

Course Title: Mathematics	Full Year	Required
<p>Course Description: The mathematical work for grade 1 is partitioned into 8 units:</p> <ol style="list-style-type: none"> 1. Adding, Subtracting, and Working with Data 2. Addition and Subtraction Story Problems 3. Adding and Subtracting within 20 4. Numbers to 99 5. Adding within 100 6. Length Measurements within 120 units 7. Geometry and Time 8. Putting it All Together <p>In these materials, particularly in units that focus on addition and subtraction, teachers will find terms that refer to problem types, such as Add To, Take From, Put Together or Take Apart, Compare, Result Unknown, and so on. These problem types are based on common addition and subtraction situations, as outlined in Table 1 of the Mathematics Glossary section of the Common Core State Standards.</p>		
<p>Additional Course Information:</p> <p>The big ideas in grade 1 include:</p> <ul style="list-style-type: none"> ● developing understanding of addition, subtraction, and strategies for addition and subtraction within 20 ● developing understanding of whole-number relationships and place value, including grouping in tens and ones ● developing understanding of linear measurement and measuring lengths as iterating length units ● reasoning about attributes of, and composing and decomposing geometric 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 Overview - FOCUS:

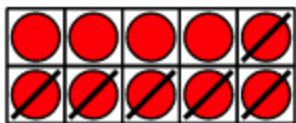
In this unit, students develop an understanding of 10 ones as a unit called “a ten” and use the structure of $10 + 2$ to add and subtract within 20.

Here, students decompose and recompose addends to find the sum of two or three numbers. For example, to find the value of $9 + 6$, they may decompose 6 into 1 and 5, compose the 1 and 9 into 10, and find $10 + 5$.

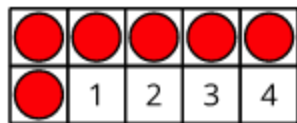
Subtraction work occurs throughout the unit and becomes the focus in the last section. Students consider taking away and counting on as methods for subtracting. They understand subtraction as an unknown-addend problem and use their knowledge of addition to find the difference of two numbers.

For instance, students may reason about the value of $10 - 6$ by:

Taking away 6 from 10



Counting on to 10, starting from 6



Using an addition fact,
 $6 + 4 = 10$

Students solve story problems throughout the unit and learn two new problem types—Add To, Start Unknown and Take From, Change Unknown. Students compare the structure of different types of story problems as they practice adding and subtracting within 20.

Topic Titles:

- Section A: Develop Fluency with Addition and Subtraction within 10
 - Sums I know
 - Relate counting to addition
 - Are the expressions equal?
 - Sums of 10
 - Find the difference
 - Story problems within 10
- Section B: Add and Subtract Using Ten as a Unit
 - Ten as a unit
 - Addition and subtraction with a 10
 - Add to and subtract from teen numbers
 - Story problems with teen numbers
- Section C: Add within 20
 - Solve story problems with three numbers
 - Add three numbers
 - Make 10 to add
 - Patterns in addition
 - Methods for addition within 20
- Section D: Subtract within 20
 - Subtract from teen numbers
 - Use a 10 to subtract

	<ul style="list-style-type: none"> ○ Relate counting to addition and subtraction ○ Solve story problems using addition and subtraction 	
<p>Coherence: How does this unit build on and connect to prior knowledge and learning?</p> <p>In Kindergarten, students composed and decomposed the numbers 11–19 into 10 ones and some more ones. In a previous unit, students solved story problems of all types with unknown values in all positions and numbers within 10. They used the relationship between addition and subtraction, drawings and equations, and various tools (10-frames, connecting cubes, two-color counters) to represent the quantities in the problems. They learned that the values represented by the numbers or expressions on each side of an equation are equal.</p>		
<p>Essential Questions:</p> <ol style="list-style-type: none"> 1. What strategies can we use to help us add and subtract numbers within 20? 2. How can we solve problems involving addition and subtraction? 	<p>Enduring Understanding:</p> <p>Counting strategies help us to add and subtract numbers within 20. We can add numbers by: relating counting to addition, counting on, making ten, and relating addition to subtraction. We can subtract numbers by: relating counting to subtraction, counting back, decomposing a number, and using related addition facts to subtract.</p> <p>We can solve addition and subtraction problems by using the commutative and associative properties. The commutative and associative properties allow us to think flexibly and efficiently about numbers and story problems.</p>	
<p>What Students Will Know:</p> <ul style="list-style-type: none"> ● Add within 10 using strategies ● Subtract within 10 using strategies ● Place value of two-digit numbers ● Count, read, and write whole numbers ● Add within 20 using strategies ● Subtract within 20 using strategies ● Represent and solve story problems involving addition and subtraction ● Solve story problems with three 	<p>What students will do:</p> <ul style="list-style-type: none"> ● I can add numbers within 10 using a variety of strategies: relating counting to addition, count on, making ten, relating addition to subtraction ● I can subtract numbers within 10 using a variety of strategies: relating counting to subtraction, counting back, decomposing a number, using related addition facts to subtract 	<p>Unit Specific Vocabulary:</p> <p>Sum Difference Count counter Addition addend Plus Equal Equal Sign</p>

<p>numbers</p> <ul style="list-style-type: none"> ● Add three numbers ● Make 10 to add ● Patterns in addition ● Subtract from teen numbers ● Use a ten to subtract ● Relate counting to addition and subtraction 	<ul style="list-style-type: none"> ● I can apply commutative and associative properties to add ● I can apply commutative and associative properties to subtract ● I can determine if equations are true or false ● I can solve equations with unknown in all positions ● I can recognize 10 as being a bundle of 10 ones, called a “ten.” ● I can explain that the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight or nine ones. ● I can read and write numerals from 0-20, and represent those numerals with objects. ● I can count down from a number higher than 10 but less than 20, using tools to help me keep track. ● I can add numbers within 20 using a variety of strategies: relating counting to addition, count on, making ten, relating addition to subtraction. ● I can subtract numbers within 20 using a variety of strategies: relating counting to subtraction, counting back, decomposing a number, using related addition facts to subtract. ● I can use addition and subtraction within 20 to solve word problems. ● I can apply strategies when solving word problems. ● I understand the meaning of the equal sign. ● I can fluently add within 10. ● I can apply the following strategies when solving: drawings, objects, equations. ● I can solve addition word problems with 3 	<p>equivalent Expressions Subtract Minus Unknown Represent Tally Related facts Addition table Strategy Method double 10-frame Value pattern True False compose Decompose Teen numbers</p>
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	<p>whole numbers whose sum is less than or equal to 20 using objects, drawings, or equations.</p> <ul style="list-style-type: none"> ● I can count forward beginning from a given number within 100. ● I can count down from 50. 	
<p>Entry Level Assessment and Connection to Unit: Develop Fluency with Addition and Subtraction within 10 (Section A Pre-Unit Practice Problems)</p> <p>Add and Subtract Using 10 as a Unit (Section B Pre-Unit Practice Problems)</p> <p>Add within 20 Practice Problem (Section C Pre-Unit Practice Problems)</p> <p>Subtract within 20 Practice Problem (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 ● Family Support Materials Unit 3 ● End of Unit 3 Assessment ● End of Unit 3 Assessment Teacher Guide 	
<p>Opportunities for Interdisciplinary Connections:</p>		
<p>Any links, attachments and resources:</p> <p>Instructional Routines Document</p> <p>Family Support Materials Unit 3</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 - Develop Fluency with Addition and Subtraction within 10	Duration: Recommended: 7 Lessons
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Topic Description:

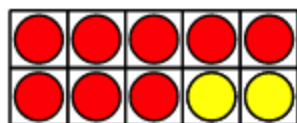
Section Learning Goals

- Build toward fluency with adding and subtracting within 10.

This section focuses on developing students’ fluency with addition and subtraction within 10. All but a few sums within 10 can be found by counting on by 1, 2, or 3, or by making a sum of 10, so being able to count on up to 3 and make 10 are helpful steps toward fluency. Students have a chance to self-assess the sums they know from memory and those they are still working on. (Fluency is not expected until the end of the school year).

Note that the term “sum” has so far been used to refer to a number—the total we have when adding two or more numbers. Here, the term is also used to refer to an addition expression like $5 + 4$ because it represents the sum of two quantities.

The 10-frame can help students visualize sums of 10. For example, this 10-frame may allow students to recall several related facts:



$$8 + 2 = 10$$

$$2 + 8 = 10$$

$$10 - 2 = 8$$

$$10 - 8 = 2$$

Changing one counter from red to yellow illustrates $7 + 3 = 10$, and changing a counter from yellow to red illustrates $9 + 1 = 10$. Seeing ways to make 10 will support students in later work of adding and subtracting within 20 and within 100.

Students are introduced to Add To, Start Unknown story problems. Because the starting number is unknown, students may find this challenging. Encourage them to act out the stories and apply what they have learned about adding within 10 to solve these problems.

<p>Competencies Addressed: 1.OA.A.1, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 1: I can add within 20 using strategies.</p> <p>Indicator 2: I can subtract within 20 using strategies.</p> <p>Indicator 3: I can represent and solve problems involving addition and subtraction.</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Question: What strategies can we use to help us add and subtract numbers within 20?</p> <p>How can we solve problems involving addition and subtraction?</p> <p>Enduring Understanding Counting strategies help us to add and subtract numbers within 20. We can add numbers by: relating counting to addition, counting on, making ten, and relating addition to subtraction. We can subtract numbers by: relating counting to subtraction, counting back, decomposing a number, and using related addition facts to subtract.</p> <p>We can solve addition and subtraction problems by using the commutative and associative properties. The commutative and associative properties allow us to think flexibly and efficiently about numbers and story problems.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> • Add within 10 using strategies • Subtract within 10 using strategies • Represent and solve problems involving addition and subtraction 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Sum Difference Count counter</p>

	<p>Addition addend Plus Equal Equal Sign Expressions Subtract Minus Unknown Represent Tally Related facts Addition table Strategy method 10-frame True false</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● I can add numbers within 10 using a variety of strategies: relating counting to addition, count on, making ten, relating addition to subtraction. ● I can subtract numbers within 10 using a variety of strategies: relating counting to subtraction, counting back, decomposing a number, using related addition facts to subtract. ● I can apply commutative and associative properties to add. ● I can apply commutative and associative properties to subtract. ● I can determine if equations are true or false. ● I can solve equations with the unknown in all positions. ● I can use addition and subtraction within 10 to solve word problems. ● I can apply strategies when solving word problems. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 1: Fluency is defined as being efficient, flexible, and accurate. How is this definition different than your previous understanding of fluency? How will it change the way you assess student fluency of addition and subtraction within 10?</p> <p>Lesson 2: How does understanding the commutative property benefit students as they build fluency with addition within 10?</p>

Lesson 3: It is common for students to think that the equal sign means that the answer comes next. What evidence have students given that they have a true understanding of the meaning of the equal sign? How might you adjust instruction to clarify this understanding?

