

Course Title: Mathematics	Full Year	Required
<p><b>Course Description:</b>            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"> <li>1. Adding, Subtracting, and Working with Data</li> <li>2. Adding and Subtracting within 100</li> <li>3. Measuring Length</li> <li>4. Addition and Subtraction on the Number Line</li> <li>5. Numbers to 1,000</li> <li>6. Geometry, Time, and Money</li> <li>7. Adding and Subtracting within 1,000</li> <li>8. Equal Groups</li> <li>9. Putting it All Together</li> </ol> <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 <a href="#">Table 1 of the Mathematics Glossary</a> section of the Common Core State Standards.</p>		
<p><b>Additional Course Information:</b></p> <p>The big ideas in Grade 2 include:</p> <ul style="list-style-type: none"> <li>● Representing and solving problems involving addition and subtraction</li> <li>● Adding and subtracting within 20</li> <li>● Understanding place value</li> <li>● Using place value understanding and properties of operations to add and subtract</li> <li>● Measuring and estimating lengths in standard units</li> <li>● Relating addition and subtraction to length</li> </ul> <p>Required fluency in grade 2 includes:</p> <ul style="list-style-type: none"> <li>● Single-digit sums and differences (sums from memory by end of Grade 2)</li> <li>● Add/subtract within 100</li> </ul>	<p><b>Core Resources:</b></p> <p><a href="#">Illustrative Mathematics</a></p> <p><a href="#">Instructional Routines and Math Language Routines</a></p> <p><a href="#">Glossary - Student-friendly</a></p> <p><a href="#">Required Materials</a></p> <p><b>IM en Español:</b></p> <p><a href="#">Developing a Mathematical Community</a></p>	<p><b>Are there any attachments <u>at the course level</u> that teachers will need?</b></p> <p><a href="#">Scope and Sequence</a> 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><a href="#">Pacing Guide and Dependency Diagrams K-5</a></p>

## Unit 9 Putting It All Together

### Unit Overview - FOCUS:

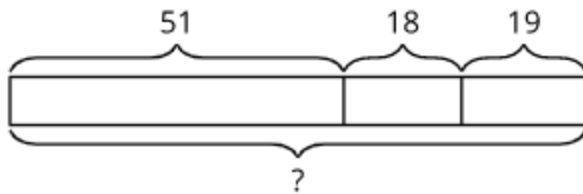
#### Unit Learning Goals

Students consolidate and solidify their understanding of various concepts and skills related to major work of the grade. They also continue to work toward fluency goals of the grade. In this unit, students revisit major work and fluency goals of the grade, applying their learning from the year.

Section A gives students a chance to solidify their fluency with addition and subtraction within 20. In section B, students apply methods they used with smaller numbers to add and subtract numbers within 100. They also revisit numbers within 1,000: composing and decomposing three-digit numbers in different ways, and using methods based on place value to find their sums and differences.

In the final section, students interpret, solve, and write story problems involving numbers within 100, which further develop their fluency with addition and subtraction of two-digit numbers. They work with all problem types with the unknown in all positions.

*Clare picked 51 apples. Lin picked 18 apples. Andre picked 19 apples.  
Here is the work a student shows to answer a question about the apples.*



$$51 + 19 = 70$$

$$70 + 18 = 88$$

*What is the question?*

The sections in this unit are standalone sections, not required to be completed in order. The goal is to offer ample opportunities for students to integrate the knowledge they have gained and to practice skills related to the expected fluencies of the grade.

### Duration:

### Topic Titles:

- **Section A: Fluency Within 20 and Measurement**
  - Fluently add and subtract within 20.
- **Section B: Numbers to 1,000**
  - Add and subtract within 1,000 using strategies based on place value and the properties of operations.
  - Fluently add and subtract within 100.
- **Section C: Create and Solve Story Problems**
  - Represent and solve one- and two-step story problems within 100.

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

Students consolidate and solidify their understanding of various concepts and skills related to major work of the grade. They also continue to work toward fluency goals of the grade. In this unit students continue to have opportunities to build their fluency with adding and subtracting within 20.

In previous units, students represented three-digit numbers by composing and decomposing units using base-ten blocks, base-ten diagrams, and equations. They added and subtracted within 100 and later within 1,000 using methods based on place value. This unit provides opportunities to strengthen student’s understanding. In third grade students will fluently add and subtract within 1,000 and extend this range to 1,000,000 in grade 4.

In previous units, students solved all the types of story problems including Add To, Take From, Put Together, and Compare with the unknown in all positions. They made sense of word problems using Three Reads and represented situations using tape diagrams and number line diagrams. In grade 3 students will continue to use tape diagrams and number line diagrams to make sense of word problems.

**Essential Questions:**

1. What are mental strategies for fluently adding and subtracting within 20?
2. What are strategies for adding and subtracting multi-digit numbers?
3. How can I use my understanding of place value to add and subtract within 1,000?
4. How do you represent and solve addition and subtraction story problems?

**Enduring Understanding:**

- **We can leverage the facts that we know from memory to find the sums and differences for other facts.** 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.
- **We can use partitions of 10, doubles, plus 1 and plus 2, decomposing a number leading to a ten, the relationship between addition and subtraction, creating equivalent but easier or known sums to fluently add and subtract.** Base-ten blocks, diagrams, and equations can be used to show adding hundreds to hundreds, tens to tens, and ones to ones.
- **We can use place value understanding, properties of operations, and the relationship between addition and subtraction to add and subtract.** Addition and subtraction have an inverse relationship that can be used to solve problems. 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. 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. Composing and decomposing numbers can be connected to methods for adding and subtracting numbers within 1,000.
- **We can identify different types of story problems - Add To, Take From, Put Together,**

