Grade 3 Topic 9: Fluently Add and Subtract Within 1,000

Topic 9
Fluently Add and Subtract Within 1,000
Number of Lessons: **8**
A/D/E: **4** days
NVACS Focus: NBT.A
Total Days:~12

[3rd Grade Curriculum Pacing Framework: Balanced Calendar]

Big Conceptual Idea: Numbers and Operations in Base Ten (p. 12)

Prior to instruction, view the Topic 9 Professional Development Video located in Pearson Realize online. Read the Teacher's Edition (TE): Cluster Overview/Math Background (pp. 401A-401F), the Topic Planner (pp.47IA-471C), all 8 lessons, and the Topic Assessments (pp. 533-534A).

Mathematical Background: Read Topic 9 Cluster Overview/Math Background (pp. 401A-401F)	Topic Essential Question: What are standard procedures for adding and subtracting whole numbers? *Reference Answering the Topic Essential Question (TE, pp. 529-530) for key elements of answers to the Essential Question.*

***The lesson map for this topic is as follows*:**

9-1	9-2	9-3	9-4	9-5	9-6	9-7	9-8	Assessment

4 A/D/E days used strategically throughout the topic.

Instructional note:

As previously stated, this topic is part of a cluster that includes topics 8 and 10. These topics focus on using place-value understanding and properties of operations to perform multi-digit arithmetic. A big idea specific to topic 9 is the use of strategies and algorithms based on place-value understanding for solving multi-digit addition and subtraction problems within 1,000 (3.NBT.A.2). This understanding builds on the work done in second grade with standard 2.NBT.B.7 that states, "Add and subtract within 1,000, using concrete models or drawing and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; **relate the strategy to a written method**. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds" (p.19).

The phrase "relate the strategy to a written method" is bolded to point out that third graders should have had experiences with using a strategy to add and subtract within 1,000 and relating that to a written method. Fuson and Beckmann (2012) explain a trajectory from strategies, to written method, to standard algorithm (the full article can be accessed in the references section at the end of this document). See figures below (p. 19 and 21).

FIGURE 2: *Multidigit Addition Methods that Decompose into Base Ten Units*

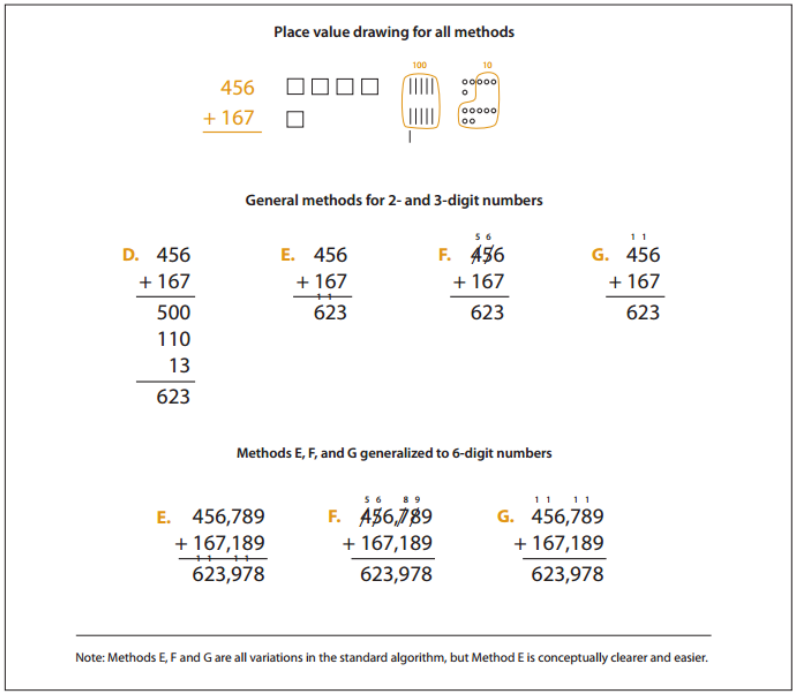
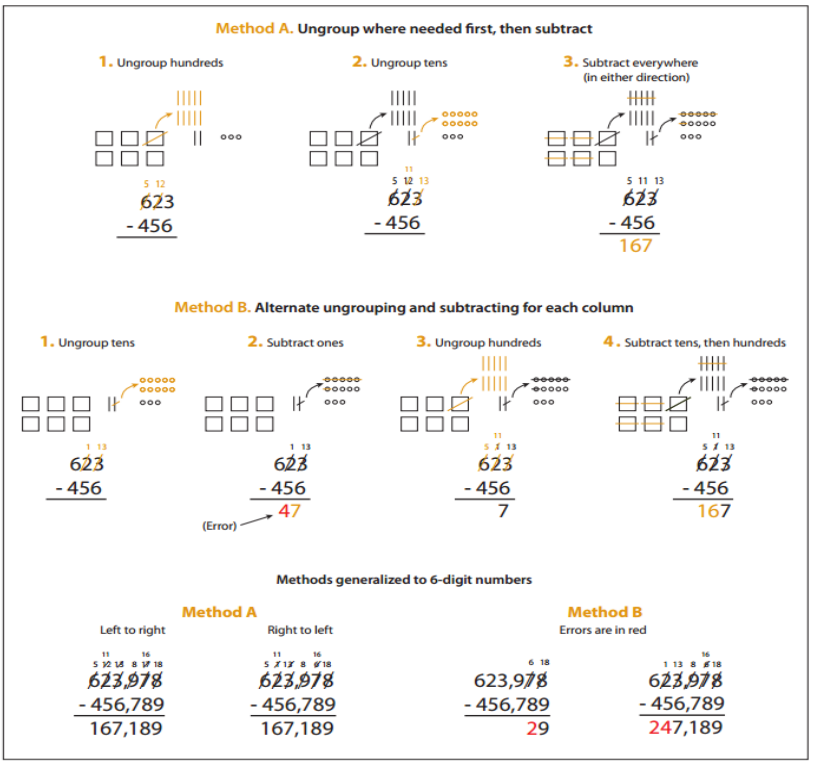


