

Course Title: Mathematics	Full Year	Required
<p>Course Description:</p> <p>The mathematical work for grade 3 is partitioned into 8 units:</p> <ol style="list-style-type: none"> 1. Introducing Multiplication 2. Area and Multiplication 3. Wrapping Up Addition and Subtraction within 1,000 4. Relating Multiplication to Division 5. Fractions as Numbers 6. Measuring Length, Time, Liquid Volume, and Weight 7. Two-dimensional Shapes and Perimeter 8. Putting it All Together 		
<p>Additional Course Information:</p> <p>The big ideas in grade 3 include:</p> <ul style="list-style-type: none"> ● developing understanding of multiplication and division and strategies for multiplication and division within 100 ● developing understanding of fractions, especially unit fractions (fractions with numerator 1) ● developing understanding of the structure of rectangular arrays and of area ● describing and analyzing two-dimensional shapes 	<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 3: Wrapping Up Addition and Subtraction Within 1,000

Duration: 22 - 23 days

Unit Overview - FOCUS:

In this unit, students work toward the goal of fluently adding and subtracting within 1,000. They use mental math strategies developed in grade 2 and learn algorithms based on place value.

In grade 2, students added and subtracted within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction. When students combine hundreds, tens, and ones, they use place value understanding. When they decompose numbers to add or subtract, they rely on the commutative and associative properties. When students count up to subtract, they use the relationship between addition and subtraction.

To move toward fluency, students learn a few different algorithms that work with any numbers and are generalizable to larger numbers and decimals. Students work with a variety of algorithms, starting with those that show expanded form, and moving toward algorithms that are more streamlined and closer to the standard algorithm.

$$\begin{array}{r} 300 + 30 + 7 \\ + 200 + 30 + 6 \\ \hline 500 + 60 + 13 \end{array}$$

$$\begin{array}{r} 500 + \overset{60}{\cancel{70}} + \overset{13}{\cancel{3}} \\ - 200 + 30 + 6 \\ \hline 300 + 30 + 7 \end{array}$$

Students explore various algorithms but are not required to use a specific one. They should, however, move from strategy-based work of grade 2 to algorithm-based work to set the stage for using the standard algorithm in grade 4. If students begin the unit with knowledge of the standard algorithm, it is still important for them to make sense of the place-value basis of the algorithm.

Understanding of place value also comes into play as students round numbers to the nearest multiple of 10 and 100. Students do not need to know a formal definition of “multiples” until grade 4. At this point, it is enough to recognize that a multiple of 10 is a number called out when counting by 10, or the total in a whole-number of tens (such as 8 tens). Likewise, a multiple of 100 is a number called out when counting by 100, or the total in a whole-number of hundreds (such as 6 hundreds). Students use rounding to estimate answers to two-step problems and determine if answers are reasonable.

Topic Titles:

- Section A: Add Within 1,000
 - Fluently add within 1,000 using algorithms based on place value and properties of operations.
 - Use place value understanding to compose and decompose numbers.
- Section B: Subtract Within 1,000
 - Fluently subtract within 1,000 using algorithms based on place value, properties of operations, and the relationship between addition and subtraction.
- Section C: Round Within 1,000
 - Round whole numbers to the nearest multiple of 10 and 100.
- Section D: Solve Two-Step Problems
 - Assess the reasonableness of answers.
 - Solve two-step word problems using addition, subtraction, and multiplication. subtraction, and multiplication.

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

In grade 2, students added and subtracted within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction. When students combine hundreds, tens, and ones, they use place value understanding. When they decompose numbers to add or subtract, they rely on the commutative and associative properties. When students count up to subtract, they use the relationship between addition and subtraction.

Essential Questions:

1. How can we efficiently, accurately, and flexibly add and subtract numbers within 1,000?

Enduring Understanding:

- **There are various strategies that we can use to add and subtract numbers efficiently, accurately, and flexibly.** We can use place value understanding, commutative and associative properties, and the relationship between addition and subtraction when calculating numbers within 1,000. Using rounding and estimation can help us determine if our sums and differences are reasonable.

What Students Will Know:

- We can represent numbers using base-ten blocks, base-ten diagrams, expanded form, numerals, and word forms
- There are a variety of strategies we can use to add within 1,000
- Algorithms are based on place value
- An algorithm is different from a strategy because it is a set of steps that works every time as long as the steps are carried out correctly.
- The addition algorithm records a single digit for the sum for each place value
- The strategies that we use for subtracting are based on place value, the associative and commutative properties, and properties of addition.
- There are different algorithms that help us to subtract.
- The subtraction algorithm is based on

What students will do:

- Represent numbers to 1,000 in different ways using place value understanding.
- Solve addition and subtraction problems within 1,000 in a way that makes sense to them.
- Add within 1,000 in a way that makes sense to them.
- Add within 1,000.
- Relate base-ten diagrams to written algorithms for addition.
- Relate written algorithms to each other using place value understanding.
- Add within 1,000 using an algorithm or another strategy based on the numbers being added.
- Subtract within 1,000 in a way that makes sense to them.
- Relate base-ten diagrams to written algorithms for subtraction.
- Analyze and use a subtraction algorithm with

Unit Specific Vocabulary:

Academic vocabulary
expanded form (Lesson 1)
algorithm (Lesson 6)
rounding (Lesson 14)

place-value.

- The subtraction algorithm allows us to condense our notation.
- We may need to decompose units in order to subtract accurately.
- Depending on the situation, we may choose to use an algorithm or a different strategy.
- We can use benchmark numbers to reason about sums and differences.
- Number lines help us to reason visually about the proximity of numbers.
- Rounding is a formal way to say which number a given number is closer to, and that number is often a multiple of 10 or 100.
- Sometimes, when we round to the nearest ten and the nearest hundred, we round to the same number
- When numbers are right in the middle of two multiples of 10 or 100, the convention is to round up
- Rounding to the nearest 10 and to the nearest 100 can give different estimates for the same situation
- We can use rounding to determine if our answer is reasonable.
- A question mark, blank line, or a box could be used to represent an unknown quantity in an equation.
- We can use a letter to represent an unknown quantity.
- Sometimes we cannot solve a problem right away. We need to find missing information.
- When making decisions, we need to

the numbers written in expanded form.

