2nd Grade

Instructional Focus:

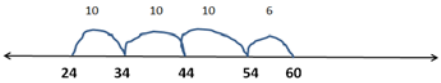
In Grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

1. Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).
2. Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.
3. Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.
4. (4) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Standard	Objective	Examples
Operations and Algebraic Thinking		
Represent and solve problems involving addition and subtraction.		
2.OA.1. Use addition and subtraction strategies to estimate, then solve one- and two-step word problems (using numbers up to 100) 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). Record and explain using equation symbols and a symbol for the unknown number to represent the problem.	1. Students will apply estimation strategies to addition and subtraction word problems using numbers up to 100. 2. Students will solve and model one and two step word problems using numbers up to 100 that have unknown subtrahends, addends, or totals by using models. 3. Students will write an equation to represent the problem. 4. Students will communicate orally and in written form their thinking in solving the problem. 5. Students will create their own word problems that use numbers up to 100.	Estimation Students who are able to use estimation strategies can judge "reasonableness" in their final answers and calculator use. Using a variety of estimation strategies such as front-end estimation, rounding, and compatible numbers build a students' sense of number. For example: 255 + 47 Front-end 300 + 50 Round to nearest ten or hundred 300+ 50 or 260 + 50 Compatible numbers 250 + 50 **<u>ONE STEP WORD PROBLEMS</u>** There are 15 stickers on the page. Brittany put some more stickers on the page. There are now 22 stickers on the page. How many stickers did Brittany put on the page? 15 + ☐ = 22 John caught 25 salmon in his net. 5 salmon escaped before he could get them on shore. How many salmon are left in his net? 25-5= ☐ **<u>TWO STEP WORD PROBLEMS</u>** There are 9 purple marbles and 6 blue marbles in the bag. Mary put in 8 more marbles. How many marbles are in the bag now? 9 + 6 + 8 = ☐ There are 8 reindeer, 3 moose, and some bears at the zoo. There are a total of 17 animals at the zoo. How many bears are there? 8+3+ ☐=17 There are 9 carrots on the plate. Brody ate 5 carrots. Mother put 7 more carrots on the plate. How many carrots are on the plate now? 9 –5 + 7 = ☐ *Read: Betcha by Stuart Murphy* <u>Result Unknown</u>:

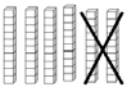
There are 29 students on the playground. Then 18 more students showed up. How many students are there now?
29 + 18 = ☐
Change Unknown:
There are 29 students on the playground. Some more students show up. There are now 47 students. How many students came?
29 + = 47
Start Unknown:
There are some students 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

One-Step Example: Some students are in the cafeteria. 24 more students came in. Now there are 60 students in the cafeteria. How many were in the cafeteria to start with? Use drawings and equations to show your thinking. Student A: I read the equation and thought about how to write it with numbers. I thought, "What and 24 makes 60?" So, my equation for the problem is □ + 24 = 60. I used a number line to solve it. I started with 24. Then I took jumps of 10 until I got close to 60. I landed on 54. Then, I took a jump of 6 to get to 60. So, 10 + 10 + 10 + 6 = 36. So, there were 36 students in the cafeteria to start with.



Student B: I read the equation and thought about how to write it with numbers. I thought, "There are 60 total. I know about the 24. So, what is 60 – 24?" So, my equation for the problem is 60 – 24 = □ I used place value blocks to solve it.

I started with 60 and took 2 tens away.

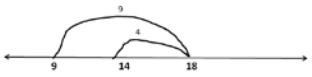


needed to take 4 more away. So, I broke up a ten into ten ones. Then, I took 4 away.

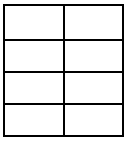
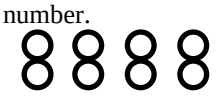
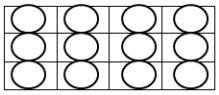
That left me with 36. So, 36 students were in the cafeteria at the beginning. 60 – 24 = 36

Two-Step Example: There are 9 students in the cafeteria. 9 more students come in. After a few minutes, some students leave.
There are now 14 students in the cafeteria. How many students left the cafeteria? Use drawings and equations to show your thinking.

