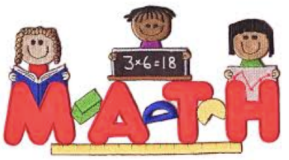
P.S. 103
Math in Action
Parent Guide

Grade 5 – Unit 1
Setting Expectations



We are excited to be using a math curriculum that reflects research-based teaching practices and the New York State Next Generation Mathematics Learning Standards (NGMLS). Education is always evolving to prepare our students for a future that will likely be quite different from today. As such, we strive to build a strong foundation in problem solving, conceptual understanding, and procedural fluency. Topics will be taught so that they build on previous understanding and prepare students for future math learning.

In Grade 5, we will focus on three critical content areas:

1. Developing proficiency 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). This includes:
    1. Using equivalent fractions as a strategy to add and subtract fractions.
    2. Applying and extending previous understandings of multiplication and division to multiply and divide fractions.
2. Extending division to two-digit divisors, integrating decimal fractions into the place value system, developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations. This includes:
    1. Deepening understanding of the place value system.
    2. Performing operations with multi-digit whole numbers and with decimals to hundredths.
3. Developing understanding of volume.
    1. Understanding concepts of volume and relating volume to multiplication and addition.

In addition to these focus areas, students will work with writing and interpreting numerical expressions, analyzing patterns and relationships, developing fluency with multi-digit multiplication, graphing points on the coordinate plane to solve real-world and mathematical problems, and classifying two-dimensional figures into categories.

Unit 1

First 15 Days of Math Instruction:

- Establish norms for a positive learning environment
- Introduce number routines and expectations for transitions
- Classify and categorize shapes and solid figures by their attributes
- Explore the basics of volume and interpreting line plots

Math Assessments:

- **iReady Diagnostic Baseline** – 1st week of October
- **iReady Middle of the Year Diagnostic** – 1st week of February
- **iReady End of the Year Diagnostic** – 1st week of June
- **End of Unit Assessments** – end of each unit
- **Quizzes and Exit Tickets** – used throughout the year
- **NYS Math Exam** – April 22nd – 23rd*

Math Websites for Families:

https://www.k5learning.com/
https://learnzillion.com/p/
https://www.khanacademy.org/signup?isparent=1
https://illuminations.nctm.org/Default.aspx

Note:
*There will be parent workshops regarding NYS testing. Look for notices in your child's backpack and on Class DoJo.

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Math Norms

As a school, we have taken on building and supporting a positive attitude towards mathematics learning. We have adapted our own set of 'Math Norms' based on the research of Jo Boaler*.

Here are the norms your child will be expected to follow in math class this year:

1) Everyone can learn math to the highest level
2) Mistakes are valuable
3) Questions are really important
4) Math is about creativity and making sense
5) Math is connections and communicating
6) Math class is learning and performing
7) Depth is more important than speed

What to Expect in Math Class:

Number Routines:

Number Routines are teacher-facilitated, student-centered techniques for building math thinking and the use of precise math vocabulary. They encourage students to value the thinking of others, so that they can expand and build a better understanding of, and expand on, their own thinking. Number routines support students in developing their mental math skills, in gaining greater fluency in finding patterns, and in using those patterns to make connections and deepen understanding of concepts.

Problem of the Day:

Meaningful problem solving takes time and requires consistent practice. Our problem of the day has been structured to give students time to 'comprehend' the context of the story in triads before they try to 'do' anything with the numbers. Students are given the opportunity to learn from each other, as well as from the teacher. They ask questions, defend their choices and engage in discussions about the various strategies they chose to help them go deeper into and ultimately solve the problem. Each day's problem leads into the teacher's intended objective for the day.

Partner/Group Work:

Students will work a lot with partners and groups throughout the year. Students will be developing skills in effectively communicating their mathematical thinking to others and building on the thinking of others. They will also have opportunities to defend their ideas and critique the reasoning of others.

Centers/Games:

As students learn to cooperatively work with their peers, they engage in student-led centers and games that allow them to reinforce skills previously learned. Mathematics takes time to internalize and really understand, so we have dedicated time for centers to provide students fun and intellectually engaging work that corresponds to the concepts they need to practice.

Math Journals/Notebooks:

Students will write notes, record multiple representations, and use precise mathematical vocabulary when explaining their mathematical learning of new concepts. Notes are used for small group and independent review and study.

Notes:

*British education author and Professor of Mathematics Education at the Stanford Graduate School of Education