	<p><b>Take Apart, Compare, and Result Unknown - to make sense of problems and help determine whether we will add or subtract.</b> We can determine the unknown. Unknowns can be used in all positions. We can use tape diagrams to make sense of and represent the problem and show the unknown.</p>	
<p><b>What Students Will Know:</b></p> <ul style="list-style-type: none"> <li>● Mental strategies to fluently add and subtract within 20</li> <li>● You can break apart one addend to make facts you know.</li> <li>● You can decompose to get a 10.</li> <li>● Addition and subtraction have an inverse relationship which can make it easier to find a sum or difference.</li> <li>● Use the properties of operations to make easier known expressions.</li> <li>● We can collect measurement data to create line plots and then use the line plot to interpret the data.</li> <li>● Numbers can be represented in many ways.</li> <li>● Sometimes numbers may need to be composed or decomposed in the process of adding or subtracting.</li> <li>● Addition and subtraction have an inverse relationship.</li> <li>● When numbers are relatively close, we can count on or count back to determine the difference between the two numbers.</li> <li>● Base-ten blocks, diagrams, and equations can be used to show adding hundreds to hundreds, tens to tens, and ones to ones.</li> </ul>	<p><b>What students will do:</b></p> <ul style="list-style-type: none"> <li>● Find the value of sums and unknown addends from memory in expressions with values within 20.</li> <li>● Fluently add and subtract within 20 using mental strategies.</li> <li>● Share different methods for finding the value of sums and differences mentally (use the relationship between addition and subtraction, decomposing to get a 10, and creating expressions that are equivalent but easier to find mentally).</li> <li>● Measure lengths in centimeters and use addition and subtraction to solve problems involving length.</li> <li>● Represent measurement data in line plots and use addition and subtraction to solve problems that can be answered using the line plot.</li> <li>● Compose and decompose three-digit numbers in different ways.</li> <li>● Use place value reasoning to compose and decompose units to find unknown numbers and create equivalent forms of three-digit numbers.</li> <li>● Recognize when it is necessary to compose or decompose a ten and/or a hundred when adding and subtracting.</li> <li>● Add and subtract numbers within 1,000 using methods based on place value.</li> </ul>	<p><b>Unit Specific Vocabulary:</b></p> <p><b>Academic vocabulary</b></p> <p>Sum Decompose Equivalent Difference Addend Length Centimeter Line plot Measurement Foot Compose Analyze Tape diagram Unknown Value Three- Reads routine Quantity Compare</p>

<ul style="list-style-type: none"> <li>● 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.</li> <li>● 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.</li> <li>● Story problems can be connected to diagrams.</li> <li>● Symbols can represent an unknown number.</li> <li>● Equations can represent story problems.</li> <li>● Tape diagrams can be used to visualize a story problem and find the unknown number</li> <li>● The relationship between addition and subtraction.</li> <li>● Different types of story problems (Add to, Take From, Put Together, Take Apart, Compare, Result Unknown).</li> </ul>	<ul style="list-style-type: none"> <li>● Fluently find sums and differences within 100.</li> <li>● Recognize and explain which sums and differences within 100 are more or less difficult for them to find.</li> <li>● Solve one-step story problems within 100.</li> <li>● Use tape diagrams and equations to represent different types of story problems within 100.</li> <li>● Interpret story problems and use diagrams and equations to represent the unknown quantities.</li> <li>● Represent and solve two-step story problems within 100.</li> <li>● Use representations to make sense of problems, support their calculations, and explain their thinking.</li> <li>● Ask mathematical questions and write story problems based on a given expression.</li> </ul>	
<p><b>Entry Level Assessment and Connection to Unit:</b></p> <p>N/A</p>	<p><b>Unit Materials, Resources and Technology:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Illustrative Mathematics</a></li> <li>● <a href="#">Instructional Routines and Math Language Routines</a></li> <li>● <a href="#">Glossary - Student-friendly</a></li> <li>● <a href="#">Required Materials</a></li> <li>● <a href="#">IM en Español</a></li> <li>● <a href="#">Pacing Guide and Dependency Diagrams K-5</a></li> </ul>	

**Opportunities for Interdisciplinary Connections:**

Students use computational strategies in science.

**Any links, attachments and resources:**

[Instructional Routines Document](#)

[Family Support Materials](#)

**Planning Ideas:**

[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](#)

<b>Topic # 1 (Section A)</b>	<b>Topic Name: Section A - Fluency Within 1,000 and Measurement</b>	<b>Duration:</b> Recommended: 4 lessons (4 days)
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**Topic Description:**

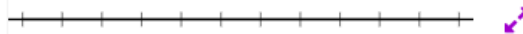
In this section, students practice adding and subtracting within 20 to meet the fluency expectations of the grade, which include finding all sums and differences within 20, and knowing from memory all sums of 2 one-digit numbers.

Students begin with exercises and games that emphasize using the relationship between addition and subtraction to find the value of expressions and unknown addends. When students encounter sums and differences they don't know right away, they use mental math strategies and other methods they have learned, such as using facts they know, making equivalent expressions, and composing or decomposing a number to make a 10.

Later in the section, students apply their mental strategies to find sums and differences within 20 in a measurement context. They measure standard lengths and create line plots, and then use the measurements to add and subtract.

<b>group</b>	<b>length of pencils in cm</b>				<b>total length</b>
<b>A</b>	8	13	12	7	
<b>B</b>	9	15	7	10	
<b>C</b>	12	13	8	6	
<b>D</b>	9	9	11	13	
<b>E</b>					

*Use the pencil measurements to create a line plot.*



**Section Learning Goals**

- Fluently add and subtract within 20.

<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems</b>  <b>2.NS.4</b> I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9)</p> <p><b>Operations and Algebraic Thinking</b>  <b>2.OA.1</b> I can add within 20. (2.OA.B.2)  <b>2.OA.3</b> I can represent and solve problems involving addition and subtraction. (2.OA.A.1, 2.MD.B.5-6)</p> <p><b>Measurement and Data Investigations</b>  <b>2.MD.1</b> I can measure and estimate lengths by selecting and using appropriate tools. (2.MD.A.1-4)  <b>2.MD.4</b> I can represent and interpret data. (2.MD.D.9-10)</p>	<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <ol style="list-style-type: none"> <li>1. What are mental strategies for fluently adding and subtracting within 20?</li> </ol> <ul style="list-style-type: none"> <li>● <b>We can leverage the facts that we know from memory to find the sums and differences for other facts.</b> 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.</li> </ul>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Mental strategies to fluently add and subtract within 20 <ul style="list-style-type: none"> <li>○ You can break apart one addend to make facts you know.</li> <li>○ You can decompose to get a 10 so that it is easier.</li> <li>○ Addition and subtraction have an inverse relationship which can make it easier to find a sum or difference.</li> <li>○ Use the properties of operations to make easier known expressions.</li> </ul> </li> <li>● We can collect measurement data to create line plots and then use the line plot to interpret the data.</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary</b>  Sum  Decompose  Equivalent  Difference  Addend  Length  Centimeter  Line plot  Measurement  Foot</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Find the value of sums and unknown addends from memory in expressions with values within 20.</li> <li>● Fluently add and subtract within 20 using mental strategies.</li> <li>● Share different methods for finding the value of sums and differences mentally (use the</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p>

relationship between addition and subtraction, decomposing to get a 10, and creating expressions that are equivalent but easier to find mentally).

