

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 Two 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.2 Count within 1000; skip-count by 5s, 10s, and 100s.

This standard calls for students to count within 1,000 a variety of ways. Students should be able to count on from any number by 1s, 5s, 10s, or 100s and say the next few numbers in that sequence. Students will understand that counting by 5s, 10s, and 100s is counting groups of items by that amount.

Example:

- What are the next 3 numbers after 498? 499, 500, 501.
- When you count back from 201, what are the first 3 numbers that you say? 200, 199, 198.
- When you skip-count by 5s, what are the next 3 numbers after 390? 395, 400, 405.
- When you skip-count backwards from 500 by 100s, what are the next 3 numbers? 400, 300, 200

NBT.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

This standard calls for students to read, write and represent a number of objects using base-ten numerals. These representations can include place value (base 10) blocks, pictorial representations, or other concrete materials.

Example:

Base-ten Numeral	Number Name	Expanded Form
235	two hundred thirty-five	$200 + 30 + 5$

Note: When reading and writing whole numbers, the word “and” should not be used.

Example:

- 235 is written as “two hundred thirty-five” not as “two hundred and thirty-five”.

NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

This standard builds on the work of NBT.1 and NBT.3 by having students compare two numbers by examining the amount of hundreds, tens and ones in each number. Students are introduced to the symbols greater than ($>$), less than ($<$) and equal to ($=$) in first grade, and use them in second grade with numbers up to 1,000. Students should have ample experiences communicating their comparisons in words before using only symbols in this standard.

Example: 452 455

Student 1

452 has 4 hundreds, 5 tens, and 2 ones.
 455 has 4 hundreds, 5 tens, and 5 ones.
 They have the same number of hundreds
 and the same number of tens, but 452 has
 only 2 ones while 455 has 5 ones. 452 is
 less than 455. I would write $452 < 455$.

Student 2

452 is less than 455. I know this because
 when I count up I say 452 before I say
 455. $452 < 455$.

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 20 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

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.

Adding on Tens then Ones

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.

Properties

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 $32 + \underline{\quad} = 63$ 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 $63 - 32 = 31$.

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 20 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:

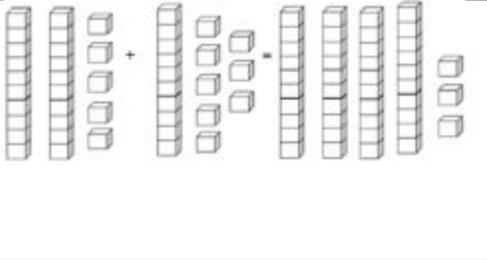
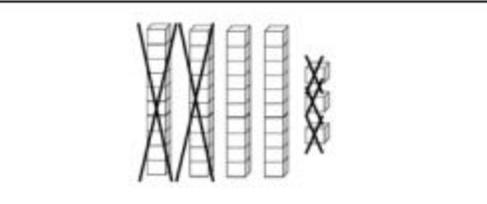
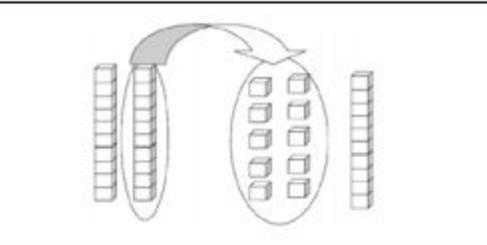
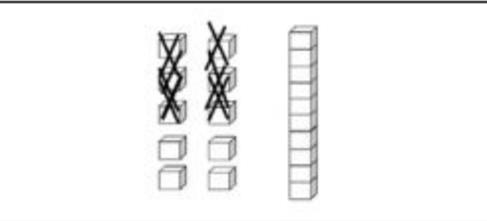
Result Unknown	Change Unknown	Start Unknown
<p>There are 29 students on the playground. Then 18 more students showed up. How many students are there now?</p> <p>$(29 + 18 = \underline{\quad})$</p>	<p>There are 29 students on the playground. Some more students show up. There are now 47 students. How many students came?</p> <p>$(29 + \underline{\quad} = 47)$</p>	<p>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?</p> <p>$(\underline{\quad} + 18 = 47)$</p>

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:

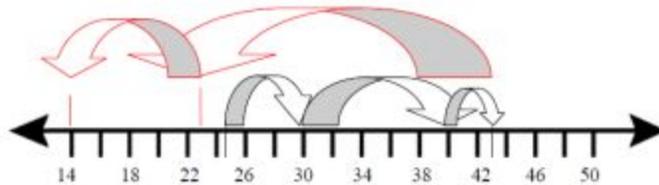
- In the morning there are 25 students in the cafeteria. 18 more students come in. After a few minutes, 14 students leave. How many students are left the cafeteria? Write an equation for your problem.

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 $25 + 18 - \underline{\quad} = 14$.	

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 $25 + 18 - \underline{\quad} = 14$.



Student 3

<p>Step 1</p>	<p>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.</p>	<table border="1"> <tbody> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </tbody> </table>	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
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<p>Step 2</p>	<p>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.</p>	<table border="1"> <tbody> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </tbody> </table>	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
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<p>Step 3</p>	<p>My equation to represent this situation is $25 + 18 - \underline{\quad} = 14$.</p>																																																																																																					

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. (review 1st grade fluency strategies: +/-1 &2, make ten, +/- 10 and practice doubles in this unit)

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.

Fayette County MD.11 Identify bills by name and value (\$1 and \$5 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 and pennies 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.