

Course Title: Mathematics	Full Year	Required
<p>Course Description: The mathematical work for kindergarten is partitioned into 8 units:</p> <ul style="list-style-type: none"> ● Math in Our World ● Numbers 1–10 ● Flat Shapes All Around Us ● Understanding Addition and Subtraction ● Composing and Decomposing Numbers to 10 ● Numbers 0–20 ● Solid Shapes All Around Us ● 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 Kindergarten include:</p> <ul style="list-style-type: none"> ● Representing and comparing whole numbers, initially with sets of objects; ● Understanding and applying addition and subtraction; and ● Describing shapes and space. ● Deeply understanding the concept that counting up is an addition process (+1/adding one more) <p>More time in kindergarten is devoted to numbers than to other topics.</p>	<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>Counting on Counting Collections Blog</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 count and represent collections of objects and images within 20. They apply previously developed counting concepts—such as one-to-one correspondence, keeping track of what has been counted, and conservation of numbers—to larger numbers.

Previously, students have counted, composed, and decomposed numbers up to 10, using tools such as counters, connecting cubes, 5-frames, 10-frames, drawings, and their fingers. They wrote expressions to record compositions and decompositions.

Here, students use the 10-frame to organize groups of 11-19 objects and images. This tool encourages students to see teen numbers as 10 ones and some more ones, emphasizing the structure of the numbers 11–19. They use this structure as they represent teen numbers with their fingers, objects, drawings, expressions, and equations. Students see equations with the addend written first, such as $10 + 6 = 16$.



Throughout the unit, students practice tracing and writing numbers 11-20. It is common for students at this stage to write numbers backwards, so the emphasis is on writing a number that is recognizable to others. Reversing the order of the digits of teen numbers is also expected, due to how teen numbers are said in English. Repeatedly seeing the number 1 written first to represent teen numbers helps students recognize the structure of these numbers.

Topic Titles:

- **Section A: Count Groups of 11-20 Objects**
 - Count groups of up to 20 objects
- **Section B: 10 Ones and Some More**
 - Understand numbers 11-19
- **Section C: Count Groups of 11-20 Images**
 - Count groups of images up to 20
 - Represent quantities up to 20 with a written number

When tracing and writing numbers, students should write on a flat surface while sitting in a chair with feet flat on the floor. Number writing practice can also happen in other parts of the day and can be done using a variety of writing tools (crayons, colored pencils, markers, and so on) for increased engagement. Students can practice creating numbers with dough, tracing numbers in sand, or forming numbers with pipe cleaners.

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

In Unit 5, students learned how to compose and decompose numbers to 10 using a variety of strategies.

Previously, students have counted, composed, and decomposed numbers up to 10, using tools such as counters, connecting cubes, 5-frames, 10-frames, drawings, and their fingers. They wrote expressions to record compositions and decompositions.

Essential Questions:

- How can we count and represent numbers up to 20?

Enduring Understanding:

We can use different tools to count and represent numbers up to 20 (using 10-frames, fingers, objects, drawings, expressions, and equations). These tools help us to organize and to see teen numbers as 10 ones and some more ones. Numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.

What Students Will Know:

- 1:1 correspondence
- “how many” questions
- Numbers have names
- There are symbols that represent numbers
- We can compose and decompose numbers 11-19 as ten ones and some more ones
- That the total number of a group of

What students will do:

- Say the count sequence to 20
- Answer how many without counting again
- Keep track of object that have been counted
- Match model to numeral
- Count on to find the total
- Count on from 10 to find the total
- Count or recognize the ones outside of the 10 ones and use a $10 + n$ fact to find the total
- Write numbers 11-19

Unit Specific Vocabulary:

Add
Equation
Expression
Fewer
Less
More
Number writing reference
Subtract
Keep track
Equal sign says is

