SCAFFOLDING TASK: What's Around Me?

Approximately 3 days

STANDARDS FOR MATHEMATICAL CONTENT

MCC1.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."
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine 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).

MCC1.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 <.

MCC1.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.

MCC1.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.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Students should be familiar with representing and comparing numbers with words and symbols. They should be able to build numbers with an understanding of place value in tens and ones and locate the numbers on a 99 chart.

ESSENTIAL QUESTIONS

- What strategies can we use to locate numbers on a 99 chart?
- How can number benchmarks build our understanding of numbers?
- How can I easily locate 10 more or 10 less on a 99 chart?
- How can I easily locate 1 more or 1 less on a 99 chart?

MATERIALS

- 99 Chart
- More/Less transparency sheet (each student will need one 5 square reader)
- More/Less recording sheet
- Clear counters
- 0-9 spinner or 0-9 dice
- More than/Less than spinner
- Paper clip
- Deck of cards (Ace through 9, A=1)

GROUPING

Large group, Individual

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Part I
Provide students with a 99 chart and a clear counter. Ask the students to cover the number 17. How can we identify a number that is one more than 17? Allow the students to share ways to find a number that is one more than a given number. The discussion should include the visual of using the 99 chart and where a number that is one more can be located. Students should also make the connection to count on one number. Provide the addition equation and ask the students if they see a connection with one more. *17+1=18*. Practice writing equations for numbers that are one more than a given number. Have students place a counter on 69. Write the addition equation for one more than 69. *69+1=70*. Next, have the students cover the number 34. How can we identify a number that is one less that 84? Students will share ways to find a number that is one less than a given number. Connect counting back one to subtraction and show how the equation represents this idea. Have students place the counter on 50. Count back one number on the 99 chart and develop the equation *50-1=49*. Throughout the discussion, ensure that the same strategies students discussed for one more are being discussed for one less. Sliding the counter to the left and right on the 99 chart can provide additional practice experiences.

Part II
Using the 99 chart, discuss different ways to locate 10 more and 10 less. Explore all the strategies that students give. Specifically concentrate on the counting on and counting back strategy. Place a clear counter at the starting number and ending number. What do we notice about the placement of the two counters? Explore this concept with several numbers. Repeat the same process with 1 more and 1 less. Ask the students if we can relate addition and subtraction to more and less. What do these number sentences look like? Complete multiple examples and have the student create the number sentences that follow. Example: given number 67. Find: 10 more = 77, 67+10=77; 10 less = 57, 67-10=57.

Part III
Pass out one 5 square reader, copied on clear transparency paper, to each student and a 99 chart. (there are 6 on a page, copy on transparency paper and cut to give one to each student) Model for students how you choose a number and place the middle square on the 5 square reader. Explain how you can use this reader to help with locating 10 more, 10 less, 1 more and 1 less. Model and allow students to explore with these readers using several different numbers. Ask the students what happens when your reader is on the edge. Model and explore this concept with your students.

Give each student a 0-9 spinner or dice, 99 chart, one 5 square reader and a copy of the 10 More/Less 1 More/Less recording sheet. Students will work independently for this activity. The student will need to spin the spinner twice to create a 2 digit number. Write this number in the middle of the 5 square reader on the recording sheet.

Students will then use the 5 square reader on transparency paper to find the numbers that are 10 more, 10 less, 1 more and 1 less on the 99 chart. Complete all ten problems on the recording sheet. Although students are working independently, it is beneficial to allow students to have conversations while completing this activity. The conversations surrounding the concept of more and less can be very helpful in building a deeper understanding. While students are working, walk around and ask students to give the related addition or subtraction sentence to a number on their recording sheet.