- Measure lengths in centimeters and use addition and subtraction to solve problems involving length.
- Represent measurement data in line plots and use addition and subtraction to solve problems that can be answered using the line plot.

**Plan for Teacher Reflection:**

**Lesson 1:** Which sums within 20 did students show they are still working on? How can you make time for practice with these sums during the school day?

**Lesson 2:** Think about which students haven't shared their strategies in class lately. Were there missed opportunities to highlight their thinking during recent lessons? How can you take advantage of those opportunities when they arise?

**Lesson 3:** In previous lessons, students found unknown addends and shared methods that included looking for ways to get to a ten to add and subtract. How did you see students use these methods in today's lesson?

**Lesson 4:** Reflect on the development of students' fluency with addition and subtraction within 20. What activities or discussions particularly helped students during the year? What will you do differently next year to foster your students' fluency with addition and subtraction?

**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.

<b>Task Title: Topic 1 - Fluency within 20 and Measurement</b>	<b>Grade Level and Unit: Grade 2, Unit 9</b>
<b>Description of Task:</b>  In this task students will measure lengths in centimeters and create a line plot to represent this measurement data. They will add and subtract as they interpret the line plot and ask and answer questions. After creating their line plots, students will share their data.	<b>Purpose of Task:</b>  The purpose of this task is for students to have another opportunity to add and subtract within 20. Students measure lengths of objects and represent measurement data in line plots and answer questions about the data. They see in the task the need to fluently add and subtract within 20 in order to interpret the line plot.
<b>Background of Students/Learning Progression:</b> Students continue to practice fluency with addition and subtraction within 20 with an emphasis on knowing from memory single-digit addition facts. Students revisit line plots, which they worked with in a previous unit. They measure the length of objects and use measurement data to create line plots. Students revisit major work and fluency goals of the grade, applying their learning from the year. This will be important for solidifying their understanding of addition and subtraction within 1,000.	<b>Ensure all competencies are addressed in the task:</b>  <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
<b>Getting Started:</b> In the lessons that make up Topic 1 - Section A of Unit 9, students will: <ul style="list-style-type: none"><li>● Fluently add and subtract within 20.</li></ul> Lesson 1 Warm Up - In this warm-up activity, this Number Talk encourages students to think about how they may use known sums and differences to find the value of other sums and differences. This understanding will be helpful as students continue building fluency with addition and subtraction within 20.  “How did the third expression help you find the value of the last expression?”	

Find the value of each expression mentally.

- $10 - 5$
- $11 - 5$
- $12 - 6$
- $13 - 6$

**Section A**

IM Lesson	<a href="#">Lesson 1: Sums and Differences Within 20</a>	<a href="#">Lesson 2: Fluency Flip</a>	<a href="#">Lesson 3: Measure on a Map</a>	<a href="#">Lesson 4: Measure and Plot</a>
Learning Cycle Model	Making Meaning	Investigation	Investigation	Create and Produce
Naugatuck Math Competency	2.OA.1	2.OA.1	2.MD.1 2.OA.3 2.OA.1	2.MD.1 2.MD.4 2.NS.4 2.OA.1
Math Practice Standards		MP7	MP2	
Lesson Purpose	The purpose of this lesson is for students to fluently add and subtract within 20 using mental strategies.	The purpose of this lesson is for students to fluently add and subtract within 20 to find unknown addends.	The purpose of this lesson is for students to measure lengths in centimeters and add and subtract lengths within 20 to answer questions.	The purpose of this lesson is for students to add and subtract within 20. Students measure lengths of objects and represent measurement data in line plots and answer questions about the data.
Vocabulary Focus	Sums, decomposing, equivalent	Differences, addends	Lengths, centimeters, sums, differences	Line plot, measurement, foot

<b>Lesson Materials/ Resources</b>	<a href="#">Lesson 1 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Give students access to index cards.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Give each group of two a paper clip and <a href="#">Spin and Find the Missing Number Spinners</a></li> </ul> <a href="#">Cool-down: Add and Subtract with Fluency</a>	<a href="#">Lesson 2 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Give each group of 2 a set of <a href="#">Number Cards 0-19</a>.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each group of 2 needs the digit cards 0–9 from the card set used in the previous activity.</li> <li>● Give each group a copy of the <a href="#">Number Mix Up</a> puzzles.</li> </ul> <a href="#">Cool-down: Just the Facts</a>	<a href="#">Lesson 3 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Give each student a ruler and a <a href="#">Measurement Map</a>.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● No additional materials</li> </ul> <a href="#">Cool-down: Practice Facts</a>	<a href="#">Lesson 4 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Each student needs an unsharpened pencil.</li> <li>● The activity works best if it is likely that students will have a range of pencil lengths between and among groups. If necessary, sharpen pencils to different lengths and distribute them randomly to students.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● No additional materials</li> </ul> <a href="#">Cool-down: Supply Request</a>
	<b>Assessment</b>	<b>Formative Assessment Strategies: observation, questioning, student discourse : <a href="#">Monitoring Sheet</a></b>		
<b>Centers Materials</b>	None	None	None	None

**Making Meaning:**

In Lesson 1, students find the value of sums and unknown addends from memory in expressions with values within 20. In the first activity, students complete an inventory of sums within 20 and identify those sums that they do not know yet from memory. In the second activity, they continue to

practice fluency with addition and subtraction within 20. Throughout the lesson, encourage students to share the methods they use to recall or find a sum or difference fluently, including methods based on using the relationship between addition and subtraction, decomposing to get to a ten, and creating expressions that are equivalent, but easier to find mentally.

