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.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.(Values within 50 with models/representations in this unit)

This standard mentions the word fluently when students are adding and subtracting numbers within 100. Fluency means accuracy (correct answer), efficiency (*basic facts* computed within 3 seconds), and flexibility (using strategies such as making 10s or breaking numbers apart).

This standard calls for students to use pictorial representations or strategies based on place value and properties to find the solution. Students who are struggling may benefit from further work with concrete objects (e.g., place value blocks).

Example: 67 + 25 = __

Place Value Strategy	Adding on Tens then Ones	Properties
I broke both 67 and 25 into tens and ones. 6 tens plus 2 tens equals 8 tens. Then I added the ones. 7 ones plus 5 ones equals 12 ones. I then combined my tens and ones. 8 tens plus 12 ones equals 92.	I wanted to start with 67 and then break 25 apart. I started with 67 and added 2 tens to equal 87. Then I added 5 more to get to 92.	I broke 67 and 25 into tens and ones so I had to add 60 + 7 + 20 + 5. I added 60 and 20 first to get 80. Then I added 7 to get 87. Then I added 5 more. My answer is 92.

Example: 63 – 32 = __

Relationship between Addition and Subtraction
I know that to find 63 – 32, I can find the number that adds to 32 to get 63. I can use the equation 32 + ___ = 63 instead. I counted 3 tens from 32 to get to 62 then 1 more to get to 63. I counted a total of 31. 32 + 31 + 63 so 63 – 32 = 31.

NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.(Two 2-digit numbers in this unit)

This standard calls for students to add a string of two-digit numbers (up to four numbers) by applying place value strategies and properties of operations.

Example: 43 + 34 + 57 + 24 = _____

Student 1: *Associative Property*	**Student 2:** *Place Value Strategies*
I saw the 43 and 57 and added them first, since I know 3 plus 7 equals 10. When I added them 100 was my answer. Then I added 34 and had 134. Then I added 24 and had 158.	I broke up all of the numbers into tens and ones. First I added the tens. $40 + 30 + 50 + 20 = 140$. Then I added the ones. $3 + 4 + 7 + 4 = 18$. Then I combined the tens and ones and had 158 as my answer.

Student 3: *Place Value Strategies and Associative Property*

I broke up all the numbers into tens and ones. First I added up the tens: $40 + 30 + 50 + 20$. I changed the order of the numbers to make adding them easier. I know that 30 plus 20 equals 50 and 50 more equals 100. Then I added the 40 and got 140. Then I added up the ones: $3 + 4 + 7 + 4$. I changed the order of the numbers to make adding easier. I know that 3 plus 7 equals 10 and 4 plus 4 equals 8. 10 plus 8 equals 18. I then combined my tens and ones. 140 plus 18 equals 158.

OA.1 Use addition and subtraction within 100 to solve one and two step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. Problems can include contexts that involve adding to, taking from, putting together/taking apart (part/part/whole) and comparing with unknowns in all positions.(Values within 50 in this unit)

This standard calls for students to add and subtract numbers within 100 in the context of one- and two-step word problems. Students should have ample experiences working on various types of problems that have unknowns in all positions, including:

Examples:

Result Unknown	**Change Unknown**	**Start Unknown**
There are 29 students on the playground. Then 18 more students showed up. How many students are there now? *(29 + 18 = ___)*	There are 29 students on the playground. Some more students show up. There are now 47 students. How many students came? *(29 + ___ = 47)*	There are some students on the playground. Then 18 more students came. There are now 47 students. How many students were on the playground at the beginning? *(___ + 18 = 47)*

This standard also calls for students to solve one- and two-step problems using drawings, objects and equations. Students can use place value blocks or hundreds charts, or create drawings of place value blocks or number lines to support their work. Two-step problems include situations where students may have to add and subtract within the same problem.

Example:
- In the morning there are 26 students in the cafeteria. 18 more students come in. After a few minutes, 14 students leave. How many students are left the cafeteria? Write an equation for your problem.