<p>objects remains the same after being rearranged</p> <ul style="list-style-type: none"> ● That a full 10-frame or all fingers on two hands represents 10 without counting 	<ul style="list-style-type: none"> ● Draw a model to show a number greater than 10 as a ten frame plus some more ● Keep track of images that have been counted ● Identify a group of 10 images in a group of 11-19 images ● Count all to find the total ● Write numbers 11-20 	<p>Academic Vocabulary:</p> <p>10- frame Collection Organize Arrange/Arrangement Rearranged Recount</p>
<p>Entry Level Assessment and Connection to Unit:</p>	<p>Unit Materials, Resources and Technology:</p> <ul style="list-style-type: none"> ● Unit 6 Teacher Guide ● Illustrative Mathematics ● Instructional Routines and Math Language Routines ● Glossary - Student-friendly ● Required Materials ● IM en Español ● Pacing Guide and Dependency Diagrams K-5 	
<p>Opportunities for Interdisciplinary Connections:</p> <p>Look for opportunities in other disciplines in which students can experiment and explore sets of objects. During this time, students can explore how to count these objects and answer the question “how many”.</p>		
<p>Any links, attachments and resources:</p> <p>Instructional Routines Document</p> <p>Family Support Materials</p>	<p>Planning Ideas:</p> <p>Components of a Typical IM Lesson</p> <p>What To Know About IM When Planning</p> <p>Where to Find the Mathematical Practices in the Units</p> <p>Assessing the Mathematical Practices</p>	

Topic # 1: Section A

Topic Name: Section A - Count Larger Collections of Objects

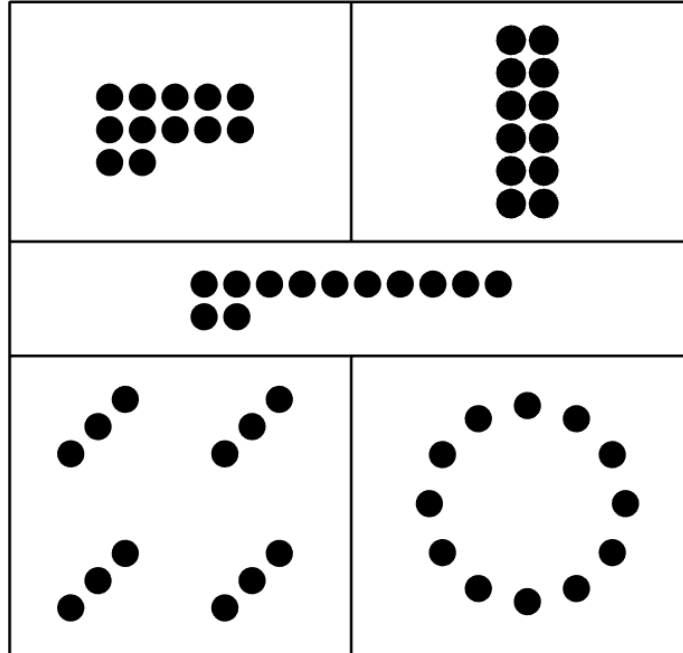
Duration:

Recommended: 13 days (13 lessons)

Topic Description:

In this section, students count groups of 11–20 objects using strategies they developed earlier when working with smaller sets of objects.

Students participate in Counting Collections as the first activity in each lesson. They think about how organizing the objects can help ensure an accurate count and may use a counting mat or a 10-frame. Students also recognize that the number of objects in a group does not change, regardless of the way they are arranged.



Display written numbers for students whenever they share their count. In later sections, after seeing numbers displayed repeatedly, students will practice recognizing, tracing, and writing numbers 11–20. They will relate these numbers to addition expressions and equations. No expressions or equations are used in this section.

Section Learning Goals

- Count groups of 11-20 objects

Competencies Addressed:

Understanding and Applying Number Sense:

NS.1: I can tell the number of objects using counting and instant visual recognition (K.CC.B.4-5)

NS.3: I can count to 100 by ones and tens and can count from a given number within 20. (K.CC.A.1-2)

NS.4: I can name and write numbers 0-20 to represent a group of objects. (K.CC.A.3)

Operations and Algebraic Thinking

OA.1: I can represent addition within 10 and fluently add within 5. (K.OA.A.1, K.OA.A.4, K.OA.A.5)

OA.3: I can solve addition and subtraction word problems within 10. (K.OA.A.2)

Essential Question and Enduring Understanding Addressed in this Topic:

Essential Question:

How can we count and represent numbers to 20?

Enduring Understanding:

We can use different tools to count and represent numbers up to 20 (using 10-frames, fingers, objects, drawings, expressions, and equations). These tools help us to organize and to see teen numbers as 10 ones and some more ones. Numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.

