

Course Title: Mathematics	Full Year	Required
<p>Course Description: The big ideas in grade 2 include: extending understanding of the base-ten number system, building fluency with addition and subtraction, using standard units of measure, and describing and analyzing shapes. The mathematical work for grade 2 is partitioned into 9 units:</p> <ol style="list-style-type: none"> 1. Adding, Subtracting, and Working with Data 2. Adding and Subtracting within 100 3. Measuring Length 4. Addition and Subtraction on the Number Line 5. Numbers to 1,000 6. Geometry, Time, and Money 7. Adding and Subtracting within 1,000 8. Equal Groups 9. Putting it All Together <p>In these materials, particularly in units that focus on addition and subtraction, teachers will find terms that refer to problem types, such as Add To, Take From, Put Together or Take Apart, Compare, Result Unknown, and so on. These problem types are based on common addition and subtraction situations, as outlined in Table 1 of the Mathematics Glossary section of the Common Core State Standards.</p>		
<p>Additional Course Information:</p> <p>The big ideas in Grade 2 include:</p> <ul style="list-style-type: none"> ● Representing and solving problems involving addition and subtraction ● Adding and subtracting within 20 ● Understanding place value ● Using place value understanding and properties of operations to add and subtract ● Measuring and estimating lengths in standard units ● Relating addition and subtraction to length <p>Required fluency in grade 2 includes:</p> <ul style="list-style-type: none"> ● Single-digit sums and differences (sums from memory by end of Grade 2) ● Add/subtract within 100 	<p>Core Resources:</p> <p>Illustrative Mathematics</p> <p>Instructional Routines and Math Language Routines</p> <p>Glossary - Student-friendly</p> <p>Required Materials</p> <p>IM en Español:</p> <p>Developing a Mathematical Community</p>	<p>Are there any attachments <u>at the course level</u> that teachers will need?</p> <p>Scope and Sequence This document should be reviewed at the start of the year and each unit for information on language routines, expectations, and possible misconceptions.</p> <p>Pacing Guide and Dependency Diagrams K-5</p>

Unit 7: Adding and Subtracting within 1,000

Duration: 18-20 days

Unit Overview - FOCUS:

Unit Learning Goals

Students use place value understanding, the relationship between addition and subtraction, and properties of operations to add and subtract within 1,000.

In this unit, students add and subtract within 1,000, with and without composing and decomposing a base-ten unit.

Previously, students added and subtracted within 100 using methods such as counting on, counting back, and composing or decomposing a ten. Here, they apply the methods they know and their understanding of place value and three-digit numbers to find sums and differences within 1,000.

Initially, students add and subtract without composing or decomposing a ten or hundred. Instead, they rely on methods based on the relationship between addition and subtraction and the properties of operations. They make sense of sums and differences using counting sequences, number relationships, and representations (number line, base-ten blocks, base-ten diagrams, and equations).

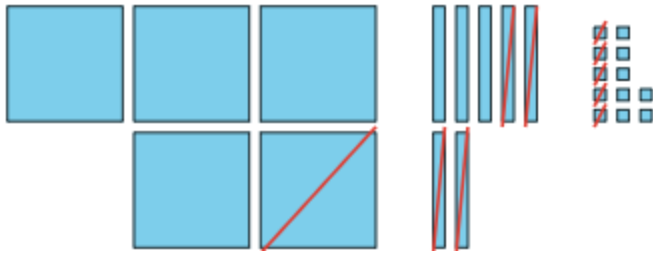
As the unit progresses, students work with numbers that prompt them to compose and decompose one or more units, eliciting strategies based on place value. When adding and subtracting by place, students first compose or decompose only a ten, then either a ten or a hundred, and finally both a ten and a hundred. They also make sense of and connect different ways to represent place value strategies. For example, students make sense of a written method for subtracting 145 from 582 by connecting it to a base-ten diagram and their experiences with base-ten blocks.

Topic Titles:

- **Section A: Add and Subtract within 1,000 without Composition or Decomposition**
 - Add and subtract numbers within 1,000 without composition or decomposition, and use strategies based on the relationship between addition and subtraction and the properties of operations.
- **Section B: Add within 1,000 using Place Value Strategies**
 - Add numbers within 1,000 using strategies based on place value understanding, including composing a ten or hundred.
- **Section C: Subtract within 1,000 using Place Value Strategies**
 - Subtract numbers within 1,000 using strategies based on place value understanding, including decomposing a ten or hundred.

How do Jada's equations match Lin's diagram?
 Finish Jada's work to find $582 - 145$.

Lin's diagram



Jada's equations

$$500 - 100 =$$

$$\begin{array}{r} 70 \\ 80 \\ 12 \\ \hline \end{array} - 40 =$$

$$\begin{array}{r} 12 \\ \hline \end{array} - 5 =$$

Students learn to recognize when composition or decomposition is a useful strategy when adding or subtracting by place. In the later half of the unit, they encounter lessons that encourage them to think flexibly and use strategies that make sense to them based on number relationships, properties of operations, and the relationship between addition and subtraction.

Coherence: How does this unit build on and connect to prior knowledge and learning?

Previously, students added and subtracted within 100 using methods such as counting on, counting back, and composing or decomposing a ten. In a previous unit, students compared three-digit numbers using a number line and considered how close they were to one another and their distance from zero. In grade 1, students added and subtracted multiples of 10 within 100. In a previous unit, students represented three-digit numbers with base-ten blocks, drawings, and words. Students used equations to represent three-digit numbers as sums of the value of hundreds, tens, and ones using the number and name of each unit ($235 = 2 \text{ hundreds} + 3 \text{ tens} + 5 \text{ ones}$) and using expanded form ($235 = 200 + 30 + 5$). Students will build on this learning and extend their range to adding and subtracting within 1,000 in this unit.

<p>Essential Questions:</p> <ol style="list-style-type: none"> 1. How can place value be helpful when adding and subtracting multi-digit numbers? 2. How can I use my understanding of place value to add numbers within 1,000? 3. How can I use my understanding of place value to subtract within 1,000? 	<p>Enduring Understanding:</p> <ul style="list-style-type: none"> ● We can use place value understanding, properties of operations, and the relationship between addition and subtraction to add and subtract. We can add and subtract by counting on or back by place and using expanded form to think about adding or subtracting using place value based strategies. Addition and subtraction have an inverse relationship that can be used to solve problems. Base-ten blocks, diagrams, and equations can be used to show adding hundreds to hundreds, tens to tens, and ones to ones. ● When adding three-digit numbers, we add hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose tens or hundreds. Concrete models or drawings can be used to represent addition and show place value understanding. ● When subtracting three-digit numbers, we subtract hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to decompose tens or hundreds. Concrete models or drawings can be used to represent subtraction and show place value understanding. Properties of operations and the relationship between addition and subtraction can be used to subtract. 	
<p>What Students Will Know: This should be based on the competencies.</p> <ul style="list-style-type: none"> ● When numbers are relatively close, we can count on or count back to determine the difference between the two numbers. ● When adding or subtracting multiples of 10, the tens place changes and when adding or subtracting multiples of 100 the hundreds place changes. ● Connections between sums of 10 and sums of 100, for example $5+5=10$ and $50+50=100$. ● Addition and subtraction have an inverse relationship. 	<p>What students will do: This should be based on the competencies.</p> <ul style="list-style-type: none"> ● Compare numbers and find the difference between 2 three-digit numbers. ● Use number relationships to add and subtract within 1,000. ● Add and subtract multiples of 10 or 100 to/from a three-digit number. ● Use the relationship between addition and subtraction to find unknown values in subtraction and addition equations. ● Explain why addition strategies work, using place value and the properties of operations. ● Represent three-digit numbers as sums of hundreds, tens, and ones. ● Use expanded form to think about adding or 	<p>Unit Specific Vocabulary:</p> <p>Academic vocabulary</p> <p>Sum Difference Value Subtrahend Decomposition Multiple Three-Digit Number Representation Multi-Digit Number Inverse Compose</p>