Part IV
Students will complete the More than/less than activity. Each student will need a more/less spinner, paper clip (for the spinner), pencil, deck of cards (A-9, A=1), 99 or hundreds chart. Students will complete this activity with a partner. Shuffle the cards and place them face down. Player one picks two cards and lays them down in the order in which they were drawn. (students should not rearrange the order) Find the number on the 99 chart and cover with a counter. The player then spins the spinner and moves the counter to change the number on the 99 chart according to what the spinner lands on. Record the results on paper. (ex: place the counter on 23, spin and land on 10 more, move the counter to 33) If a player spins and the result moves him/her off the board then they lose a turn. The other player then verifies the answer. If the answer is correct the player gets 1 point. If the player is incorrect they lose 1 point. The cards go on the bottom of the pile. The other players repeat to continue the game. Play continues until a player gets a predetermined number of points (example:

10 points). This activity can be used in a variety of ways to reinforce this skill. Provide manipulatives for students that may need assistance in understanding the larger numbers.

Part V

Play the game "99 Chart Tic-Tac-Toe". This is a partner review game on place value and will allow students to become more fluent with understanding the tens and ones that make up a number. The directions are on the handout following the recording sheets.

FORMATIVE ASSESSMENT QUESTIONS

- How can you locate a number on a 99 chart?
- How do benchmark numbers help you use the 99 chart?
- Given the number _____ can you locate 10 more or 10 less on a 99 chart?
- Given the number _____ can you locate 1 more or 1 less on a 99 chart?
- What is the addition/subtraction sentence that is related to 10 more/less?
- What is the addition/subtraction sentence that is related to 1 more/less?

DIFFERENTIATION

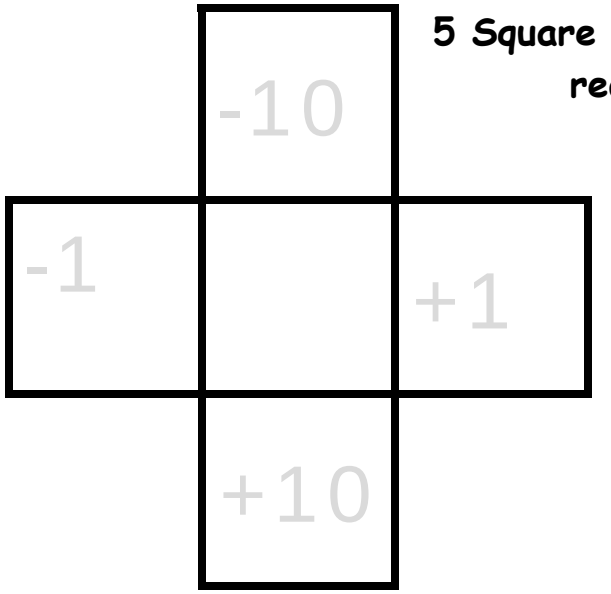
Extension

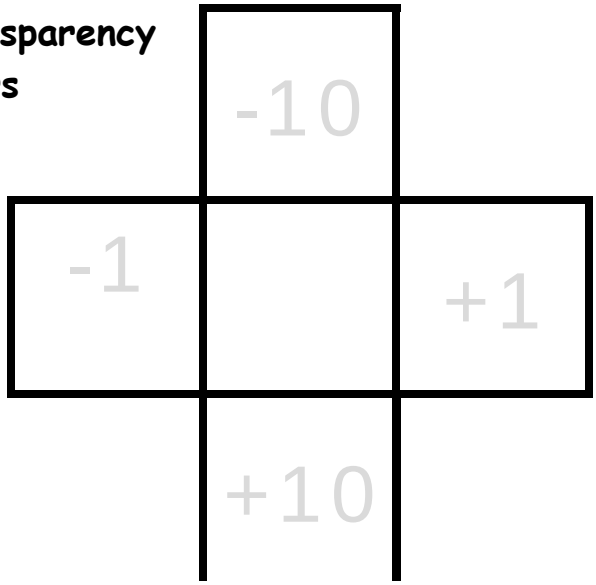
- Allow students to write a note to kindergarten students, in their math journal, explaining the concept of 1 more/less and 10 more/less. Remind students to be very specific with creating directions for this idea.
- Students will explore the idea of 20 more/less on the 99 chart. Have students use a counter to demonstrate what happens when we find ten less than a number. Use this same strategy to find 20 more/less.