In this Topic, students will know:

- 1:1 correspondence
- “how many” questions
- Numbers have names
- There are symbols that represent numbers
- We can compose and decompose numbers 11-19 as ten one and some more ones
- The total number of a group of objects remains the same after being rearranged

Topic Vocabulary:

Fewer
Less
More
Keep track

Academic vocabulary:

10- frame
Collection

	<p>Organize Arrange/Arrangement Rearranged</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Say the count sequence to 20 ● Answer how many without counting again ● Keep track of object that have been counted ● 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <p>Grade K Unit 6 I Can Self Assessment</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs ● Planning for small groups <p>Teacher Journal Reflection Questions:</p> <p>Lesson 1: How have 5- and 10-frames supported students in keeping track of and accurately counting groups of objects?</p> <p>Lesson 2: When do your students feel successful in math? How do you know?</p> <p>Lesson 3: What can the work of the second activity help you learn about your students' understanding of counting and conservation of number?</p> <p>Lesson 4: As students worked together today, where did you see evidence of the mathematical community established over the course of the school year?</p>

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.

<p>Task Title: Topic 1 - Count Groups of 11-20 Objects</p>	<p>Grade Level and Unit: Kindergarten, Unit 6</p>
<p>Description of Task: Students will build a tower with 20 cubes.</p>	<p>Purpose of Task: The purpose of this task is for students to count groups of up to 20 objects and understand that the number of objects in a collection stays the same, regardless of how they are arranged.</p>
<p>Background of Students/Learning Progression: Students apply previously developed counting concepts—such as one-to-one correspondence, keeping track of what has been counted, and conservation of numbers—to larger numbers.</p> <p>Students will count the same collection of objects in different arrangements to build this conservation of numbers, which develops through experience over time. While developing conservation of numbers, students may need to recount the objects each time they are rearranged.</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: In the lessons that make up Topic 1 - Section A of Unit 6, students will be asked: How many instruments do you see? How did you count? Can you write that number? (K.CC.B.5)</p>	



Section A

IM Lesson	L1: Count Larger Collections of Objects	L2: Keep Track of Objects	L3: Count Carefully	L4: Does the Number Change?
Learning Cycle Model	Making Meaning	Investigate	Investigate	Investigate/Create and Produce
Naugatuck Math Competency	K.NS.1, K.NS.3, K.NS.4	K.NS.1, K.OA.1, K.OA.3	K.NS.1, K.OA.1	K.NS.1
Math Practice Standards	MP5, MP6	MP6	MP5, MP8	MP5, MP8
Lesson Purpose	The purpose of this lesson is for students to count to answer "how many" questions about groups of up to 20 objects.	The purpose of this lesson is for students to keep track of objects that have been counted in order to accurately count groups of up to 20 objects.	The purpose of this lesson is for students to recognize that the number of objects in a group stays the same	The purpose of this lesson is for students to count collections of objects and understand that the number of objects in a collection stays the same,

			regardless of how they are counted.	regardless of how they are arranged.
Vocabulary Focus	Collection, keep track	collection, keep track	organize	arrange/arrangement, rearranged
Lesson Materials/ Resources	<p>Lesson 1 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each student needs a collection of 11-20 objects. ● 10-frames ● Counting mats <p>Activity 2:</p> <ul style="list-style-type: none"> ● Connecting cubes ● Create a pile of 4 connecting cubes to display. ● Create a pile of 13 connecting cubes to display. ● Students need the collections of 11-20 objects from the previous activity. <p>Activity 3:</p> <ul style="list-style-type: none"> ● Intro Number Race Center (Stage 2) ● Number Race Stage 2 Tracing 	<p>Lesson 2 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Optional Lesson</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each student needs a collection of 11-20 objects. ● 10-frames ● Counting mats <p>Activity 2:</p> <ul style="list-style-type: none"> ● Each student needs a collection of 11–20 objects. ● Students need the 10-frames and counting mats from the previous activity. 	<p>Lesson 3 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Warm- Up:</p> <ul style="list-style-type: none"> ● Create a pile of 18 connecting cubes to display. <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each student needs a collection of 11-20 objects. ● 10-frames ● Counting mats <p>Activity 2:</p> <ul style="list-style-type: none"> ● Create a pile of 16 connecting cubes to display. <p>Activity 3:</p> <ul style="list-style-type: none"> ● Intro Find the Pair Center (Stage 1) ● Find the Pair Stage 1 Recording Sheet ● 5-frames ● Counters ● Number Cards 0-10 	<p>Lesson 4 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each student needs a collection of 11-20 objects. ● 10-frames ● Counting mats <p>Activity 2:</p> <ul style="list-style-type: none"> ● Each student needs a collection of 11-20 objects. ● 10-frames <p>Activity 3:</p> <ul style="list-style-type: none"> ● Intro Tower Build Center (Stage 2) ● Number Mat 1-10 ● Connecting cubes ● Create a tower with 16 cubes for the activity synthesis.