FIGURE 3: *Multidigit Subtraction Methods that Decompose into Base Ten Units*



These ideas relate to topic 9 as students move through various models and strategies towards a standard algorithm.

For example, in the problem 175 + 366 students might say, "I carried the 1 ten in 11 to the tens place to add with the other tens. Then I added 10 +70 + 60 to make 140 so I wrote the 4 under the tens place and carried the 1 hundred to the hundreds place…"

Students might also explain that when adding the 1 (10), 7 (70), and 6 (60) in the tens place they had 14 tens and since 10 tens is 100 they carried a 1 to be added with the rest of the hundreds.

The essential question for this topic is, *"What are standard procedures for adding and subtracting whole numbers?"* This connects to the learning trajectory for the topic which focuses on connecting partial sums and differences to the expanded algorithm and then to a standard algorithm. In 4th grade, students are expected to demonstrate security with a standard algorithm. The goal of this unit is to secure the language of regrouping and the concepts of partial sums and differences.

Focus Math Practice 3: Construct viable arguments and critique the reasoning of others

The standard states, "They (students) make conjectures and build a logical progression of statements to explore the truth of their conjectures…. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and -if there is a flaw in and argument- explain what it is" (NVACS, 2010, p. 6-7).

To help students work towards security, consider introducing a routine that when students are done working on the *Solve & Share* they explain their reasoning to themselves to "convince yourself." After practicing, students could share their reasoning and conjectures with a classmate to "convince a friend." Finally, they share their reasoning with somebody that disagrees with their conjecture to "Convince a critic." Consider also requiring that if students feel there is flawed reasoning they must be able to explain the flaw or when a student revises their own thinking they must be able to explain why they have changed their conjecture. Behaviors associated with MP.3 are described in the Teacher's Edition (pp. F23 - F23A) and the NVACS.

Meaningful Fluency Practice & Assessment:

The following games can help students develop strategies that will support attaining NVACS standard 3.NBT.A.2, "Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction (NVACS, 2010, p. 24)." Consider rotating days so that students still have the opportunity to engage in meaningful practice of multiplication facts. There is a Pre/Post Addition/Subtraction Assessment available on the C & I, K-5 Mathematics website in resources for Academic Parent-Teacher Teams (APTT).

Rolling for 500

Directions: See below in this document for the directions and game board.