Student A
I read the equation and thought about how to write it with numbers: 9 + 9 - □ = 14. I used a number line to solve it. I started at 9 and took a jump of 9. I landed on 18. Then, I jumped back 4 to get to 14. So, overall, I took 4 jumps. 4 students left the cafeteria.



Student B
I read the equation and thought about how to write it with numbers: 9 + 9 - □ = 14. I used doubles to solve it. I thought about double 9s. 9 + 9 is

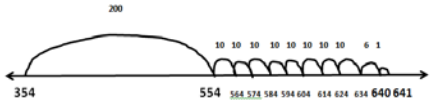
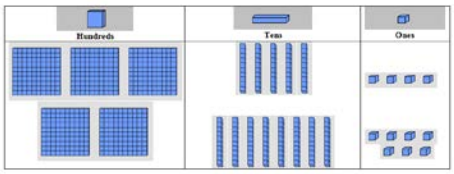
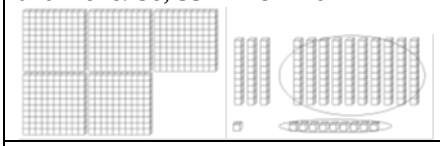
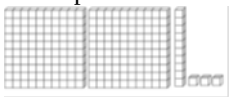
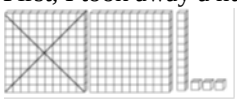
<table>
<tr><td></td><td></td><td colspan="2">18. I knew that I only needed 14. So, I took 4 away, since 4 and 4 is eight. So, 4 students left the cafeteria.</td></tr>
<tr><td colspan="4">Add and subtract using numbers up to 20.</td></tr>
<tr><td rowspan="5">2.OA.2. Fluently add and subtract using numbers up to 20 using mental strategies. Know from memory all sums of two one-digit numbers.</td><td rowspan="5">1. Students will demonstrate a mental math strategy that works best for them.
2. Students will know from memory all sums of two one-digit numbers</td><td colspan="2">Mental strategies from first grade 1.OA.6
• counting on
• making ten (8 + 6 = 8 + 2 + 4 = 10 + 4 = 14)
• decomposing a number leading to a ten (13 - 4 = 13 - 3 - 1 = 10 - 1 = 9)
• using the relationship between addition and subtraction, such as fact families, (8 + 4 = 12 and 12 - 8 = 4) creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
Developing Fluency for Addition & Subtraction within 20</td></tr>
<tr><td colspan="2">Example: 9 + 5= __</td></tr>
<tr><td>Student A
Counting On
I started at 9 and then counted 5 more. I landed on 14.</td><td>Student B
Decomposing a Number-Leading to 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 is 14.</td></tr>
<tr><td colspan="2">Example: 13 - 9 = __</td></tr>
<tr><td>Student A
Using the Relationship between Addition and Subtraction
I know that 9 plus 4 equals 13. So 13 minus 9 is 4.</td><td>Student B
Creating an Easier Problem
Instead of 13 minus 9, I added 1 to each of the numbers to make the problem 14 minus 10. I know the answer is 4. So 13 minus 9 is also 4.</td></tr>
<tr><td colspan="4">Work with equal groups of objects to gain foundations for multiplication.</td></tr>
<tr><td rowspan="4">2.OA.3. Determine whether a group of objects (up to 20) is odd or even (e.g., by pairing objects and comparing, counting by 2s). Model an even number as two equal groups of objects and then write an equation as a sum of two equal addends.</td><td rowspan="4">1. Students will be able to determine whether a group of objects is odd or even by pairing objects.
2. Students will be able to determine whether a group of objects is odd or even and comparing.
3. Students will be able to determine whether a group of objects is odd or even by counting by twos.
4. Students will model an even number as two equal groups of objects.
5. Students will write an equation as a sum of two equal addends (doubles) eg. 3+3=6</td><td colspan="2">Is 8 an even number? Justify your thinking.</td></tr>
<tr><td>Student 1
I grabbed 8 counters. I paired counters up into groups of 2. Since I didn't have any counters left over, I know that 8 is an even number.</td><td>Student 2
I grabbed 8 counters. I put them into 2 equal groups. There were 4 counters in each group, so 8 is an even number.</td></tr>
<tr><td>Student 3
I drew 8 boxes in a rectangle that had two columns. Since every box on the left matches a box on the right, I know that 8 is even.
  </td><td>Student 4
I drew 8 circles. I matched one on the left with one on the right. Since they all match up I know that 8 is an even number.
  </td></tr>
<tr><td colspan="2">Student 5
I know that 4 plus 4 equals 8. So 8 is an even number.</td></tr>
<tr><td rowspan="2">2.OA.4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. Write an equation to express the total as repeated addition (e.g., array of 4 by 5</td><td rowspan="2">1. Students will find the total number of objects in rectangular arrays with up to 5 rows and 5 columns.
2. Students will write a repeated addition equation to represent the total number of</td><td colspan="2">What is the total number of circles below?
  </td></tr>
<tr><td>Student A
I see 3 counters in each column and there are 4 columns. So I added 3 + 3 + 3 + 3. That equals 12.</td><td>Student B
I see 4 counters in each row and there are 3 rows. So I added 4 + 4 + 4. That equals 12.</td></tr>
</table>