<ul style="list-style-type: none"> ● The order in which we add does not affect the value of the sum. ● When you add a two-digit number to a three-digit number, knowing sums of 10 can help you tell if you will need to compose a ten. ● A hundred is a unit that is composed of 10 tens. ● Sometimes you need to make a ten and a hundred when adding. ● Sometimes numbers may need to be composed or decomposed in the process of adding or subtracting. ● The inverse relationship between addition and subtraction can be used to solve problems and check answers. 	<p>subtracting using place value based strategies.</p> <ul style="list-style-type: none"> ● Add and subtract within 1,000 using the method that makes the most sense and is most efficient for a given problem. ● Add and subtract within 1,000 without composing a ten or hundred. ● Make our thinking visible to other mathematicians. ● Add a two-digit number to a three-digit number that requires composing a ten when adding by place. ● Explain why addition strategies work using place value and the properties of operations. ● Find an unknown addend. ● Recognize when it is necessary to compose a ten and/or a hundred when adding. ● Add within 1,000 using self-selected strategies. ● Explain why they chose a method based on the numbers in the expression. ● Analyze work to identify why a method worked and identify any errors if the method did not work. ● Use base-ten blocks, diagrams, and equations to show adding hundreds to hundreds, tens to tens, and ones to ones. ● Recognize when a ten or a hundred would be decomposed when subtracting three-digit numbers. ● Subtract numbers within 1,000 using place value strategies that include decomposing a ten or a hundred. ● Explain why a subtraction method works ● Decompose tens or hundreds to subtract by place. ● Subtract within 1,000, using concrete models or drawings and strategies based on place 	<p>Compare Analyze Value Expression Sum Decompose</p>
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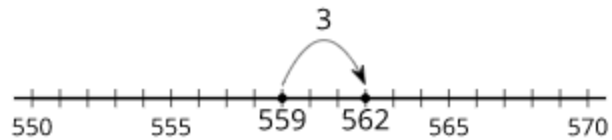
	value, properties of operations and/or the relationship between addition and subtraction.	
<p>Entry Level Assessment and Connection to Unit:</p> <p>Section A Pre-Unit Practice Problems Section B Pre-Unit Practice Problems Section C Pre-Unit Practice Problems</p>	<p>Unit Materials, Resources and Technology:</p> <ul style="list-style-type: none"> ● Illustrative Mathematics ● Instructional Routines and Math Language Routines ● Glossary - Student-friendly ● Required Materials ● IM en Español ● Pacing Guide and Dependency Diagrams K-5 	
<p>Opportunities for Interdisciplinary Connections:</p>		
<p>Any links, attachments and resources:</p> <p>Instructional Routines Document Family Support Materials</p>	<p>Planning Ideas:</p> <p>Components of a Typical IM Lesson What To Know About IM When Planning Where to Find the Mathematical Practices in the Units Assessing the Mathematical Practices</p>	

Topic # 1 (Section A)	Topic Name: Section A - Add and Subtract within 1,000 without Composition or Decomposition	Duration: Recommended: 5 lessons (5 days)
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Topic Description:

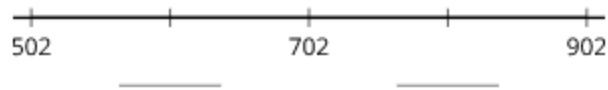
In this section, students add and subtract within 1,000 using methods where they do not explicitly compose or decompose a ten or a hundred.

The number line is used early in this section to help students recognize that when numbers are relatively close, they can count on or count back to find the value of the difference. For example, they may count on from 559 to 562.



Students also analyze counting sequences of three-digit numbers that increase or decrease by 10 or 100. They observe patterns in place value before adding and subtracting multiples of 10 or 100.

Fill in the missing numbers. Does the number line show counting on by 10 or by 100?



Students then engage with problems and expressions that encourage them to reason about sums and differences using the relationship between addition and subtraction and the properties of operations.

Diego has 6 tens. Tyler has 8 hundreds, 3 tens, and 6 ones.
What is the value of their blocks together?

Later in the section, students analyze and make connections between methods that use different representations, such as number lines, base-ten

diagrams, and equations. They then use methods or representations that make sense to them to add and subtract three-digit numbers.

Section Learning Goals

- Add and subtract numbers within 1,000 without composition or decomposition, and use strategies based on the relationship between addition and subtraction and the properties of operations.

Competencies Addressed:

Understanding and Applying Number Systems

- 2.NS.2** I can count, read, and write whole numbers. (2.NBT.A.2-3)
- 2.NS.3** I can apply my understanding of place value to compare whole numbers. (2.NBT.A.4)
- 2.NS.4** I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9)
- 2.NS.5** I can use my understanding of place value to subtract. (2.NBT.B.5, 7-9)

Essential Question and Enduring Understanding Addressed in this Topic:

1. How can place value be helpful when adding and subtracting multi-digit numbers?
 - **We can use place value understanding, properties of operations, and the relationship between addition and subtraction to add and subtract.** We can add and subtract by counting on or back by place and using expanded form to think about adding or subtracting using place value based strategies. Addition and subtraction have an inverse relationship that can be used to solve problems. Base-ten blocks, diagrams, and equations can be used to show adding hundreds to hundreds, tens to tens, and ones to ones.

