvement, Questar III BOCES, 2012.