Lesson 4: Reflect on how easily students found different ways to make 10 and which ways they know from memory. How prepared are students to make 10 in order to add within 20 in an upcoming section. In what other ways can you offer practice that will help prepare students for this work.

Lesson 5: Many students prefer addition to subtraction. How do the activities in this lesson help students see that addition and subtraction are related and that addition can be used to find the difference between two numbers?

Lesson 6: How effective were your questions in supporting students' thinking today? What did students say or do that showed they were effective?

Lesson 7: What do your students think it means to be good at math? How are you helping them change negative impressions they might have about their ability to reason mathematically?

Utilize additional strategies for Teacher Reflection:

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

Topic 1 (Section A) 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 (Section A) - Develop Fluency with Addition and Subtraction within 10	Grade Level and Unit: Grade 1, Unit 3
<p>Description of Task: Students choose from any stage of previously introduced centers.</p> <ul style="list-style-type: none">● Number Puzzles● Find the Pair● Compare <p>Students work in groups of 2 and will choose 2 different centers to work at for 10 minutes each that they have already learned.</p>	<p>Purpose of Task: The purpose of this task is for students to choose an activity to work on that focuses on addition and subtraction within 10.</p>
<p>Background of Students/Learning Progression: In a previous unit, students practiced adding and subtracting within 10, with an emphasis on adding or subtracting 1 and 2. They also considered the commutative property in the context of story problems. Students classify sums as “got it” or “not yet” depending on whether they know the sum quickly or not. There is not a specific time expectation for students to classify sums as “got it,” but class discussion allows students to consider what it means to “get” the sum. Students discuss ways of finding sums within ten that they don’t know yet.</p> <p>As students find sums, they may count on, know some sums from memory, apply the commutative property and use related sums. Students work towards the end-of-year fluency goal for grade 1 which requires demonstrating fluency for adding and subtracting within 10. Fluency is defined as being efficient, flexible, and accurate.</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:</p> <p>Lesson #1: Warm-Up ONLY: Notice and Wonder: Addition Table</p> <p>The purpose of this warm-up is to elicit the idea that there are many sums within 10, and students may already know many of these sums. This will be useful when students identify sums they know and don’t know in a later activity.</p>	

*For all routines, consider establishing a small, discreet hand signal that students can display to indicate they have an answer they can support with reasoning. This signal could be a thumbs-up, a certain number of fingers that tells the number of responses they have, or another subtle signal. This is a quick way to see if students have had enough time to think about the problem. It also keeps students from being distracted or rushed by hands being raised around the class.

Learning Cycle Model Process

Section A

IM Lesson	L1: Sums I Know	L2: Relate Counting to Addition	L3: Are the Expressions Equal?	L4: Sums of 10	L5: Find the Difference	L6: Story Problems within 10	L7: Center Day 1
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Investigate & Create and Produce
Naugatuck Math Competency	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2
Math Practice Standards		MP 6		MP 3, 6	MP 1, 3	MP 2, 3	
Lesson Purpose	The purpose of this lesson is for students to identify which sums within 10 they know and which they are still working on.	The purpose of this lesson is for students to understand and apply counting on and the commutative property in order to find the sum.	The purpose of this lesson is for students to identify expressions that are equal.	The purpose of this lesson is to build toward fluency within 10 by looking for and making use of patterns in sums that have a value of 10.	The purpose of this lesson is for students to develop fluency with subtraction within 10, using the relationship between addition and subtraction.	The purpose of this lesson is to introduce students to a new type of story problem, Add To, Start Unknown.	The purpose of this lesson is for students to practice adding within 10.
Teacher Facing Learning Goals	<ul style="list-style-type: none"> Add within 10. Identify known sums within 10. 	<ul style="list-style-type: none"> Understand and apply counting on as a method for addition. Understand and use the commutative property. 	<ul style="list-style-type: none"> Interpret equations with expressions on both sides of the equal sign. Understand and use the commutative property. 	Look for and make use of patterns in addition expressions that have a sum of 10.	Use the relationship between addition and subtraction to find differences within 10.	Solve Add To and Put Together story problems with unknowns in all positions.	Add within 10.

Vocabulary Focus							
Lesson Structure	<p>Warm-up: 10 min Notice & Wonder: Addition Table</p> <p>Activity 1: 15 min My Favorite Sum</p> <p>Activity 2: 25 min Sums I've Got</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: 2 or 3 More</p> <p>Activity 1: 15 min More Shake and Spill</p> <p>Activity 2: 10 min Are They Both Right?</p> <p>Activity 3: 10 min Practice Addition within 10</p> <p>Synthesis: 10 min</p> <p>Cooldown: 5 min</p>	<p>Warm-up: 10 min How Many Do You See? Sums within 10</p> <p>Activity 1: 20 min Sort Addition Expressions</p> <p>Activity 2: 15 min Are Both Sides Equal?</p> <p>Synthesis: 10 min</p> <p>Cooldown: 5 min</p>	<p>Warm-up: 10 min True or False Equations: Equal Equations</p> <p>Activity 1: 10 min Shake and Spill: 10 Counters</p> <p>Activity 2: 15 min All the Ways to Make 10</p> <p>Activity 3: 15 min Centers: Choice Time</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: Missing Value Within 10</p> <p>Activity 1: 15 min Different Ways to Find the Difference</p> <p>Activity 2: 10 min Subtraction Number Strings</p> <p>Activity 3: 10 min The Value of the Difference</p> <p>Synthesis: 10 min</p> <p>Cooldown: 5 min</p>	<p>Warm-up: 10 min Notice and Wonder: Han's Cup</p> <p>Activity 1: 15 min Shake and Spill Story Problem</p> <p>Activity 2: 20 min Shake and Spill Story Problems</p> <p>Synthesis: 10 min</p> <p>Cooldown: 5 min</p>	<p>Warm-up: 10 min Choral Counting: Beyond 40</p> <p>Activity 1: 15 min Introduce Compare, Add & Subtract within 10</p> <p>Activity 2: 25 min Centers: Choice Time</p> <p>Synthesis: 10 min</p>
Materials to Gather	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Bags (brown paper) • Bags or envelopes • Scissors 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters • Materials from a previous lesson • Two-color counters 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Materials from a previous lesson 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • 10-frames • Crayons • Cups • Materials from previous centers • Two-color counters 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • 10-frames • Connecting cubes or two-color counters 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Materials from previous centers
Lesson Materials/ Resources	<p>Lesson 1 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p>	<p>Lesson 2 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p>	<p>Lesson 3 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p>	<p>Lesson 4 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p>	<p>Lesson 5 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1, 2, and :</p>	<p>Lesson 6 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1 and 2:</p>	<p>Lesson 7 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p>

	<ul style="list-style-type: none"> No additional materials <p>Activity 2:</p> <ul style="list-style-type: none"> Gather envelopes, bag Give each student scissors and a set of Compare Stage 1 Addition Cards to 10. <p>Cooldown: Checkpoint</p>	<ul style="list-style-type: none"> Each group of 2 needs 10 two-color counters and access to 10-frames. Have one cup available to demonstrate Shake and Spill. <p>Activity 2:</p> <ul style="list-style-type: none"> Each group of 2 needs 10 two-color counters. <p>Activity 3:</p> <ul style="list-style-type: none"> Give students access to 10-frames and connecting cubes or two-color counters. <p>*Note:</p> <ul style="list-style-type: none"> Each student needs their addition expression cards from a previous lesson to use during the lesson synthesis. <p>Cooldown: How Does it Help?</p>	<ul style="list-style-type: none"> Each student needs their addition expression cards from a previous lesson. <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to connecting cubes or two-color counters. <p>Cooldown: Equal Expressions</p>	<ul style="list-style-type: none"> Give each group a cup, 10 two-color counters, and two Shake and Spill Stage 3 Recording Sheet Grade 1. <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to 10-frames, two-color counters, and yellow and red crayons. <p>Activity 3: Centers - see below</p> <p>Cooldown: Checkpoint</p>	<ul style="list-style-type: none"> Give each group a cup, 10 two-color counters <p>Cooldown: Subtraction within 10</p>	<ul style="list-style-type: none"> Give students access to 10-frames and connecting cubes and two-color counters. <p>Cooldown: How Many Counters?</p>	<ul style="list-style-type: none"> For each group of 2 create a set of Compare Stage 1 Addition Cards to 10 and Compare Stage 1 Subtraction Cards to 10. <p>Activity 2: Centers - see below</p> <p>Cooldown: Checkpoint</p>
Assessment	<p>Formative Assessment Strategies: observation, questioning, student discourse See Section A Checkpoint Assessment, Section A Checkpoint Teacher’s Guide</p>						

							Section A Practice Problems
Centers Materials				Number Puzzles, Stage 1 Check It Off, Stages 1 and 2 Find the Pair, Stage 2			Number Puzzles, Stage 1 Find the Pair, Stage 2 Compare, Stage 1

LESSON NOTES

Making Meaning:

[Lesson #1: Sums I Know](#)

Activity #1: My Favorite Sum

The purpose of this activity is for students to explore sums within 10. Students pick their favorite sum as an entry point to the next activity in which students sort the sums into those they know and those they don't yet know. In this activity, students may choose any sum within 10 that they like.