	<ul style="list-style-type: none"> • Number Mat 11-20 • Colored pencils/crayons/markers • Connecting cubes 		(Before playing, remove the cards that show numbers greater than 5.)	
Assessment	Formative Assessment Strategies: observation, questioning, student discourse. See Checkpoint A Document , Checkpoint A Teacher Guide , and Grade K Unit 6 I Can Self Assessment			
				Section A - Practice Problems
Centers Materials	Number Race (Stages 1-2) Subtraction Towers (Stage 1) 5-frames (Stages 1-2)	Number Race (Stages 1-2) Subtraction Towers (Stage 1) 5-frames (Stages 1-2)	Find the Pair (Stage 1) Number Race (Stages 1-2) Subtraction Towers (Stage 1) 5-frames (Stages 1-2)	Tower Build (Stage 2) Find the Pair (Stage 1) Number Race (Stages 1-2) Subtraction Towers (Stage 1) 5-frames (Stages 1-2)

Making Meaning:

Lesson 1 (Activity 1 on): [Count Larger Collections of Objects](#)

- The purpose of this lesson is for students to count to answer “how many” questions about groups of up to 20 objects.
- [Lesson 1 Slides](#)
- [Teacher Presentation Materials](#)

As students are engaging in this lesson, be sure to monitor students who are utilizing strategies from previous units and connect these strategies to continue counting sets of up to 20 objects. It is imperative that students recognize that there is a need to count more than 10.

Investigation:

Lesson 2: [Keep Track of Objects](#)

- The purpose of this lesson is for students to keep track of objects that have been counted in order to accurately count groups of up to 20 objects.
- [Lesson 2 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 3: [Count Carefully](#)

- The purpose of this lesson is for students to recognize that the number of objects in a group stays the same regardless of how they are counted.
- [Lesson 3 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 4: [Does the Number Change](#)

- The purpose of this lesson is for students to count collections of objects and understand that the number of objects in a collection stays the same, regardless of how they are arranged.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

Activities 1 and 2 are Investigate because students have opportunities to rearrange and determine how many there are in the same collection of objects multiple times, to build their understanding that the arrangement of objects does not affect the number. They also investigate ways of arranging a collection so that it is easiest for them to count. As teachers monitor the class for different ways of arrangement, note which students are utilizing specific strategies and tools. During the Lesson Synthesis, provide students with opportunities to share their strategy to the rest of the class. Not all strategies need to be shared; take note on which strategies would connect to prior strategies and make connections to other strategies.

Create and Produce:

Lesson 4: [Does the Number Change \(Activity 3\) Tower Build](#)

- The purpose of this lesson is for students to count collections of objects and understand that the number of objects in a collection stays the same, regardless of how they are arranged.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

In lesson 4, Activity 3, students will be introduced to the Tower Build, Count and Build to 20 center. The goal is for students to build a tower with exactly 20 cubes. Students may start counting their connecting cubes from 1 each time or may remember how many cubes were in the tower and count on to determine the total number of cubes. Students roll to determine how many cubes to add to their tower. If they go over 20, they can begin to make more towers of 20 cubes.

Activity 3:

- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

Communicate and Present:

Lesson 4: [Does the Number Change](#)

- The purpose of this lesson is for students to count collections of objects and understand that the number of objects in a collection stays the same, regardless of how they are arranged.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

Invite students to share their towers. Monitor students as they work together to build their tower and count to 20. Students can show how they know how many counters are in their towers.

Listen for students using the precise vocabulary focusing on numbers 11-20 and their ability to count with accuracy and one-to-one correspondence. Ask questions such as “Noah has a tower of 16 cubes. He rolled a 3. Is he going to win? How do you know?” If needed, ask “Is his tower going to get to 20 cubes?” (He is not going to win. His tower will have 19 cubes.) “How many more connecting cubes does he need to have 20 in his tower now?” (He needs 1 more. 20 is 1 more than 19.)

Notes: Follow lessons in numerical order.