<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● When numbers are relatively close, we can count on or count back to determine the difference between the two numbers. ● When adding or subtracting multiples of 10, the tens place changes and when adding or subtracting multiples of 100 the hundreds place changes. ● Connections between sums of 10 and sums of 100, for example $5+5=10$ and $50+50=100$. ● Addition and subtraction have an inverse relationship. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p> <p>Sum Difference Value Subtrahend Decomposition Multiple Three-Digit Number Representation Multi-Digit Number Inverse</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Compare numbers and find the difference between 2 three-digit numbers. ● Use number relationships to add and subtract within 1,000. ● Add and subtract multiples of 10 or 100 to/from a three-digit number. ● Use the relationship between addition and subtraction to find unknown values in subtraction and addition equations. ● Explain why addition strategies work, using place value and the properties of operations. ● Represent three-digit numbers as sums of hundreds, tens, and ones. ● Use expanded form to think about adding or subtracting using place value based strategies. ● Add and subtract within 1,000 using the method that makes the most sense and is most efficient for a given problem. ● Add and subtract within 1,000 without composing a ten or hundred. ● Make our thinking visible to other mathematicians. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 1: In previous lessons, students located and compared numbers on the number line. How did the number line help them make sense of subtraction methods based on counting on by place? How could you use number lines to help students make their thinking visible for others?</p> <p>Lesson 2: In previous lessons, students represented three-digit numbers as sums of hundreds, tens, and ones. How does that understanding support students as they add and subtract multiples of 10 and 100?</p> <p>Lesson 3: What strategies are students using to</p>

subtract? How can you help students see the connections between addition and subtraction as they consider ways to subtract within 1,000?

Lesson 4: What opportunities are you giving students to reflect on their understanding of the mathematical content?

Lesson 5: Revisit the norms you established as a class about doing mathematics. Which norms are working and which might need revision? Are there any norms you or your students might want to add?

Utilize additional strategies for Teacher Reflection:

- Reviewing formative assessments
- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups

Topic 1 Task Development

Each Topic has its own Task that serves as a roadmap for instruction during the unit. The task follows the [Learning Cycle Model](#) that drives teaching and learning in Naugatuck Public Schools.

Task Title: Topic 1 - Add and Subtract within 1,000 without Composition or Decomposition	Grade Level and Unit: Grade 2, Unit 7
Description of Task: Students explore two different methods for adding and subtracting numbers within 1,000. Then students choose the method that they prefer and explain why they prefer this method. Next students find the value of an expression and share their strategy and solution with others.	Purpose of Task: The purpose of this activity is for students to use their understanding of expanded form, place value, and properties of operations to reason about adding and subtracting by place. Students analyze different methods and representations that show adding hundreds and hundreds, tens and tens, and ones and ones. Students notice that hundreds, tens, and ones can be added in any order. In the next section, the focus will be on strategies based on place value and will include composing and decomposing tens and hundreds. In the synthesis, there are discussions that honor all methods while connecting each strategy to place value in preparation for the work of the upcoming lessons.
Background of Students/Learning Progression: We added and subtracted by counting on or back by place and used expanded form to think about adding or subtracting using place value based strategies. Students make sense of methods based on adding by place. Students are invited to try the methods for adding and subtracting that they analyze in this task or choose any method that makes the most sense to them. They will continue to analyze and use methods based on adding and subtracting by place in upcoming lessons. Previously, students added and subtracted within 100 using methods such as counting on, counting back, and composing or decomposing a ten. Here, they apply the methods they know and their understanding of place value and three-digit numbers to find sums and differences within 1,000.	Ensure all competencies are addressed in the task: <ul style="list-style-type: none"><input type="checkbox"/> Yes, all competencies are addressed<input type="checkbox"/> No - Task needs modification

Getting Started: In the lessons that make up Topic 1 - Section A of Unit 7, students will:

- Add and subtract numbers within 1,000 without composition or decomposition, and use strategies based on the relationship between addition and subtraction and the properties of operations.

Lesson 1: Warm Up: The purpose of this Number Talk is to elicit strategies and understandings students have for counting back as a strategy for finding the value of differences. These understandings help students develop fluency and will be helpful later in this lesson when students subtract within 1,000. As students share their thinking, they represent it on an open number line to help them make connections.

Find the value of each expression mentally.

- $586 - 6$
- $586 - 8$
- $434 - 5$
- $352 - 4$

“Even though there were three-digit numbers, I noticed that some of you used the same strategies you’ve used before. Why does that work?” (If you are subtracting a small amount, you can count back by ones to find the answer.)

“Today we are going to look at other ways we can use strategies we’ve used for adding and subtracting two-digit numbers to add and subtract with three-digit numbers.”

Section A

IM Lesson	Lesson 1: Compare, Count on, and Count Back	Lesson 2: Add and Subtract with Tens and Hundreds	Lesson 3: Count on or Count Back to Subtract	Lesson 4: Add and Subtract Three-digit Numbers in Different Ways	Lesson 5: Center Day 1 (optional)
Learning Cycle Model	Making Meaning	Making Meaning	Investigation	Create / Produce	Additional Learning
Naugatuck Math Competency	2.NS.2 2.NS.4, 2.NS.5	2.NS.4, 2.NS.5	2.NS.4, 2.NS.5	2.NS.4, 2.NS.5	2.NS.3 2.NS.4
Math Practice Standards	MP7, MP8	MP7, MP8	MP7		
Lesson Purpose	The purpose of this lesson is for students to add or subtract within 1,000 using number relationships.	The purpose of this lesson is for students to add and subtract multiples of 10 and 100 within 1,000.	The purpose of this lesson is for students to subtract within 1,000 using strategies that demonstrate an understanding of the relationship between addition and	The purpose of this lesson is for students to add and subtract within 1,000 without composing a ten or hundred using place value understanding, properties of	The purpose of this lesson is for students to practice adding numbers within 1,000.

			subtraction, including counting on and counting back.	operations, and the relationship between addition and subtraction.	
Vocabulary Focus	Sums, differences		Subtrahend, decomposition		
Lesson Materials/ Resources	Lesson 1 Slides Teacher Presentation Materials Student Pages No copied materials needed Cool-down: Subtract and Count	Lesson 2 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group base-ten blocks and a number cube. Activity 2: <ul style="list-style-type: none"> Give students access to base-ten blocks. Cool-down: How Many Blocks?	Lesson 3 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students access to base-ten blocks. Cool-down: Mystery Number	Lesson 4 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students access to base-ten blocks. Activity 2: <ul style="list-style-type: none"> Give students access to base-ten blocks. Cool-down: Find the Sum, Find the Difference	Lesson 5 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group two paper clips, 10 counters, and a Five in a Row Addition and Subtraction Stage 7 Gameboard. Activity 2: <ul style="list-style-type: none"> Centers - see below
Assessment	Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section A Checkpoint Assessment , Section A Checkpoint Teacher's Guide				
					Section A Practice Problems
Centers Materials	Jump the Line (2–5) , Stage 1: Add and Subtract within 100 (Supporting) Number Line Scoot (2–3) , Stage 1: Twos,	Jump the Line (2–5) , Stage 1: Add and Subtract within 100 (Supporting) Number Line Scoot (2–3) , Stage 1: Twos,	Five in a Row: Addition and Subtraction (1–2) , Stage 6: Add within 100 with Composing (Supporting)	Five in a Row: Addition and Subtraction (1–2) , Stage 6: Add within 100 with Composing (Supporting)	Five in a Row: Addition and Subtraction (1–2) , Stages 6–7 Get Your Numbers in Order (1-5) , Stage 2

	Fives, and Tens (Supporting)	Fives, and Tens (Supporting)	How Close? (1–5) , Stage 3: Add to 100 (Supporting)	How Close? (1–5) , Stage 3: Add to 100 (Supporting)	Mystery Number (1-4) , Stage 2 Greatest of them All (1-5) , Stage 2
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Making Meaning:

In Lesson 1, students compare numbers and use the number line to consider ways to find the difference between 2 three-digit numbers. When locating numbers on the number line, students recognize that when the numbers are relatively close, they can simply count on or count back to determine the difference between the two numbers. In the second activity, students analyze number lines and counting sequences that increase or decrease by 10 or 100. Using these number relationships, students label number lines by counting on or back by 10 or 100. The work of this activity helps prepare students to use and make sense of computation methods based on counting or adding on by place in upcoming lessons.