Close Call: Addition Version

Directions: Remove 10s and face cards from the deck. Shuffle the deck and deal each player 8 cards. Each player selects six of their cards and creates two 3-digit numbers from them. The goal is to create two numbers that have a sum as close to 1000 as possible, without going over. After players have made their selections, they place their cards face up in front of them, arranging them so other players can see which two numbers they have created. The player with the sum closest to 1000, without going over, wins a point. In the case of a tie, a point is awarded to each team. Shuffle the cards before dealing another round. Play continues for 5 rounds. The player with the most points after the last round wins the game.

For example, a student draws 7, 4, 5, 6, 8, 2, 1, 1 and chooses to use the cards 7, 4, 5, 6, 8, 1, creating the problem 754 +186 = 940. Just so long as another player does not get a number closer to 1000 without going over then this student earns 1 point for this round.

Close Call: Subtraction Version

Directions: Remove 10s and face cards from the deck. Shuffle the deck and deal each player 8 cards. Each player selects five or six of their cards and creates two 3-digit numbers or a 2-digit number that's subtracted from a 3-digit number from the dealt cards. The goal is to create two numbers that have a difference as close to 10 as possible, without going lower. After players have made their selections, they place their cards face up in front of them, arranging them so other players can see which two numbers they have created. The player with the numbers closest to 10, without going lower, wins a point. In the case of a tie, a point is awarded to each team. Shuffle the cards before dealing another round. Play continues for 5 rounds. The player with the most points after the last round wins the game. For example, a student draws 7, 4, 5, 6, 8, 2, 1, 1 and chooses to use the cards 7, 4, 5, 6, 8, 1, creating the problem 821 - 765 = 56. Just so long as another player doesn't get a difference closer to 10 without going lower then this student earns 1 point for this round.

Essential Academic Vocabulary Use these words consistently during instruction.	
New Academic Vocabulary: (First time explicitly taught)	Review Academic Vocabulary: (Vocabulary explicitly taught in prior grades or topics)
conjecture	*regroup* *compatible numbers* *Associative Property of Addition* *Commutative Property of Addition* *inverse operation* *expanded form*

Additional terminology that students may need support with: *more, fewer, less*

*Collaborative Team Conversations (CTC)

Consider using ***one*** of the following as part of the formative assessment process at the lesson level to **collect student work** to analyze for evidence of mathematical understanding:

Guiding question: "Are students applying place value understanding to add and subtract whole numbers?"

Lesson	Evidence	Look for
9-1	*Quick Check* (digital platform) Items 1, 3, and 4	Focus CTC around data analysis and collection of student workspace (scratch paper). Printable version available under "Teacher Resources". • understanding place value to break apart (decompose) numbers.
9-5	*Math Practices and Problem Solving* (student work samples) Item 16	Focus CTC around the big idea: • student strategies and models. • students understanding place value to break apart numbers. • students using partial differences.

Learning Cycle Assessments (summative)	*Topic Assessments* SE pp. 529-534	Use *Scoring Guide* TE pp. 529-534A

Standards listed in **bold** indicate a focus of the lesson.