### **Lesson 1: [Sums and Differences Within 20](#)**

- The purpose of this lesson is for students to fluently add and subtract within 20 using mental strategies.
- [Lesson 1 Slides](#)
- [Teacher Presentation Materials](#)

### **Investigation:**

In Lesson 2, students find unknown addends within 20 and continue developing fluency with addition and subtraction within 20.

In previous lessons, students assessed their fluency with sums and differences within 20. They shared different methods for finding the value of sums and differences mentally.

In Lesson 3, students add and subtract within 20 and build fluency within this range of numbers. They also practice measuring lengths in centimeters and use their measurements to add and subtract. The activities encourage students to consider ways to use properties of operations to make easier or known expressions and use the facts they know (MP7). In the first activity, students measure lengths on a map and add and subtract their measurements to answer questions. They share the ways they used facts that they know to find the value of sums and differences. The questions focus on the measured distances in centimeters. It may be helpful to discuss how the actual distances between cities are much longer. However, proportional relationships, such as those in a map scale, is a grade 6 topic and should not be the focus of these activities. In the second activity, students solve Compare problems within the context of their measurements on the map.

### **Lesson 2: [Fluency Flip](#)**

- The purpose of this lesson is for students to fluently add and subtract within 20 to find unknown addends.
- [Lesson 2 Slides](#)
- [Teacher Presentation Materials](#)

### **Lesson 3: [Measure on a Map](#)**

- The purpose of this lesson is for students to measure lengths in centimeters and add and subtract lengths within 20 to answer questions.
- [Lesson 3 Slides](#)
- [Teacher Presentation Materials](#)

### Create and Produce:

In Lesson 4, students continue to practice fluency with addition and subtraction within 20 with an emphasis on knowing from memory single-digit addition facts. Students revisit line plots, which they worked with in a previous unit. They measure the length of objects and use measurement data to create line plots.

In Activity 2, students plot their measurement data and use the data to answer questions (MP2). In the activity synthesis, students share the methods they use to add or subtract within 20 and discuss different ways that they can use the data in a line plot.

### Lesson 4: [Measure and Plot](#)

- The purpose of this lesson is for students to add and subtract within 20. Students measure lengths of objects and represent measurement data in line plots and answer questions about the data.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

### Communicate and Present:

Invite 1–2 students to share methods for how they found the difference between the longest and shortest pencil or the difference between the shortest pencil and an unsharpened pencil. Consider selecting strategies based on making 10 and using known facts.

“What other questions could we use the line plot to answer?” (How many people had a pencil that was \_\_\_\_\_ cm long? How many more students had a pencil that was \_\_\_\_\_ cm long than students who had a pencil that was \_\_\_\_\_ cm long?)

Display a completed table from the first activity and a line plot from the second activity.

“What questions are easier to answer with the line plot? Explain.”

### Reflection:

“Today we used addition and subtraction to find sums of lengths and to compare lengths. We shared ways we used facts we know and ways to make 10 to make sums and differences easier to find.”

Display:

$$\begin{array}{r} 14 - 8 \\ 14 - 4 = 10 \end{array}$$

“Mai is finding the difference between 14 and 8.”

“First, she thinks, ‘I know 14-4 is 10.’”

“What should she do next?” (take away 4 more because you have to take away 8, find 10-4=6)

	If time, "What is another way you could use a fact you know to find the value of $14-8$ ?" ( $8+6=14$ )
<b>Notes: Follow lessons in numerical order</b>	<b>Complete File with Resources and Task:</b>

<b>Topic # 2 (Section B)</b>	<b>Topic Name: Section B - Numbers to 1,000</b>	<b>Duration:</b> Recommended 4 lessons (4 days)
<p><b>Topic Description:</b>  In this section, students revisit numbers within 1,000 and develop their facility with addition and subtraction within 100. The work here requires students to compose and decompose multiple place-value units, which reinforces their understanding of place value and operations on larger numbers.</p> <p>Students begin by decomposing and composing three-digit numbers in multiple ways using base-ten blocks, base-ten diagrams, words, and symbols. They also compose and decompose units as they match and create equivalent expressions for three-digit numbers.</p> <p>Find the number that makes each equation true.</p> <p>6 hundreds + 9 ones = 5 hundreds + _____ tens + 9 ones  2 hundreds + 9 tens + 17 ones = _____ hundreds + 7 ones</p> <p>Next, students practice addition and subtraction within 1,000. They analyze sums and differences and reason about which ones are more difficult to evaluate and which are easier, deepening their understanding of composition and decomposition based on place value.</p> <p>Students then work toward fluent addition and subtraction within 100, which requires composing or decomposing one unit when using methods based on place value. Methods for finding sums and differences mentally, without explicitly composing or decomposing units, are also encouraged.</p> <p><b>Section Learning Goals:</b></p> <ul style="list-style-type: none"> <li>• Add and subtract within 1,000 using strategies based on place value and the properties of operations.</li> <li>• Fluently add and subtract within 100.</li> </ul>		

**Competencies Addressed:**

**Understanding and Applying Number Systems**

**2.NS.1** I understand 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)

**Essential Question and Enduring Understanding Addressed in this Topic:**

1. What are strategies for adding and subtracting multi-digit numbers?
2. How can I use my understanding of place value to add and subtract within 1,000?

- **We can use partitions of 10, doubles, plus 1 and plus 2, decomposing a number leading to a ten, the relationship between addition and subtraction, creating equivalent but easier or known sums to fluently add and subtract.** Base-ten blocks, diagrams, and equations can be used to show adding hundreds to hundreds, tens to tens, and ones to ones.

