Georgia Department of Education

SECOND GRADE MATHEMATICS
UNIT 4 STANDARDS

Dear Parents,
We want to make sure that you have an understanding of the mathematics your child will be learning this year. Below you will find the standards we will be learning in Unit Four. Each standard is in bold print and underlined and below it is an explanation with student examples. Your child is not learning math the way we did when we were in school, so hopefully this will assist you when you help your child at home. Please let your teacher know if you have any questions. ☺

MGSE2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

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***

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.

Student 2: ***Place Value Strategies***

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.

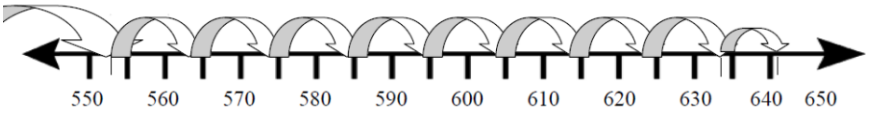
MGSE2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.

This standard builds on the work from 2.NBT.5 by increasing the size of numbers (two 3-digit numbers). Students should have ample experiences to use concrete materials (place value blocks) and pictorial representations to support their work.

This standard also references composing and decomposing a ten. This work should include strategies such as making a 10, making a 100, breaking apart a 10, or creating an easier problem. While the standard algorithm could be used here, students' experiences should extend beyond only working with the algorithm. Example: 354 + 287 = ___

Student 1

I started at 354 and jumped 200. I landed on 554. Then I made 8 jumps of 10 and landed on 634. I then jumped 7 and landed on 641



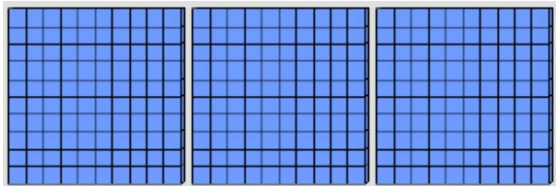
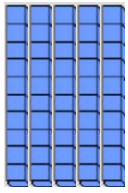
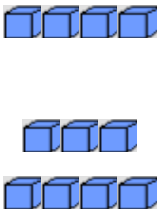
Student 2

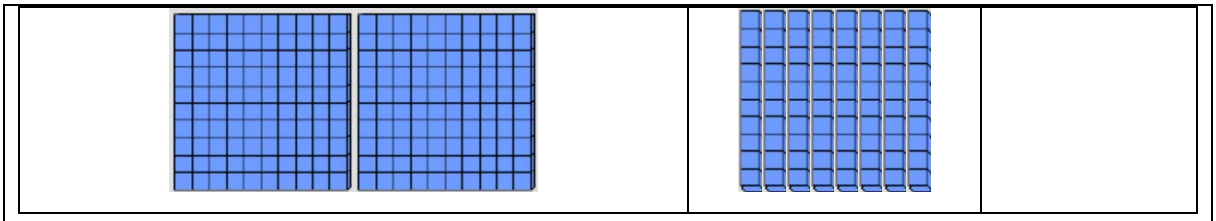
I broke all of the numbers up by place using a place value chart.
I first added the ones.4 + 7 = 11.
I then added the tens. 50 + 80 = 130.
I then added the hundreds. 300 + 200 = 500.
I then combined my answers. 500 + 130 = 630. 630 + 11= 641

Student 2

I broke all of the numbers up by place using a place value chart.

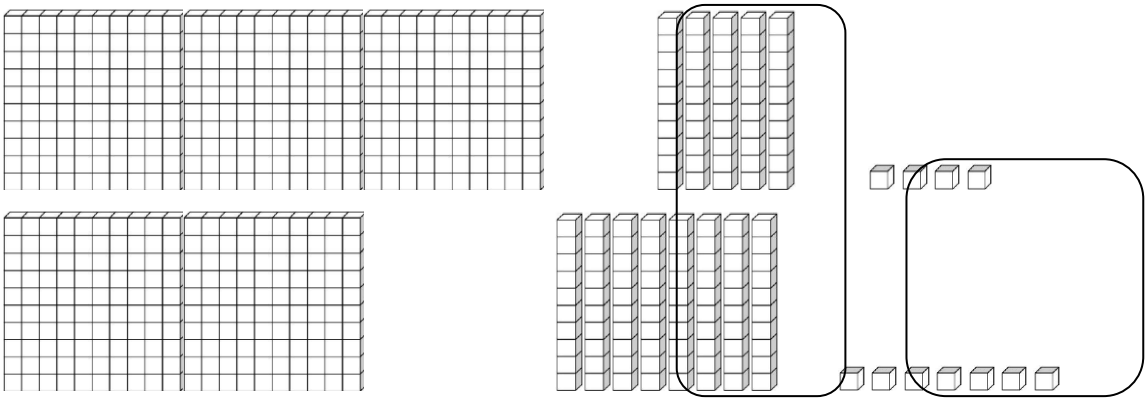
- I first added the ones: 4 + 7 = 11.
- Then I added the tens: 50 + 80 = 130.
- Then I added the hundreds: 300 + 200 = 500.
- Then I combined my answers: 500 + 130 = 630; 630 + 11 = 641.

