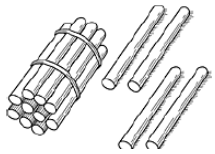
FIRST GRADE MATHEMATICS
UNIT 5 STANDARDS

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 Five. 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 child's teacher know if you have any questions. ☺

MGSE1.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 standard asks students to unitize 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.



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

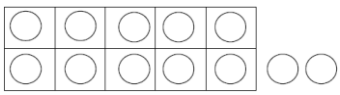
This standard asks students to extend their work from Kindergarten when they composed and decomposed numbers from 11 to 19 into ten ones and some further ones. In Kindergarten, everything was thought of as individual units: ―ones‖. In First Grade, students are asked to unitize those ten individual ones 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.

Example:

For the number 12, do you have enough to make a ten? Would you have any leftover? If so, how many leftovers would you have?

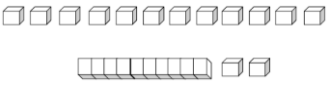
Student 1:

I filled a ten-frame to make one ten and had two counters left over. I had enough to make a ten with some left over. The number 12 has 1 ten and 2 ones.



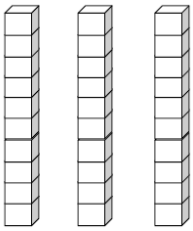
Student 2:

I counted out 12 place value cubes. I had enough to trade 10 cubes for a ten-rod (stick). I now have 1 ten-rod and 2 cubes left over. So, the number 12 has 1 ten and 2 ones.



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 standard builds on the work of MGSE.1.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. (Most first grade students view the ten stick (numeration rod) as ONE. 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 30 or more objects supports grouping to keep track of the number of objects.)



MGSE1.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 MGSE.1.NBT.1 and MGSE.1.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 in this standard.

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 45 has more ones than 42. So, 45 is greater than 42. So, 42 < 45.	42 is less than 45. I know this because when I count up I say 42 before I say 45. So, 42 < 45.

MGSE1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

This standard calls for students to use concrete models, drawings and place value strategies to add and subtract within 100. Students should not be exposed to the standard algorithm of carrying or borrowing in first grade.

Example:

There are 37 children on the playground. When a class of 23 students come to the playground, how many students are on the playground altogether?

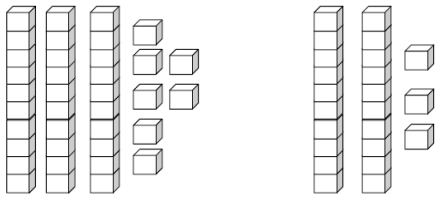
Student 1

I used a hundreds chart. I started at 37 and moved over 3 to land on 40. Then to add 20 I moved down 2 rows and landed on 60. So, there are 60 people on the playground.

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

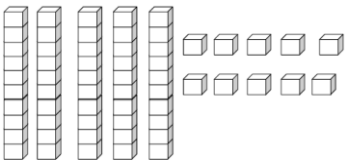
Student 2

I used place value blocks and made a pile of 37 and a pile of 23. I joined the tens and got 50. I then joined the ones and got 10. I then combined those piles and got 60. So, there are 60 people on the playground. Relate models to symbolic notation.



Student 3

I broke 37 and 23 into tens and ones. I added the tens and got 50. I added the ones and got 10. I know that 50 and 10 more is 60. So, there are 60 people on the playground. Relate models to symbolic notation.

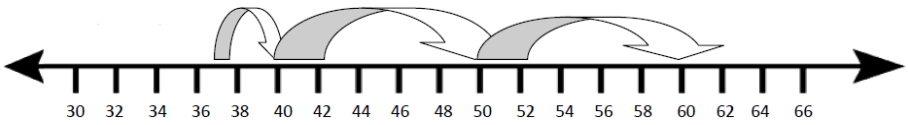


Student 4

Using mental math, I started at 37 and counted on 3 to get 40. Then I added 20 which is 2 tens, to land on 60. So, there are 60 people on the playground.

Student 5

I used the number line. I started at 37. Then I broke up 23 into 20 and 3 in my head. Next, I added 3 ones to get to 40. I then jumped 10 to get to 50 and 10 more to get to 60. So, there are 60 people on the playground.



MGSE1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

This standard builds on students' work with tens and ones by mentally adding ten more and ten less than any number less than 100. Ample experiences with ten frames and the hundreds chart help students use the patterns found in the tens place to solve such problems.

Example:

There are 74 birds in the park. 10 birds fly away. How many are left?

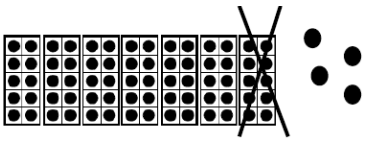
Student 1

I used a 100s board. I started at 74. Then, because 10 birds flew away, I moved back one row. I landed on 64. So, there are 64 birds left in the park.

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

Student 2

I pictured 7 ten-frames and 4 left over in my head. Since 10 birds flew away, I took one of the ten-frames away. That left 6 ten-frames and 4 left over. So, there are 64 birds left in the park.



MGSE1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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 and explain the reasoning used.

This standard calls for students to use concrete models, drawings and place value strategies to subtract multiples of 10 from decade numbers (e.g., 30, 40, 50).

Example:
There are 60 students in the gym. 30 students leave. How many students are still in the gym?

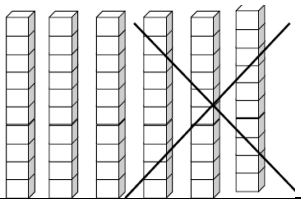
Student 1

I used a 100s chart and started at 60. I moved up 3 rows to land on 30. There are 30 students left.

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

Student 2

I used place value blocks or unifix cubes to build towers of 10. I started with 6 towers of 10 and removed 3 towers. I had 3 towers left. 3 towers have a value of 30. So, there are 30 students left.



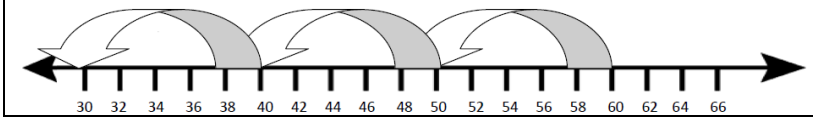
Student 3

Using mental math, I solved this subtraction problem. I know that 30 plus 30 is 60, so 60 minus 30 equals 30. There are 30 students left.

MGSE1.NBT.7 Identify dimes, and understand ten pennies can be thought of as a dime. (Use dimes as manipulatives in multiple mathematical contexts.)

Student 4

I used a number line. I started with 60 and moved back 3 jumps of 10 and landed on 30. There are 30 students left.



MGSE1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

This standard is taught throughout the first 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 3 possible responses and then work with the data that they collect. For example:

Students pose a question and the 3 possible responses: *Which is your favorite flavor of ice cream? Chocolate, vanilla or strawberry?* 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.

What is your favorite flavor of ice cream?	
Chocolate	12
Vanilla	5
Strawberry	6

Students interpret the data by comparing categories.

Examples of comparisons:

- What does the data tell us? Does it answer our question?
- More people like chocolate than the other two flavors.
- Only 5 people liked vanilla.
- Six people liked Strawberry.
- 7 more people liked Chocolate than Vanilla.
- The number of people that liked Vanilla was 1 less than the number of people who liked Strawberry.
- The number of people who liked either Vanilla or Strawberry was 1 less than the number of people who liked chocolate.
- 23 people answered this question.