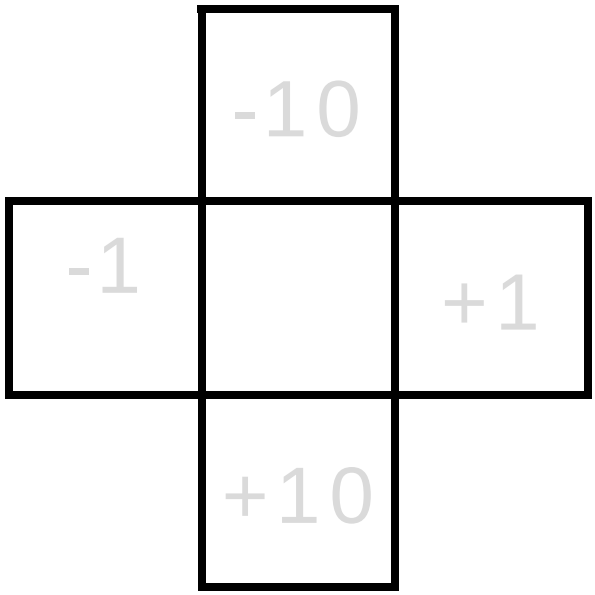
Intervention

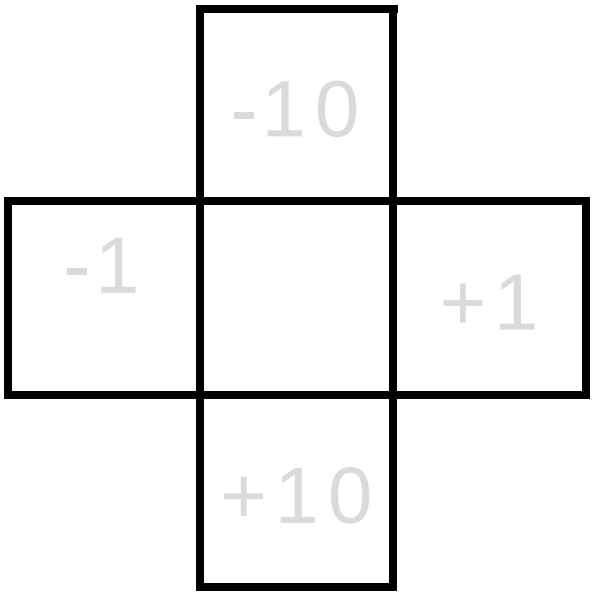
- Students can work with smaller numbers on the 99 chart using a 6 sided dice. Use the 5 card reader to aid in finding 1 more/less or 10 more/less.