- **We can use place value understanding, properties of operations, and the relationship between addition and subtraction to add and subtract.** Addition and subtraction have an inverse relationship that can be used to solve problems. 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. 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. Composing and decomposing numbers can be connected to methods

	for adding and subtracting numbers within 1,000.
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>• Numbers can be represented in many ways.</li> <li>• Sometimes numbers may need to be composed or decomposed in the process of adding or subtracting.</li> <li>• Addition and subtraction have an inverse relationship.</li> <li>• When numbers are relatively close, we can count on or count back to determine the difference between the two numbers.</li> <li>• Base-ten blocks, diagrams, and equations can be used to show adding hundreds to hundreds, tens to tens, and ones to ones.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary:</b>  Compose  Decompose  Analyze  Compare</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Compose and decompose three-digit numbers in different ways.</li> <li>• Use place value reasoning to compose and decompose units to find unknown numbers and create equivalent forms of three-digit numbers.</li> <li>• Recognize when it is necessary to compose or decompose a ten and/or a hundred when adding and subtracting.</li> <li>• Add and subtract numbers within 1,000 using methods based on place value.</li> <li>• Fluently find sums and differences within 100.</li> <li>• Recognize and explain which sums and differences within 100 are more or less difficult for them to find.</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <hr/> <p><b>Plan for Teacher Reflection:</b></p> <p><b>Lesson 5:</b> In this section, students are working to develop fluency when adding and subtracting within 100. How does the work of the lesson help deepen students' understanding of place value? How will the work of this lesson help students become more fluent when adding and subtracting within 100?</p> <p><b>Lesson 6:</b> In future lessons, students will be working</p>

on developing fluency with addition and subtraction within 100. How does the work of this lesson support students in developing fluency with sums and differences within 100?

**Lesson 7:** How did students reason about which sums and differences were least and most challenging to find? What does this tell you about students' understanding of place value and number?

**Lesson 8:** What was the best question you asked students today? Why would you consider it the best one based on what students said or did?

**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.

<b>Task Title: Topic 2 - Numbers to 1,000</b>	<b>Grade Level and Unit: Grade 2, Unit 9</b>
<b>Description of Task:</b> In this task students will create a poster with their group to show 356 in at least 3 different ways. They will show their thinking using diagrams, symbols, or other representations. Then they will take a gallery walk to discover other ways to represent the number.	<b>Purpose of Task:</b> The purpose of the task is for students to be able to represent numbers in different ways because it can help students strengthen their place value understanding and flexibility with numbers. It is important for students to then connect composing and decomposing numbers to methods for adding and subtracting numbers within 1,000.
<b>Background of Students/Learning Progression:</b> In previous units, students represented three-digit numbers by composing and decomposing units using base-ten blocks, base-ten diagrams, and equations. In this task, students compose and decompose three-digit numbers using base-ten blocks and other representations that make sense to them. Throughout the task, students are encouraged to show and deepen their understanding of place value by composing and decomposing units. When you have a strong understanding of composing and decomposing three-digit numbers in different ways you can see the connection to adding and subtracting numbers within 1,000. Students recognize that when a number is composed or decomposed it needs to have the same value in order to add and subtract. This will help students build their mental fluency for adding and subtracting within 100 and begin to build their fluency and understanding for adding and subtracting within 1,000.	<b>Ensure all competencies are addressed in the task:</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, all competencies are addressed</li><li><input type="checkbox"/> No - Task needs modification</li></ul>
<b>Getting Started</b> In the lessons that make up Topic 2 - Section B of Unit 9, students will: <ul style="list-style-type: none"><li>● Add and subtract within 1,000 using strategies based on place value and the properties of operations.</li><li>● Fluently add and subtract within 100.</li></ul> Lesson 5 Warm Up - In the Warm-up activity, What Do You Know About _____, students are invited to share what they know about and how they can represent the number 308. Students use place value understanding as they describe the meaning of the digits in 308 and the different ways they can represent the number (MP7).	

“What do you know about 308?”

1 minute: quiet think time

Record responses.

**Section B**

IM Lesson	<a href="#">Lesson 5: Compose and Decompose Numbers Within 1,000</a>	<a href="#">Lesson 6: Represent Numbers with Expressions</a>	<a href="#">Lesson 7: Add and Subtract Within 1,000</a>	<a href="#">Lesson 8: Add and Subtract Within 100</a>
Learning Cycle Model	Create and Produce	Investigation	Investigation	Making Meaning
Naugatuck Math Competency	2.NS.1	2.NS.A.1 2.NS.A.2	2.NS.B.4 2.NS.B.5	2.NS.B.4 2.NS.B.5
Math Practice Standards	MP2, MP7			
Lesson Purpose	The purpose of this lesson is for students to compose and decompose three-digit numbers in different ways.	The purpose of this lesson is for students to demonstrate their understanding of place value by composing and decomposing numbers within 1,000 in different ways.	The purpose of this lesson is for students to add and subtract within 1,000 using methods based on place value.	The purpose of this lesson is for students to practice addition and subtraction within 100 to build fluency.
Vocabulary Focus	Compose, decompose		Analyze, compare	
Lesson Materials/ Resources	<a href="#">Lesson 5 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Give base-ten blocks to each group of 2.</li> </ul>	<a href="#">Lesson 6 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Give students access to base-ten blocks.</li> </ul>	<a href="#">Lesson 7 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>No additional materials</li> </ul> <b>Activity 2:</b>	<a href="#">Lesson 8 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Give each group of 3 students a set of <a href="#">Heads Up - Add and Subtract within 100 Number</a></li> </ul>

	<p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Give each group of 3 or 4 a piece of chart paper and markers.</li> </ul> <p><a href="#">Cool-down: Two Hundred Sixty-Three</a></p>	<p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Give each group a set of <a href="#">Match Expressions Cards 2.9</a>.</li> </ul> <p><a href="#">Cool-down: Think of a Time</a></p>	<ul style="list-style-type: none"> <li>No additional materials</li> </ul> <p><a href="#">Cool-down: Add and Subtract Within 1,000</a></p>	<p><a href="#">Cards</a>.</p> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 needs access to the cards used in the previous activity.</li> </ul> <p><a href="#">Cool-down: Practice for Fluency</a></p>
<b>Assessment</b>	Formative Assessment Strategies: observation, questioning, student discourse : <a href="#">Monitoring Sheet</a>			
<b>Centers Materials</b>	None	None	None	<a href="#">Five in a Row, Stage 6</a> <a href="#">Target Numbers, Stages 3–5</a>

## Making Meaning

In Lesson 8, students develop fluency with adding and subtracting within 100. In the first activity, all students play a new “Heads Up” game to practice fluency. This version of the game “Heads Up: Make 20” is structured differently (groups of 3, different recording directions) from the game in Section A. In the second activity, students choose which center game from previous units to play based on what they know they need to practice. Spinners and cards can be reused if they were saved from previous units or new cards can be printed for the centers and stages recommended for this lesson. In previous lessons, students composed and decomposed units to add and subtract within 1,000. Students considered which sums and differences within 100 were more or less difficult for them to find.