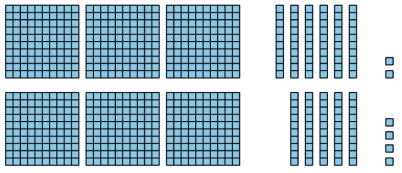
- Relate subtraction algorithms to one another using place value understanding.
- Subtract numbers within 1,000 using another algorithm based on place value.
- Analyze different steps in subtraction algorithms and reason about when certain steps might be more productive.
- Subtract within 1,000 using algorithms or other strategies based on the numbers in the problem.
- Recognize that numbers are often approximated by their closest multiples of 10 or 100.
- Understand the meaning of the nearest multiple of 100.
- Identify the closest multiples of 10 and 100 for numbers within 1,000.
- Understand that rounding is a formal way to say which number a given number is closer to, and that number is often a multiple of 10 or 100.
- Understand the meaning of “the closest multiple of 10.”
- Round whole numbers within 1,000 to the nearest ten and hundred, using the convention of rounding up when the number is halfway between two multiples of 10 or 100.
- Recognize and generalize patterns in the rounding of whole numbers within 1,000.
- Recognize that numbers are often approximated by their closest multiples of 10 or 100.
- Understand the meaning of the nearest multiple of 100.
- Identify the closest multiples of 10 and 100 for numbers within 1,000.

<ul style="list-style-type: none"> ● adhere to mathematical constraints. 	<ul style="list-style-type: none"> ● Understand that rounding is a formal way to say which number a given number is closer to, and that number is often a multiple of 10 or 100. ● Understand the meaning of “the closest multiple of 10.” ● Round whole numbers within 1,000 to the nearest ten and hundred, using the convention of rounding up when the number is halfway between two multiples of 10 or 100. ● Recognize and generalize patterns in the rounding of whole numbers within 1,000. ● 	
<p>Entry Level Assessment and Connection to Unit:</p> <p>Section A: Pre-Unit Practice Problems</p> <p>Section B: Pre-Unit Practice Problems</p> <p>Section C: Pre-Unit Practice Problems</p> <p>Section D: 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</p> <p>Family Support Materials</p>	<p>Planning Ideas:</p> <p>Components of a Typical IM Lesson</p> <p>What To Know About IM When Planning</p> <p>Where to Find the Mathematical Practices in the Units</p> <p>Assessing the Mathematical Practices</p>	

Topic # 1 (Section A)	Topic Name: Section A - Add Within 1,000	Duration: Recommended: 6 days
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Topic Description:
 Students begin this section by revisiting the idea of place value, reasoning about different ways to decompose numbers within 1,000, and using familiar strategies from grade 2 to add and subtract within 1,000.

From there, they progress toward more abstract addition strategies, but ones that are still based on place value. To support this progression toward algorithms, students use base-ten blocks or diagrams, express numbers in expanded form, and rely on their understanding of properties of operations. For example, here are three ways to add $362 + 354$:



$$\begin{array}{r}
 300 + 60 + 2 \\
 + 300 + 50 + 4 \\
 \hline
 600 + 110 + 6
 \end{array}$$

$$\begin{array}{r}
 362 \\
 + 354 \\
 \hline
 716
 \end{array}$$

Students look for and make use of structure as they relate the compositions of numbers, expressions, and base-ten blocks or diagrams to find sums and differences (MP7).

Section Learning Goals

- Fluently add within 1,000 using algorithms based on place value and properties of operations.
- Use place value understanding to compose and decompose numbers.

<p>Competencies Addressed: 3.NBT.A.2, 3.OA.D.9</p> <p>Understanding and Applying Number Systems</p> <p>Indicator 5 - I can use my understanding of place value and properties of operations to add and subtract whole numbers.</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 1 - I can analyze and explain patterns.</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>How can we efficiently, accurately, and flexibly add and subtract numbers within 1,000?</p> <ul style="list-style-type: none"> There are various strategies that we can
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	<p>use to add and subtract numbers efficiently, accurately, and flexibly. We can use place value understanding, commutative and associative properties, and the relationship between addition and subtraction when calculating numbers within 1,000. Using rounding and estimation can help us determine if our sums and differences are reasonable.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● We can represent numbers using base-ten blocks, base-ten diagrams, expanded form, numerals, and word forms ● There are a variety of strategies we can use to add within 1,000 ● Algorithms are based on place value ● An algorithm is different from a strategy because it is a set of steps that works every time as long as the steps are carried out correctly. ● The addition algorithm records a single digit for the sum for each place value 	<p>Topic Vocabulary:</p> <p>Academic vocabulary expanded form (Lesson 1) algorithm (Lesson 6)</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Represent numbers to 1,000 in different ways using place value understanding. ● Solve addition and subtraction problems within 1,000 in a way that makes sense to them. ● Add within 1,000 in a way that makes sense to them. ● Add within 1,000. ● Relate base-ten diagrams to written algorithms for addition. ● Relate written algorithms to each other using place value understanding. ● Add within 1,000 using an algorithm or another strategy based on the numbers being added. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs ● Planning for small groups ● Teacher Reflection Prompts in Teacher Guides

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 Within 1,000	Grade Level and Unit: Grade 1, Unit
Description of Task: Students continue to work with algorithms, but see that newly composed tens or hundreds can be recorded as a single digit at the top of the tens column or hundreds column. Students also take time to consider when it makes sense to use an algorithm and when it makes sense to use another strategy, such as those learned in grade 2. Students will consider how thinking about the numbers in the problem can help them use their knowledge of addition flexibly to add within 1,000.	Purpose of Task: The purpose of this lesson is for students to record newly composed tens and hundreds with a single digit and to consider when they might use algorithms or other strategies to add.
Background of Students/Learning Progression: In previous lessons, students learned how to use an algorithm that records a single digit for the sum in each place value position, but records 10 or 100 for a newly composed ten or hundred.	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: Lesson 1: Represent Numbers in Different Ways <ul style="list-style-type: none">• The purpose of this lesson is for students to represent numbers using base-ten blocks, base-ten diagrams, expanded form, numerals, and word form.• Teacher presentation materials• Slides	