Activity #2: Sums I've Got

The purpose of this activity is for students to identify which sums within 10 they know and which they don't know yet. Sums that students know from memory or that they have a quick mental method for should be categorized as "got it." Consider giving each student two bags or envelopes to keep their cards separated for ease of practice. Label one bag "Got It" and the other "Not Yet." As students know more sums from memory, they can move them to the "Got It" bag.

- [Teacher presentation materials](#): Bags or envelopes, scissors, Materials to Copy: Compare Stage 1 Addition Cards to 10
- [Slides](#)

[Lesson #2: Relate Counting to Addition](#)

- Warm-Up: Number Talk: 2 or 3 More
- [Activity #1: More Shake and Spill](#)

The purpose of this activity is for students to solve Put Together, Total Unknown story problems through a context they are familiar with—the game Shake and Spill. To launch the lesson, the teacher plays a round of the game with students and reminds students to draw a box around the number in the equation that answers the question.

- Activity #2: Are They Both Right?

The purpose of this activity is for students to analyze representations of the work of two students who counted on. Each student chose a different addend to count on from, which illustrates the commutative property. Methods are represented and students are asked to explain why both methods are correct using precise mathematical language (MP6).

- Activity #3: Practice Addition within 10

The purpose of this activity is for students to find the value of sums within 10. Students may apply what they learned about the commutative property and counting on. They may count on for certain equations, such as or equations as they can keep track easily, but count all for others. In the lesson synthesis, students return to the addition expressions cards they created in a previous lesson.

- [Teacher presentation materials](#): 10 Frames, Two-color counters, connecting cubes
- [Slides](#)

Lesson #3: Are the Expressions Equal?

- Warm-Up: How Many Do You See? Sums within 10

- Activity #1: Sort Addition Expressions

The purpose of this activity is for students to sort addition expressions by their value. Students find the value of each sum on their own and share their method with a partner, moving students towards fluency.

- Activity #2: Are Both Sides Equal?

The purpose of this activity is for students to determine whether equations are true or false. Students may use a combination of computation and reasoning about the commutative property to determine whether each equation is true or false. The synthesis focuses on how students can use the structure of the expressions to determine if they are equal without finding their values (MP7).

- [Teacher presentation materials](#): Materials from a previous lesson, connecting cubes or two-color counters
- [Slides](#)

Lesson #4: Sums of 10

- Warm-Up: True or False: Equal Expressions

- Activity #1: Shake and Spill: 10 Counters

The purpose of this activity is for students to decompose 10 in different ways through a familiar game, Shake and Spill. During the synthesis, the teacher records equations that students found during the activity, and students make connections between equations.

- Activity #2: All the Ways to Make 10

The purpose of this activity is for students to justify that they have found all the ways to make 10. Students are given access to 10-frames and two-color counters to construct their argument (MP3). Students notice that there are patterns in the numbers in the expressions and how the addends change.

- [Teacher presentation materials](#): cups, two-color counters, Materials to Copy: Shake & Spill Stage 3 Recording Sheet Grade 1, 10 Frames, crayons, materials from previous centers
- [Slides](#)

Lesson #5: Find the Difference

- Warm-Up: Number Talk: Missing Value Within 10
- [Activity #1: Different Ways to Find the Difference](#)

In this activity, students analyze three different ways to subtract. They see that taking away is one way to find the difference, but that you can also count on or use known addition facts. Students further solidify their understanding that addition and subtraction are related, which sets the groundwork for a later activity when students solve subtraction problems within 10.

- [Activity #2: Subtraction Number Strings](#)

The purpose of this activity is for students to identify patterns when subtracting (MP7). Students have access to connecting cubes and two-color counters to make sense of the problems and explain their thinking (MP1).

- [Activity #3: The Value of the Difference](#)

The purpose of this activity is for students to find the value of differences within 10. Students are encouraged to think about how patterns in subtraction problems and knowing sums within 10 can help them find the value of the differences.

- [Teacher presentation materials](#): connecting cubes or two-color counters
- [Slides](#)

Lesson #6: Story Problems within 10

- Warm-Up: Notice and Wonder: Han's Cup
- [Activity #1: A Shake and Spill Story Problem](#)

In this activity students solve a new type of story problem—Add To, Start Unknown. Students represent and solve it in any way that makes sense to them.

- [Activity #2: Shake and Spill Story Problems](#)

The purpose of this activity is for students to solve various Add To/Take From and Put Together problems with the unknown in all positions. Problems are presented through the familiar Shake and Spill context and all sums are within 10 so students can attend to making sense of each problem. Students use the commutative property, count on, take away or use known sums. When students connect the quantities in the story problem to an equation, they reason abstractly and quantitatively (MP2).

- [Teacher presentation materials](#): 10-frames, connecting cubes or two-color counters
- [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 Teacher Instructions](#)

[Checkpoint A Table](#)

Investigate:

[Lesson #7: Center Day 1: Choral Counting: Beyond 40 Warm-UP](#)

The purpose of this Choral Count is to invite students to practice counting forward by 1 and notice patterns in the count. These understandings help students develop fluency and will be helpful later in this lesson when students may count on to add.

When students notice patterns such as the 0–9 pattern in the ones place, as well as the pattern in the tens place they are making use of the base-ten structure (MP7).

[Lesson #7: Center Day 1: Introduce Compare, Add and Subtract within 10 Activity #1](#)

The purpose of this activity is for students to learn a new center called Compare. Both partners flip over a card with an addition or subtraction expression within 10. The partner whose card has the greater value takes both cards. The game is over when each partner runs out of cards to flip over. The partner with the most cards wins.

- [Teacher presentation materials](#): connecting cubes or two-color counters, Materials to copy: Compare stage 1 addition cards to 10, Compare Stage 1 Subtraction cards to 10
- [Slides](#)

Create and Produce:

The purpose of [Lesson 7, Activity 2 \(Choice Time\)](#) is for students to choose an activity to work on that focuses on addition and subtraction within 10. Students choose from any stage of previously introduced centers.

- Number Puzzles
- Find the Pair
- Compare

After completing the center, students will create a way to present their understanding through words, drawings, written work, and/or visuals.

Communicate and Present:

From Lesson 7, Activity 2

Reflection:

Lesson 7, Reflection:

“Today we learned a new game that we can play during

<p>Students can share what they produced in Lesson 7, Activity 2.</p> <p>Reflection: “What is one thing you learned or got better at by working on the activity you chose?”</p>	<p>center time.”</p> <p>“How did you and your partner work together during centers? What went well? What can we continue to work on?”</p>
<p>Notes:</p>	<p>Complete File with Resources and Task:</p> <p>Task-Based Learning Plan Format for Unit 3 Topic 1</p>

Topic # 2 (Section B)	Topic Name: Section B - Add and Subtract using Ten as a Unit	Duration: Recommended: 7 lessons
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Topic Description:

Section Learning Goals

- Add and subtract one-digit numbers from teen numbers without composing or decomposing a ten.
- Find the value that makes an addition or subtraction equation true, involving 10.
- Understand 10 ones as a ten and the numbers 11 to 19 as a ten and some ones.

In this section, students begin exploring the structure of the base-ten system and the idea of place value as they work with teen numbers.

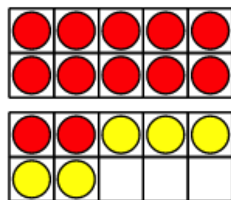
Students see that a new unit, a ten, is composed from 10 ones, and that teen numbers are composed of 1 unit of ten plus some number of ones. Double 10-frames are used here as they encourage students to see this structure (MP7).

Unlike in connecting cube towers, where identifying a unit of ten means counting individual cubes, the unit of ten—and whether it is complete—is evident in double 10-frames.



The structure of teen numbers and double 10-frames help students add and subtract teen numbers.

Here students work only with expressions that do not require composing or decomposing a ten, for example, $13 - 2$ and $12 + 5$. They notice that the unit of ten doesn't change and relate the sum to the adding or subtracting of ones.



Students encounter a new problem type—Take From, Change Unknown—in which the number that needs to be subtracted to get a difference is unknown. Encourage students to act out the story problems or to use double 10-frames and counters to make sense of them.

While they are not expected to write equations that match the action in a story, students do write equations that they may use to solve problems and explain how their equations relate to the stories. In doing so, they reason quantitatively and abstractly (MP2).

Competencies Addressed:

1.NBT.A.1, 1.NBT.B.2.a, 1.NBT.B.2.b, 1.OA.A.1, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8

Understanding and Applying Number Systems

Indicator 1: I understand place value of two-digit numbers.

Indicator 2: I can count, read, and write whole numbers.

Operations and Algebraic Thinking

Indicator 1: I can add within 20 using strategies.

Indicator 2: I can subtract within 20 using strategies.

Indicator 3: I can represent and solve problems involving addition and subtraction.

Essential Question and Enduring Understanding Addressed in this Topic:

Essential Question:

What strategies can we use to help us add and subtract numbers within 20?

How can we solve problems involving addition and subtraction?

Enduring Understanding

Counting strategies help us to add and subtract numbers within 20. We can add numbers by: relating counting to addition, counting on, making ten, and relating addition to subtraction. We can subtract numbers by: relating counting to subtraction, counting back, decomposing a number, and using related addition facts to subtract.

We can solve addition and subtraction problems by using the commutative and

	<p>associative properties. The commutative and associative properties allow us to think flexibly and efficiently about numbers and story problems.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Place value of two-digit numbers ● Count, read, and write whole numbers ● Add within 20 using strategies ● Subtract within 20 using strategies ● Represent and solve problems involving addition and subtraction 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p> <p>Sum Difference Count counter Addition addend Plus Equal Equal Sign Expressions Subtract Minus Unknown Represent Tally Related facts Addition table Strategy method 10-frame compose Decompose Teen numbers True false</p>

In this Topic, students will be able to:

- I can recognize 10 as being a bundle of 10 ones, called a “ten.”
- I can explain that the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight or nine ones.
- I can read and write numerals from 0-20, and represent those numerals with objects.
- I can count down from a number higher than 10 but less than 20, using tools to help me keep track.
- I can add numbers within 20 using a variety of strategies: relating counting to addition, count on, making ten, relating addition to subtraction.
- I can subtract numbers within 20 using a variety of strategies: relating counting to subtraction, counting back, decomposing a number, using related addition facts to subtract.
- I can apply commutative and associative properties to add.
- I can apply commutative and associative properties to subtract.
- I can determine if equations are true or false.
- I can solve equations with the unknown in all positions.
- I can use addition and subtraction within 20 to solve word problems.
- I can apply strategies when solving word problems.