### Lesson 8: [Add and Subtract Within 100](#)

- The purpose of this lesson is for students to practice addition and subtraction within 100 to build fluency.
- [Lesson 8 Slides](#)
- [Teacher Presentation Materials](#)

**Investigation:**

In Lesson 6, students practice using place value reasoning to compose and decompose units to find unknown numbers and create equivalent forms of three-digit numbers. They find the unknown numbers that make expressions equivalent and match expressions that represent the same number. Although students should have access to base-ten blocks and tools to create base-ten diagrams as needed, students should also be encouraged to reason mentally based on their understanding of place value. The work of this lesson will support students' work with adding and subtracting within 1,000 and developing students' fluency in adding and subtracting within 100.

In Lesson 7, students connect composing and decomposing numbers to methods for adding and subtracting numbers within 1,000. The first activity encourages students to consider which sums and differences within 1,000 would be least and most challenging to find. Students are encouraged to think about what might make finding the values of some expressions more challenging. They share the methods they use to find these values. The second activity focuses only on sums within 100 and encourages students to use and share methods that help them fluently find sums and differences. In previous lessons, students practiced composing and decomposing three-digit numbers in different ways.

**Lesson 6: [Represent Numbers with Expressions](#)**

- The purpose of this lesson is for students to demonstrate their understanding of place value by composing and decomposing numbers within 1,000 in different ways.
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 7: [Add and Subtract Within 1,000](#)**

- The purpose of this lesson is for students to add and subtract within 1,000 using methods based on place value.
- [Lesson 7 Slides](#)
- [Teacher Presentation Materials](#)

**Create and Produce:**

In Lesson 5, students compose and decompose three-digit numbers using base-ten blocks and other representations that make sense to them. Throughout the lesson, students are encouraged to show and deepen their understanding of place value by composing and decomposing units. In previous units, students represented three-digit numbers by composing and decomposing units using base-ten blocks, base-ten diagrams, and equations.

Lesson 5, Activity 2 students are **creating** a visual display.

The purpose of this activity is for students to represent the same number in multiple ways. During the gallery walk, students are encouraged to connect different representations of a number that make use of structure in similar ways (for example, connecting a diagram and an equation that show the number using the same number of hundreds, tens, and ones). The lesson synthesis focuses on the different ways students represent 356 with expressions or equations. Students demonstrate their understanding of the structure of the base-ten system when they describe, compare, and connect different representations of the same three-digit number (MP7).

**Lesson 5: [Compose and Decompose Numbers Within 1,000](#)**

The purpose of this lesson is for students to compose and decompose three-digit numbers in different ways.

[Lesson 5 Slides](#)

[Teacher Presentation Materials](#)

**Communicate and Present:**

“Represent 356 in at least 3 different ways. You may use diagrams, symbols, or other representations. If you have time, you can represent 356 in more than 3 ways.”

“How could you represent this number with equations?”

“How could you represent this number with words?”

“How could you represent this number with digits?”

“Share your representations with your group. Work together to put each different way on your group’s poster. If you have time, you may add other ways to represent the number.”

5 minutes: group work time

Present - Gallery walk

“You are going to rotate to see other group’s posters. One person from your group should place a checkmark next to any representation your team also used to show 356.”

Prompt groups to rotate to the next chart every 1 minute.

**Reflection:**

Display:

3 hundreds + 4 tens + 16 ones

“Does this expression show 356? Explain.” (Yes. 16 ones is the same as one ten and 6 ones so it’s the same as 3 hundreds 5 tens and 6 ones.)

“This is one way we could show 356 as an expression. What other ways did you see groups represent 356 as an expression?”

“How are the expressions the same? How are they different?”  
(They all show 356. Some expressions have different amounts of hundreds and tens. Some expressions use words.)

**Notes: Follow the lessons in numerical order.**

**Complete File with Resources and Task:**

<b>Topic # 3 (Section C)</b>	<b>Topic Name: Section C - Create and Solve Story Problems</b>	<b>Duration:</b> Recommended: 5 lessons (5 days)
<p><b>Topic Description:</b>  In this section, students create and solve one- and two-step story problems with unknown values in all positions. They discuss how they make sense of the problem and share their methods for solving.</p> <p>By now, students are expected to solve all types of story problems within 100, using methods and representations that make sense to them. They continue to make connections across representations, with a focus on equations and tape diagrams, which will be used frequently in grade 3.</p> <p>Students analyze stories and determine the types of questions that could be asked based on the provided information. Then, they write their own story problems based on images and their own experiences.</p> <div data-bbox="121 662 705 919" data-label="Diagram"> </div> <p><i>Write and solve a story problem the diagram could represent.</i></p> <p><b>Section Learning Goals</b></p> <ul style="list-style-type: none"> <li>• Represent and solve one- and two-step story problems within 100.</li> </ul>		
<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems</b>  <b>2.NS.4</b> I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9)  <b>2.NS.5</b> I can use my understanding of place value to subtract. (2.NBT.B.5, 7)</p> <p><b>Operations and Algebraic Thinking</b>  <b>2.OA.3</b> I can represent and solve problems involving addition and subtraction. (2.OA.A.1, 2.MD.B.5-6)</p>		<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <ol style="list-style-type: none"> <li>1. How do you represent and solve addition and subtraction story problems?</li> </ol> <ul style="list-style-type: none"> <li>• <b>We can identify different types of story problems - Add To, Take From, Put Together, Take Apart, Compare, and</b></li> </ul>