NVACS (Content and Practices)	Mathematical Development of the Big Idea	Instructional Clarifications & Considerations
Lesson 9-1: Use Partial Sums to Add		
3.NBT.A.2 MP.1 MP.3 MP.4 MP.5 MP.7	Access Prior Learning: In Topics 4 & 6, Grade 2 students developed fluency with adding and subtracting 2-digit numbers. In Topics 10 & 11, Grade 2 students began to develop understanding for adding and subtracting 3-digit numbers using models such as place value blocks and number lines. In Topic 8, students revisited the properties of addition and used the number line to model addition and subtraction. Developing the Big Idea: Students are further *developing* their understanding of using place value strategies to add 3-digit numbers by using the expanded algorithm to break the addition problems into a series of easier problems based on place value, then partial sums are added together to get the total.	Topic Opener: Introduce the *Topic Essential Question*, "What are standard procedures for adding and subtracting whole numbers?" (TE, p. 471). Consider making this an anchor chart in your classroom. Adding new ideas to the chart helps students to see the development of concepts and strategies and make new connections. You might also consider having students complete the *Review What You Know* prior to beginning instruction on topic 9 so that you can respond to student instructional needs using the *Item Analysis for Diagnosis and Intervention* (TE, pp. 472-474). Consider introducing vocabulary terms as they are encountered in the lessons rather than introducing all terms at the beginning of the lesson. Consider introducing the Convince Yourself, Convince a Friend, and Convince a Critic at this time to support student development of MP. 3 "*Construct viable arguments and critique the reasoning of others.*" Solve & Share: Consider having a place value chart (Teaching Tool 5) and base-10 blocks available, especially for students that struggled with using place value in topic 8. Watch for students that are attempting to or do use the U.S. Traditional Algorithm. For these students ask questions to determine if the student has conceptual understanding of the procedures or if it is just a memorized procedure. Encourage students that only have a memorized procedure to show their work using the place value chart and base-10 blocks or to attempt a partial sums strategy such as the expanded algorithm and explain their reasoning. Watch for students that do not line up digits by place value. Consider posing a situation where the digits are not lined up correctly and discussing the error with the whole class. Can the students use this error to generalize and make a rule about place value and addition? Consider beginning to support students' development of the meaning of the mathematical term "regroup" by connecting their informal language for the term with the actual term. Assess and Differentiate: If time permits, you may consider replacing the *Math and Science Activity* with games from previous topics or the *Fluency Practice Activity* (TE, p. 523). Child-watch to identify students who need additional support and pull them into a small group to do the *Intervention Activity* (TE, p. 479A). *CTC: *Quick Check* (digital platform)
Lesson 9-2: Add 3-Digit Numbers		
3.NBT.A.2 MP.1 MP.3 MP.4 MP.5	Access Prior Learning: In the previous lesson, students used the expanded algorithm for adding 3-digit numbers. Developing the Big Idea: Students are *developing* the understanding of a standard algorithm as a shortcut for the expanded algorithm by connecting it to place value understanding.	Solve & Share: Consider having place value charts (Teaching Tool 5) and base-10 blocks available for students still needing to direct model the addition and build place value understanding. Watch for students that only use the U.S. Traditional Algorithm. Encourage them to think about whether that is always the most appropriate strategy. Students build fluency when they think flexibly and determine that different strategies can be more efficient because of the numbers in a problem. This type of reasoning builds number sense and place value understanding. Consider supporting students' development of the meaning of the mathematical term "regroup" by connecting their informal language for the term with the actual term. If students did not offer a solution method similar to "KiKo's Work", consider discussing "KiKo's Work" as a class (TE, p. 481). Notice that Kiko offers a visual representation to explain the regrouping he did in the standard algorithm. *-continues on next page-*

		Look Back: Consider discussing the *Look Back!* prompt to continue to support students' understanding of estimation and identify the connections in mathematical ideas. Visual Learning: The *Visual Learning Animation* only shows the U.S. Traditional Algorithm as a solution method. Research has shown that once students have been taught a standard algorithm, they are unlikely to go back to using invented algorithms and reasoning strategies. If students are insecure in their place value understanding, consider not showing the *Visual Learning Animation* and instead run item 19 from *Math Practices and Problem Solving* as another *Solve & Share* to give more opportunity to work with invented algorithms and connect them to place value understanding. Convince Me: If you do show the *Visual Learning Animation*, consider assigning and discussing the *Convince Me!* to support students' development of understanding the math behind procedures such as the U.S. Traditional Algorithm. Independent Practice/Math Practices and Problem Solving: *Quick Check* item 22 *Higher Order Thinking* may be more difficult for students because so far this year students have mostly worked with Add to-Result Unknown problem types (for more information on problem types see p. 88 of NVACS). Item 22 is a "Compare-Bigger Unknown" problem type. Assess and Differentiate: If time permits, teach students how to play the game "Clip and Cover" (TE, p. 485A). All students should have the opportunity to play this game. Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 485A).
Lesson 9-3: Continue to Add 3-Digit Numbers		
3.NBT.A.2 MP.1 MP.2 MP.3 MP.6 MP.7 MP.8	Access Prior Learning: In the previous lesson, students learned to add 3-digit numbers using the U.S. Traditional Algorithm and place value understanding. Developing the Big Idea: Students further *develop* the understanding of the U.S. Traditional Algorithm as a shortcut for the expanded algorithm by connecting it to place value understanding.	Instructional note: Many problems in this lesson are the compare problem type, which can be difficult for learners still building an understanding of addition. Watch for students that seem to be struggling due to the comparative terminology and provide vocabulary support for the terms as well as questioning to push students to think about what is known and unknown. Ask them to connect back to the situation given and the relationship between these terms. Focus on making sense of problems and relationships helps students develop problem-solving habits. Solve & Share: Prior to introducing the *Solve & Share*, consider asking students to share out all the strategies they can think of for adding multi-digit numbers and posting these ideas to the anchor chart. Keep in mind that the outcome of this topic is not that students are fluent with the U.S. Traditional Algorithm, but rather that they are secure with the place value understandings to add multi-digit numbers. Therefore, it is acceptable for students to be using strategies based on place value understanding such as the expanded or partial sums algorithms to solve multi-digit addition problems. Visual Learning: The *Visual Learning Animation* only shows the U.S. Traditional Algorithm as a solution method. Consider pausing frequently to connect the computation used in the U.S. Traditional Algorithm to partial sums. Include modeling with using base-10 blocks if needed. You might also consider not showing the *Visual Learning Animation*, but still ask students to share their invented algorithms, or partial sums, and explain using place value understanding. Assess and Differentiate: If time permits, teach students how to play the game "Teamwork" (TE, p. 491A). All students should have the opportunity to play this game. Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 485A and/or TE, p. 491A).