Plan for Student Reflection:

[Student Journal Prompts and Reflection Practices](#)

Plan for Teacher Reflection:

Lesson 8: Which students had opportunities to share their representations and thinking during whole-class discussion? How did you select these students?

Lesson 9: What methods are students using when they build teen numbers: concrete objects on a 10-frame, drawings, numbers? How do these methods reflect their developing understanding of the unit ten?

Lesson 10: How did the student work you selected impact the direction of the discussion? What student work might you pick next time if you taught the lesson again?

Lesson 11: What aspects of today’s lesson allowed each of your students to see themselves as productive mathematical reasoners?

Lesson 12: What connections did students make between the different methods shared? What questions did you ask to help make the connections more visible?

Lesson 13: Think about who volunteered to share their thinking with the class today. Are the same students always volunteering, while some students never offer to share? What can you do to help the

class understand the value of hearing the ideas of every mathematician?

Lesson 14: Identify something you thought was going to go well in math class recently, but did not. What can you do to make it a success next time?

Utilize additional strategies for Teacher Reflection:

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

Topic 2 (Section B) 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 (Section B)- Add and Subtract Using 10 as a Unit	Grade Level and Unit: Grade 1, Unit
<p>Description of Task: The purpose of Lesson 14, Activity 2 (Choice Time) is for students to choose from activities that focus on adding and subtracting within 20. Students choose from any stage of previously introduced centers.</p> <ul style="list-style-type: none">● Number Puzzles● Shake and Spill● Compare <p>After completing the center, students will create a way to present their understanding through words, drawings, written work, and/or visuals.</p>	<p>Purpose of Task: The purpose of this task is for students to choose from activities that focus on adding and subtracting within 20.</p>
<p>Background of Students/Learning Progression: In previous lessons, students added and subtracted within 20 with teen numbers that did not require composing or decomposing a ten. They used counting on, take away, the $10 + n$ structure of teen numbers, and the relationship between subtraction and addition. Additionally, students solved a new type of story problem - Take From, Change Unknown. Students use methods that make sense to them and then make connections between methods.</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:</p> <p>Lesson #8: Warm-Up ONLY: Which One Doesn't Belong: Groups of 10</p> <p>This warm-up prompts students to compare four images. It gives students a reason to use language precisely (MP6). It provides an opportunity for the teacher to hear how students use mathematical language to describe characteristics of the items in comparison to one another.</p> <p>Launch:</p> <ul style="list-style-type: none">● Groups of 2● Display the image.	

- “Pick one that doesn’t belong. Be ready to share why it doesn’t belong.”
- 1 minute: quiet think time

Activity:

- “Discuss your thinking with your partner.”
- 2–3 minutes: partner discussion
- Share and record responses.

Sample responses:

- A doesn’t belong because it isn’t organized.
- B doesn’t belong because there are not 10.
- C doesn’t belong because all the things are connected.
- D doesn’t belong because it has two colors; it isn’t all red.

Synthesis:

- “Let’s find at least one reason why each one doesn’t belong.”

Learning Cycle Model Process

Section B

IM Lesson	L8: Ten as a Unit	L9: Addition With a Ten	L10: Addition and Subtraction with a Ten	L11: Add to a Teen Number	L12: Subtract From a Teen Number	L13: More Story Problems with Teen Numbers	L14: Center Day 2
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Investigate & Create and Produce
Naugatuck Math Competency	Addressing 1.NS.1	Addressing 1.NS.1, 1.OA.1, 1.OA.2	Addressing 1.NS.1, 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.NS.2, 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2
Math Practice Standards		MP 8	MP 2, 4, 5	MP 1, 8	MP 1	MP 2	
Lesson Purpose	The purpose of this lesson is for students to	The purpose of this lesson is for students to	The purpose of this lesson is for students to find	The purpose of this lesson is for students to add	The purpose of this lesson is for students to add	The purpose of this lesson is for students to solve	The purpose of this lesson is for students to

	understand that 10 ones make a unit called a ten. Students compose and decompose teen numbers with a ten and some ones.	deepen their understanding that teen numbers are composed of a ten and some ones, and to find the value that makes an addition equation true when one addend is 10.	the value that makes an equation true when one value is a teen number and one is a ten.	within 20 when one addend is a teen number.	and subtract within 20 without composing or decomposing a ten.	Take From, Result or Change Unknown story problems.	practice adding and subtracting within 20.
Teacher Facing Learning Goals	<ul style="list-style-type: none"> • Compose and decompose teen numbers into 1 ten and some number of ones. • Understand 10 ones as a unit called a ten. 	<ul style="list-style-type: none"> • Compose and decompose teen numbers into 1 ten and some number of ones. • Find the value that makes an addition equation true, where one addend is 10. 	<ul style="list-style-type: none"> • Find the value that makes an equation true where the total is a teen number. • Use the relationship between addition and subtraction to find missing values. 	Add within 20 when one addend is a teen number.	Add and subtract single-digit numbers from teen numbers without composing or decomposing a ten.	Solve Take From, Result or Change Unknown story problems.	Add and subtract within 20.
Vocabulary Focus	Teen Number						
Lesson Structure	<p>Warm-up: 10 min Which One Doesn't Belong: Groups of 10</p> <p>Activity 1: 20 min Counting Collections: Count and Show How Many</p> <p>Activity 2: 15 min Building Teen Numbers</p> <p>Synthesis: 10 min Cooldown: 5 min</p>	<p>Warm-up: 10 min Notice and Wonder: Teen Numbers</p> <p>Activity 1: 20 min Make It: Teen Numbers and 10-Frames</p> <p>Activity 2: 15 min Equations With a Ten</p> <p>Synthesis: 10 min Cooldown: 5 min</p>	<p>Warm-up: 10 min Number Talk: A Ten and Some Ones</p> <p>Activity 1: 20 min Story Problems With a Ten</p> <p>Activity 2: 15 min Related Equations</p> <p>Synthesis: 10 min Cooldown: 5 min</p>	<p>Warm-up: 10 min True or False: Teen Numbers</p> <p>Activity 1: 10 min Rock Collection</p> <p>Activity 2: 10 min Write Equations: Adding on to Teen Numbers</p> <p>Activity 3: 20 min Centers: Choice Time</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Choral Count: By Ten</p> <p>Activity 1: 15 min Noah's Collection</p> <p>Activity 2: 10 min Addition & Subtraction Equations with Teen Numbers</p> <p>Activity 3: 15 min Introduce Shake and Spill, Cover (up to 20)</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: Add Ones</p> <p>Activity 1: 15 min Sitting or Standing</p> <p>Activity 2: 10 min Solve Story Problems and Compare Methods</p> <p>Activity 3: 15 min Centers: Choice Time</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min True or False: Expressions on Both Sides</p> <p>Activity 1: 15 min Introduce Number Puzzles, Within 20</p> <p>Activity 2: 25 min Centers: Choice Time</p> <p>Synthesis: 10 min</p>

Materials to Gather	Materials to Gather	Materials to Gather	Materials to Gather	Materials to Gather	Materials to Gather	Materials to Gather	Materials to Gather
<p>Lesson Materials/ Resources</p>	<p>Lesson 8 Slides Teacher Materials Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Each group of 2 needs a bag of 16 single connecting cubes and access to 10-frames. Each group needs a copy of Counting Collections Stages 1 and 2 Recording Sheet <p>Activity 2:</p> <ul style="list-style-type: none"> Students need access to connecting cubes <p>Cooldown: How</p>	<p>Lesson 9 Slides Teacher Materials Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Give each group a set of Number Cards 11-20, a Double 10-Frame - Standard, and access to at least 20 connecting cubes or two-color counters. <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to double 10-frames and connecting cubes or two-color 	<p>Lesson 10 Slides Teacher Materials Student Pages</p> <p>Activity 1 and 2:</p> <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. <p>Cooldown: What's Missing?</p>	<p>Lesson 11 Slides Teacher Materials Student Pages</p> <p>Activity 1 and 2:</p> <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. <p>Activity 3: Centers - see below</p> <p>Cooldown: Checkpoint</p>	<p>Lesson 12 Slides Teacher Materials Student Pages</p> <p>Activity 1 and 2:</p> <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. <p>Activity 3:</p> <ul style="list-style-type: none"> Give each group a cup, two-color counters, and Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2). <p>Cooldown:</p>	<p>Lesson 13 Slides Teacher Materials Student Pages</p> <p>Activity 1 and 2:</p> <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. <p>Activity 3: Centers - see below</p> <p>Cooldown: Checkpoint</p>	<p>Lesson 14 Slides Teacher Materials Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Each group of 2 needs one set of Number Puzzle Digit Cards from stage 1 of this center and a copy of Number Puzzles Addition and Subtraction Stage 2 Gameboard <p>Activity 2: Centers - see below</p> <p>Cooldown: Checkpoint</p>

	Many Counting Cubes?	counters. Cooldown: Missing Number			Checkpoint		
Assessment	Formative Assessment Strategies: observation, questioning, student discourse See Section B Checkpoint Assessment , Section B Checkpoint Teacher's Guide						
							Section B Practice Problems
Centers Materials				Compare, Stage 1 Number Puzzles, Stage 1 Find the Pair, Stage 2		Shake and Spill, Stages 3-5 Compare, Stage 1 Number Puzzles, Stage 1	Number Puzzles, Stages 1 and 2 Shake and Spill, Stages 3-5 Compare, Stage 1

Making Meaning:

[Lesson #8: Ten as a Unit](#)

- [Activity #1: Counting Collections: Count and Show How Many](#)
The purpose of this activity is for students to count a collection of objects and show on paper how many there are so that others can understand how they counted. This collection of objects is a teen number of connecting cubes to encourage students to unitize a ten (MP7).
- [Activity #2: Building Teen Numbers](#)
The purpose of this activity is for students to compose a teen number as one ten and some ones.
- [Teacher presentation materials](#): 10-frames, bags, connecting cubes, Materials to copy: Counting collections stages 1 and 2 recording sheet
- [Slides](#)

[Lesson #9: Addition with a 10](#)

- Warm-Up: Notice and Wonder: Teen Numbers
- [Activity #1: Make It: Teen Numbers and 10-Frames](#)

The purpose of this activity is for students to continue to explore teen numbers as 1 ten and some ones, using a new version of a familiar tool, the double 10-frame.