,Section A

IM Lesson	L1: Represent Numbers in Different Ways	L2: Addition and Subtraction Situations	L3: Add Your Way	L4: Introduction to Addition Algorithms	L5: Another Addition Algorithm	L6: Use Strategies and Algorithms to Add
Learning Cycle Model	Getting started	Making Meaning	Making Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	Building Towards 3.NS.5	3.NS.5, 3.OA.1	3.NS.5	3.NS.5	3.NS.5, 3.OA.1	3.NS.5
Math Practice Standards	MP 7	MP 2	MP 5	MP 6		
Lesson Purpose	The purpose of this lesson is for students to represent numbers using base-ten blocks, base-ten diagrams, expanded form, numerals, and word form.	The purpose of this lesson is for students to use addition and subtraction to solve problems within 1,000.	The purpose of this lesson is for students to use strategies to add within 1,000.	The purpose of this lesson is for students to use their knowledge of base-ten diagrams to make sense of two written addition algorithms.	The purpose of this lesson is for students to use an addition algorithm that records a single digit for the sum for each place value position and a 10 or 100 for a newly composed ten or hundred.	The purpose of this lesson is for students to record newly composed tens and hundreds with a single digit and to consider when they might use algorithms or other strategies to add.
Teacher Facing Learning Goal	Represent numbers to 1,000 in different ways using place value understanding.	Solve addition and subtraction problems within 1,000 in a way that makes sense to them.	Add within 1,000 in a way that makes sense to them.	<ul style="list-style-type: none"> Add within 1,000. Relate base-ten diagrams to written algorithms for addition. 	Relate written algorithms to each other using place value understanding.	Add within 1,000 using an algorithm or another strategy based on the numbers being added.
Vocabulary Focus	expanded form					algorithm
Lesson Materials/ Resources	Lesson 1 Slides Teacher Materials Student Pages Activity 1: Create a set of cards from the blackline	Lesson 2 Slides Teacher Materials Student Pages Activity 1: Students solve word problems that involve	Lesson 3 Slides Teacher Materials Student Pages Activity 1: Students add within 1,000 using any	Lesson 4 Slides Teacher Materials Student Pages Activity 1: Students use their knowledge of	Lesson 5 Slides Teacher Materials Student Pages Activity 1: Students learn an algorithm in which a	

	<p>master for each group of 2. Card Sort: Numbers in Their Different Forms</p> <p>Activity 2: Students use place value understanding from grade 2 to decompose numbers in different ways. Numbers in Different Forms Round Table</p> <p>Materials to Gather Base-ten blocks</p>	<p>adding or subtracting numbers within 1,000, using strategies they are familiar with from earlier grades.</p> <p>Activity 2: Students reflect on the strategies they used in the first activity.</p> <p>Materials to Gather Base-ten blocks</p>	<p>strategy that makes sense to them.</p> <p>Activity 2: Students see that they can start adding from the largest place-value unit or from the smallest and still get the same sum.</p> <p>Materials to Gather Base-ten blocks</p>	<p>base-ten representations and place value to make sense of two addition algorithms.</p> <p>Activity 2: Students try the algorithms they saw earlier in the lesson. The important thing is that they combine hundreds and hundreds, tens and tens, and ones and ones, which should be a familiar idea from grade 2.</p> <p>Materials to Gather Base-ten blocks</p>	<p>single digit is recorded as each place value position is added.</p> <p>Activity 2: Students consider how the composition of new tens and hundreds are recorded in the algorithm they saw in the previous activity.</p>	
	Cooldown: Let Me Count the Ways	Cooldown: How Much Taller?	Cooldown: Add it Up	Cooldown: Choose an Algorithm	Cooldown: Use an Algorithm for Addition	Cooldown: Algorithm or Another Strategy?
Additional Resource: Section A Practice Problems						
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section A Checkpoint Assessment , Section A Checkpoint Teacher's Guide					
Centers Materials	<ul style="list-style-type: none"> Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2), Stage 8: Add within 	<ul style="list-style-type: none"> Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2), Stage 8: Add within 	<ul style="list-style-type: none"> Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2), Stage 8: Add within 	<ul style="list-style-type: none"> Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2), Stage 8: Add within 	<ul style="list-style-type: none"> Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2), Stage 8: Add within 	<ul style="list-style-type: none"> Target Numbers (1–5), Stage 6: Add Hundreds, Tens, or Ones (Addressing) Five in a Row: Addition and Subtraction (1–2), Stage 8: Add within

	1,000 with Composing (Addressing)	1,000 with Composing (Addressing) <ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) 	1,000 with Composing (Addressing) <ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) 	1,000 with Composing (Addressing) <ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) 	1,000 with Composing (Addressing) <ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) 	1,000 with Composing (Addressing) <ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting)
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Making Meaning:

[Lesson 2: Addition and Subtraction Situations](#)

- The purpose of this lesson is for students to use addition and subtraction to solve problems within 1,000.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 3: Add Your Way](#)

- The purpose of this lesson is for students to use strategies to add within 1,000.
- [Teacher presentation materials](#)
- [Slides](#)

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint A: Assessment](#)

[Checkpoint A: Teacher Guide](#)

Investigate:

[Lesson 4: Introduction to Addition Algorithm](#)

- The purpose of this lesson is for students to use their knowledge of base-ten diagrams to make sense of two written addition algorithms.
- [Teacher presentation materials](#)
- [Slides](#)

Lesson 5: Another Addition Algorithm

- The purpose of this lesson is for students to use an addition algorithm that records a single digit for the sum for each place value position and a 10 or 100 for a newly composed ten or hundred.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

Lesson 6: Use Strategies and Algorithms to Add

- The purpose of this lesson is for students to record newly composed tens and hundreds with a single digit and to consider when they might use algorithms or other strategies to add.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

“What is it that made these numbers easier to add mentally?” (The first 3 were really close to 300 so we were able to add 300 and make little adjustments. In the last problem, the first number was really close to 200 which made it easy to subtract mentally.)