 **Hundreds**	 **Tens**	 **Ones**
		



Student 3

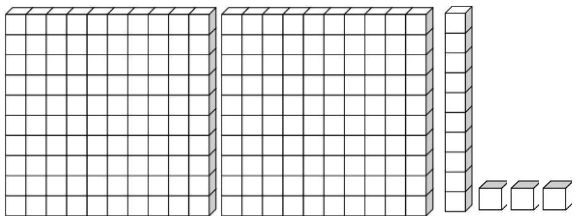
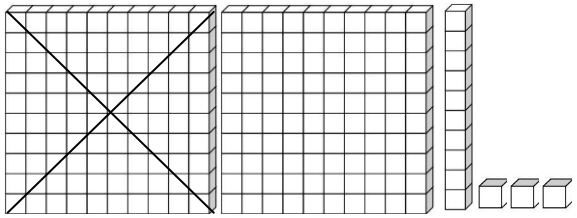
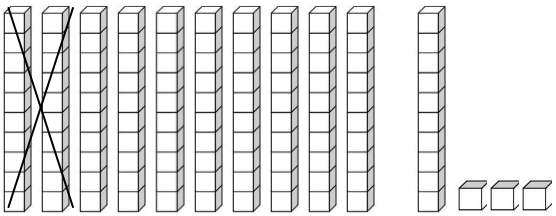
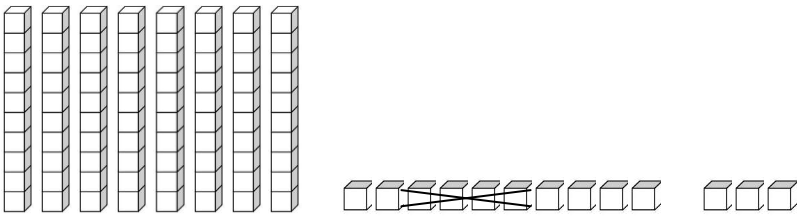
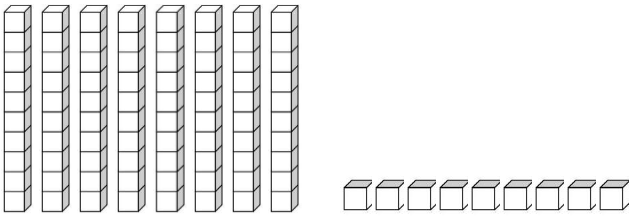
I used place value blocks. I made a pile of 354. I then added 287. That gave me 5 hundreds, 13 tens and 11 ones. I noticed that I could trade some pieces. I had 11 ones, and I traded 10 ones for a ten. I then had 14 tens, so I traded 10 tens for a hundred. I ended up with 6 hundreds, 4 tens, and 1 ones.



Example: 213 – 124 = ___

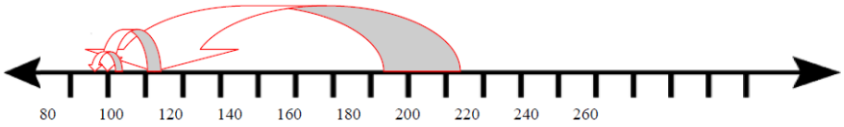
Student 1

I used place value blocks. I made a pile of 213. Then I started taking away blocks. First I took away a hundred, which left me with 1 hundred and thirteen. I need to take away 2 tens but I only had 1 ten so I traded in my last hundred for 10 tens. Then I took 2 tens away, leaving me with no hundreds, 9 tens, and 3 ones. Then I had to take 4 ones away but I only have 3 ones. I traded in a ten for 10 ones. Then I took away 4 ones. This left me with no hundreds, 8 tens, and 9 ones. My answer is 89.

Step 1 **213**	
Step 2 **113**	
Step 3 **93**	
Step 4 **89**	
Final Answer **89**	

Student 2

I started at 213 and moved backwards 100 and landed on 113. Then I moved back 2 jumps of ten and landed on 93. Then I moved back 4 and landed on 89.