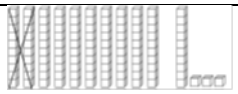
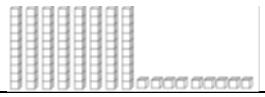
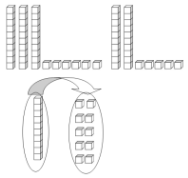
would be 5 + 5 + 5 + 5 = 20).	objects in an array.	3 + 3 + 3 + 3 = 12	4 + 4 + 4 = 12
Identify and continue patterns.			
2.OA.5. Identify, continue and label number patterns (e.g., aabb, abab). Describe a rule that determines and continues a sequence or pattern.	1. Students will identify number patterns. 2. Students will continue number patterns. 3. Students will label number patterns. 4. Students will describe a rule that determines and continues a sequence or pattern.	1. Is there a pattern in this number sequence? 2, 2, 4, 4, 2, 2, 4, 4 2. Continue the number patterns 3, 3, 2, 2, 3, 3, 2, 2, __, __ 50, 40, 30 , __, __, __ 3. Label the number patterns 2, 2, 4, 4, 2, 2, 4, 4 This is an aabb pattern 50, 40, 30 , __, __, __ The pattern is subtracting 10 each time. 4. Continue the pattern. What is the rule? 5,10,15,__, __, __Rule=+5	
Number and Operations in Base Ten			
Understand place value.			
2.NBT.1. Model and identify place value positions of three digit numbers. Include: a. 100 can be thought of as a bundle of ten tens --called a "hundred". b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	1. Students will model place value positions of three digit numbers. Include: a. 100 can be thought of as a bundle of ten tens -called a "hundred". b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). 2. Students will identify place value positions of three digit numbers. Include: a. 100 can be thought of as a bundle of ten tens --called a "hundred". b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	**1.a. Example:** **Teacher**: I have a pile of base-ten rods. Count out 12 please. **Student**: Student gathers 12 ten-rods. **Teacher**: How many cubes do you think you have? **Student**: Makes an estimate. **Teacher**: Count them to see. **Student**: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120. There are 120 here. **Teacher**: So, do you think you have enough to make a 100? **Student**: Yes. **Teacher**: Go ahead and trade some in to make a 100. **Student**: Student trades 10 rods for a 100 flat and leaves 2 tens remaining. **Teacher**: What do you have now? **Student**: I have 1 hundred and 2 tens. **Teacher**: Does that help you know how many you have in all? **Student**: Yes. 1 hundred and 2 tens is 120. There are 120 cubes here in all. **1.b. Example:** Students can represent this with both groupable (cubes, links) and pre-grouped place value blocks) materials. **2.a.Example:** How many tens are in 120? **2.b.Example** How many hundreds are in the number 957?	
2.NBT.2. Count up to 1000, skip-count by 5s, 10s and 100s.	1. Students will orally count up to 1000 by 5s 2. Students will orally count up to 1000 by 10s. 3. Students will orally count up to 1000 by 100s.		
2.NBT.3. Read, write, order up to 1000 using base-ten numerals,	1. Students read numbers up to 1000 using base-ten numerals, number	**1&2**. 1000 using base-ten numerals (236), number names (two hundred, thirty six),expanded form (236=200+30+6)	