In Lesson 2, students add and subtract three-digit numbers and multiples of 10 and 100 using what they know about tens and hundreds. Students compare representations such as base-ten blocks, base-ten diagrams, and equations to understand that when adding or subtracting multiples of 10, the tens place changes and when adding or subtracting multiples of 100 the hundreds place changes (MP7, MP8).

Lesson 1: [Compare, Count on, and Count Back](#)

- The purpose of this lesson is for students to add or subtract within 1,000 using number relationships.
- [Lesson 1 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 2: [Add and Subtract with Tens and Hundreds](#)

- The purpose of this lesson is for students to add and subtract multiples of 10 and 100 within 1,000.
- [Lesson 2 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

In Lesson 3, they analyze different methods, including counting on and counting back, to subtract within 1,000. They make connections between sums of 10 and sums of 100, for example $5+5=10$ and $50+50=100$. Students use the relationship between addition and subtraction as they find unknown values in subtraction and addition equations.

Lesson 3: [Count on or Count Back to Subtract](#)

- The purpose of this lesson is for students to subtract within 1,000 using strategies that demonstrate an understanding of the relationship between addition and subtraction, including counting on and counting back.
- [Lesson 3 Slides](#)
- [Teacher Presentation Materials](#)

Create and Produce:

The purpose of this activity is for students to use their understanding of expanded form, place value, and properties of operations to reason about adding and subtracting by place (MP7). Students analyze different methods and representations that show adding hundreds and hundreds, tens and tens, and ones and ones. Students notice that hundreds, tens, and ones can be added in any order. In the next section, the focus will be on strategies based on place value and will include composing and decomposing tens and hundreds. In the synthesis, there are discussions that honor all methods while connecting each strategy to place value in preparation for the work of the upcoming lessons.

Lesson 4, Activity 2:

In Lesson 4, as in previous lessons, students used what they know about counting within 1,000 and place value to subtract multiples of 10 and 100 from three-digit numbers. In this lesson, students continue to apply methods they used when adding and subtracting within 100 to add and subtract within 1,000. They also make sense of methods that are represented with equations. In the first activity, they make sense of different methods for subtracting a three-digit number from a multiple of 100. In the second activity, they make sense of methods based on adding by place. Students are invited to try the methods for adding and subtracting that they analyze in this lesson or choose any method that makes the most sense to them. They will continue to analyze and use methods based on adding and subtracting by place value in upcoming lessons.

Lesson 4: [Add and Subtract Three-digit Numbers in Different Ways](#)

- The purpose of this lesson is for students to add and subtract within 1,000 without composing a ten or hundred using place value understanding, properties of operations, and the relationship between addition and subtraction.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

Communicate and Present:

Have students share how they used each way.
“Which way did you prefer? Why?”
“How was it the same or different when finding the sum versus finding the difference?”

Reflection:

“Today you shared different ways to represent adding and subtracting numbers. You also talked about how thinking about place value and expanded form can help you find the value of expressions.”

	<p>“What was most helpful to you when finding the difference?”</p> <p>“What is something that you learned from comparing with a partner when adding or subtracting three-digit numbers by place value?”</p>
<p>Additional Learning:</p> <p>In Lesson 5, Activity 1, students learn stage 7 of the Five in a Row: Addition and Subtraction center. In this new stage, students add within 1,000 without composing. In Activity 2, students choose to continue working on Five in a Row, or choose between two previously introduced centers focused on place value in three-digit numbers.</p> <p>Lesson 5: Center Day 1 (optional)</p> <ul style="list-style-type: none">• The purpose of this lesson is for students to practice adding numbers within 1,000.• Lesson 5 Slides• Teacher Presentation Materials	
<p>Notes: Follow IM Lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p>

Topic # 2 (Section B)

Topic Name: Section B - Add within 1,000 using Place Value Strategies

Duration:

Recommended 6 lessons (6 days)

Topic Description:

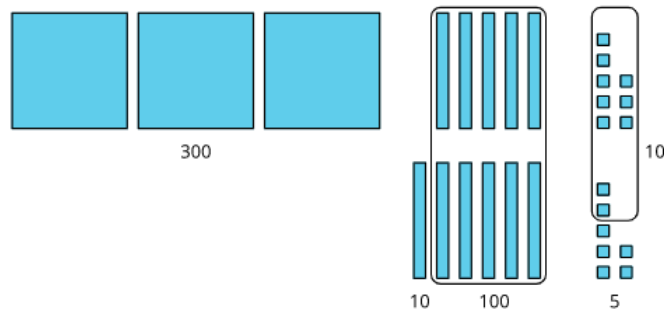
In this section, students use strategies based on place value to add three-digit numbers. They learn that it is sometimes necessary to compose a hundred from 10 tens to find the value of such sums.

Students begin with sums that allow them to decide when to make a ten. They then work with larger values in the tens place and determine when to compose a hundred. As the lessons progress, they encounter sums of two- and three-digit numbers that involve composing two units.

Throughout the section, students analyze and use representations such as base-ten blocks, base-ten diagrams, expanded form, and other equations to build conceptual understanding and show place value reasoning. They also develop their understanding of the properties of operations as they observe that the order in which they add the units doesn't affect the value of the sum.

What is the same and what is different about how Priya and Lin found $358 + 67$?

Priya's work



$$300 + 100 + 10 + 10 + 5$$
$$400 + 20 + 5 = 425$$

Lin's work

$$3 \text{ hundreds} + 11 \text{ tens} + 15 \text{ ones}$$
$$11 \text{ tens} = 110$$
$$15 \text{ ones} = 15$$
$$300 + 110 + 15 = 425$$

Later in the section, students add within 1,000 using any method they have learned and thinking flexibly about the numbers they are adding.

Section Learning Goals:

- Add numbers within 1,000 using strategies based on place value understanding, including composing a ten or hundred.