- Activity #2: Equations with a Ten

The purpose of this activity is for students to determine the value that makes addition equations true. The numbers in the equations all use the relationship between 1 ten and some ones and teen numbers. Students find the value that makes the equation true with one addend or the total unknown. This will help when students solve story problems with the unknown value in different positions in a later lesson.

- [Teacher presentation materials](#): connecting cubes or two-color counters, Materials to Copy: Double 10-frame standard, Number cards 11-20
- [Slides](#)

Lesson #10: Addition and Subtraction with a Ten

- Warm-Up: Number Talk: A Ten and Some Ones

- Activity #1: Story Problems with a Ten

The purpose of this activity is to elicit methods students have for solving story problems involving addition and subtraction with teen numbers.

- Activity #2: Related Equations

The purpose of this activity is for students to discuss the relationship between addition and subtraction equations involving teen numbers. Students find the value that makes the addition and subtraction equations true with the unknown in all positions. Students may choose to use objects to represent the problems and find the value that makes the equation true (MP5).

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames
- [Slides](#)

Lesson #11: Add to a Teen Number

- Warm-Up: True or False: Teen Numbers

- Activity #1: Rock Collection

The purpose of this activity is to elicit and discuss methods for adding a one-digit number to a teen number, within 20

- Activity #2: Write Equations: Adding on to Teen Numbers

The purpose of this activity is for students to add a one-digit number to a teen number. All of the totals are within 20.

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, Materials from previous centers
- [Slides](#)

Lesson #12: Subtract From a Teen Number

- Warm-Up: Choral Count: By Ten

- Activity #1: Noah's Collection

The purpose of this activity is for students to solve a Take From, Result Unknown story problem in which the minuend is in the teens. Students solve using any method that makes sense to them, which could include using double 10-frames, connecting cubes, or drawings, and counting back or counting on (MP1).

- [Activity #2: Addition and Subtraction Equations with Teen Numbers](#)

The purpose of this activity is for students to find the value that makes the addition and subtraction equations true using methods that make sense to them. Each equation has a total within 20 and one part that is a teen number.

- [Activity #3: Introduce Shake and Spill, Cover](#)

The purpose of this activity is for students to learn stage 5 of the Shake and Spill center.

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, cups, Materials to copy: Shake & Spill Stage 4 and 5 recording sheet (G1 and 2)
- [Slides](#)

[Lesson #13: More Story Problems with Teen Numbers](#)

- Warm-Up: Number Talk: Add Ones

- [Activity #1: Sitting of Standing](#)

The purpose of this activity is for students to solve a Take From, Change Unknown story problem using a method that makes sense to them. This is a challenging problem type for students because the amount that students are taking away or counting on is the unknown.

- [Activity #2: Solve Story Problems and Compare Methods](#)

The purpose of the lesson is for students to solve a Take From, Result Unknown and a Take From, Change Unknown story problem. The story problems have the same numbers, which include a teen number, so that the focus can be on the structure of the story problems and the equations.

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, materials from previous centers
- [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 Teacher Instructions](#)

[Checkpoint B Table](#)

Investigate:

[Lesson #14: Center Day 2: True or False: Expressions on Both Sides Warm-UP](#)

The purpose of this True or False is to elicit strategies students have for determining whether two expressions have the same value. Students may find the value of each expression, or they may reason about the numbers on each side of the equal sign. This will also be helpful later when students compare addition expressions.

Lesson #14: Center Day 2: Introduce Number Puzzles, Within 20 Activity #1

The purpose of this activity is for students to learn stage 2 of the Number Puzzles center. Students work together to use digit cards to make addition and subtraction equations within 20 true. Each digit card may only be used one time on a page.

- [Teacher presentation materials](#): Materials from previous centers, Materials to copy: Number puzzles Addition and Subtraction Stage 2 gameboard
- [Slides](#)

Create and Produce:

The purpose of [Lesson 14, Activity 2 \(Choice Time\)](#) is for students to choose from activities that focus on adding and subtracting within 20. Students choose from any stage of previously introduced centers.

- Number Puzzles
- Shake and Spill
- Compare

After completing the center, students will create a way to present their understanding through words, drawings, written work, and/or visuals.

Communicate and Present:

From Lesson 14, Activity 2

Students can share what they produced in Lesson 14, Activity 2.

In the synthesis, students discuss which method they use most often to add within 20 and why they use that method the most.

Reflection:

From Lesson 14, Activity 2

“Today we learned a new game that we can play during center time.”

“How did you and your partner work together during centers? What went well? What can we continue to work on?”

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

[Task-Based Learning Plan Format for Unit 3 Topic 2](#)

Topic # 3 (Section C)	Topic Name: Section C - Add within 20	Duration: Recommended: 7 Lessons
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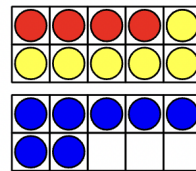
Topic Description:

Section Learning Goals

- Add within 20, including three addends.

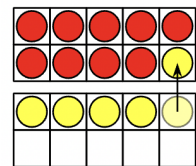
In this section, students explore the idea of composing and decomposing numbers to add up to three addends within 20. They make use of the base-ten structure and the commutative and associative properties (collectively referred to as the “add in any order” property throughout the materials) when adding, and discover the usefulness of grouping numbers to make a sum of 10 (or a unit of ten).

For instance, to find the value of $4 + 7 + 6$, they can rearrange the addends to group 4 and 6, which makes 10, and add the 7.



$$\begin{aligned}
 &4 + 7 + 6 \\
 &4 + 6 + 7 \\
 &10 + 7 \\
 &17
 \end{aligned}$$

Making a ten is also helpful when finding the sum of two addends. For example, to find the value of $9 + 5$, students can take 1 from the 5 and group it with the 9 to make 10, and then add the 4.



$$\begin{aligned}
 &9 + 5 \\
 &9 + 1 + 4 \\
 &10 + 4 \\
 &14
 \end{aligned}$$

Although this section focuses on making a ten, students may use other facts they know to find sums. For example, given $7 + 8$, students who know the value of $7 + 7$ may think of it as $7 + 7 + 1$.

<p>Competencies Addressed: 1.OA.A.1, 1.OA.A.2, 1.OA.B.3, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 1: I can add within 20 using strategies.</p> <p>Indicator 3: I can represent and solve problems involving addition and subtraction.</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Questions: What strategies can we use to help us add and subtract numbers within 20?</p> <p>How can we solve problems involving addition and subtraction?</p> <p>Enduring Understanding Counting strategies help us to add and subtract numbers within 20. We can add numbers by: relating counting to addition, counting on, making ten, and relating addition to subtraction. We can subtract numbers by: relating counting to subtraction, counting back, decomposing a number, and using related addition facts to subtract.</p> <p>We can solve addition and subtraction problems by using the commutative and associative properties. The commutative and associative properties allow us to think flexibly and efficiently about numbers and story problems.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Solve story problems with three numbers ● Add three numbers ● Make 10 to add ● Patterns in addition 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Addend sum Equation</p>

<ul style="list-style-type: none"> ● Strategies for addition within 20 	<p>Strategy method 10-frame double Represent Related facts Equal Equivalent expression Value Pattern True false</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● I understand the meaning of the equal sign. ● I can add numbers within 20 by making a 10. ● I can determine if equations are true or false. ● I can solve equations with unknowns in all positions. ● I can fluently add within 10. ● I can use addition within 20 to solve word problems. ● I can apply the following strategies when solving: drawings, objects, equations. ● I can solve addition word problems with 3 whole numbers whose sum is less than or equal to 20 using objects, drawings, or equations. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 15: How did introducing Louis Agassiz Fuertes and his bird paintings support students as they engaged in story problems about birds? Why is it important for students to experience real-world contexts in math?</p> <p>Lesson 16: Think about a time you recently made a mistake during math class. How did you leverage your mistake to show students that mistakes are just learning in process?</p> <p>Lesson 17: What was the best question you asked students today? Why would you consider it the best one based on what students said or did?</p>

Lesson 18: As students worked in their small groups today, whose ideas were heard, valued, and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are a part of the collective learning?

Lesson 19: What methods are students using to find sums? Which methods were you expecting and which surprised you?

Lesson 20: What student thinking was made visible through representations and discussion today? What thinking was still invisible? How might you make that thinking visible in future lessons?

Lesson 21: What methods are students using to add three numbers? What questions have you asked to encourage them to make a ten?

Utilize additional strategies for Teacher Reflection:

- Reviewing formative assessments
- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups
- Teacher Reflection Prompts in Teacher Guides

Topic 3 (Section C) Task Development

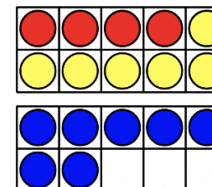
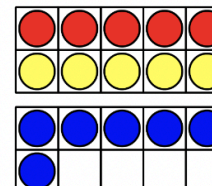
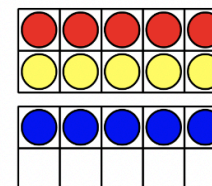
Each Topic has its own Task that serves as a roadmap for instruction during the unit. The task follows the [Learning Cycle Model](#) that drives teaching and learning in Naugatuck Public Schools.