<table>
<tr><td>number names and expanded form.</td><td>names, and expanded form
2. Students write numbers up to 1000 using base-ten numerals, number names, and expanded form.
3. Students order numbers up to 1000 using base-ten numerals, number names, and expanded form.</td><td colspan="2">3. Put the following numbers in order from least to greatest:

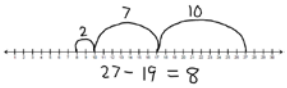
21, 356, 12, 78, 780

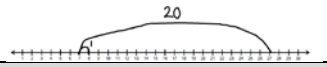
<u>12, 21, 78, 356, 780</u></td></tr>
<tr><td>2.NBT.4. Compare two three-digit numbers based on the meanings of the hundreds, tens and ones digits, using >, =, < symbols to record the results.</td><td>Students compare two three-digit numbers based on the meanings of the hundreds, tens and ones digits, using >, =, < symbols to record the results.</td><td><u>Student A</u>
Place Value
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 455 has 5 ones and 452 only has 2 ones. 452 is less than 455.
452 < 455</td><td><u>Student B</u>
Counting
452 is less than 455. I know this because when I count up I say 452 before I say 455.
452 < 455
452 is less than 455</td></tr>
<tr><td colspan="4">Use place value understanding and properties of operations to add and subtract.</td></tr>
<tr><td rowspan="5">2.NBT.5. Fluently add and subtract using numbers up to 100.
Use:
• strategies based on place value
• properties of operations
• and/or the relationship between addition and subtraction.</td><td rowspan="5">1. Students fluently add and subtract using numbers up to 100 using strategies based on place value.
2. Students fluently add and subtract using numbers up to 100 using the properties of operations.
3. Students fluently add and subtract using numbers up to 100 using the relationship between addition and subtraction.</td><td colspan="2">Example: 67 + 25 = __</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="2">Decomposing into Tens:
I decided to start with 67 and break 25 apart. I knew I needed 3 more to get to 70, so I broke off a 3 from the 25. I then added my 20 from the 22 left and got to 90. I had 2 left. 90 plus 2 is 92. So, 67 + 25 = 92</td></tr>
<tr><td colspan="2">Commutative Property:
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.</td></tr>
<tr><td colspan="2">Decomposing into Tens:
I broke apart both 63 and 32 into tens and ones. I know that 3 minus 2 is 1, so I have 1 left in the ones place. I know that 6 tens minus 3 tens is 3 tens, so I have a 3 in my tens place. My answer has a 1 in the ones place and 3 in the tens place, so my answer is 31.
63 – 32 = 31</td></tr>
<tr><td colspan="2">Think Addition:
I thought, ‘32 and what makes 63?’. I know that I needed 30, since 30 and 30 is 60. So, that got me to 62. I needed one more to get to 63. So, 30 and 1 is 31. 32 + 31 = 63</td></tr>
<tr><td rowspan="2">2.NBT.6. Add up to four two-digit numbers using strategies based on place value and properties of operations.</td><td rowspan="2">1. Students will add up to four two-digit numbers using strategies based on place value.
2. Students will add up</td><td colspan="2">Example: 43 + 34 + 57 + 24 = __</td></tr>
<tr><td colspan="2">Associative Property
I saw the 43 and 57 and added them first. I know 3 plus 7 equals 10, so when I added them 100 was my answer. Then I added 34 and had 134. Then I added 24 and had 158.
43 + 57 + 34 + 24 = 158</td></tr>
</table>