<p>Competencies Addressed:</p> <p>Understanding and Applying Number Systems</p> <p>2.NS.4 I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9)</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <ol style="list-style-type: none"> How can I use my understanding of place value to add numbers within 1,000? <ul style="list-style-type: none"> When adding three-digit numbers, we add hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose tens or hundreds. Concrete models or drawings can be used to represent addition and show place value understanding.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> The order in which we add does not affect the value of the sum. When you add a two-digit number to a three-digit number, knowing sums of 10 can help you tell if you will need to compose a ten. A hundred is a unit that is composed of 10 tens. Sometimes you need to make a ten and a hundred when adding. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p> <p>Compose Compare Analyze Value Expression Sum</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> Add a two-digit number to a three-digit number that requires composing a ten when adding by place. Explain why addition strategies work using place value and the properties of operations. Find an unknown addend. Recognize when it is necessary to compose a ten and/or a hundred when adding. Add within 1,000 using self-selected strategies. Explain why they chose a method based on the numbers in the expression. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 6: In upcoming lessons, students will add</p>

- Analyze work to identify why a method worked and identify any errors if the method did not work.
- Use base-ten blocks, diagrams, and equations to show adding hundreds to hundreds, tens to tens, and ones to ones.

using methods based on place value that involve composing both hundreds and tens. How does today's focus on using what students know about combinations of numbers that make a ten help prepare them for this work?

Lesson 7: In previous lessons, students were encouraged to make sense of computation methods based on counting on by place that did not explicitly compose a ten or hundred. How did students demonstrate their understanding of hundreds, tens, and ones as units in today's lesson? What evidence have you seen from students that demonstrates an understanding of composing a hundred when adding?

Lesson 8: Today students composed a ten and a hundred when adding a two-digit number and a three-digit number for the first time. Where did you observe students generalizing their understanding of place value and composing larger units as they found the sums? How will you support students who prefer other methods to make sense of composing units when adding by place as they continue this work in upcoming lessons?

Lesson 9: Reflect on who participated in math class today. What assumptions are you making about those who did not participate? How can you leverage each of your students' ideas to support them in being seen and heard in tomorrow's math class?

Lesson 10: Unlike talking, listening is a difficult thing to observe. At what points in the lesson did you observe students listening to one another's ideas today in class? What indicators do you have that they were listening?

Lesson 11: When do your students feel successful in math? How do you know?

Utilize additional strategies for Teacher Reflection:

- Reviewing formative assessments
- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups

Topic 2 Task Development

Each Topic has its own Task that serves as a roadmap for instruction during the unit. The task follows the [Learning Cycle Model](#) that drives teaching and learning in Naugatuck Public Schools.

Task Title: Topic 2 - Add within 1,000 using Place Value Strategies	Grade Level and Unit: Grade 2, Unit 7
Description of Task: The purpose of this task is for students to find an unknown addend in sums that have a value of 1,000. Paint is splattered on paper to cover an addend with an equation that has a sum of 1,000. Students use strategies to figure out the missing addend. Then they can create their own equation with a sum of 1,000 and a splatter covering a missing addend. Students can create a visual to show their thinking to find the value of the missing addend.	Purpose of Task: In this lesson, students choose their own methods for adding within 1,000 and share their methods with their peers. They also have opportunities to explain why they chose their methods based on the numbers in an expression. They also analyze the relationship between two numbers in an equation to find an unknown value. Students use what they know about composing units to find unknown three-digit numbers when they are partially covered.
Background of Students/Learning Progression: Students may use what they know about counting by 5, 10, and 100 or use what they know about composing larger units to find the unknown addend. Students have been using their understanding of place value and the properties of operations to add numbers within 1,000. Students can use their understanding of the relationship between addition and subtraction to find the unknown addend.	Ensure all competencies are addressed in the task: <ul style="list-style-type: none"><input type="checkbox"/> Yes, all competencies are addressed<input type="checkbox"/> No - Task needs modification
Getting Started In the lessons that make up Topic 2 - Section B of Unit 7, students will: <ul style="list-style-type: none">● Add numbers within 1,000 using strategies based on place value understanding, including composing a ten or hundred. Lesson 6 Warm Up: The purpose of this Number Talk is to elicit strategies and understandings students have for making a ten when adding a two-digit number to a two-digit number. In the synthesis, the focus is on how knowing number combinations to make ten can support finding the value of each sum. For example: $28 + 2$ can help students think about $28+12$ as $28+2+10$. These understandings help students develop fluency and will be helpful when students need to add 2 three-digit numbers that require composing units when adding by place. As students share their thinking, consider recording on an open number line. “What’s the same about all of the expressions?”	

“Why are $28+2$ and $67+3$ helpful in finding the value of the other expressions?”
 “In the next activity, we are going to keep thinking about how knowing sums of 10 can help us.”

Section B

IM Lesson	Lesson 6: Use a Ten to Add Within 1,000	Lesson 7: Compose a Larger Unit	Lesson 8: Compose Tens and Hundreds to Add	Lesson 9: Add Three-digit Numbers	Lesson 10: Add within 1,000	Lesson 11: Center Day 2 (optional)
Learning Cycle Model	Making Meaning	Making Meaning	Investigation	Investigation	Create Produce	Additional Learning
Naugatuck Math Competency	2.NS.4	2.NS.4	2.NS.4	2.NS.4	2.NS.4	2.NS.4
Math Practice Standards	MP7	MP3, MP7	MP7	MP3		
Lesson Purpose	The purpose of this lesson is for students to add a two-digit number to a three-digit number that requires composing a ten when adding by place.	The purpose of this lesson is for students to add two-digit numbers and three-digit numbers and compose a ten or a hundred. Students relate composing a hundred to composing a ten.	The purpose of this lesson is for students to add within 1,000 using place value-based strategies by composing both a ten and a hundred.	The purpose of this lesson is for students to add 2 three-digit numbers.	The purpose of this lesson is for students to add three-digit numbers using strategies based on place value and the properties of operations.	The purpose of this lesson is for students to practice adding numbers within 1,000.
Vocabulary Focus	Composing					
Lesson Materials/Resources	Lesson 6 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students 	Lesson 7 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students 	Lesson 8 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students access to base-ten 	Lesson 9 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students 	Lesson 10 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group 	Lesson 11 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each student a set of Number

	<p>access to base-ten blocks.</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Give each group a set of Card Sort Perfect 10 and access to base-ten blocks. <p>Cool-down: Find the Sum</p>	<p>access to base-ten blocks.</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Give half the students three-digit cards (A) and the other half two-digit cards (B) from Walk About and Add Cards. Give students access to base-ten blocks. <p>Cool-down: Make a Ten? Make a Hundred?</p>	<p>blocks.</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to base-ten blocks. <p>Cool-down: Make Tens and Hundreds</p>	<p>access to base-ten blocks.</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to base-ten blocks. <p>Cool-down: Find the Sum</p>	<p>a set How Did You Do That? Addition Card Sort.</p> <ul style="list-style-type: none"> Give students access to base-ten blocks. <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to base-ten blocks. <p>Cool-down: Different Methods for Adding within 1,000</p>	<p>Cards 0-10 and a How Close? Stage 4 Recording Sheet</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Give each group 10 counters and 2 paper clips, and a Five in a Row Addition and Subtraction Stage 8 Gameboard.
Assessment	<p>Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section B Checkpoint Assessment, Section B Checkpoint Teacher’s Guide</p>					
						Section B Practice Problems
Centers Materials	<p>Five in a Row: Addition and Subtraction (1–2), Stage 7: Add within 1,000 without Composing (Addressing)</p> <p>How Close? (1–5), Stage 3: Add to 100 (Supporting)</p>	<p>Five in a Row: Addition and Subtraction (1–2), Stage 7: Add within 1,000 without Composing (Addressing)</p> <p>Number Puzzles: Addition and Subtraction (1–4), Stage 4: Within 100 with Composing (Supporting)</p>	<p>Five in a Row: Addition and Subtraction (1–2), Stage 7: Add within 1,000 without Composing (Addressing)</p> <p>Number Puzzles: Addition and Subtraction (1–4), Stage 4: Within 100 with Composing (Supporting)</p>	<p>Five in a Row: Addition and Subtraction (1–2), Stage 7: Add within 1,000 without Composing (Addressing)</p> <p>Number Puzzles: Addition and Subtraction (1–4), Stage 4: Within 100 with Composing (Supporting)</p>	<p>Five in a Row: Addition and Subtraction (1–2), Stage 7: Add within 1,000 without Composing (Addressing)</p> <p>Number Puzzles: Addition and Subtraction (1–4), Stage 4: Within 100 with Composing (Supporting)</p>	<p>Five in a Row: Addition and Subtraction (1–2), Stage 8</p> <p>How Close? (1–5), Stage 4</p>