Task Title: Topic 3 (Section C)- Add within 20	Grade Level and Unit: Grade 1, Unit
Description of Task: In this activity students solve three-addend story problems within 20. Students use methods and representations that make sense to them. Students work in groups of 2 and have access to double 10-frames and connecting cubes or two-color counters. When students connect the quantities in the story to an equation, they reason abstractly and quantitatively (MP2). They think strategically and may either choose to use a double 10-frame or decompose and compose the numbers in a way that helps them see the sum as 10 and some ones (MP1, MP5).	Purpose of Task: The purpose of this task is for students to solve story problems with three addends.
Background of Students/Learning Progression: In previous lessons, students decomposed an addend in order to make a ten and thought about sums as equivalent $10 + n$ expressions. They applied the commutative and associative properties to find the sum more easily. Students looked for and used patterns in addition expressions (such as $4 + 8 = 5 + 7$). Students analyzed addition methods for adding within 20 and used methods flexibly to find sums based on the numbers given in an expression.	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 #15: Warm-Up ONLY: How Many Do You See: 10 Frames The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. Two-color counters are arranged on 10-frames so that students might notice there are three addends in the problem. Launch: <ul style="list-style-type: none">● Groups of 2● “How many do you see? How do you see them?”	

- Flash the image.
- 30 seconds: quiet think time

Activity:

- Display the image.
- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Record responses.
- Repeat for each image.



Student Response (Sample responses):

- 15: I see a full 10-frame and 5 more.
- 16: I see 5 and 5 is 10, and 6 more is 16.
- 17: I see a group of 10 and 7 more.

Synthesis:

- “What equation could I write for each image?”
- If needed, “How can I write an equation that shows the number of each color of counters?”
($10 + 5 = 15$, $5 + 5 + 5 = 15$)

Learning Cycle Model Process

Section C

IM Lesson	L15: Solve Story Problems with Three Numbers	L16: Add Three Numbers	L17: Make 10 to Add	L18: Patterns in Addition	L19: Methods for Addition Within 20	L20: A Trip to the Zoo	L21: Center Day 3
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Investigate & Create and Produce
Naugatuck Math Competency	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2

Math Practice Standards	MP 1, 5, 7		MP 7, 8		MP 3	MP 1, 2, 5	
Lesson Purpose	The purpose of this lesson is for students to solve story problems with three addends, two of which make a ten, in a way that makes sense to them.	The purpose of this lesson is for students to apply the commutative and associative properties in order to make a ten when adding three numbers within 20, and make sense of equations with addition expressions on both sides of the equal sign.	The purpose of this lesson is for students to look for and use patterns to add within 20. Students see that they can decompose one addend in order to make a ten.	The purpose of this lesson is for students to find expressions equivalent to $10 + n$ expressions. Students then look for patterns in the expressions.	The purpose of this lesson is for students to analyze addition methods for adding within 20, then use those methods flexibly to find sums based on the numbers in a given expression.	The purpose of this lesson is for students to solve story problems with three addends.	The purpose of this lesson is for students to practice adding within 20.
Teacher Facing Learning Goals	Solve story problems within 20 with three addends, two of which make a ten.	<ul style="list-style-type: none"> • Make sense of equations with addition expressions on both sides of the equal sign (For example, $3 + 6 + 7 = 10 + 6$). • Use the associative property to make a ten when adding three numbers. 	<ul style="list-style-type: none"> • Analyze methods for adding within 20 that involve making a ten. • Look for and use patterns in addition expressions to add within 20. 	<ul style="list-style-type: none"> • Look for and use patterns in addition expressions to add within 20. • Make a ten to find the sum of two numbers within 20. 	<ul style="list-style-type: none"> • Analyze methods for adding within 20. • Use addition methods flexibly to find sums based on the numbers in a given problem. 	Solve story problems with three addends.	<ul style="list-style-type: none"> • Students add two and three numbers within 20. • Students write equations with three addends.
Vocabulary Focus							
Lesson Structure	<p>Warm-up: 10 min How Many Do You See: 10-Frames</p> <p>Activity 1: 20 min Louis Agassiz Fuertes's Birds</p> <p>Activity 2: 20 min Fuertes's Bird Cards</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: Related Expressions</p> <p>Activity 1: 15 min Match Expressions</p> <p>Activity 2: 10 min Is the Equation True?</p> <p>Activity 3: 10 min</p>	<p>Warm-up: 10 min How Many Do You See: Double 10-Frames</p> <p>Activity 1: 20 min The 9 Plus Game</p> <p>Activity 2: 15 min Clare's Birds</p> <p>Synthesis: 10 min</p> <p>Cooldown: 5 min</p>	<p>Warm-up: 10 min How Many Do You See: More Double 10-Frames</p> <p>Activity 1: 10 min Expression Match</p> <p>Activity 2: 15 min Compare and Connect: Gallery Walk</p>	<p>Warm-up: 10 min Number Talk: Related Expressions</p> <p>Activity 1: 20 min Lin, Han, and Kiran Add</p> <p>Activity 2: 20 min How Did You Add?</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: Using $10 + \square$</p> <p>Activity 1: 15 min How Many Reptiles?</p> <p>Activity 2: 20 min Zoo Exhibits</p> <p>Synthesis: 10 min</p> <p>Cooldown: 5 min</p>	<p>Warm-up: 10 min What Do You Know About 20?</p> <p>Activity 1: 20 min Introduce How Close? Add to 20</p> <p>Activity 2: 20 min Introduce Five in a Row, Add 7, 8, or 9</p> <p>Synthesis: 10 min</p>

		Write Expressions Synthesis: 10 min Cooldown: 5 min		Activity 3: 15 min Centers: Choice Time Synthesis: 10 min			
Materials to Gather	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames Number cards 0–10 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames Materials from previous centers Tools for creating a visual display 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames Materials from a previous lesson 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes or two-color counters Double 10-frames Number cards 0–10 Two-color counters
Lesson Materials/ Resources	Lesson 15 Slides Teacher Materials Student Pages Activity 1 and 2: <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Cooldown: Checkpoint	Lesson 16 Slides Teacher Materials Student Pages Activity 1, 2 and 3: <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Cooldown: Add Them Up	Lesson 17 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters and a set of Number Cards (0-10). Activity 1: <ul style="list-style-type: none"> Give students access to Double 10-Frame - 	Lesson 18 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group of 2 a set of Compare Stage 2 Addition Cards to 20 and access to Double 10-Frame - Standard and connecting cubes or two-color counters Activity 2: <ul style="list-style-type: none"> Give each 	Lesson 19 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters Activity 2: <ul style="list-style-type: none"> Give each group a set of the Compare Stage 2 Addition Cards to 20 from 	Lesson 20 Slides Teacher Materials Student Pages Activity 1 and 2: <ul style="list-style-type: none"> Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Cooldown: A Visit with the Primates	Lesson 21 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group a set of Number Cards 0-10, two How Close? Stage 1 Recording Sheet, and access to Double 10-Frame - Standard and connecting cubes or two-color counters. Activity 2: <ul style="list-style-type: none"> Give each group a set

			Standard and connecting cubes or two-color counters. Cooldown: Sitting Birds	group tools for creating a visual display. Activity 3: Centers - see below Cooldown: Checkpoint	Lesson 18. Cooldown: Checkpoint		of Number Cards 0-10 , Five in a Row Addition and Subtraction Stage 3 Gameboard , and access to Double 10-Frame - Standard and connecting cubes or two-color counters.
Assessment	Formative Assessment Strategies: observation, questioning, student discourse See Section C Checkpoint Assessment , Section C Checkpoint Teacher's Guide						
							Section C Practice Problems
Centers Materials				Shake and Spill, Stages 3-5 Compare, Stage 1 Number Puzzles, Stages 1 and 2			

Making Meaning:

[Lesson #15: Solve Story Problems with Three Numbers: Activities 1, 2, & Lesson Synthesis](#)

- [Activity #1: Louis Agassiz Fuertes's Birds](#)
The purpose of this activity is for students to solve a story problem with three addends in which two of the addends make 10. The addends that make a ten are not next to each other to encourage students to use the commutative and associative properties to make 10.
- [Activity #2: Fuertes's Bird Cards](#)

The purpose of this activity is for students to solve more story problems with three addends, in which two of the addends make 10. Students are encouraged to look for addends that have a sum of 10 and think about how that helps when adding (MP7).

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames
- [Slides](#)

Lesson #16: Add Three Numbers

- Warm-Up: Number Talk: Related Expressions

- [Activity #1: Match Expressions](#)

The purpose of this activity is for students to match expressions with three addends to the expression with the same value. This activity sets the groundwork for the next activity in which students make sense of addition equations with expressions on both sides of the equal sign.

- [Activity #2: Is the Equation True?](#)

The purpose of this activity is for students to determine whether equations with an expression on each side of the equal sign are true. Each equation has an expression with three addends on one side and a $10 + n$ expression on the other. Students do not need to find the value of each expression in order to determine if the equation is true, but some students may do so. In this activity, students have an opportunity to look for and make use of structure (MP7) because they apply the associative property and pattern to determine whether equations are true.

- [Activity #3: Write Expressions](#)

The purpose of this activity is for students to write an expression that is equal to a given expression. Each expression given has three addends, two of which make a ten.

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames
- [Slides](#)

Lesson #17: Make 10 to Add

- Warm-Up: How Many Do You See: Double 10-Frames

- [Activity #1: The 9-Plus Game](#)

The purpose of this activity is for students to find sums when one addend is nine. Students represent sums on the 10-frame to encourage them to use the structure of a ten. During the launch, the teacher demonstrates playing a round of the game. It is important to let students discover patterns as they play the game. For example, when finding the sum of , some students may represent each addend on a separate 10-frame and count to find the sum. Other students may use the associative property and move one counter from the five, and add it to the nine to make a ten.

- [Activity #2: Clare's Birds](#)

The purpose of this activity is for students to solve addition story problems in which one addend is close to 10. Students may use any method or representation that makes sense to them. During the synthesis, the double 10-frame is used to visually show decomposing one addend to make ten with the other (the associative property).