Lesson 9-4: Add 3 or More Numbers		
3.NBT.A.2 MP.2 MP.3 MP.4 MP.8	Access Prior Learning: In the previous lesson students learned to add two, 3-digit numbers using a standard algorithm, like the U.S. Traditional Algorithm. Developing the Big Idea: Students further *develop* an understanding of the U.S. Traditional Algorithm as a shortcut for the expanded algorithm by connecting it to place value understanding with 3 multi-digit numbers.	Solve & Share: After introducing the *Solve & Share*, consider asking students to make sense of the problem, identify what the problem is asking and develop a plan. To continue to support students' understanding of additive versus multiplication situations consider also asking students why this is not a multiplication problem (e.g. we do not have repeated equal sized groups of fish). Visual Learning: The *Visual Learning Animation* only shows the U.S. Traditional Algorithm as a solution method. Consider pausing frequently to connect the computation of the U.S. Traditional Algorithm to partial sums. Include modeling with using base-10 blocks if needed. You might also consider not showing the *Visual Learning Animation*, but still have students solve and share their invented algorithms, or partial sums, with place value understanding. Independent Practice/Math Practices and Problem Solving: Consider using item 18 as it has students use information from a picture to find the total height. Assess and Differentiate: If time permits, teach students how to play "Display the Digits" (TE, p. 497A). All students should have the opportunity to play this game. Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 497A).
Lesson 9-5: Use Partial Differences to Subtract		
3.NBT.A.2 MP.3 MP.6 MP.7 MP.8	Access Prior Learning: In topics 4 & 6, Grade 2 students developed fluency with adding and subtracting 2-digit numbers. In topics 10 & 11, Grade 2 students began to develop understanding for adding and subtracting 3-digit numbers using models such as place value blocks and number lines. In topic 8, students revisited the properties of addition, compensation with subtraction, and using the number line to model addition and subtraction. Developing the Big Idea: Students are further *developing* their understanding of using place value strategies to subtract 3-digit numbers by using the expanded algorithm to break the subtraction problems into a series of easier problems based on place value.	Solve & Share: Consider having a place value chart (Teaching Tool 5) and base-10 blocks available, especially for students that are struggling to connect regrouping in addition to place value understanding. Watch for students that attempt or do use the U.S. Traditional Algorithm. For these students ask questions to determine if the student has conceptual understanding or if they are using a memorized procedure. Are they applying place value understanding to use a partial differences strategy? Are they making simpler problems and showing flexibility and efficiency in their thinking? Encourage all students to show or explain their reasoning and to connect these ideas to a written strategy. For an example of how concrete modeling can be connected to a representational strategy, see *Analyze Student Work* in Lesson 9-6 (TE, p. 505); "Ira's Work". Visual Learning: The *Visual Learning Animation* only shows the U.S. Traditional Algorithm as a solution method, research states that once students have been taught a standard algorithm they are unlikely to go back to using invented algorithms. Consider pausing frequently to connect the computation with the U.S. Traditional Algorithm to the expanded algorithm and partial differences; include using base-10 blocks if needed. You might also consider not showing the *Visual Learning Animation* and instead ask students to share their strategies and reasoning for solving. Are students applying addition strategies to help them subtract? Are there similarities in the use of place value between strategies that students can notice and use to make a generalization about place value and subtraction? Convince Me: Consider assigning and discussing the *Convince Me!* to support students' development of using place value understanding to subtract multi-digit numbers. Independent Practice/Math Practices and Problem Solving: Item 15 *Higher Order Thinking* of the *Quick Check* is a "compare" problem, which may present an extra challenge. Students have been working mostly with "Take from-Result Unknown" problems in this lesson (for more on the problem types see page 88 of the NVACS). Focus on helping students make sense of what problems are asking and developing a plan. Assess and Differentiate: If time permits, you may consider replacing the *Problem Solving Reading Mat* with the game "Clip and Cover" (TE, p. 485A), "Teamwork" (TE, p. 491A), "Display the Digits" (TE, p. 497A), or the *Fluency Practice Activity* (TE, p. 523). Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 503A). *CTC: *Math Practices and Problem Solving* (student work samples)