Reflection:

- [IM Reflection Practices](#)

Complete File with Resources and Task:

Topic # 2: Section B

Topic Name: Section B - 10 Ones and Some More

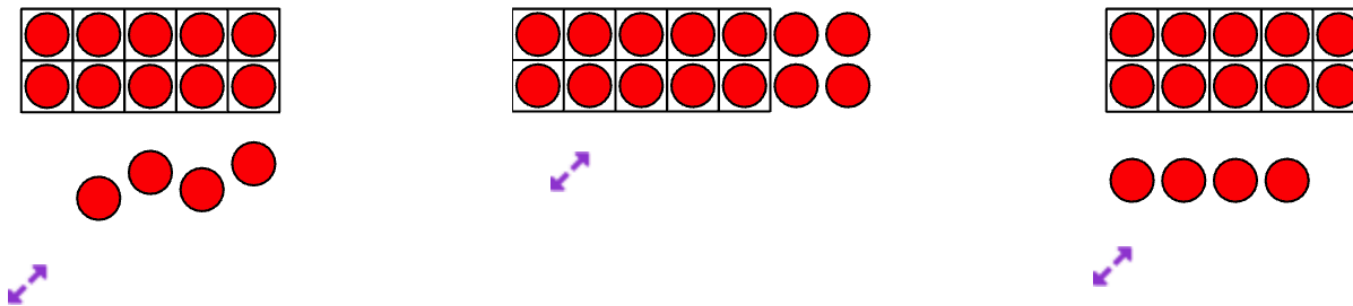
Duration:

Recommended: 6 days (6 lessons)

Topic Description:

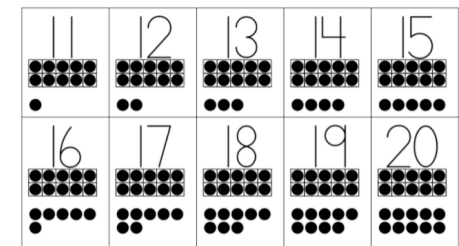
In this section, students see the numbers 11–19 as 10 ones and some more ones. They compose and decompose teen numbers and record the compositions and decompositions with objects, drawings, and expressions.

Students use fingers and 10-frames to represent these numbers, but with more emphasis on the 10-frames as the lessons progress. To represent a teen number, they fill a 10-frame and show some more ones, which they may arrange in different ways. To determine the number of objects, students may count all or count on from 10 (though the latter is not an expectation in kindergarten).



Students compose and decompose teen numbers by starting with the parts (“10 and 5 is 15”) and starting with the total (“15 is 10 and 5”). For the first time, students see equations with the addends on the left side of the equal sign ($10 + 5 = 15$). They complete equations that show missing parts or a missing total to represent teen numbers as 10 ones and some more ones ($__ + __ = 12$ and $10 + 7 = __$).

Starting from this section, students have access to a reference sheet that shows numbers 11–20 with dots in 10-frames, which they can use to identify written numbers. Students can count the dots to determine which written number is on the card.



<p>Section Learning Goals</p> <ul style="list-style-type: none"> Students answer “how many” questions and count out groups within 20. They understand that numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. They write numbers within 20. 	
<p>Competencies Addressed:</p> <p>Understanding and Applying Number Sense: NS.1: I can tell the number of objects using counting and instant visual recognition (K.CC.B.4-5) NS.4: I can name and write numbers 0-20 to represent a group of objects. (K.CC.A.3) NS.5: I can work with numbers 11-19 to gain foundations for place value. (K.NBT.A.1)</p> <p>Operations and Algebraic Thinking OA.1: I can represent addition within 10 and fluently add within 5. (K.OA.A.1, K.OA.A.4, K.OA.A.5)</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Question(s): How can we count and represent numbers up to 20?</p> <p>Enduring Understanding: We can use different tools to count and represent numbers up to 20 (using 10-frames, fingers, objects, drawings, expressions, and equations). These tools help us to organize and to see teen numbers as 10 ones and some more ones. Numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> 1:1 correspondence “how many” questions Numbers have names There are symbols that we use to represent numbers The next number said in the counting sequence is one more We can compose and decompose numbers 11-19 as ten one and some more ones The total number of a group of objects remains the same after being rearranged 	<p>Topic Vocabulary:</p> <p>Add Equation Expression Fewer Greater Less More Number Writing Reference Teen numbers Ten ones and some more ones Equal sign says is</p>

	<p>Academic vocabulary: Ten- frame Estimate Recount Rearranged</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Say the count sequence to 20 ● Answer how many without counting again ● Keep track of object that have been counted 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <p>Grade K Unit 6 I Can Self Assessment</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs ● Planning for small groups <p>Teacher Journal Reflection Questions:</p> <p>Lesson 5: In upcoming lessons, students will compose and decompose numbers 11–19 using 10 ones and some more ones. How does the work of this lesson help build students’ understanding numbers 11–19 as 10 ones and some more ones?</p> <p>Lesson 6: 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</p>

every mathematician?