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, Number cards 0-10

- [Slides](#)

Lesson #18: Patterns in Addition

- Warm-Up: How Many Do You See: More Double 10-Frames
- Activity #1: Expression Match
The purpose of this activity is for students to use what they know about making a ten to identify which addition expressions are equivalent to expressions. Students should have access to double 10-frames and connecting cubes or two-color counters.
- Activity #2: Compare and COnect: Gallery Walk
The purpose of this activity is for students to create a poster to show all the expressions equivalent to their assigned expression. Before the activity, assign each group an expression for which they will make a poster. Then, students get into new groups of three and each group visits three posters. Students consider what patterns they notice between the expressions on the poster. Students may notice there is a relationship between the addends of equivalent expressions. For example, when one addend decreases by 1, the other addend in the sum increases by 1 (MP7).
- Teacher presentation materials: Connecting cubes or two-color counters, Double 10-frames, tools for creating a visual display, materials from previous centers, Materials to copy: Compare Stage 2 Addition cards to 20
- [Slides](#)

Lesson #19: Methods for Addition Within 20

- Warm-Up: Number Talk: Related Expressions
- Activity #1: Lin, Han, and Kiran Add
The purpose of this activity is for students to analyze three different methods for solving , two of which involve decomposing an addend to make a known fact. The third method involves adding 1 to make a known fact then taking 1 away from the sum. Throughout this activity, students must justify and explain the work of the given characters. Students share their thinking and have opportunities to listen to and critique the reasoning of their peers (MP3).
- Activity #2How Did You Add?
The purpose of this activity is for students to find sums within 20, using addition methods flexibly based on the numbers in a given problem. Students may use any method they choose. For example, for a sum such as , students may choose to count on. For , students may apply the commutative and associative properties, and think . Students may use known facts and adjust addends as needed. Students first work independently to find each sum and then explain their method to their partner.
- Teacher presentation materials: Connecting cubes or two-color counters, Double 10-frames, materials from a previous lesson
- [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 Teacher Instructions](#)

[Checkpoint C Table](#)

Investigate:

[Lesson #20: A Trip to the Zoo](#): Warm-Up and Activity 1

- The purpose of this lesson is for students to solve story problems with three addends.
- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames
- [Slides](#)

Create and Produce:

[Lesson #20: A Trip to the Zoo](#): Activity 2

- The purpose of this lesson is for students to solve story problems with three addends.
- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames
- [Slides](#)

In this activity students solve three-addend story problems within 20. Students use methods and representations that make sense to them. Students work in groups of 2 and have access to double 10-frames and connecting cubes or two-color counters. When students connect the quantities in the story to an equation, they reason abstractly and quantitatively (MP2). They think strategically and may either choose to use a double 10-frame or decompose and compose the numbers in a way that helps them see the sum as 10 and some ones (MP1, MP5).

Communicate and Present:

Lesson 20, Activity 2 Synthesis:

- Invite students to share their method for each problem.
- Record each method with an equation.

Reflection:

Lesson 20 Synthesis:

“In this section, we worked on different ways to add within 20. What are you most proud of? What do you still need to practice?”

Additional Learning:

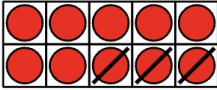
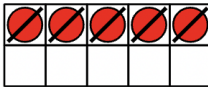
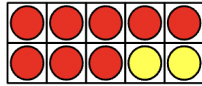
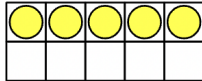
[Lesson #21: Center Day 3: Introduce How Close? Add to 20](#)

- The purpose of this lesson is for students to practice adding within 20.
- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, Number cards 0-10, Materials to copy: How Close? Stage 1 recording sheet, Five in a Row Addition and Subtraction Stage 3 gameboard
- [Slides](#)

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

[Task-Based Learning Plan Format for Unit 3 Topic 3](#)

Topic # 4 (Section D)	Topic Name: Section D - Subtract within 20	Duration: Recommended: 7 lessons
<p>Topic Description:</p> <p>Section Learning Goals</p> <ul style="list-style-type: none"> Subtract within 20. <p>In this section, students subtract within 20. They rely on the relationship between addition and subtraction and the idea of making a ten to do so. Students encounter subtraction expressions and missing-addend equations, and use taking-away and counting-on methods to find differences.</p> <p>For example, given , students may take away 5 to get to 10 and then take away another 3 to find the difference of 7.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> $15 - 5 = 10$ $10 - 3 = 7$ </div> </div> <div style="display: flex; justify-content: center; margin-top: 10px;">  </div> <p>They may also start with 8 and count on by 2 to get 10, and then add another 5 to reach 15. They see that the difference is 7.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> $8 + 2 = 10$ $10 + 5 = 15$ $2 + 5 = 7$ </div> </div> <div style="display: flex; justify-content: center; margin-top: 10px;">  </div>		
<p>Competencies Addressed: 1.NBT.A.1, 1.OA.A.1, 1.OA.A.2, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8</p> <p>Understanding and Applying Number Systems Indicator 2: I can count, read, and write whole numbers.</p> <p>Operations and Algebraic Thinking Indicator 1: I can add within 20 using strategies.</p>		<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Questions: What strategies can we use to help us add and subtract numbers within 20? How can we solve problems involving addition and subtraction?</p>

<p>Indicator 2: I can subtract within 20 using strategies.</p> <p>Indicator 3: I can represent and solve problems involving addition and subtraction.</p>	<p>Enduring Understanding Counting strategies help us to add and subtract numbers within 20. We can add numbers by: relating counting to addition, counting on, making ten, and relating addition to subtraction. We can subtract numbers by: relating counting to subtraction, counting back, decomposing a number, and using related addition facts to subtract.</p> <p>We can solve addition and subtraction problems by using the commutative and associative properties. The commutative and associative properties allow us to think flexibly and efficiently about numbers and story problems.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Subtract from teen numbers ● Use a ten to subtract ● Relate counting to addition and subtraction ● Solve story problems using addition and subtraction 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Subtraction Difference Teen number Strategy method Expression Equation Unknown Related facts Double 10-frame Addend Value Pattern True</p>

	false
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● I can count forward beginning from a given number within 100. ● I can count down from 50. ● I can read and write numerals from 0-20 and represent those numerals with objects. ● I understand the meaning of the equal sign. ● I can subtract within 20 using a variety of strategies such as: relate counting on to subtraction, counting back. ● I can apply commutative and associative properties (without naming the specific property) as strategies to subtract. ● I can determine if equations are true or false. ● I can solve equations with unknowns in all positions. ● I can use addition and subtraction within 20 to solve word problems. ● I can apply the following strategies when solving: objects, drawings, equations with a symbol for the unknown number to represent the problem. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 22: As you move into a section that focuses on different subtraction methods, how can you continue to develop students' understanding of the relationship between addition and subtraction and encourage students to work flexibly with both operations?</p> <p>Lesson 23: Check-in with your norms and routines. Are they promoting engagement from all of your students? Are there any adjustments you might make so that all students do math tomorrow?</p> <p>Lesson 24: With which math ideas from today's lesson did students grapple most? Did this surprise you or was this what you expected?</p> <p>Lesson 25: How did your students represent their work today? How might you support them in creating more efficient representations?</p> <p>Lesson 26: As you finish up this unit, reflect on the norms and activities that have supported each student in learning math. How have you seen each student grow as a young mathematician throughout this work? How have you seen yourself grow as a teacher? What will you continue to do and what will you improve upon in Unit 4?</p>

Lesson 27: Reflect on who got to do math today in class. What norms or routines allowed those students to engage in the mathematics? How can you adjust these norms and routines so all students do math tomorrow?

Lesson 28: What part of the lesson went really well today in terms of students' learning? What did you do that made that part go well?

Utilize additional strategies for Teacher Reflection:

- Reviewing formative assessments
- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups
- Teacher Reflection Prompts in Teacher Guides

Topic 4 (Section D) 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 (Section D) - Subtract Within 20	Grade Level and Unit: Grade 1, Unit
Description of Task: In this task, students solve related addition and subtraction story problems with the unknown in different positions. Students work with a partner to solve a story problem and create a poster of their work. They share their work with groups who solved a different problem and compare their representations and methods.	Purpose of Task: The purpose of this task is for students to solve addition and subtraction story problems with the unknowns in all positions.
Background of Students/Learning Progression: In previous lessons, students solved Add To, Start or Change Unknown and Take Away, Change or Result Unknown story problems. In this lesson, students apply addition and subtraction methods learned in this unit to solve story problems. In the first activity, students solve two story problems that highlight the relationship between addition and subtraction. In the second activity, students solve more story problems with missing values in all positions. Students do a gallery walk in order to analyze how their classmates solved and compare their representations.	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 #22: Warm-Up: Number Talk: Subtract from a Teen Number The purpose of this Number Talk is to elicit strategies and understandings students have for finding the difference of two numbers. These understandings develop fluency and will be helpful later in this lesson when students subtract from teen numbers. Launch: <ul style="list-style-type: none">● Display one expression.● “Give me a signal when you have an answer and can explain how you got it.”● 1 minute: quiet think time Activity: <ul style="list-style-type: none">● Record answers and strategy.	

- Keep expressions and work displayed.
- Repeat with each expression.

Sample Student Responses:

- 10: I know $14 - 4 = 10$.
- 9: I am subtracting 1 more than in the first expression, so the answer is 1 less than 10.
- 10: 17 is 10 and 7. When you subtract the 7, you're left with the 10.
- 8: The last problem was $17 - 7$, this one is $17 - 9$. I am subtracting 2 more, so my answer is 2 less than 10.

Synthesis:

- "How can you use $14 - 4 = 10$ to find the difference in $14 - 5$?" (I know $14 - 4$ is 10, so if I subtract 1 more, the answer is 9.)
- "How can you use $17 - 7 = 10$ to find the difference in $17 - 9$?" ($17 - 7$ is 10, so I am subtracting 2 more in $17 - 9$. So I can take 2 from 10 to get the answer.)

