Dear Parents,

The Mathematics Georgia Standards of Excellence (MGSE), present a balanced approach to mathematics that stresses understanding, fluency, and real world application equally. Know that your child is not learning math the way many of us did in school, so hopefully being more informed about this curriculum will assist you when you help your child at home.

Below you will find the standards from Unit Three in bold print and underlined. Following each standard is an explanation with student examples. Please contact your child's teacher if you have any questions.

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.

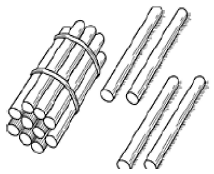
This standard calls for students to rote count forward to 120 by counting on from any number less than 120. This standard also calls for students to read, write and represent a number of objects with a written numeral. Students can represent numbers using cubes, place value (base 10) blocks, pictorial representations, or other concrete materials. As students are developing accurate counting strategies, they are also building an understanding of how the numbers in the counting sequence are related—each number is one more (or one less) than the number before (or after).

NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

a. 10 can be thought of as a bundle of ten ones – called a "ten."

This part of the standard asks students to think of a group of ten ones as a whole unit: a ten. This is the foundation of the place value system. So, rather than seeing a group of ten cubes as ten individual cubes, the student is now asked to see those ten cubes as a bundle – one bundle of ten.

Example:

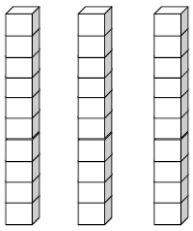
- This model represents 1 ten and 4 more ones "10, 11, 12, 13, 14" instead of 1, 2, 3, 4,…,  or 14. The student should think 14.

b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

This part of the standard asks students to extend their work from kindergarten when they composed and decomposed numbers from 11 to 19 into ten ones and some further ones. In kindergarten, everything was thought of as individual units: ―ones. In first grade, students are asked to think of those ten individual ones as a whole unit: ―*one* ten. Students in first grade explore the idea that the teen numbers (11 to 19) can be expressed as *one* ten and some leftover ones. Ample experiences with ten frames will help develop this concept.

c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

This part of the standard builds on the work of NBT.2b. Students should explore the idea that decade numbers (e.g., 10, 20, 30, 40) are groups of tens with no left over ones. Students can represent this with cubes or place value (base 10) rods. It is recommended to make a ten with unfix cubes or other materials that students can group. Provide students with opportunities to count books, cubes, pennies, etc. Counting larger numbers of objects supports grouping to keep track of the number of objects.



NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

This standard builds on the work of NBT.1 and NBT.2 by having students compare two numbers by examining the amount of tens and ones in each number. Students are introduced to the symbols greater than (>), less than (<) and equal to (=). Students should have ample experiences communicating their comparisons using words, models and in context before using only symbols.

Example: 42 ___ 45

Student 1:	**Student 2:**
42 has 4 tens and 2 ones. 45 has 4 tens and 5 ones. They have the same number of tens, but 42 has fewer ones than 45. Because 42 is less than 45, I can write that as 42 < 45.	42 is less than 45. I know this because when I count up I say 42 before I say 45. I can write 42 < 45.

Fayette County NBT.8 Use concrete representations (e.g., hundreds chart, 99 chart) to explore number patterns and relationships.

This standard asks students to explore patterns on the hundreds chart (or 99 chart). They should look for patterns that involve tens and ones, before/after/between, etc.

Fayette County NBT.9 Skip count forward up to 120 by 5s and 10s.

Although this standard calls for students to skip count forward up to 120 by 5s and 10s, in this unit students will focus on skip counting by tens. They will also complete and extend number patterns that involve skip counting by tens.

Example:

What is the missing number in the pattern below?

40, 50, 60, ___, 80, 90

OA.1 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.

This standard builds on the ideas students learned in Kindergarten by having students use a variety of mathematical representations (e.g., objects, drawings, and equations) to show their thinking. The unknown symbols could include boxes or pictures but not letters.

There are three types of addition problems:

- Result Unknown
- Change Unknown
- Start Unknown

Examples:

Result Unknown	**Change Unknown**	**Start Unknown**
There are 9 students on the playground. Then 8 more students showed up. How many students are there now? 9 + 8 = ____	There are 9 students on the playground. Some more students show up. There are now 17 students. How many students came? 9 + ____ = 17	There are some students on the playground. Then 8 more students came. There are now 17 students. How many students were on the playground at the beginning? ____ + 8 = 17

<u>OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).</u>

This standard mentions the word fluency when students are adding and subtracting numbers within 10. Fluency means accuracy (correct answer), efficiency (within 3-4 seconds), and flexibility (using strategies such as making 5 or making 10). The standard also calls for students to use a variety of strategies when adding and subtracting numbers within 20.
It is important to move beyond the strategy of counting on, as that strategy can become troublesome when working with larger numbers.

Example: 8 + 7 = ___

Student 1: *Making 10 and Decomposing a Number* I know that 8 plus 2 is 10, so I decomposed (broke) the 7 up into a 2 and a 5. First I added 8 and 2 to get 10, and then added the 5 to get 15. 8 + 7 = (8 + 2) + 5 = 10 + 5 = 15	Student 2: *Creating an Easier Problem with Known Sums* I know 8 is 7 + 1. I also know that 7 and 7 equal 14 and then I added 1 more to get 15. 8 + 7 = (7 + 7) + 1 = 15

Example: 14 – 6 = ___

Student 1: *Decomposing the Number You Subtract* I know that 14 minus 4 is 10, so I broke the 6 up into a 4 and a 2. 14 minus 4 is 10. Then I take away 2 more to get 8. 14 – 6 = (14 – 4) – 2 = 10 – 2 = 8	Student 2: *Relationship between Addition and Subtraction* 6 + • is 14. I know that 6 plus 8 is 14, so that means that 14 minus 6 is 8. 6 + 8 = 14, so 14 – 6 = 8