Student 1

Step 1	I used place value blocks and made a group of 25 and a group of 18. When I counted them I had 3 tens and 13 ones which is 43.	
Step 2	I then wanted to remove blocks until there were only 14 left. I removed blocks until there were 20 left.	
Step 3	Since I have two tens I need to trade a ten for 10 ones.	
Step 4	After I traded it, I removed blocks until there were only 14 remaining.	
Step 5	My answer was the number of blocks that I removed. I removed 2 tens and 9 ones. That's 29. My equation is 25 + 18 – ___ = 14.	
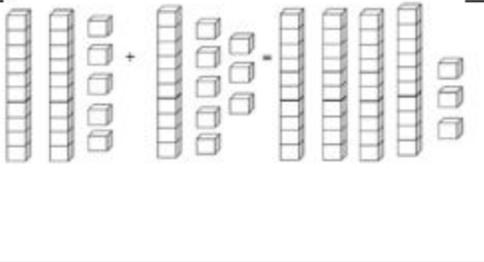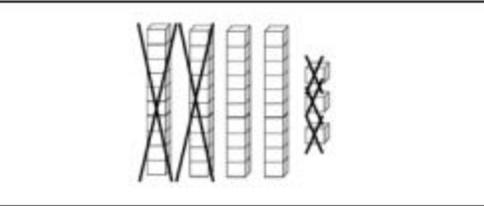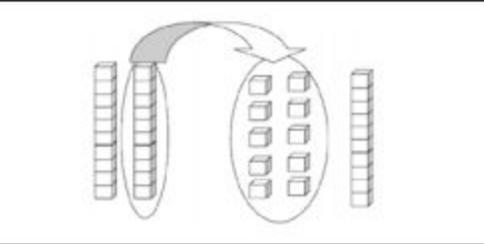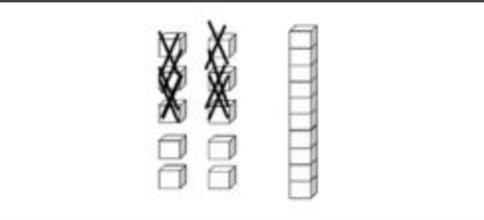
Student 2

I used a number line. I started at 25 and needed to move up 18 spots so I started by moving up 5 spots to 30, and then 10 spots to 40, and then 3 more spots to 43. Then I had to move backwards until I got to 14 so I started by first moving back 20 spots until I got to 23. Then I moved to 14 which were an additional 9 places. I moved back a total of 29 spots. Therefore there were a total of 29 students left in the cafeteria. My equation is 25 + 18 – ___ = 14.

Student 3

Step 1	I used a hundreds board. I started at 25. I moved down one row which is 10 more, then moved to the right 8 spots and landed on 43. This represented the 18 more students coming into the cafeteria.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	(25)	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Step 2	Now starting at 43, I know I have to get to the number 14 which represents the number of students left in the cafeteria so I moved up 2 rows to 23 which is 20 less. Then I moved to the left until I land on 14, which is 9 spaces. I moved back a total of 29 spots. That means 29 students left the cafeteria.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	(43)	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Step 3	My equation to represent this situation is 25 + 18 – ___ = 14.

OA.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.(using make ten and more, emphasizing basic decomposition, ex. 6+7 is 6+4+3)

This standard mentions the word *fluently* when students are adding and subtracting numbers within 20. Fluency means accuracy (correct answer), efficiency (within 3 seconds), and flexibility (using strategies such as making 10s or breaking apart numbers). Research indicates that teachers can best support students' memorization of sums and differences through varied experiences with strategies such as making 10s, breaking numbers apart, doubles, etc. rather than repetitive timed tests.

Example: 9 + 5 = ___

Student 1: Counting On

I started at 9 and then counted 5 more to get 14.

Student 2: Decomposing a Number to Make a Ten

I know that 9 and 1 is 10, so I broke 5 into 1 and 4. 9 plus 1 is 10. Then I have to add 4 more, which gets me to 14.

Example: 13 – 9 = _____

Student 1: *Using the Relationship between Addition and Subtraction* I know that 9 plus 4 equals 13. So 13 minus 9 equals 4.	Student 2: *Creating a Problem with the Same Difference* I added 1 to each of the numbers to move the problem to create a new problem that has the same difference. 14 minus 10 is 4 so 13 minus 9 is also 4.

MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.(nearest five minutes)

This standard calls for students to tell (orally and in writing) and write time after reading analog and digital clocks. Time should be to 5 minute intervals, and students should also use the terms a.m. and p.m. Students should make the connection between skip counting by 5s and telling time on an analog clock.

Example:
The time on the clock shows when Josie's class goes to recess. What time does the clock show?
Student: I know the hour hand is a little past the 1 and the minute hand is on the 2. The time would be 1:10 p.m. since recess could be in the afternoon (not the middle of the night).

Fayette County MD.11 Identify bills by name and value ($1, $5, $10 and $20 only in this unit).

This standard calls for students to identify the above U.S. bills by name and value.
    Example:
        ● When shown a bill, the student should call the bill by name.
        ● The student should be able to tell the value of each bill and write that value using a dollar symbol appropriately (no decimal).—$1, $5, etc.

Fayette County MD.12 Count money and write the amount using the appropriate symbol. (dimes, pennies and nickels only in this unit) (Do not use decimal notation.)

Although this standard calls for students to count money and write the amount, at this point students should count combinations of dimes and pennies only. Students will also explore the similarities and differences between tens and ones and dimes and pennies.
    Example:
        ● When shown 3 dimes and 4 pennies, the student should write 34¢. (The student should not write $0.34 which is decimal notation.)
        ● 3 dimes and 4 pennies is like 3 tens and 4 ones because a dime is worth 10 cents and a penny is worth 1 cent.