Learning Cycle Model Process

Section D

IM Lesson	L22: Subtract from Teen Numbers	L23: Use a Ten to Subtract	L24: Relate Counting to Addition and Subtraction	L25: How Do You Want to Subtract?	L26: What's the Story?	L27: Center Day 4	L28: Around the Room
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Investigate	Create and Produce
Naugatuck Math Competency	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2	Addressing 1.NS.2, 1.OA.1, 1.OA.2	Addressing 1.NS.2, 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2, 1.OA.3	Addressing 1.OA.1, 1.OA.2	Addressing 1.OA.1, 1.OA.2, 1.OA.3
Math Practice Standards	MP 6, 7	MP 3	MP 6, 7	MP 2, 3	MP 4		MP 4
Lesson Purpose	The purpose of this lesson is for students to subtract from a teen number.	The purpose of this lesson is for students to notice how the unit of ten can be used to find differences	The purpose of this lesson is for students to analyze and use counting on and taking away	The purpose of this lesson is for students to use subtraction methods flexibly to find differences.	The purpose of this lesson is for students to solve addition and subtraction story problems with the	The purpose of this lesson is for students to practice adding and subtracting within 20.	The purpose of this lesson is for students to write and solve their own story problems involving

		within 20.	methods to subtract within 20.		unknowns in all positions.		addition and subtraction.
Teacher Facing Learning Goals	Subtract within 20 in a way that makes sense to them.	Use the unit of a ten to find differences within 20.	Analyze and use counting on and taking away as methods to subtract.	Use subtraction methods flexibly to find differences based on the numbers in a given problem.	Solve addition and subtraction story problems with unknowns in all positions.	Add and subtract within 20.	<ul style="list-style-type: none"> • Add within 20 with three addends. • Write and solve story problems.
Vocabulary Focus							
Lesson Structure	<p>Warm-up: 10 min Number Talk: Subtract From a Teen Number</p> <p>Activity 1: 10 min Subtraction Methods</p> <p>Activity 2: 20 min Number Card Subtraction</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: Subtract to Make 10</p> <p>Activity 1: 15 min Number Card Subtraction with 10-Frames</p> <p>Activity 2: 20 min Diego and Andre Find the Difference</p> <p>Synthesis: 10 min Cooldown: 5 min</p>	<p>Warm-up: 10 min Choral Count: Backward from 50</p> <p>Activity 1: 20 min Different Ways to Subtract</p> <p>Activity 2: 20 min Find the Number That Makes Each Equation True</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Choral Count: Start at 50</p> <p>Activity 1: 20 min Choose Your Own Subtraction Method</p> <p>Activity 2: 15 min Solve Story Problems</p> <p>Synthesis: 10 min Cooldown: 5 min</p>	<p>Warm-up: 10 min Number Talk: Subtract 10 or More</p> <p>Activity 1: 15 min Solve Related Story Problems</p> <p>Activity 2: 25 min More Story Problems</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Number Talk: Subtract 10</p> <p>Activity 1: 15 min Introduce How Close? Subtract from 20</p> <p>Activity 2: 25 min Introduce Compare, Add and Subtract Within 20</p> <p>Synthesis: 10 min</p>	<p>Warm-up: 10 min Notice and Wonder: Counting Things in the Classroom</p> <p>Activity 1: 20 min Writing Classroom Story Problems</p> <p>Activity 2: 10 min Story Problem Posters</p> <p>Activity 3: 10 min Poster Gallery Walk</p> <p>Synthesis: 10 min</p>
Materials to Gather	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames • Materials from a previous lesson • Number cards 0–10 • Tools for 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames • Materials from a previous lesson • Number cards 0–10 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames • Tools for creating a visual display 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames • Materials from a previous lesson • Materials from previous centers 	<p>Materials to Gather</p> <ul style="list-style-type: none"> • Connecting cubes or two-color counters • Double 10-frames • Tools for creating a visual display

	creating a visual display					● Number cards 0–10	
Lesson Materials/ Resources	Lesson 22 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Activity 2: <ul style="list-style-type: none"> ● Each group of 2 needs a set of Number Cards (0-10) and a set of Number Cards 11-20. Cooldown: Checkpoint	Lesson 23 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> ● Each group of 2 needs a set of Number Cards (0-10) and a set of Number Cards 11-20. Activity 2: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Cooldown: Subtract from 14	Lesson 24 Slides Teacher Materials Student Pages Activity 1 and 2: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Cooldown: Checkpoint	Lesson 25 Slides Teacher Materials Student Pages Activity 1 and 2: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Cooldown: Subtraction Methods	Lesson 26 Slides Teacher Material Student Pages Activity 1: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Activity 2: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. ● Students need access to tools to create a display. Cooldown: Checkpoint	Lesson 27 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters, and two copies of How Close? Stage 2 Recording Sheet Compare Stage. Activity 2: <ul style="list-style-type: none"> ● Each group of 2 needs a set of Compare Stage 2 Addition Cards to 20 and a set of Compare Stage 2 Subtraction Cards to 20. 	Lesson 28 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters. Activity 2:. <ul style="list-style-type: none"> ● Students need access to tools to create a display. Activity 3: <ul style="list-style-type: none"> ● Give students access to Double 10-Frame - Standard and connecting cubes or two-color counters.
	Assessment	Formative Assessment Strategies: observation, questioning, student discourse See Section D Checkpoint Assessment, Section D Checkpoint Teacher’s Guide Unit 3 Assessment, Unit 3 Assessment Teacher Guide					

Centers Materials						Compare, Stage 1 How Close? Stages 1 and 2 Five in a Row, Stages 1-3	
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Making Meaning:

[Lesson #22: Subtract From Teen Numbers: Activities 1, 2, & Lesson Synthesis](#)

- [Activity #1: Subtraction Methods](#)
The purpose of this activity is for students to solve a Take From, Result Unknown problem, which requires decomposing a ten, in a way that makes sense to them. The problem is presented with an image that encourages students to think about 16 as a ten and 6 ones. They create a poster to share how they solved the problem, and participate in a gallery walk to see how their classmates solved. As students are working, the teacher monitors for methods to analyze during the activity synthesis. As they do so, students connect addition and subtraction and see how either can be used to solve the problem (MP7).
- [Activity #2: Number Card Subtraction](#)
The purpose of this activity is for students to subtract a one-digit number from a teen number. Students choose a teen number card, then choose a number card to subtract from the teen number. They write an equation to represent each round. The equations students write may involve subtraction, or addition with a missing addend.
- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, tools for creating a visual display, materials from a previous lesson, Number cards 0-10
- [Slides](#)

[Lesson #23: Use a Ten to Subtract](#)

- Warm-Up: Number Talk: Subtract to Make 10
- [Activity #1: Number Card Subtraction with 10-Frames](#)
The purpose of this activity is to play the same game from the previous lesson, with a focus on using the ten in the teen number to help find the difference. This time, all students use the double 10-frame to represent the teen number to encourage students to use a ten to help them subtract.
- [Activity #2: Diego and Andre Find the Difference](#)

The purpose of this activity is for students to analyze different take away methods used to find the difference between two numbers. During the launch, students discuss the two different methods to subtract. Then they solve two problems using one of the methods they discussed. Given the first step toward a calculation, students make sense of and then complete the calculation (MP3).

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, tools for creating a visual display, materials from a previous lesson, Number cards 0-10
- [Slides](#)

Lesson #24: Relate Counting to Addition and Subtraction

- Warm-Up: Choral Count: Backward From 50
- [Activity #1: Difference Ways to Subtract](#)

The purpose of this activity is for students to analyze and apply both counting on and taking away as methods to subtract. Both counting on and taking away are valid methods for finding a difference. Students should begin to notice that one method may be more efficient than the other, depending on the numbers in the problem. During the synthesis, students discuss how counting on and taking away are the same and different. This allows teachers to see the mathematical vocabulary students use to describe the strategies (MP6).

- [Activity #2: Find the Number that Makes Each Equation True](#)

The purpose of this activity is for students to find the missing values that make subtraction and addition equations true. The numbers are selected to encourage students to use a ten to find the missing value and are presented as two sets: subtraction and addition. Students may notice that the first equation in Set B relates to a subtraction equation in Set A.

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames
- [Slides](#)

Lesson #25: How Do You Want to Subtract?

- Warm-Up: Choral Count: Start at 50
- [Activity #1: Choose Your Own Subtraction Method](#)

The purpose of this activity is for students to find differences using methods they choose. As students work, they may feel more comfortable with one method than another. The numbers were chosen to encourage different methods (counting on and taking away) so students can consider the numbers in a specific expression as they find the difference. During the activity synthesis, students share which method they used for a specific problem and why they chose it (MP3).

- [Activity #2: Solve Story Problems](#)

The purpose of this activity is for students to solve different types of story problems involving teen numbers. Each story problem can be solved using either addition or subtraction. Students may use either operation for the second and third problems and any method that makes sense to them. They write equations to match the stories and should be able to explain how they match (MP2).

- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames

- [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 Teacher Instructions](#)

[Checkpoint D Table](#)

Investigate:

[Lesson #26: What's the Story?](#)

- The purpose of this lesson is for students to solve addition and subtraction story problems with the unknowns in all positions.
- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, tools for creating a visual display
- [Slides](#)

Create and Produce:

[Lesson #27: Center Day 4: Introduce How Close? Subtract from 20](#)

- The purpose of this lesson is for students to practice adding and subtracting within 20.
- [Teacher presentation materials](#): Connecting cubes or two-color counters, Double 10-frames, Number cards 0-10, materials from a previous lesson, materials from previous centers, Materials to copy: How Close? Stage 2 recording sheet, Compare Stage 2 Subtraction cards to 20
- [Slides](#)

[Lesson 28: Around the Room](#)

- The purpose of this lesson is for students to write and solve their own story problems involving addition and subtraction.
- [Teacher Presentation Materials](#)
- [Slides](#)

Communicate and Present:

Lesson 26, Activity 2:

- Arrange groups together so each larger group has students who have solved each of the four problems.
- “Share your poster with your group. Explain how the equations you wrote match the story. As each group shares, discuss how the problems are the same and different. Make a list of equations you used for each problem.”

Reflection:

Lesson 26, Activity 2 Synthesis:

- Display a list of equations one group made for each problem.
- “What do you notice about the equations this group used for each problem?” (They used the same equations for each problem. All the problems have more than one equation. All the problems have addition and subtraction equations.)

	<p>Lesson 26 Synthesis: “We have been doing a lot of subtraction using different methods. Tell your partner something new you have learned about subtraction.” (I learned that you can turn a subtraction expression into an addition expression. I learned that you can use 10 to help you subtract.)</p>
<p>Additional Learning:</p>	
<p>Notes: Follow lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p> <p>Task-Based Learning Plan Format for Unit 3 Topic 4</p>