	to four two-digit numbers using strategies based properties of operations.	**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. That meant I had 1 ten and 8 ones. So, 140 + 10 is 150. 150 and 8 more is 158. So, 43 + 34 + 57 + 24 = 158
		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 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 my ones. 140 plus 18 (1 ten and 8 ones) equals 158.
2.NBT.7. Add and subtract using numbers up to 1000. Use: • concrete models or drawings and strategies based on place value • properties of operations • and/or relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used. Demonstrate in adding or subtracting three-digit numbers, hundreds and hundreds are added or subtracted, tens and tens are added or subtracted, ones and ones are added or subtracted and sometimes it is necessary to compose a ten from ten ones or a hundred from ten tens.	1. Students add and subtract using numbers up to 1000 using concrete models or drawings. 2. Students add and subtract using numbers up to 1000 using strategies based on place value. 3. Students add and subtract using numbers up to 1000 using properties of operations. 4. Students add and subtract using numbers up to 1000 using the relationship between addition and subtraction. 5. Students relate the strategy to a written method and explain the reasoning used. 6. Students demonstrate in adding or subtracting three-digit numbers in which: a. Hundreds are add/subtract from hundreds b. Tens are add/subtract from tens c. Ones are add/subtract from ones d. Sometimes it is necessary to compose a ten from ten ones or a hundred from ten tens. (grouping ungrouping, regrouping)	Example: 354 + 287 = __
		I started at 354 and jumped 200. I landed on 554. I then made 8 jumps of 10 and landed on 634. I then jumped 6 to land on 640. Then I jumped 1 more and landed on 641. 354 + 287 = 641 
		I used place value blocks and a place value mat. I broke all of the numbers and placed them on the place value mat. 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. 
		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 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 one. So, 354 + 287 = 641 
		Example: 213 - 124 = __
		I used place value blocks. I made a pile of 213.  I then started taking away blocks. First, I took away a hundred which left me with 1 hundred and thirteen.  Now, I only need to take away 24. 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 two tens away leaving me with no hundreds and 9 tens and 3 ones.

		 I then had to take 4 ones away but I only have 3 ones. I traded in a ten for 10 ones. I then took away 4 ones.  This left me with no hundreds, 8 tens and 9 ones. My answer is 89. 213 - 124 = 89 
2.NBT.8. Mentally add 10 or 100 to a given number 100-900 and mentally subtract 10 or 100 from a given number.	1. Students mentally add 10 to a given number 100-900. 2. Students mentally subtract 10 from a given number 100-900. 3. Students mentally add 100 to a given number 100-900. 4. Students mentally subtract 100 from a given number 100-900.	**1. Example:** Across hundreds 293 + 10 = ☐ What is 10 less than 206? **2. Example**: Within the same hundred What is 10 more than 218? What is 241 – 10? **3. Example:** What is 100 more than 218? 218+100= ☐ **4. Example** 293 - 100 = ☐ What is 100 less than 206?
2.NBT.9. Explain or illustrate the processes of addition or subtraction and their relationship using place value and the properties of operations.	1. Students explain the processes of addition or subtraction and their relationship using place value. 2. Students explain the processes of addition or subtraction and their relationship using the properties of operations. 3. Students illustrate the processes of addition or subtraction and their relationship using place value. 4. Students illustrate the processes of addition or subtraction and their relationship using the properties of operations.	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 30 + 6 + 20 + 5. I can change the order of my numbers, since it doesn't change any amounts, so I added 30+ 20 and got 50. Then I added 5 and 5 to make10 and added it to the 50. So, 50 and 10 more is 60. I added the one that was left over and got on 6 to get 61. So there are 61 birds in the park.
		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? **Student 2:** I see what they did. Yes. I think the strategy is correct. They thought, '34 and what makes 56?' So they thought about adding 2 to the 4 to get 6. Then, they had 36 and needed 56. So, they added 20 more. That means that they added 2 and 20 which is 22. I think that it's right.
		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 3** I used place value blocks and made a pile of 36 and a pile of 25. Altogether, I had 5 tens and 11 ones. 11 ones is the same as one ten and one left over. So, I really had 6 tens and 1 one. That makes 61. 
		Example: 25+35=☐ **Student 4**: 20+30=50 5+5=10 50+10=60