Invite 4-5 students to share a strategy or algorithm that someone they talked to used.
“What strategies or algorithms do you want to practice more?”

Reflection:

“Who can restate _____ 's reasoning in a different way?”
“Did anyone have the same strategy but would explain it differently?”
“Did anyone approach the problem in a different way?”
“Does anyone want to add on to ____'s strategy?”

Notes: Follow the lessons in numerical order.

Complete File with Resources and Task:

Task-Based Learning Plan Format for Topic 1

Topic # 2 (Section B)	Topic Name: Section B - Subtract Within 1,000	Duration: Recommended: 6 days
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Topic Description:

In this section, students analyze and use subtraction algorithms. They begin by using base-ten blocks and diagrams to subtract numbers. Because it is difficult to record regrouping using drawings, however, they see algorithms as a helpful way to find differences.

As is the case with addition, students first make sense of a subtraction algorithm that uses expanded form, which allows them to see how the hundreds and tens are decomposed into smaller units.

$$\begin{array}{r}
 400 \quad 120 \\
 \cancel{500} + \cancel{20} + 8 \\
 - 200 + 70 + 1 \\
 \hline
 \end{array}$$

This non-conventional notation allows students to see the meaning behind the digits used above the numbers in the standard algorithm.

$$\begin{array}{r}
 4 \quad 12 \\
 \cancel{5} \quad \cancel{2} \quad 8 \\
 - 2 \quad 7 \quad 1 \\
 \hline
 \end{array}$$

Section Learning Goals

- Fluently subtract within 1,000 using algorithms based on place value, properties of operations, and the relationship between addition and subtraction.

Competencies Addressed: 3.NBT.A.2, 3.OA.B.5

Understanding and Applying Number Systems

Essential Question and Enduring Understanding Addressed in this Topic:

<p>Indicator 5 - I can use my understanding of place value and properties of operations to add and subtract whole numbers.</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 3 - I can apply the properties of operations to multiply and divide.</p>	<p>How can we efficiently, accurately, and flexibly add and subtract numbers within 1,000?</p> <ul style="list-style-type: none"> ● There are various strategies that we can use to add and subtract numbers efficiently, accurately, and flexibly. We can use place value understanding, commutative and associative properties, and the relationship between addition and subtraction when calculating numbers within 1,000. Using rounding and estimation can help us determine if our sums and differences are reasonable.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● The strategies that we use for subtracting are based on place value, the associative and commutative properties, and properties of addition. ● There are different algorithms that help us to subtract. ● The subtraction algorithm is based on place-value. ● The subtraction algorithm allows us to condense our notation. ● We may need to decompose units in order to subtract accurately. ● Depending on the situation, we may choose to use an algorithm or a different strategy. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Subtract within 1,000 in a way that makes sense to them. ● Relate base-ten diagrams to written algorithms for subtraction. ● Analyze and use a subtraction algorithm with the numbers written in expanded form. ● Relate subtraction algorithms to one another using place value understanding. ● Subtract numbers within 1,000 using another algorithm based on place value. ● Analyze different steps in subtraction algorithms and reason about when certain steps might be more productive. ● Subtract within 1,000 using algorithms or other strategies based on the numbers in the 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring

problem.

- PLCs
- Planning for small groups
- Teacher Reflection Prompts in Teacher Guides

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 - Subtract Within 1,000				Grade Level and Unit: Grade 3, Unit 3		
Description of Task: Students take time to consider when it makes sense to use an algorithm and when it makes sense to use another strategy, such as those learned in grade 2. Students will consider how thinking about the numbers in the problem can help them use their knowledge of subtraction to flexibly subtract within 1,000.				Purpose of Task: The purpose of this task is for students to consider when they might use algorithms or other strategies to subtract.		
Background of Students/Learning Progression: Students have learned several subtraction algorithms in prior lessons.				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: Lesson 7: Subtract Your Way <ul style="list-style-type: none"> The purpose of this lesson is to activate the strategies students have for subtracting numbers within 1,000. Teacher presentation materials Slides 						
Section B						
IM Lesson	L7: Subtract Your Way	L8: Subtraction Algorithms (Part 1)	L9: Subtraction Algorithms (Part 2)	L10: Subtraction Algorithms (Part 3)	L11: Analyze Subtraction Algorithms	L12: Subtract Strategically
Learning Cycle Model	Getting Started	Making Meaning	Making Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	3.NS.5	3.NS.5	3.NS.5	3.NS.5	3.NS.5	3.NS.5, 3.OA.3

Math Practice Standards	MP 5	MP 6	MP 3		MP 3	MP 7, 8
Lesson Purpose	The purpose of this lesson is to activate the strategies students have for subtracting numbers within 1,000.	The purpose of this lesson is for students to use their knowledge of base-ten diagrams to make sense of a written subtraction algorithm.	The purpose of this lesson is for students to subtract within 1,000 using a subtraction algorithm that records numbers in expanded form.	The purpose of this lesson is for students to use a subtraction algorithm that records a single digit for the difference between the numbers in each place value position and a condensed notation for a decomposed hundred or ten.	The purpose of this lesson is for students to consider subtraction algorithms in more detail, with a focus on decomposing as needed and on cases when it is necessary to decompose multiple units to subtract across zeros.	The purpose of this lesson is for students to consider when they might use algorithms or other strategies to subtract.
Teacher Facing Learning Goal	Subtract within 1,000 in a way that makes sense to them.	Relate base-ten diagrams to written algorithms for subtraction.	Analyze and use a subtraction algorithm with the numbers written in expanded form.	<ul style="list-style-type: none"> • Relate subtraction algorithms to one another using place value understanding. • Subtract numbers within 1,000 using another algorithm based on place value. 	Analyze different steps in subtraction algorithms and reason about when certain steps might be more productive.	Subtract within 1,000 using algorithms or other strategies based on the numbers in the problem.
Vocabulary Focus						
Lesson Materials/ Resources	Lesson 7 Slides Teacher Materials Student Pages Activity 1: Students subtract numbers within 1,000 using any strategy that makes sense to them to find the difference of two	Lesson 8 Slides Teacher Materials Student Pages Activity 1: Students use their knowledge of base-ten diagrams and place value to make sense of a subtraction algorithm.	Lesson 9 Slides Teacher Materials Student Pages Activity 1: Students examine an error in an algorithm in which a larger digit is subtracted from a smaller digit in the same place value	Lesson 10 Slides Teacher Materials Student Pages Activity 1: Students learn a subtraction algorithm that records the difference in each place value position as a single digit.	Lesson 11 Slides Teacher Materials Student Pages Activity 1: Students consider two subtraction algorithms. Activity 2: Students make sense	Lesson 12 Slides Teacher Materials Student Pages Activity 1: Students choose a strategy or algorithm to subtract within 1,000. Activity 2:

	<p>numbers within 1,000.</p> <p>Activity 2: Students make sense of drawings of base-ten blocks.</p> <p>Materials to Gather Base-ten blocks Tools for creating a visual display</p>	<p>Activity 2: Students analyze the connections between algorithms and base-ten diagrams that represent subtraction. Create a set of cards from the blackline master for each group of 2. Diagrams and Algorithms</p>	<p>position.</p> <p>Activity 2: Students practice using the subtraction algorithm introduced in a previous lesson.</p> <p>Materials to Gather Base-ten blocks</p>	<p>Activity 2: Students practice using the algorithm they learned in the previous activity.</p> <p>Materials to Gather Base-ten blocks</p>	<p>of an algorithm in which a number with non-zero digits is subtracted from a number with a zero in the tens place.</p>	<p>Students play a game that enables them to practice using strategies and algorithms to subtract within 1,000. Each group of 2 will need a paper clip. Greatest Difference, Smallest Difference</p> <p>Materials to Gather Paper clips Pencils</p>
	Cooldown: Subtract within 1,000	Cooldown: Connect a Diagram and an Algorithm	Cooldown: How Did Andre Subtract?	Cooldown: Choose the Method	Cooldown: Subtraction Reflection	Cooldown: An Algorithm or Another Strategy?
Additional Resource: Section B Practice Problems						
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section B Checkpoint Assessment, Section B Checkpoint Teacher’s Guide					
Centers Materials	<ul style="list-style-type: none"> • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) 	<ul style="list-style-type: none"> • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing)

Making Meaning:

[Lesson 8: Subtraction Algorithms \(Part 1\)](#)

- The purpose of this lesson is for students to use their knowledge of base-ten diagrams to make sense of a written subtraction algorithm.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 9: Subtraction Algorithms \(Part 2\)](#)

- The purpose of this lesson is for students to subtract within 1,000 using a subtraction algorithm that records numbers in expanded form.
- [Teacher presentation materials](#)
- [Slides](#)

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint B: Assessment](#)

[Checkpoint B: Teacher Guide](#)

Investigate:

[Lesson 10: Subtraction Algorithms \(Part 3\)](#)

- The purpose of this lesson is for students to use a subtraction algorithm that records a single digit for the difference between the numbers in each place value position and a condensed notation for a decomposed hundred or ten.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 11: Analyze Subtraction Algorithms](#)

- The purpose of this lesson is for students to consider subtraction algorithms in more detail, with a focus on decomposing as needed and on cases when it is necessary to decompose multiple units to subtract across zeros.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

[Lesson 12: Subtract Strategically](#)

- The purpose of this lesson is for students to consider when they might use algorithms or other strategies to subtract.

- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

Invite 4–5 students to share a strategy or algorithm they saw. “What strategies or algorithms do you want to practice more?”

“If these were the numbers you made, how would you find the difference and why?”

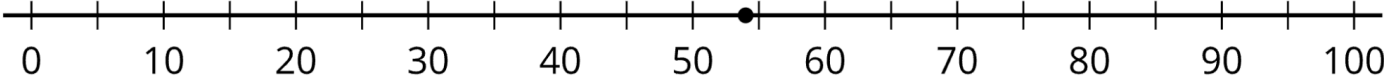
Reflection:

“Today we used strategies to subtract. How did you decide when to use an algorithm or another strategy?”

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

Task-Based Learning Plan Format for Topic 2

Topic # 3 (Section C)	Topic Name: Section C - Round Within 1,000	Duration: Recommended: 4 days
<p>Topic Description: In this section, students learn the conventions of rounding whole numbers to the nearest multiple of 10 or 100. This work relies on and reinforces their understanding of place value. Number line diagrams are used to help students think about the multiple of 10 or 100 to which a given number is closest.</p>  <p>Students learn that when we find the nearest multiple of 10 or 100, we are rounding “to the nearest ten” or rounding “to the nearest hundred.” They also see that rounding a number to the nearest ten and nearest hundred can produce the same result.</p> <p>Students explore how rounding to the nearest ten or hundred can change the estimate of a sum. This prepares them to use rounding to see if solutions to problems are reasonable in the next section.</p> <p>Section Learning Goals</p> <ul style="list-style-type: none"> • Round whole numbers to the nearest multiple of 10 and 100. 		
<p>Competencies Addressed: 3.NBT.A.1, 3.OA.C.7</p> <p>Understanding and Applying Number Systems Indicator 2 - I can apply my understanding of place value to round whole numbers.</p> <p>Operations and Algebraic thinking Indicator 4 - I can multiply and divide within 100.</p>		<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>How can we efficiently, accurately, and flexibly add and subtract numbers within 1,000?</p> <ul style="list-style-type: none"> • There are various strategies that we can use to add and subtract numbers efficiently, accurately, and flexibly. We can use place value understanding, commutative and associative properties,