	<p><b>Result Unknown</b> to make sense of problems and help determine whether we will add or subtract. We can determine the unknown. Unknowns can be used in all positions. We can use tape diagrams to make sense of and represent the problem and show the unknown.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Story problems can be connected to diagrams.</li> <li>● Symbols can represent an unknown number.</li> <li>● Equations can represent story problems.</li> <li>● Tape diagrams can be used to visualize a story problem and find the unknown number</li> <li>● The relationship between addition and subtraction.</li> <li>● Different types of story problems (Add to, Take From, Put Together, Take Apart, Compare, Result Unknown).</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary</b></p> <p>Tape diagram  Unknown  Value  Three- Reads routine  Quantity  Compare</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Solve one-step story problems within 100.</li> <li>● Use tape diagrams and equations to represent different types of story problems within 100.</li> <li>● Interpret story problems and use diagrams and equations to represent the unknown quantities.</li> <li>● Represent and solve two-step story problems within 100.</li> <li>● Use representations to make sense of problems, support their calculations, and explain their thinking.</li> <li>● Ask mathematical questions and write story problems based on a given expression.</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <hr/> <p><b>Plan for Teacher Reflection:</b></p> <p><b>Lesson 9:</b> The standards suggest using the relationship between addition and subtraction as one way of solving problems. How do tape diagrams support students in seeing this relationship within a problem? How can you help students continue to</p>

make these connections?

**Lesson 10:** In grade 3, students will continue to see and use tape diagrams and number line diagrams. How can you support their understanding of these diagrams and help them choose representations that make sense to them?

**Lesson 11:**

Students have used tape diagrams to interpret different situations. How have these diagrams helped your students interpret story problems? How can you leverage the connections students make between story problems, diagrams, and equations when they solve problems in upcoming lessons?

**Lesson 12:** Which students had opportunities to share their math story problems and thinking during the whole-class discussion? How did you select these students?

**Lesson 13:** How did the gallery walk support continued learning and allow students to revise their thinking? What growth have you seen in your students this year in this area?

**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.

<b>Task Title: Topic 3 - Create and Solve Story Problems</b>	<b>Grade Level and Unit: Grade 2, Unit 9</b>
<b>Description of Tasks:</b> In this task students will solve the story problem they wrote in the previous lesson and make a poster to display their story problem. The poster should include the student’s thinking and reasoning to solve the problem. They should use pictures, diagrams, words, expressions, and the answer to the story problem question. Then students will take a gallery walk to see the story problem posters that their classmates created. They will have time to revise their own posters based on what they learned from the gallery walk.	<b>Purpose of Task:</b> The purpose of this task is for students to solve their own story problems and represent one or more ways to solve the problem. Then students will take a gallery walk to see the different story problem posters their classmates made. After the gallery walk, students have a chance to make revisions to their own posters. This could be making corrections, but it could also be adding new details or different representations based on what they learned from seeing the other posters. Students have opportunities to represent story problems and have a deeper understanding of the structure of a problem and the different types of story problems. This will help them better make sense of story problems.
<b>Background of Students/Learning Progression:</b> In previous units, students solved all the types of story problems including Add To, Take From, Put Together, and Compare with the unknown in all positions. They made sense of word problems using Three Reads and represented situations using tape diagrams. This task provides students with another opportunity to make sense of story problems. In grade 3 students will continue to use tape diagrams to make sense of one- and two- step word problems.	<b>Ensure all competencies are addressed in the task:</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, all competencies are addressed</li><li><input type="checkbox"/> No - Task needs modification</li></ul>
<b>Getting Started</b> In the lessons that make up Topic 2 Section C Unit 9, students will: <ul style="list-style-type: none"><li>● Represent and solve one- and two-step story problems within 100.</li></ul>	

Lesson 9 Warm Up - The purpose of this Number Talk is to elicit strategies and understandings students have for finding the value of differences when they may need to decompose a ten. When students consider how they can use known differences, like 10-6 or 14-6, to find the value of the other expressions, they look for and make use of structure and express regularity in repeated reasoning (MP7, MP8).

Launch  
Display one expression.

Find the value of each expression mentally.

- $10 - 6$
- $14 - 6$
- $54 - 6$
- $54 - 26$

“Give me a signal when you have an answer and can explain how you got it.”

Record answers and strategy.  
Keep expressions and work displayed.

Repeat with each expression.

**Section C**

IM Lesson	<a href="#">Lesson 9: Sort the Story Problems</a>	<a href="#">Lesson 10: What’s the Question?</a>	<a href="#">Lesson 11: All About Tape Diagrams</a>	<a href="#">Lesson 12: What’s the Story?</a>	<a href="#">Lesson 13: Let’s Solve Our Story Problems</a>
Learning Cycle Model	Making Meaning	Investigation	Investigation	Investigation	Create and Produce
Naugatuck Math Competency	2.NS.4 2.NS.5 2.OA.3	2.NS.4 2.NS.5 2.OA.3	2.NS.4 2.NS.5 2.OA.3	2.NS.4 2.NS.5 2.OA.3	2.NS.4 2.NS.5 2.OA.3

<b>Math Practice Standards</b>	MP2, MP7, MP8	MP2, MP4	MP2	MP2	MP2, MP8
<b>Lesson Purpose</b>	The purpose of this lesson is for students to compare, connect, and solve story problems.	The purpose of this lesson is for students to analyze a tape diagram and number line diagram and determine, in context, a question that could be answered based on each representation.	The purpose of this lesson is for students to make connections between story problems, equations, and tape diagrams.	The purpose of this lesson is for students to ask mathematical questions and write story problems based on a given expression.	The purpose of this lesson is for students to solve story problems and represent their thinking.
<b>Vocabulary Focus</b>	Add To Put Together Take From Compare		Tape Diagram		
<b>Lesson Materials/Resources</b>	<a href="#">Lesson 9 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Give each student a set of <a href="#">Card Sort Story Problems</a> cards.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>Cards from Activity 1</li> </ul>	<a href="#">Lesson 10 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>No additional materials</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>No additional materials</li> </ul>	<a href="#">Lesson 11 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Give each group a set of <a href="#">Represent Story Problem Cards</a>.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>No additional materials</li> </ul> <p><b>*Save story problems from this lesson for Lesson 12.</b></p>	<a href="#">Lesson 12 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Story problems from Lesson 11</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>Gather a see-through container with a collection of connecting cubes (or other math tool or object that might generate different math questions) to display in the launch.</li> </ul>	<a href="#">Lesson 13 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Give students materials to make posters.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>Display student posters on tables or walls.</li> <li>Give students access to sticky notes.</li> </ul>