Measurement and Data		
Measure and estimate lengths in standard units.		
2.MD.1. Measure the length of an object by selecting and using standard tools such as rulers, yardsticks, meter sticks, and measuring tapes.	1. Students measure length of an object by selecting and using standard tools such as rulers, yardsticks, meter sticks, and measuring tapes.	
2.MD.2. Measure the length of an object twice using different length units for the two measurements. Describe how the two measurements relate to the size of the unit chosen.	1. Students compare equal measurements in different units. 2. Students analyze how the two measurements relate to the size of the unit chosen.	Example: A student measured the length of a desk in both feet and inches. She found that the desk was 3 feet long. She also found out that it was 36 inches long. **Teacher:** Why do you think you have two different measurements for the same desk? **Student:** It only took 3 feet because the feet are so big. It took 36 inches because an inch is a whole lot smaller than a foot.
2.MD.3. Estimate, measure and draw lengths using whole units of inches, feet, yards, centimeters and meters.	1. Students estimate lengths using whole units of inches, feet, yards, centimeters, and meters. 2. Students measure using whole units of inches, feet, yards, centimeters, and meters. 3. Students draw lengths using whole units of inches, feet, yards, centimeters, and meters.	1.Example: **Teacher:** How many inches do you think this string is if you measured it with a ruler? **Student:** An inch is pretty small. I'm thinking it will be somewhere between 8 and 9 inches. **Teacher:** Measure it and see. **Student:** It is 9 inches. I thought that it would be somewhere around there.
2.MD.4. Measure to compare lengths of two objects, expressing the difference in terms of a standard length unit.	1. Students measure to compare lengths of two objects. 2. Students express the difference in terms of standard length unit.	Example: **Teacher:** Choose two pieces of string to measure. How many inches do you think each string is? **Student:** I think String A is about 8 inches long. I think string B is only about 4 inches long. It's really short. **Teacher**: Measure to see how long each string is. Student measures. What did you notice? **Student:** String A is definitely the longest one. It is 10 inches long. String B was only 5 inches long. I was close! **Teacher:** How many more inches does your short string need to be so that it is the same length as your long string? **Student:** Hmmm. String B is 5 inches. It would need 5 more inches to be 10 inches. 5 and 5 is
Relate addition and subtraction to length.		
2.MD.5. Solve addition and subtraction word problems using numbers up to 100 involving length that are given in the same units (e.g., by using drawings of rulers). Write an equation with a symbol for the unknown to	1. Students solve addition and subtraction word problems involving lengths that are given in the same unit 2. Students write an equation with a symbol for the unknown to represent	Example: In P.E. class Kate jumped 14 inches. Mary jumped 23 inches. How much farther did Mary jump than Kate? Write an equation and then solve the problem. **Student 1** My equation is 14 + __ = 23 since I thought, "14 and what makes 23?". I used Unifix cubes. I made a train of 14. Then I made a train of 23. When I put them side by side, I saw that Kate would need 9 more cubes to be the same as Mary. So, Mary jumped 9 more inches than Kate. 14 + 9 = 23. 

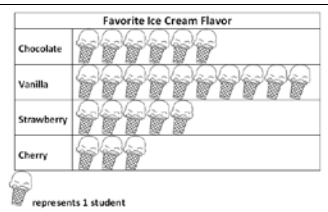
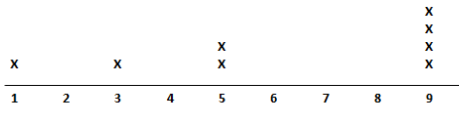
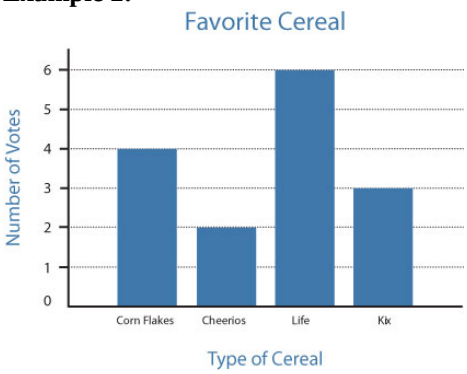
<table>
<tr><td>represent the problem.</td><td>the problem.</td><td>Student 2
My equation is 23 - 14 = __ since I thought about what the difference was between Kate and Mary. I broke up 14 into 10 and 4. I know that 23 minus 10 is 13. Then, I broke up the 4 into 3 and 1. 13 minus 3 is 10. Then, I took one more away. That left me with 9. So, Mary jumped 9 more inches than Kate. That seems to make sense since 23 is almost 10 more than 14. 23 – 14 = 9.
23 – 10 = 13
13 – 3 = 10
10 – 1 = 9</td></tr>
<tr><td>2.MD.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1,2, …, and represent whole-number sums and differences within 100 on a number line diagram.</td><td>1. Students represent the whole as lengths from zero on a number line with equally spaced points corresponding to the numbers. 0,1,2…..
2. Students use a number line to solve whole number addition and subtraction problems within 100.</td><td>Example: There were 27 students on the bus. 19 got off the bus. How many students are on the bus?
Student A: I used a number line. I started at 27. I broke up 19 into 10 and 9. That way, I could take a jump of 10. I landed on 17. Then I broke the 9 up into 7 and 2. I took a jump of 7. That got me to 10. Then I took a jump of 2. That’s 8. So, there are 8 students now on the bus.
 