	<p>and the relationship between addition and subtraction when calculating numbers within 1,000. Using rounding and estimation can help us determine if our sums and differences are reasonable.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● We can use benchmark numbers to reason about sums and differences. ● Number lines help us to reason visually about the proximity of numbers. ● Rounding is a formal way to say which number a given number is closer to, and that number is often a multiple of 10 or 100. ● Sometimes, when we round to the nearest ten and the nearest hundred, we round to the same number ● When numbers are right in the middle of two multiples of 10 or 100, the convention is to round up ● Rounding to the nearest 10 and to the nearest 100 can give different estimates for the same situation ● 	<p>Topic Vocabulary:</p> <p>Academic vocabulary rounding (Lesson 14)</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Recognize that numbers are often approximated by their closest multiples of 10 or 100. ● Understand the meaning of the nearest multiple of 100. ● Identify the closest multiples of 10 and 100 for numbers within 1,000. ● Understand that rounding is a formal way to say which number a given number is closer to, and that number is often a multiple of 10 or 100. ● Understand the meaning of “the closest multiple of 10.” ● Round whole numbers within 1,000 to the nearest ten and hundred, using the convention of rounding up when the number is halfway between two multiples of 10 or 100. ● Recognize and generalize patterns in the rounding of whole numbers within 1,000. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs ● Planning for small groups ● Teacher Reflection Prompts in Teacher Guides

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 - Round Within 1,000	Grade Level and Unit: Grade 1, Unit
Description of Task: Students use place value understanding to round whole numbers and add and subtract within 1,000. They also represent and solve two-step word problems using addition, subtraction, and multiplication and assess the reasonableness of answers.	Purpose of Task: The purpose of this activity is for students to apply what they've learned about rounding to play a game in which each student generates a mystery number with three clues. The three clues describe whether the mystery number is even or odd, what it rounds to, and two numbers that it's between. It is possible that more than one number can fit the clues provided. In the synthesis, students reflect on which clues were most helpful for determining the mystery number.
Background of Students/Learning Progression: Students deepen their understanding of rounding to go beyond accurately rounding individual numbers as they think about what numbers round to a given number. Working backward from a multiple of 10 or 100 allows students to think about the relative distance of numbers and the range of numbers that round to the given multiple of 10 or 100. Students then use this understanding to write clues to help their classmates guess a mystery number. What a number rounds to becomes a useful way to describe a number in this game.	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: Lesson 13: Multiples of 100 <ul style="list-style-type: none">• The purpose of this lesson is for students to reason about the position of numbers relative to their immediate multiples of 100, using number lines to do so.• Teacher presentation materials• Slides	

Section C

IM Lesson	L13: Multiples of 100	L14: Nearest Multiples of 10 and 100	L15: Round to the Nearest 10 and 100	L16: Round and Round Again
Learning Cycle Model	Getting Started	Making Meaning	Investigate	Create and Produce
Naugatuck Math Competency	3.NS.2	3.NS.2	3.NS.2	3.NS.2. 3.OA.4
Math Practice Standards	MP 1, 7	MP 8	MP 3	
Lesson Purpose	The purpose of this lesson is for students to reason about the position of numbers relative to their immediate multiples of 100, using number lines to do so.	The purpose of this lesson is for students to reason about the position of numbers relative to their immediate multiples of 10 and 100, using number lines to do so.	The purpose of this lesson is for students to round whole numbers within 1,000 to the nearest ten or hundred.	The purpose of this lesson is for students to use their understanding of rounding to consider all the numbers that round to a given number.
Teacher Facing Learning Goals	<ul style="list-style-type: none"> Recognize that numbers are often approximated by their closest multiples of 10 or 100. Understand the meaning of the nearest multiple of 100. 	<ul style="list-style-type: none"> Identify the closest multiples of 10 and 100 for numbers within 1,000. Understand that rounding is a formal way to say which number a given number is closer to, and that number is often a multiple of 10 or 100. Understand the meaning of “the closest multiple of 10.” 	Round whole numbers within 1,000 to the nearest ten and hundred, using the convention of rounding up when the number is halfway between two multiples of 10 or 100.	Recognize and generalize patterns in the rounding of whole numbers within 1,000.
Vocabulary Focus		rounding		
Lesson Materials/ Resources	Lesson 13 Slides Teacher Materials Student Pages Activity 1: Students think about what it means for numbers to be close to multiples of 100.	Lesson 14 Slides Teacher Materials Student Pages Activity 1: Students practice naming the nearest multiple of 100 and apply the same reasoning to identify the nearest multiple of	Lesson 15 Slides Teacher Materials Student Pages Activity 1: Students round given numbers to the nearest ten and hundred and see that the result can be the same for some numbers.	Lesson 16 Slides Teacher Materials Student Pages Activity 1: Students apply what they learned about rounding in prior lessons to think about all the numbers that would round to a

	<p>Activity 2: Students locate two- and three-digit numbers on a series of number lines.</p>	<p>10.</p> <p>Activity 2: Students identify the nearest multiples of 10 and 100 for given three-digit numbers.</p>	<p>Activity 2: Students practice rounding to the nearest ten and hundred in context.</p>	<p>given number.</p> <p>Activity 2: Students apply what they've learned about rounding to play a game in which each student generates a mystery number with three clues. They will need index cards for this activity.</p>
	Cooldown: Locate, Label, and Name	Cooldown: Closest Multiple of 10 and 100	Cooldown: Round It Twice	Cooldown: What is Clare's Mystery Number?
Additional Resource: Section C Practice Problems				
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section C Checkpoint Assessment , Section C Checkpoint Teacher's Guide			
Centers Materials	<ul style="list-style-type: none"> • Target Numbers (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Addressing) • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) 	<ul style="list-style-type: none"> • Target Numbers (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Addressing) • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Capture Squares (1–3), Stage 6: Multiply with 1–5 (Supporting) 	<ul style="list-style-type: none"> • Target Numbers (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Addressing) • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Capture Squares (1–3), Stage 6: Multiply with 1–5 (Supporting) 	<ul style="list-style-type: none"> • Target Numbers (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Addressing) • How Close? (1–5), Stage 4: Add to 1,000 (Addressing) • Capture Squares (1–3), Stage 6: Multiply with 1–5 (Supporting)