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Making Meaning

In Lesson 6, students use what they know about making a ten to find the sum of a three-digit number and a two-digit number. Throughout the lesson, students may use the methods that make the most sense to them to add, which may include counting or adding-on by place or adding tens and tens and ones and ones. They may also use whichever representations help them make sense of each sum, including number lines or base-ten blocks. The activity and lesson syntheses focus on using known sums of 10 to anticipate when a ten is composed when adding by place. This understanding will be used in upcoming lessons as students add two three-digit numbers by place and anticipate when units may need to be composed.

In previous lessons, students used their understanding of place value to add and subtract within 100 by composing and decomposing tens. Students learned that a hundred is a unit that is composed of 10 tens and composed and decomposed hundreds to name the values of base-ten blocks. In Lesson 7, the number choices and the use of base-ten blocks encourage students to look for ways to add by place and to anticipate where composing a unit might be needed before adding (MP7).

Lesson 6: [Use a Ten to Add Within 1,000](#)

- The purpose of this lesson is for students to add a two-digit number to a three-digit number that requires composing a ten when adding by place.
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 7: [Compose a Larger Unit](#)

- The purpose of this lesson is for students to add two-digit numbers and three-digit numbers and compose a ten or a hundred. Students relate composing a hundred to composing a ten.
- [Lesson 7 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

In Lesson 8, students build upon previous lessons, where they related composing a ten and a hundred when adding within 1,000. They found sums that required composing one larger unit when adding by place. Throughout this lesson, the addends in each expression encourage students to consider adding by place. Both activities invite students to make sense of methods based on adding by place and to use the method that makes the most sense to them. Monitor for the different methods students use and how they use their understanding of place value to add and make sense of others' work (MP3, MP7).

In Lesson 9, students practice adding within 1,000. They add two three-digit numbers using methods based on place value and the properties of operations. Students also compare diagrams and drawings to written methods that use equations and expressions. They analyze work to identify why a method worked and identify any errors if the method did not work (MP3).

Lesson 8: [Compose Tens and Hundreds to Add](#)

- The purpose of this lesson is for students to add within 1,000 using place value-based strategies by composing both a ten and a hundred.
- [Lesson 8 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 9: [Add Three-digit Numbers](#)

- The purpose of this lesson is for students to add 2 three-digit numbers.
- [Lesson 9 Slides](#)
- [Teacher Presentation Materials](#)

Create and Produce:

In Lesson 10, students choose their own methods for adding within 1,000 and share their methods with their peers. They also have opportunities to explain why they chose their methods based on the numbers in an expression. They also analyze the relationship between two numbers in an equation to find an unknown value. Students use what they know about composing units to find unknown three-digit numbers when they are partially covered.

Lesson 10: [Add within 1,000](#)

- The purpose of this lesson is for students to add three-digit numbers using strategies based on place value and the properties of operations.
- [Lesson 10 Slides](#)
- [Teacher Presentation Materials](#)

The purpose of this activity is for students to find an unknown addend in sums that have a value of 1,000. They may use what they know about counting by 5, 10, and 100 or use what they know about composing larger units. Although students do not need to know that a thousand is a unit made up of 10 hundreds in grade 2, listen for students who generalize their understanding of place value to make this conjecture to share in the synthesis. Then they can create their own equation with a sum of 1,000 and make a splatter covering a missing addend. Students can create a visual to show their thinking to find the value of the missing addend.

<p>Communicate and Present:</p> <p>Students choose their own methods for adding within 1,000 and share their methods with their peers. They also have opportunities to explain why they chose their methods based on the numbers in an expression.</p> <p>Invite previously identified students to share their work.</p> <p>“How did _____ find the unknown number?” (They started by adding the 85 to the 615 to get 700. Then they knew they needed 3 more hundreds to get to 1,000.)</p> <p>Share responses and record with equations and on an open number line.</p>	<p>Reflection:</p> <p>Students reflect on which missing addends were most challenging to find and share their reasoning.</p>
<p>Additional Learning:</p> <p>In Lesson 11, Activity 1, students learn stage 4 of the How Close center. In this new stage, called Add to 1,000, students pick 8 digit cards and then choose 6 of those to make an expression that yields a number as close as possible to the target number, 1,000. In Activity 2, students learn stage 8 of the Five in a Row center, Add within 1,000 with Composing, and then choose to continue working on Five in a Row, or choose between two previously introduced centers focused on addition with three-digit numbers.</p> <p>Lesson 11: Center Day 2 (optional)</p> <ul style="list-style-type: none"> • The purpose of this lesson is for students to practice adding numbers within 1,000. • Lesson 11 Slides • Teacher Presentation Materials 	
<p>Notes: Follow IM lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p>

Topic # 3 (Section C)	Topic Name: Section C - Subtract within 1,000 using Place Value Strategies	Duration: Recommended 7 lessons (8 days) 1 extra day for Unit Assessment
<p>Topic Description: In this section, students subtract numbers within 1,000 using place value strategies that involve decomposing a ten, a hundred, or both. This work builds on their previous experience of subtracting two-digit numbers by place value and decomposing a ten.</p> <p>Students use base-ten blocks to subtract hundreds from hundreds, tens from tens, and ones from ones, which offers a concrete experience of exchanging a ten for 10 ones or a hundred for 10 tens as needed.</p> <p>Along the way, they begin to think strategically about how to decompose the minuend (the quantity or number from which another number is to be subtracted) when using base-ten blocks or diagrams. They learn that by analyzing the value of the digits in each place, they can initially represent the minuend in a way that would require decomposing fewer units when subtracting by place.</p> <p>For example, this is a helpful way to represent 244 if we are subtracting a number with more than 4 ones, such as when finding $244-67$:</p> <div data-bbox="170 781 848 951" data-label="Image"> </div> <p>Throughout the section, students compare the steps they use to decompose units and the different ways to represent and record the units being decomposed.</p> <p>The section ends with students choosing subtraction methods flexibly. They apply their understanding of place value, the relationship between addition and subtraction, and the properties of operations, to analyze number relationships and decide how to find the value of differences within 1,000.</p> <p>Section Learning Goals</p> <ul style="list-style-type: none"> Subtract numbers within 1,000 using strategies based on place value understanding, including decomposing a ten or hundred. 		
Competencies Addressed:		Essential Question and Enduring Understanding Addressed in this Topic:

<p>Understanding and Applying Number Systems 2.NS.1 I understand the place value of three-digit numbers. (2.NBT.A.1) 2.NS.2 I can count, read, and write whole numbers. (2.NBT.A.2-3) 2.NS.4 I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9) 2.NS.5 I can use my understanding of place value to subtract. (2.NBT.B.5, 7-9)</p> <p>Measurement and Data 2.MD.4 I can represent and interpret data. (2.MD.D.9-10)</p>	<p>1. How can I use my understanding of place value to subtract within 1,000?</p> <ul style="list-style-type: none"> ● When subtracting three-digit numbers, we subtract hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to decompose tens or hundreds. Concrete models or drawings can be used to represent subtraction and show place value understanding. Properties of operations and the relationship between addition and subtraction can be used to subtract.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Sometimes numbers may need to be composed or decomposed in the process of adding or subtracting. ● The inverse relationship between addition and subtraction can be used to solve problems and check answers. 	<p>Topic Vocabulary: Academic vocabulary</p> <p>Decompose</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Recognize when a ten or a hundred would be decomposed when subtracting three-digit numbers. ● Subtract numbers within 1,000 using place value strategies that include decomposing a ten or a hundred. ● Explain why a subtraction method works ● Decompose tens or hundreds to subtract by place. ● Subtract within 1,000, using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <p>Plan for Teacher Reflection: Lesson 12: In previous units, students decomposed a ten when subtracting two-digit numbers. How did you see students use this understanding as they subtracted from three-digit numbers in this lesson? Lesson 13: Which students came up with an unexpected strategy in today’s lesson? What are some ways you can be more open to the ideas of</p>

each and every student?

Lesson 14: What connections did students make between the different methods and reasoning shared in today's lesson? What evidence are you seeing that students' are using their understanding of place value to make sense of expressions and other's methods for subtraction?

Lesson 15: What part of the lesson went really well today in terms of students learning? What did you do that made that part go well?

Lesson 16: How are students using their understanding of number relationships and place value to choose their methods for subtracting? What more can be done to help students recognize and plan for the units they need to decompose when subtracting by place?

Lesson 17: Reflect on whose thinking was heard today. Reflect on whose thinking was not heard but could have enriched the conversations. What prompts or structures might better enable the latter to share their voices and reasoning?

Lesson 18: Reflect on times you observed students listening to one another's ideas today in class. What norms would help each student better attend to their classmates' ideas in future lessons?

Utilize additional strategies for Teacher

Reflection:

- Reviewing formative assessments
- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups

Topic 3 Task Development

Each Topic has its own Task that serves as a roadmap for instruction during the unit. The task follows the [Learning Cycle Model](#) that drives teaching and learning in Naugatuck Public Schools.

Task Title: Topic 3 - Subtract within 1,000 using Place Value Strategies	Grade Level and Unit: Grade 2, Unit 7
Description of Task: In this task students use their understanding of addition and subtraction within 1,000 to answer the questions and generate their own mathematical questions that can be answered using the bar graph. They engage in a question exchange with their peers in the second part of the task to ask and answer the questions they write. Students have discussions with their partner to justify their thinking and to determine if a question can be answered with the given bar graph.	Purpose of Task: The purpose of this task is for students to apply their understanding of bar graphs and addition and subtraction within 1,000 to write and solve questions that can be solved from information on a given bar graph.
Background of Students/Learning Progression: In a previous unit students interpreted bar graphs and asked and answered questions using bar graphs. Students solved addition and subtraction word problems within 100 and 1,000. In this lesson students discuss whether they can answer a question using addition and subtraction. They continue their work with adding and subtracting two three-digit numbers using place value strategies that include composing or decomposing 2 units, which has been their focus in this unit.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
Getting Started In the lessons that make up Topic 2 Section C Unit 7, students will: <ul style="list-style-type: none">• Subtract numbers within 1,000 using strategies based on place value understanding, including decomposing a ten or hundred. Lesson 12 Warm Up: The purpose of this What Do You Know About _____ is to invite students to share what they know and how they can represent the number 354. It gives the teacher an opportunity to hear how students think about representing a three-digit number by decomposing or renaming units. This will be helpful as students decompose units to subtract within 1,000 in future activities.	

Section C

IM Lesson	Lesson 12: Decompose to Subtract	Lesson 13: Decompose Tens or Hundreds	Lesson 14: Think Before You Subtract	Lesson 15: Decompose a Ten and a Hundred to Subtract	Lesson 16: Subtract Within 1,000	Lesson 17: Center Day 3 (optional)	Lesson 18: Paint Splattered Bar Graph (optional)
Learning Cycle Model	Making Meaning	Making Meaning	Investigation	Investigation	Investigation	Investigation	Create / Produce
Naugatuck Math Competency	2.NS.1 2.NS.2 2.NS.5	2.NS.5	2.NS.1 2.NS.5	2.NS.2 2.NS.5	2.NS.1 2.NS.5	2.NS.4 2.NS.5	2.MD.4 2.NS.4 2.NS.5
Math Practice Standards	MP5	MP2	MP7	MP2			
Lesson Purpose	The purpose of this lesson is for students to decompose a ten in order to subtract within 1,000.	The purpose of this lesson is for students to subtract from three-digit numbers using place value strategies that include decomposing a ten or hundred.	The purpose of this lesson is for students to analyze expressions to determine if a unit will be decomposed before subtracting.	The purpose of this lesson is for students to subtract 2 three-digit numbers using strategies based on place value.	The purpose of this lesson is for students to choose methods for finding the value of differences based on the numbers being subtracted.	The purpose of this lesson is for students to practice adding and subtracting within 1,000.	The purpose of this lesson is for students to apply their understanding of bar graphs and addition and subtraction within 1,000 to write and solve questions that can be solved from information on a given bar graph.
Vocabulary Focus	Decompose						
Lesson Materials/ Resources	Lesson 12 Slides Teacher Presentation Materials	Lesson 13 Slides Teacher Presentation Materials	Lesson 14 Slides Teacher Presentation Materials	Lesson 15 Slides Teacher Presentation Materials	Lesson 16 Slides Teacher Presentation Materials	Lesson 17 Slides Teacher Presentation Materials	Lesson 18 Slides Teacher Presentation Materials