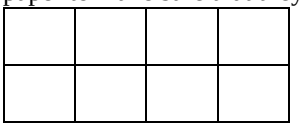
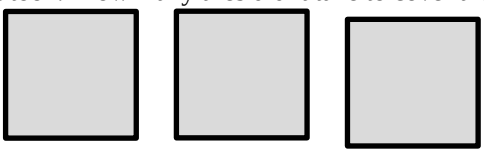
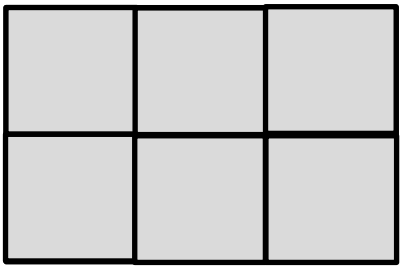
Student B: I used a number line. I saw that 19 is really close to 20. Since 20 is a lot easier to work with, I took a jump of 20. But, that was one too many. So, I took a jump of 1 to make up for the extra. I landed on 8. So, there are 8 students on the bus.
27 - 20 = 7
7 + 1 = 8
 
</td></tr>
<tr><td colspan="3">Work with time and money.</td></tr>
<tr><td>2.MD.7. Tell and write time to the nearest five minutes using a.m. and p.m. from analog and digital clocks.</td><td>1. Students will tell time to the nearest five minutes using a.m. and p.m. from analog and digital clocks.
2. Students will write time to the nearest five minutes using a.m. and p.m. from analog and digital clocks</td><td></td></tr>
<tr><td>2.MD.8. Solve word problems involving dollar bills and coins using the $ and ¢ symbols appropriately.</td><td>1. Students will solve word problems involving dollar bills and coins using the dollar ($) and cents (¢) notation.
2. Students will solve addition and subtraction story problems that use money up to $100.</td><td>Example: How many different ways can you make 37¢ using pennies, nickels, dimes, and quarters?

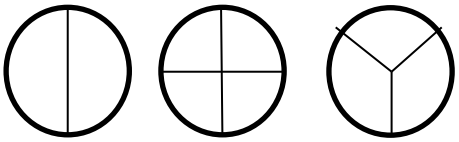
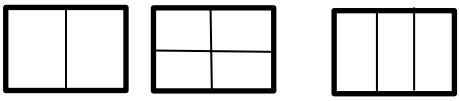
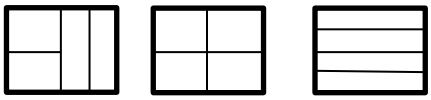
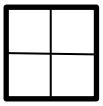
Example: How many different ways can you make 12 dollars using $1, $5, and $10 bills?

Example: Joey went to the movies. He bought a bag of popcorn for $5.75. He also bought a soda for $2.95. How much money did he spend?