Making Meaning:

[Lesson 14: Nearest Multiples of 10 and 100](#)

- The purpose of this lesson is for students to reason about the position of numbers relative to their immediate multiples of 10 and 100, using number lines to do so.
- [Teacher presentation materials](#)
- [Slides](#)

Investigate:

[Lesson 15: Round to the Nearest Ten and Hundred](#)

- The purpose of this lesson is for students to round whole numbers within 1,000 to the nearest ten or hundred.
- [Teacher presentation materials](#)
- [Slides](#)

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint C: Assessment](#)

[Checkpoint C: Teacher Guide](#)

Create and Produce:

[Lesson 16: Round and Round Again](#)

- The purpose of this lesson is for students to use their understanding of rounding to consider all the numbers that round to a given number.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

“Look at your responses for the first 2 problems. What patterns do you see in the numbers? Why is that happening?” (I see they each start with a 5 in the ones place below it because it’s halfway to the nearest ten, and the numbers end with a 4 in the ones place because that is closer than the next ten.)

“How did you use what you learned from the first 2 problems to think about the last problem?” (Instead of thinking about fives, we thought about fifties. We looked at all the numbers that are closer to 600 than 500 or 700.)

“As you played the game, what clues were the most helpful and why?”

Reflection:

“How did you determine that these numbers would round to ____?”

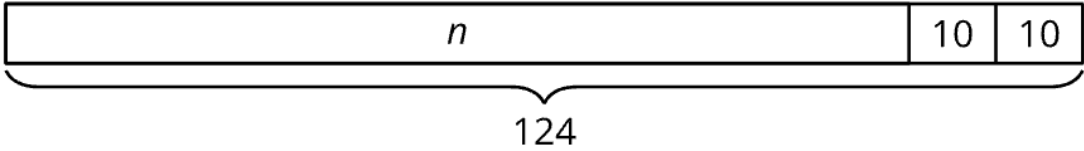
“How could you use a number line to find all the numbers that round to ____?”

“In the last few lessons we learned about rounding to the nearest ten and hundred. What are some important things you have found helpful to remember when you are rounding?”

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

Task-Based Learning Plan Format for Topic 1

Topic # 4 (Section D)	Topic Name: Section D - Solve Two-Step Problems	Duration: Recommended: 5 days
<p>Topic Description: In this section, students encounter more complex problems, think about the reasonableness of their answers, and use rounding to make estimates.</p> <p>Students analyze tape diagrams that could represent the relationships in given situations and write corresponding equations to represent them. Previously, they worked with diagrams and equations with a ? or ___ to represent an unknown. Now, students interpret and write letters to stand for an unknown number.</p> <div style="text-align: center;">  <p style="margin-left: 100px;">$124 - (2 \times 10) = n$</p> </div> <p>Finally, students apply what they've learned about adding and subtracting within 1,000 to solve two-step word problems that involve multiplication, addition, and subtraction.</p> <p>Section Learning Goals</p> <ul style="list-style-type: none"> ● Assess the reasonableness of answers. ● Solve two-step word problems using addition, subtraction, and multiplication. 		
<p>Competencies Addressed: 3.NBT.A.1, 3.NBT.A.2, 3.OA.C.7, 3.OA.D.8</p> <p>Understanding and Applying Number Systems</p>		<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>How can we efficiently, accurately, and flexibly</p>

<p>Indicator 2 - I can apply my understanding of place value to round whole numbers.</p> <p>Indicator 5 - I can use my understanding of place value and properties of operations to add and subtract whole numbers.</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 4 - I can multiply and divide within 100.</p> <p>Indicator 5 - I can solve multi-step problems using the four operations and assess the reasonableness of my answers.</p>	<p>add and subtract numbers within 1,000?</p> <ul style="list-style-type: none"> ● There are various strategies that we can use to add and subtract numbers efficiently, accurately, and flexibly. We can use place value understanding, commutative and associative properties, and the relationship between addition and subtraction when calculating numbers within 1,000. Using rounding and estimation can help us determine if our sums and differences are reasonable.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● We can use rounding to determine if our answer is reasonable. ● A question mark, blank line, or a box could be used to represent an unknown quantity in an equation. ● We can use a letter to represent an unknown quantity. ● Sometimes we cannot solve a problem right away. We need to find missing information. ● When making decisions, we need to adhere to mathematical constraints. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Rounding</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Assess the reasonableness of answers using mental computation and estimation strategies including rounding. ● Solve two-step word problems using addition and subtraction in a way that makes sense to them. ● Relate diagrams and equations to two-step word problems. ● Represent and solve two-step word problems using equations with a letter standing for the unknown quantity. ● Represent and solve two-step word problems. ● Add and subtract within 1,000 to solve real-world problems. ● Round whole numbers to the nearest ten or hundred to solve problems. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs

- Planning for small groups
- Teacher Reflection Prompts in Teacher Guides

Topic 4 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 4 - Solve Two-Step Problems	Grade Level and Unit: Grade 1, Unit
<p>Description of Task: In this activity, students make a wish list of items for the classroom with a \$1,000 budget. As they make their selections, they keep an estimate of the total by rounding, and use estimation and addition strategies to remain within the budget. To make their wish list, students use a supply list that is longer than shown in the warm-up.</p>	<p>Purpose of Task: The purpose of this task is to provide students with the opportunity to make decisions and choices, adhere to mathematical constraints, interpret a mathematical answer in context, organize data, make revisions, and report results, they model with mathematics (MP4). They explain their choices and compare how much money they plan to spend in each category. They make comparisons using “how much more” and “how much less” statements.</p>
<p>Background of Students/Learning Progression: In grade 2, students added and subtracted within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction. When students combine hundreds, tens, and ones, they use place value understanding. When they decompose numbers to add or subtract, they rely on the commutative and associative properties. When students count up to subtract, they use the relationship between addition and subtraction.</p>	<p>Ensure all competencies are addressed in the task:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
<p>Getting Started: The purpose of this True or False is to elicit strategies students have for estimating. The reasoning students do here helps to deepen their understanding of how rounding can be used to estimate. It will also be helpful later when students are to determine a reasonable estimate.</p> <ul style="list-style-type: none"> ● Display one statement. 	