	<p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Give students base-ten blocks. <p>Cool-down: Subtract</p>	<p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Cool-down: More Subtraction</p>	<p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Cool-down: Decompose? Maybe.</p>	<p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. ● Give each student one card from Walk About and Subtract Cards. <p>Cool-down: Find the Error</p>	<p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Give students access to base-ten blocks. <p>Cool-down: Find the Difference Your Way</p>	<p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Give each group 3 number cubes. ● Give each student a Target Numbers Stage 6 Recording Sheet. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Give each group 3 number cubes. ● Give each student a Target Numbers Stage 6 Recording Sheet. 	<p>Student Pages</p> <p>No additional prep or materials needed.</p>
Assessment	<p>Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section C Checkpoint Assessment, Section C Checkpoint Teacher's Guide End of Unit 7 Assessment, End of Unit 7 Assessment Teacher's Guide</p>						
							Section C Practice Problems
Centers Materials	<p>How Close? (1–5), Stage 4: Add to 1,000 (Addressing)</p>	<p>How Close? (1–5), Stage 4: Add to 1,000 (Addressing)</p>	<p>How Close? (1–5), Stage 4: Add to 1,000 (Addressing)</p>	<p>Target Numbers (1–5), Stage 5: Subtract Two-digit Numbers (Supporting)</p>	<p>Target Numbers (1–5), Stage 5: Subtract Two-digit Numbers (Supporting)</p>	<p>Target Numbers (1–5), Stage 6 Five in a Row: Addition and</p>	<p>Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing)</p>

	Five in a Row: Addition and Subtraction (1–2) , Stage 8: Add within 1,000 with Composing (Addressing)	Five in a Row: Addition and Subtraction (1–2) , Stage 8: Add within 1,000 with Composing (Addressing)	Five in a Row: Addition and Subtraction (1–2) , Stage 8: Add within 1,000 with Composing (Addressing)	Number Puzzles: Addition and Subtraction (1–4) , Stage 4: Within 100 with Composing (Supporting)	Number Puzzles: Addition and Subtraction (1–4) , Stage 4: Within 100 with Composing (Supporting)	Subtraction (1–2) Stages 7 and 8 How Close? (1–5) , Stage 4: Add to 1,000 (Addressing)	Target Numbers (1–5) , Stage 7: Subtract Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2) , Stage 8: Add within 1,000 with Composing (Addressing) How Close? (1–5) , Stage 4: Add to 1,000 (Addressing)
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Making Meaning

In Lesson 12, students extend their understanding of decomposing tens to subtract by place within 1,000. In the first activity, students are invited to use whatever method makes sense to them to subtract one- and two-digit numbers from a three-digit number. In the following activity, they use base-ten blocks to subtract from a three-digit number and reason about when a ten is decomposed when subtracting by place.

In Lesson 13, students interpret representations of subtraction that show decomposing a ten and hundred. They use base-ten blocks and their understanding of place value to explain why the method works (MP7). Students may continue to use the base-ten blocks or any representation that makes sense to them to subtract within 1,000.

Lesson 12: [Decompose to Subtract](#)

- The purpose of this lesson is for students to decompose a ten in order to subtract within 1,000.
- [Lesson 12 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 13: [Decompose Tens or Hundreds](#)

- The purpose of this lesson is for students to subtract from three-digit numbers using place value strategies that include decomposing a ten or hundred.
- [Lesson 13 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

In Lesson 14, students subtract two-digit numbers from three-digit numbers when 2 units are decomposed. Students are encouraged to attend to the details of the numbers in each expression to decide whether or not any units will need to be decomposed before subtracting (MP7).

Throughout the lesson, students explain their reasoning and critique their peers' reasoning as they use their understanding of place value to analyze expressions and plan their methods (MP3).

In Lesson 15, students subtract 2 three-digit numbers that require decomposing a hundred and a ten when subtracting by place. They connect the use of base-ten blocks or diagrams to written methods that use numbers and equations. Throughout the lesson, students interpret and share methods that use words and equations to show subtracting by place (MP2, MP7). However, students should be encouraged to attend to the numbers in expressions and may use base-ten blocks, base-ten diagrams, and any other representations that make sense to them.

In Lesson 16, students attend to the relationship between numbers in expressions to flexibly subtract. Although the focus of this section has been on interpreting and using methods based on place value, the number choices in this lesson are intended to also encourage the strategies students used in prior sections. Throughout this lesson, students explain their thinking and listen to and critique the reasoning of others (MP3).

In Lesson 17, Activity 1, students learn stage 6 of the Target Numbers center. In this new stage, called Add Hundreds, Tens, or Ones, students add hundreds, tens, and ones to get as close to 1,000 as possible. In Activity 2, students learn Stage 7 of the Target Numbers center, called Subtract Hundreds, Tens, or Ones. Then, they choose to continue working on Target Numbers, or choose between two previously introduced centers focused on addition and subtraction within 1,000.

Lesson 14: [Think Before You Subtract](#)

- The purpose of this lesson is for students to analyze expressions to determine if a unit will be decomposed before subtracting.
- [Lesson 14 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 15: [Decompose a Ten and a Hundred to Subtract](#)

- The purpose of this lesson is for students to subtract 2 three-digit numbers using strategies based on place value.

- [Lesson 15 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 16: [Subtract Within 1,000](#)

- The purpose of this lesson is for students to choose methods for finding the value of differences based on the numbers being subtracted.
- [Lesson 16 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 17: [Center Day 3 \(optional\)](#)

- The purpose of this lesson is for students to practice adding and subtracting within 1,000.
- [Lesson 17 Slides](#)
- [Teacher Presentation Materials](#)

Create and Produce:

Lesson 18 (Activity 1 and 2)

The purpose of this activity is for students to use information in a bar graph to answer their peers' mathematical questions.

In this activity, students exchange the questions they wrote in the previous activity and go through 3 rounds of answering new questions. Students may notice some questions require more than the given information and cannot be answered or cannot be answered precisely. For example, if students create a question that requires the grade 1 data, some students may argue that the question cannot be answered. However, others may decide to estimate based on the given information. Encourage students to justify their reasoning to convince others (MP3).

In Lesson 18, students analyze a bar graph that has some information obscured due to a paint splatter. Students determine if a question can be answered with the given bar graph. They use their understanding of addition and subtraction within 1,000 to answer the questions and generate their own mathematical question. They engage in a question exchange with their peers in the second activity to ask and answer the questions they write.

Lesson 18: [Paint Splattered Bar Graph \(optional\)](#)

- The purpose of this lesson is for students to apply their understanding of bar graphs and addition and subtraction within 1,000 to write and solve questions that can be solved from information on a given bar graph.
- [Lesson 18 Slides](#)
- [Teacher Presentation Materials](#)

Communicate and Present:

Students will trade questions they wrote with peers.

Reflection:

“Today, we analyzed a bar graph and answered questions using the information from the graph.”

<p>“Trade a question that you came up with in the last activity with another partner. Answer each others’ questions.”</p> <p>“If you cannot answer a question, be prepared to explain why you cannot answer the question based on the given information.”</p> <p>“If you have time, trade another question with a different partner.”</p> <p>“How did you decide if you had enough information to answer a question?”</p> <p>“How might you solve it?”</p>	<p>“How did you know when you could answer a question by adding or subtracting?”</p>
<p>Notes: Follow IM lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p>