Student 3

I noticed that I was taking 124 away from 213. I changed 213 into 224 by adding 11. That made my problem 224 – 124. I know the answer to that problem is 100. Then I had to take away the 11 that I added. 100 – 11 = 89. My answer is 89.

MGSE2.NBT.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

This standard calls for students to mentally add or subtract multiples of 10 or 100 to any number between 100 and 900. Students should have ample experiences working with the concept that when you add or subtract multiples of 10 or 100 that you are only changing the tens place (multiples of ten) or the digit in the hundreds place (multiples of 100).
In this standard, problems in which students cross centuries should also be considered.
Example: 273 + 60 = 333.

MGSE2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.

This standard calls for students to explain using concrete objects, pictures and words (oral or written) to explain why addition or subtraction strategies work. The expectation is that students apply their knowledge of place value and the properties of operations in their explanation. Students should have the opportunity to solve problems and then explain why their strategies work.

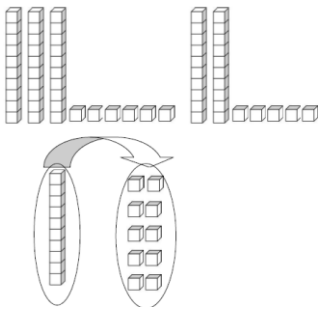
Example: There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work.

Student 1

I broke 36 and 25 into tens and ones and then added them. 30 + 6 + 20 + 5. I can change the order of my numbers, so I added 30 + 20 and got 50. Then I added on 6 to get 56. Then I added 5 to get 61. This strategy works because I broke all the numbers up by their place value.

Student 2

I used place value blocks and made a pile of 36. Then I added 25. I had 5 tens and 11 ones. I had to trade 10 ones for 1 10. Then I had 6 tens and 1 one. That makes 61. This strategy works because I added up the tens and then added up the ones and traded if I had more than 10 ones.



Students could also have experiences examining strategies and explaining why they work. Also include incorrect examples for students to examine.

Example: One of your classmates solved the problem 56 - 34 = __ by writing —I know that I need to add 2 to the number 4 to get 6. I also know that I need to add 20 to 30 to get 20 to get to 50. So, the answer is 22. Is their strategy correct? Explain why or why not?

Example: One of your classmates solved the problem 25 + 35 by adding 20 + 30 + 5 + 5. Is their strategy correct? Explain why or why not?

MGSE2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*
This standard calls for students to solve word problems involving either dollars or cents. Since students have not been introduced to decimals, problems should either have only dollars or only cents.

Example: What are some possible combinations of coins (pennies, nickels, dimes, and quarters) that equal 37 cents?

Example: What are some possible combinations of dollar bills ($1, $5 and $10) that equal 12 dollars?

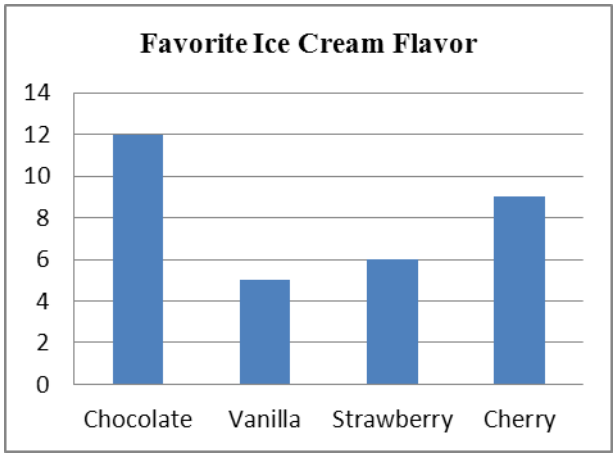
MGSE2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. This standard continues throughout the 2nd grade year.

This standard calls for students to work with categorical data by organizing, representing and interpreting data. Students should have experiences posing a question with 4 possible responses and then work with the data that they collect.

Example: Students pose a question and the 4 possible responses. Which is your favorite flavor of ice cream: Chocolate, vanilla, strawberry, or cherry?
Students collect their data by using tallies or another way of keeping track. Students organize their data by totaling each category in a chart or table. Picture and bar graphs are introduced in 2nd Grade.

Flavor	Number of People
Chocolate	12
Vanilla	5
Strawberry	6
Cherry	9

Students display their data using a picture graph or bar graph using a single unit scale.



Favorite Ice Cream Flavor	
Chocolate	
Vanilla	
Strawberry	
Cherry	

represents 1 student