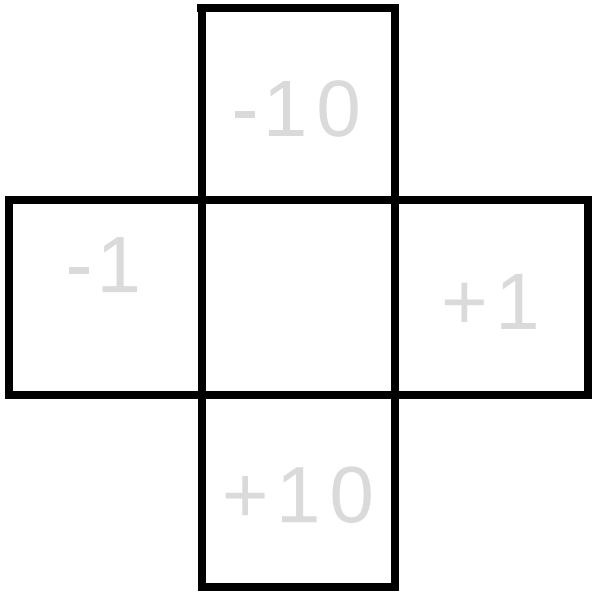
5 Square transparency readers

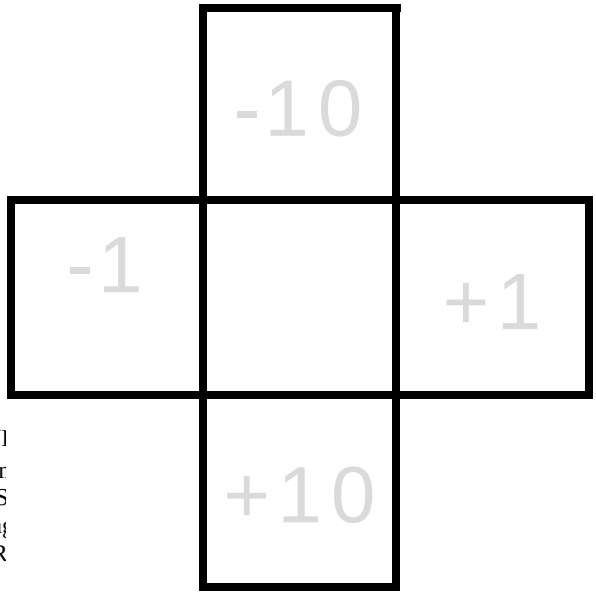




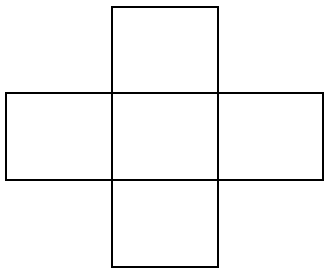
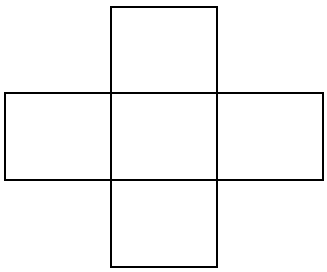
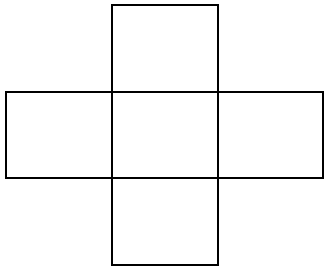
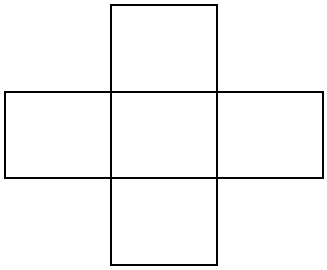
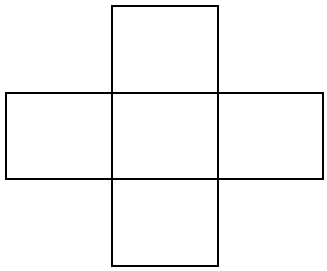
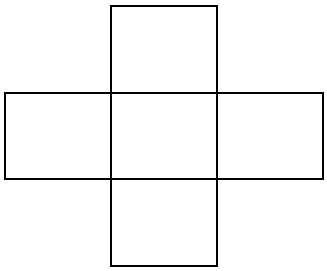
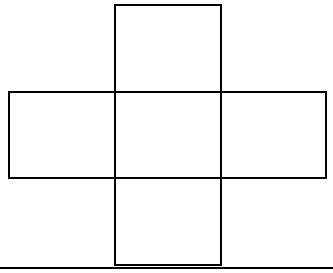
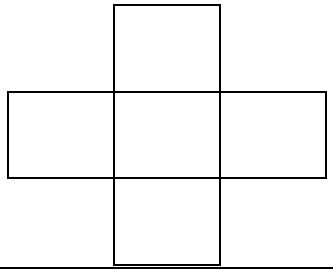
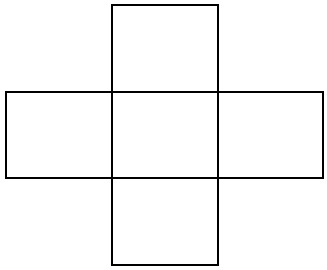
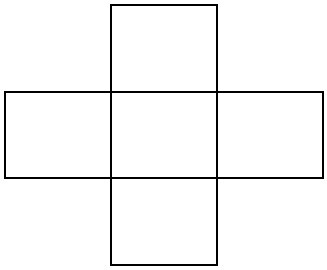