Lesson 9-6: Subtract 3-Digit Numbers		
3.NBT.A.2 MP.1 MP.2 MP.4 MP.5 MP.8	Access Prior Learning: In previous lessons in this topic students subtracted multi-digit numbers by breaking larger subtraction problems into smaller problems. Students found partial differences that helped them find differences for larger subtraction problems. By using the expanded algorithm, students further developed their understanding of place value. Developing the Big Idea: This lesson further *develops* students' understanding of using place value strategies to subtract 3-digit numbers by using the expanded algorithm to break the subtraction problems into a series of easier problems based on place value. Students also *begin* to understand use of the U.S. Traditional Algorithm for subtracting 3-digit numbers.	Solve & Share: Consider having place value charts (Teaching Tool 5) and base-10 blocks available, especially for students still needing to direct model the subtraction with regrouping. The *Solve & Share* has extraneous information (e.g. the number of houses for sale in Hunter County); consider asking students the questions provided in the *Build Understanding* (TE, p. 505) to make sure all students are working within the same constraints of the problem. Visual Learning: The *Visual Learning Animation* only shows the U.S. Traditional Algorithm as a solution method, research states that once students have been taught a standard algorithm they are unlikely to go back to using invented algorithms. Consider pausing frequently to connect the computation of the standard algorithm to the expanded algorithm or a partial differences strategy, include using base-10 blocks if needed. You might also consider not showing the *Visual Learning Animation*, but still have students solve and share their invented algorithms, or expanded algorithms, with place value understanding. Convince Me: If you do show the *Visual Learning Animation*, consider assigning and discussing the *Convince Me!* to support students' development of understanding the math behind the procedures in the U.S. Traditional Algorithm. Assess and Differentiate: If time permits, you may consider replacing the *Math and Science Activity* with the game "Clip and Cover" (TE, p. 485A), "Teamwork" (TE, p. 491A), "Display the Digits" (TE, p. 497A), or the Fluency Practice Activity (TE, p. 523). Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 509A).
Lesson 9-7: Continue to Subtract 3-Digit Numbers		
3.NBT.A.2 MP.1 MP.2 MP.3 MP.4 MP.5 MP.8	Access Prior Learning: In the previous lesson, students used place value understanding to subtract 3-digit numbers. Students also connected place value understandings to a standard algorithm for subtraction. Developing the Big Idea: Students further *develop* the understanding of a standard algorithm as a shortcut for the expanded algorithm. This is achieved by connecting place value understanding to subtracting multi-digit numbers where they have to regroup across zero.	Instructional note: The majority of problems in this lesson are compare problem types which research indicates tend to be more difficult for students. Watch for students that seem to be struggling due to the comparative terminology and provide vocabulary support for the terms. Focus on making meaning of the problems and determining appropriate plans. Solve & Share: Consider giving students opportunity to solve the problem any way they choose. Have tools readily available for students to use if needed. Therefore, it is acceptable for students to be using expanded or partial differences algorithms to solve multi-digit subtraction problems. After introducing the *Solve & Share*, consider asking students if there is any information we do not need to solve the problems (e.g. Rick is allowed to receive 1,000 texts per month). If students do not offer a solution method that is the same as "Sam's Work", then consider discussing "Sam's Work" as a class (TE p. 511). Notice that Sam offers a visual representation and a written explanation of the regrouping. Look Back: Consider assigning the *Look Back!* to support students' understanding of the inverse relationship between addition and subtraction. Visual Learning: The *Visual Learning Animation* only shows the U.S. Traditional Algorithm as a solution method. Consider pausing frequently to connect the computation with the standard algorithm to partial sums, including using base-10 blocks if needed. You might also consider not showing the *Visual Learning Animation*, but still have students solve and share their invented algorithms, or partial differences, with place value understanding. Convince Me: If you do show the *Visual Learning Animation*, consider assigning and discussing the *Convince Me!* to help students see the place value connections to the U.S. Traditional Algorithm. *-continues on next page-*