- “Give me a signal when you know whether the statement is true and can explain how you know.”
- 1 minute: quiet think time
- Share and record answers and strategy.
- Repeat with each statement.

Decide if each statement is true or false. Be prepared to explain your reasoning.

- $132 + 115 > 200$
- $228 + 195 > 400$
- $217 + 151 > 400$

Section D

IM Lesson	L17: Does it Make Sense?	L18: Diagrams and Equations for Word Problems	L19: Situations and Equations	L20: More Practice to Represent and Solve	L21: Classroom Supplies
Learning Cycle Model	Making Meaning	Making Meaning	Investigation	Investigation	Create and Produce
Naugatuck Math Competency	3.OA.5	3.OA.5	3.OA.5	3.OA.4, 3.OA.5	3.NS.2, 3.NS.5
Math Practice Standards	MP 3, 6	MP 2, 3	MP 1, 2	MP 1, 6	MP 4
Lesson Purpose	The purpose of this lesson is for students to use mental computation and estimation strategies such as rounding to decide if answers to two-step word problems make sense.	The purpose of this lesson is for students to relate diagrams and equations to two-step word problems.	The purpose of this lesson is for students to represent and solve two-step word problems.	The purpose of this lesson is for students to continue to represent and solve two-step word problems, including problems in which not all necessary information is given up front.	The purpose of this lesson is for students to use their understanding of estimation, rounding, and addition within 1,000 to solve a problem about a class wish list.
Teacher Facing Learning Goals	<ul style="list-style-type: none"> • Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 	Relate diagrams and equations to two-step word problems.	Represent and solve two-step word problems using equations with a letter standing for the unknown quantity.	Represent and solve two-step word problems.	<ul style="list-style-type: none"> • Add and subtract within 1,000 to solve real-world problems. • Round whole numbers to the nearest ten or hundred to solve

	<ul style="list-style-type: none"> Solve two-step word problems using addition and subtraction in a way that makes sense to them. 				problems.
Vocabulary Focus					
Lesson Materials/ Resources	Lesson 17 Slides Teacher Materials Student Pages	Lesson 18 Slides Teacher Materials Student Pages Materials to Gather Sticky notes Tools for creating a visual display Materials to Copy Card Sort: Situations, Equations, and Diagrams	Lesson 19 Slides Teacher Materials Student Pages	Lesson 20 Slides Teacher Materials Student Pages Materials to Copy Info Gap: Bake Sale	Lesson 21 Slides Teacher Materials Student Pages
	Cooldown: Beads in the Bin	Cooldown: Equation Match	Cooldown: How Many Beads?	Cooldown: Reflection	
	Additional Resource: Section D Practice Problems				
Required Prep		Activity 1: <ul style="list-style-type: none"> Create a set of cards from the blackline master for each group of 4. 		Activity 2: <ul style="list-style-type: none"> Create a set of cards from the blackline master for each group of 2. Keep set 1 separate from set 2. 	
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section D Checkpoint Assessment , Section D Checkpoint Teacher’s Guide Unit 3 Assessment , Unit 3 Teacher Guide				
Centers	<ul style="list-style-type: none"> Tic Tac Round (3–5). 	<ul style="list-style-type: none"> Tic Tac Round (3–5). 	<ul style="list-style-type: none"> Tic Tac Round (3–5). 	<ul style="list-style-type: none"> Tic Tac Round (3–5). 	<ul style="list-style-type: none"> Tic Tac Round (3–5).

<p>Materials</p>	<p>Stage 1: Nearest Ten or Hundred (Addressing)</p> <ul style="list-style-type: none"> • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) 	<p>Stage 1: Nearest Ten or Hundred (Addressing)</p> <ul style="list-style-type: none"> • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<p>Stage 1: Nearest Ten or Hundred (Addressing)</p> <ul style="list-style-type: none"> • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<p>Stage 1: Nearest Ten or Hundred (Addressing)</p> <ul style="list-style-type: none"> • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<p>Stage 1: Nearest Ten or Hundred (Addressing)</p> <ul style="list-style-type: none"> • Number Puzzles: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Addressing) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting)
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Making Meaning:

Lesson 17: Does It Make Sense?

- The purpose of this lesson is for students to use mental computation and estimation strategies such as rounding to decide if answers to two-step word problems make sense.
- [Teacher presentation materials](#)
- [Slides](#)

Lesson 18: Diagrams and Equations for Word Problems

- The purpose of this lesson is for students to relate diagrams and equations to two-step word problems.
- [Teacher presentation materials](#)
- [Slides](#)

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint D: Assessment](#)

[Checkpoint D: Teacher Guide](#)

Investigate:

Lesson 19: Situations and Equations

- The purpose of this lesson is for students to represent and solve two-step word problems.
- [Teacher presentation materials](#)
- [Slides](#)

Lesson 20: More Practice to Represent and Solve

- The purpose of this lesson is for students to continue to represent and solve two-step word problems, including problems in which not all necessary information is given up front.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

Lesson 21: Classroom Supplies

- The purpose of this lesson is for students to use their understanding of estimation, rounding, and addition within 1,000 to solve a problem about a class wish list.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

- Invite groups to share how their strategies compared to those of their partner groups.
- Invite partner groups to share their comparisons with the whole class using “how much less” and “how much more” statements.

Reflection:

“Today, we made decisions to buy helpful and beneficial materials for the class. Unfortunately, there wasn’t enough money to buy everything on the list.”

“What else would you get if we had more money?”

“Which item on the list has the greatest benefit for the class?” (I think the fish would have the most value because we get to learn about science as we take care of the fish and how to be responsible for a pet.)

Consider asking, “What are some other things you would buy for the class that are not on the list?”

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

Task-Based Learning Plan Format for Topic 1