Name_____ **10 More/Less 1 More/Less Recording Sheet**

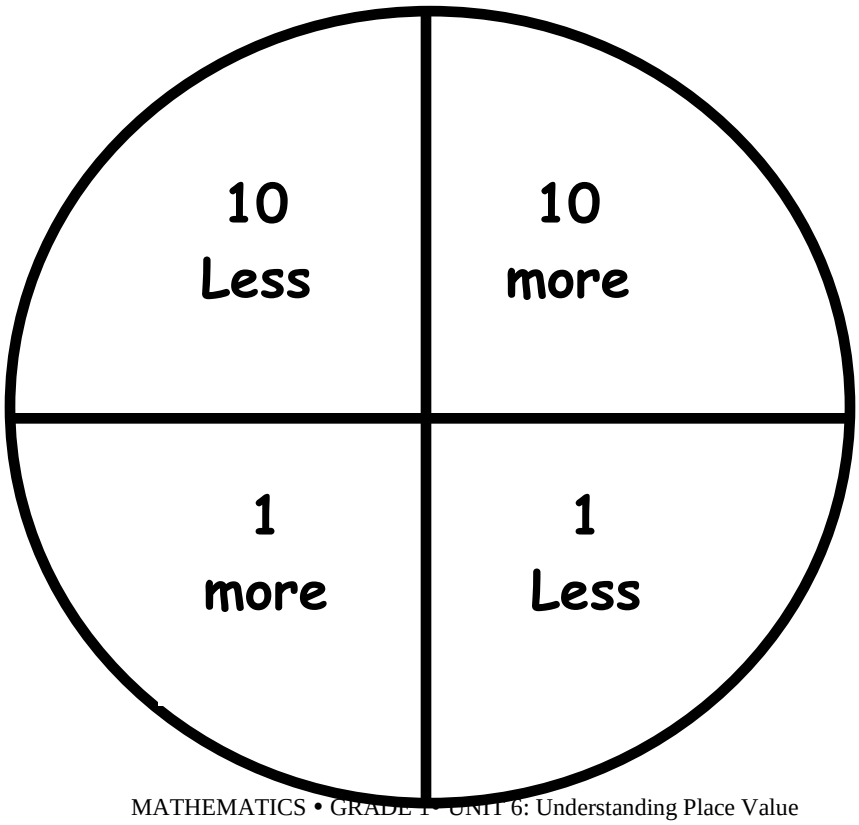
1. 	2. 
3. 	4. 
5. 	6. 
7. 	8. 
9. 	10. 

More Than / Less Than

Materials: More than/less than spinner, paper clip, pencil, deck of cards (A-9, A=1), 99 or hundreds chart

Directions:

1. Shuffle the cards and place them face down.
2. Player one picks two cards and lays them down in the order in which they were drawn. *(students are not rearranging the order)* Find the number on the 99 chart and cover with a manipulative.
3. The player then spins the spinner and moves the counter to change the number on the 99 chart according to what the spinner lands on. Record the results on paper. (ex: place the counter on 23, spin and land on 10 more, move the counter to 33)
4. The other player then verifies the answer. If the answer is correct, the player gets 1 point. If the player is incorrect, they lose 1 point.
5. The cards go on the bottom of the pile.
6. The other players repeat to continue the game. Play continues until a player gets a predetermined number of points (example: 10 points).



99 Chart Tic-Tac-Toe

0	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

Skill: Place value 0-99

Players: 2 students

Materials: one 99 chart, ten sided dice, paper, pencil, chip/markers (2 different colors)

Directions: Players select a color chip/marker to use. The goal of the game is for a player to get three or more of their markers in a row either vertically, horizontally or diagonally. Player number one begins by rolling the ten sided dice twice and making a number to their partner. Ex: roll 6, 3 and say "six tens and three ones equals sixty three" or "three tens and six ones equals thirty six". Player number one covers this number with their marker. Player two then takes a turn, rolling the dice twice and covering the number rolled, remembering to verbalize the tens and ones place value to the other player. Play continues until one player gets three or more of their markers in a row. This player scores two points for each marker in a row.

*Players can also steal an opponent's space. When a player makes a number already occupied by their opponent, they can replace it with their own marker. For each stolen number, they receive five points.

*If a player rolls double zero they lose a turn.

*Players can play until set time limit is reached or they reach a certain number of points.