



P.S. 103
Math in Action
Parent Guide

Grade K – 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 K, we will be focusing on two critical content areas:

1. Representing and comparing whole numbers, initially with sets of objects

1. Knowing number names and the count sequence.
2. Counting to tell the number of objects.
3. Comparing numbers.
4. Understanding addition as putting together and adding to, and understanding subtraction as taking apart and taking from.
5. Working with the numbers 11–19 to gain foundations for place value.

2. Describing shapes and spatial relationships

1. Identifying and describing shapes.
2. Analyzing, comparing, creating, and composing shapes.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20

More learning time in kindergarten will be devoted to number sense than to other topics.

First 20 Days of Math Instruction:

- Establish norms for a positive learning environment – *What should our math community look like and sound like?*
- Introduce calendar and number routines
- Set up expectations for transitions
- Name and identify colors
- Recognize and count numbers 0–5

Math Assessments:

- **Prerequisite Skills Interviews** – 1 on 1 with the teacher (Sept./Oct.)
- **Middle of the Year Benchmark** – 1st week of February
- **End of the Year Benchmark** – 1st week of June
- **Observation Checklists:** For each unit, the teacher tracks the accuracy of students' understanding of the topics based on the work they are doing individually and in partnerships.



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>



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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) Listen to and Ask questions of their teacher and classmates: *Does that make sense?*
- 2) Keep trying
- 3) Share ideas
- 4) Respect others' ideas
- 5) Agree and Disagree on the math, not the person



What to Expect in Math Class:

Calendar/Number Routines:

Calendar routines are used to reinforce patterns found by tracking days in a month, months in a year, as well as counting the number of days of school. 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 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.

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 skills and concepts they need to practice.

Math in Our World Images – Problem Solving:

Meaningful problem solving takes time and requires consistent practice. Our problem of the week has been structured to give students time to make sense of a real-world image before they try to 'do' anything with numbers. Over the course of the week, they answer the following questions about the same image:

1. What do you see? What is the picture about?
2. What can you count? Count it.
3. What do you wonder?
4. What does this remind you of? (making connections to their experiences)

By the end of May, students begin to see written word problems.