	<a href="#">Cool-down: Book Donations</a>	<a href="#">Cool-down: Ask It and Answer It</a>	<a href="#">Cool-down: What's the Story?</a>	<ul style="list-style-type: none"> <li>• (Optional) Provide a copy of <a href="#">Story Photos</a> for each group of 2 students</li> </ul>	<a href="#">Cool-down: Represent Story Problems</a>
<b>Assessment</b>	<b>Formative Assessment Strategies: observation, questioning, student discourse : <a href="#">Monitoring Sheet</a>  <a href="#">End of Unit 9 Assessment</a>, <a href="#">End of Unit 9 Teacher Assessment Guide</a></b>				
<b>Centers Materials</b>	None	None	None	None	None

### Making Meaning

In Lesson 9, students sort a variety of story problems, including two-step problems, and choose a problem to solve. Students sort the story problems and describe the categories they create. They then choose to solve the story problems using a method that makes sense to them. This lesson can be used to assess how students think about and make sense of story problems and the methods and representations they are most comfortable using to solve them (MP2). In previous lessons, students solved all the types of story problems including Add To, Take From, Put Together, and Compare with the unknown in all positions.

Students work with story problems within 100 to reinforce the fluency expectation for grade 2.

#### Lesson 9: [Sort the Story Problems](#)

- The purpose of this lesson is for students to compare, connect, and solve story problems.
- [Lesson 9 Slides](#)
- [Teacher Presentation Materials](#)

#### Investigation:

In Lesson 10, students use given information to ask math questions and figure out what question was asked when presented with student work. Students interpret the context of a story and analyze tape diagrams to determine what question is being asked (MP2, MP4). Students then use a representation of their choice to answer a math question which they pose.

In Lesson 11, students match story problems with tape diagrams and equations and write stories based on a tape diagram (MP2). The words in each story need to be interpreted carefully in order to decide which equation is the best match. For most problems, there is a choice for students to make because the problems can be represented and solved with either addition or subtraction. Likewise, tape diagrams can often be interpreted in multiple ways, either as showing addition or showing subtraction. The lesson synthesis highlights how a tape diagram can help students make sense of a story problem and decide on a method to solve the problem.

In Lesson 12, students write story problems to match equations, ask mathematical questions based on pictures and about their environment, and write story problems based on their observations. The goal of the lesson synthesis is for students to discuss which story they liked the most of those that were shared.

**Lesson 10: [What's the Question?](#)**

- The purpose of this lesson is for students to analyze a tape diagram and number line diagram and determine, in context, a question that could be answered based on each representation.
- [Lesson 10 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 11: [All About Tape Diagrams](#)**

- The purpose of this lesson is for students to make connections between story problems, equations, and tape diagrams.
- [Lesson 11 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 12: [What's the Story?](#)**

- The purpose of this lesson is for students to ask mathematical questions and write story problems based on a given expression.
- [Lesson 12 Slides](#)
- [Teacher Presentation Materials](#)

**Create and Produce:**

**Lesson 13: [Let's Solve Our Story Problems](#)**

- The purpose of this lesson is for students to solve story problems and represent their thinking.
- [Lesson 13 Slides](#)
- [Teacher Presentation Materials](#)

In Lesson 13, students solve their story problems and represent their work for others to see. Students take a gallery walk to see and compare the different stories and representations. They have an opportunity to revise their posters after the gallery walk. Throughout the lesson, students

explain how they solved story problems and represented their thinking. Then they consider ways they can revise their explanations and representations for clarity (MP3, MP6).

In Activity 1, students solve their story problems and represent one or more ways to solve the problem (MP2). As students work, encourage them to find a different way to solve the problem or a different way to represent the problem once they have completed a solution.

In Activity 2, students see the different story problem posters their classmates made. After the gallery walk, students have a chance to make revisions to their own posters. This could be making corrections, but it could also be adding new details or different representations based on what they learned from seeing the other posters. Some students might need guidance with asking mathematical questions or leaving feedback using precise math language (MP3, MP6).

**Communicate: Activity 1**

“Today you are going to solve your story problem and then make a poster that shows your story problem and how you solved it.”

“If you have time, you can show different ways to solve the problem using pictures”

“Share your poster with your partner and make revisions if needed.”

**Present: Activity 2**

“What is something you read or saw that helped you understand the story problem?”

“What is something the writer could add or change to help make the problem more clear?”

“What is something you saw that made it clear how the problem was solved?”

“What is something that could be added or changed to make the writer’s method more clear?”

“What questions do you have about the story problem or the solution?”

“Walk around the room with your partner and look at the posters. Talk to your partner about what you notice and what you wonder.”

“Use your sticky notes to leave comments or questions about the stories and solutions, including things that helped you understand the problem and solutions and any other representations you might add to the poster.”

“Make revisions to your own poster based on what you saw and discussed.”

**Reflection:**

Activity 1:

“In the next activity, you are going to look at the posters and leave comments.”

“What are some things that you will look for when you look at the posters?” (Do I understand the story? Do I agree with the solution? Can I follow the thinking or reasoning?)

“What are some different ways you can show solutions to the problems?” (pictures of objects, base-ten pictures, diagrams, number line diagrams, expressions, equations)

“Keep an eye out for all of these representations and think about which ones you would choose if you were solving the problem.”

Activity 2:

“What did you change on your poster after seeing the other posters?” (Answers vary.)

“If you had time, what other changes or additions would you make?”

**Notes: Follow the lessons in numerical order.**

**Complete File with Resources and Task:**