Example: Jane bought 2 pencils for 75¢. She paid with a 5 dollar bill. How much money will she get back?</td></tr>
<tr><td colspan="3">Represent and interpret data.</td></tr>
<tr><td>2.MD.9. Collect, record, interpret, represent, and describe data in a table, graph or line plot.</td><td>1. Students will collect, record, represent, and describe data in a table.
2. Students will collect, record, represent, and describe data in a graph.
3. Students will collect,</td><td>Example 1:
<table><tr><th>Flavor</th><th>Number of People</th></tr><tr><td>Chocolate</td><td>12</td></tr><tr><td>Vanilla</td><td>5</td></tr><tr><td>Strawberry</td><td>6</td></tr><tr><td>Cherry</td><td>9</td></tr></table>
Example2:</td></tr>
</table>

	record, represent, and describe data in line plot.	 **Example 3:** Measure 8 objects in the basket to the nearest inch. Then, display your data on a line plot. **Teacher**: What do you notice about your data? **Student**: Most of the objects I measured were 9 inches. Only 2 objects were smaller than 4 inches. I was surprised that none of my objects measured more than 9 inches! **Teacher:** Do you think that if you chose all new objects from the basket that your data would look the same? Different? Why do you think so? 
2.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.	1. Students will draw picture graphs (with single unit-scale) with up to four categories. 2. Students will draw bar graphs (with single unit-scale) with up to four categories. 3. Students will solve simple put-together, take-apart and comparison problems using information presented in a bar graph.	**Example 1:**  **Example 2:**  **Example 3:** Questions from graph in example 2. **Put-Together:** How many votes did Cheerios and Kix get altogether? **Take-Apart:** Out of the 15 votes, Cheerios had 2 votes. How many people did not vote for Cheerios? **Comparison:** How many more votes did Corn Flakes get than Cheerios?

Geometry		
Reason with shapes and their attributes.		
2.G.1. Identify and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces compared visually, not by measuring. Identify triangles, quadrilaterals, pentagons, hexagons and cubes.	1. Students use the attributes (angles, faces, sides, vertices) to identify, draw, and compare shapes: triangle, quadrilaterals, pentagons, hexagons and cubes.	**Example:** **Teacher:** Draw a closed shape that has five sides. What is the name of the shape? **Student:** I drew a shape with 5 sides. It is called a pentagon.  **Example:** **Teacher:** I have 3 sides and 3 angles. What am I? **Student:** A triangle. See, 3 sides, 3 angles. 
2.G.2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	1. Students will partition rectangles into rows and columns of same size squares 2. Students count partitioned squares to find total	**Example:** **Teacher:** Partition the rectangle into 2 rows and 4 columns. How many small squares did you make? **Student:** There are 8 squares in this rectangle. See- 2, 4, 6, 8. I folded the paper to make sure that they were all the same size.  **Example:** Use color tiles to cover the rectangle. Draw lines to show how many tiles it took. How many tiles did it take to cover the rectangle?  

2.G.3. Partition circles and rectangles into shares, describe the shares using the words *halves, thirds, half of, a third of,* etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	1. Students will divide circles into equal shares. 2. Students will divide rectangles into equal shares. 3. Students will describe how a shape is divided using words halves, thirds, half of, a third of, etc. 4. Students will recognize and describe that a whole can be two halves, three thirds, or four fourths. 5. Students will recognize that equal shares of identical wholes need not have the same shape.	**Example 1:**  **Example 2**:  **Example 3**: Students describe how shapes are divided looking at examples 1 and 2. **Example 4:** How many halves are in a whole? How many thirds are in a whole? How many fourths are in a whole**?** **(Students will recognize that it doesn't matter how an object is partitioned it is still a whole.)** **Example 5:** **Teacher**: Partition each rectangle into fourths a different way. **Student A:** I partitioned this rectangle 3 different ways. I folded or cut the paper to make sure that all of the parts were the same size.  **Teacher:** In your 3 pictures, how do you know that each part is a fourth? **Student:** There are four equal parts. Therefore, each part is one-fourth of the whole piece of paper. NOTE: It is important for students to understand that fractional parts may not be symmetrical. The only criteria for equivalent fractions is that the area is equal, as illustrated in the first example above. **Example 5:** How many different ways can you partition this rectangle into fourths? **Student A:** I partitioned the square into four equal sized squares. **Teacher:** How do you know that each section is a fourth? **Student A:** Because there are four equal sized squares. That means that each piece is a fourth of the whole square.  **Student B**: I partitioned the square in half down the middle. The section on the left I divided into two equal sized squares. The other section I partitioned into two equal sized triangles. **Teacher**: How do you know that each section is a fourth? **Student B**: Each section is a half of a half, which is the same as a fourth.