		Independent Practice/Math Practices and Problem Solving: *Quick Check* item 19 requires students to reason with a multi-step compare problem type. Consider asking students what the hidden questions are in order to solve this problem. Assess and Differentiate: If time permits, teach students how to play "Display the Digits" (TE, p. 515A). All students should have the opportunity to play this game. Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 515A).
Lesson 9-8: Math Practices and Problem Solving- Construct Arguments		
3.NBT.A.2 MP.3 MP.1 MP.2 MP.4 MP.7	Access Prior Learning: In Grade 2, students learned how to explain their thinking when proving answers to addition problems. Developing the Big Idea In this lesson, students further *develop* their understanding of MP. 3 *"Construct viable arguments and critique the reasoning of others"* using addition and subtraction to justify conjectures.	This lesson provides an opportunity to focus on the Thinking Habits and display the behaviors associated with Math Practice 3, *"Construct viable arguments and critique the reasoning of others*." Refer to the *Math Practices and Problem Solving Handbook* for suggestions on how to develop, connect and assess this Math Practice (TE, pp. F23-F23A, F29). Also, reference the handbook in the Student Edition (SE, p. F23). Solve & Share: Consider reintroducing MP. 3 Thinking Habits (SE, p. F23) before introducing the *Solve & Share*. Watch for students that are able to complete the task, but are unable to explain how they know they have the largest sum. Consider supporting these students with questioning about how they can see and used place value in their strategies? Look Back: Consider discussing as a class the *Look Back!* question to support students' mathematical reasoning skills and place value understandings. Convince Me: Consider assigning the *Convince Me!* as it provides an opportunity for students to reason more with MP.3 by supporting a conjecture with a representation. Assess and Differentiate: If time permits, you may consider replacing the *Problem Solving Reading Mat* with the game "Clip and Cover" (TE, p. 485A), "Teamwork" (TE, p. 491A), "Display the Digits" (TE, p. 497A), "Display the Digits" (TE, p. 515A), or the Fluency Practice Activity (TE, p. 523). Child watch to identify students who need additional support and consider the included *Intervention Activity* (TE, p. 521A).

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Rolling for 500

Mathematical Understanding:
Students strengthen numerical fluency through practice with strategies used for addition and subtraction.

Grade Level: 3-5

Number of Players: 2-4

Materials Needed:
- a die
- a game piece for each player
- game board

Object of the Game:
The first player to reach or cross the **Finish** wins the game.

Directions:
Each player places their marker on the **Start** square of the shared game board.

Player 1 rolls the die. Match the number rolled to the table on the game board to determine how many spaces to move forward or backward. Player 1 moves their marker.

Players take turns rolling the die and using the table to determine spaces moved.

The first player to reach or cross the **Finish** line wins the game.

Players cannot move below zero and wait at the start space for a positive roll.
Two players can be on the same space on the game board at the same time.

Optional:
When playing the estimation version, players can state aloud what their exact space would be and how close they are to the space they move onto to. Which space is the closest and why

Guiding Questions:
What do you know?
Where do you think you will begin?
Where are you stuck? What is confusing? What are you wondering about?
What are you going to try?
What did you think about to come to your answer?

Differentiation:

Two versions of the game can be used for grades 3-5. **Rolling for 500** gives practice with place value strategies to add and subtract numbers up to 500. **Rolling for 500 estimation** gives practice with place value strategies for addition and subtraction and also requires comparative reasoning in order to properly place the game board marker.

Game Trajectory:
Pre K-K: Counting along a number line to 20

K-2: Addition and subtraction to get to 50

3-5: Rolling for 500 or Rolling for 500 estimation version

Clean up Checklist for Game Bag:
Die
Game piece markers
Game boards

Rolling for 500

Roll	Spaces
1	add 30
2	subtract 20
3	add 50
4	subtract 60
5	add 80
6	add 10