Lesson 7: If you were to teach this lesson over again, what activity would you redo? How would your proposed changes support student learning?

Lesson 8: How did the work of the previous lesson lay the foundation for students to be successful in the activities of this lesson?

Lesson 9: 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 10: What opportunities are you giving students to reflect on their understanding of the mathematical content?

Topic 2 Task Development

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

Task Title: Topic 2 - 10 Ones and Some More				Grade Level and Unit: Kindergarten, Unit 6		
Description of Task: Students will explore numbers 11-19 as 10 ones and some more ones. They will compose and decompose teen numbers and record the compositions and decompositions with objects, drawings, and expressions.				Purpose of Task: The purpose of this task is for students to demonstrate their understanding of numbers greater than 10 as 10 ones and some more.		
Background of Students/Learning Progression: The foundation for understanding place value is developed in this unit. Prior to this students have had a variety of opportunities to explore the structure of 10. Students have been counting quantities of 11-19 in different arrangements.				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: To help students “get started” with this series of lessons, utilize the following : Lesson 5 Warm-Up: Estimation Exploration <ul style="list-style-type: none"> ○ Display image ○ “What is an estimate, or guess that's too high? Too low? About right?” 						
Section B						
IM Lesson	L5: How Many Fingers? How Many Dots?	L6: Fingers and 10-frames	L7: Make Numbers with 10 and Some More (Part I)	L8: Make Numbers with 10 and Some More (Part 2)	L9: Expressions and Equations	L10: Complete Equations
Learning Cycle Model	Making Meaning	Making Meaning	Investigate	Investigate	Investigate	Investigate/Create and Produce
Naugatuck Math Competency	K.NS.1, K.NS.4, K.NS.5	K.NS.1, K.NS.4, K.NS.5	K.NS.1, K.NS.5	K.NS.1, K.NS.5	K.NS.1, K.NS.5, K.OA.1	K.NS.5, K.OA.1
Math Practice Standards	MP7	MP7	MP8	MP8	MP7	MP2, MP8
Lesson Purpose	The purpose of this lesson is for students	The purpose of this lesson is for students	The purpose of this lesson is for students	The purpose of this lesson is for students	The purpose of this lesson is for students	The purpose of this lesson is for students

	to count to answer “how many” questions about groups of up to 19 images.	to represent numbers 11-19 with fingers and on a 10-frame.	to compose numbers using 10 ones and some more ones.	to compose numbers 11-19 using 10 ones and some more ones.	to make sense of expressions and equations that represent numbers 11-19.	to represent numbers 11-19 with equations.
Vocabulary Focus	estimate, recount	teen numbers, ten ones and some more ones, 10-frame	-	-	equal sign says is, expression	equation
Lesson Materials/ Resources	<p>Lesson 5 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Make sure numbers 1–20 are posted in the classroom. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Make sure numbers 1–20 are posted in the classroom. <p>Activity 3:</p> <ul style="list-style-type: none"> ● Intro Grab and Count Center (Stage 1) ● Grab and Count Stage 1 Recording Sheet ● 10-frames ● Counting mats ● Pattern blocks 	<p>Lesson 6 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 2:</p> <ul style="list-style-type: none"> ● 10-frames ● Counters <p>Activity 3:</p> <ul style="list-style-type: none"> ● Revisit Number Race (Stage 2) center without tracing paper ● Number Race Center (Stage 2) ● Number Mat 11-20 ● Each group needs 1 connecting cube ● Colored pencils/crayons/ markers 	<p>Lesson 7 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● 10- Frame and More Dot Cards ● Each student needs 1 card from the blackline master. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Two-color counters ● Number Cards 1–9 ● Reference Sheet Numbers 11–20 with 10-frames ● Create a set of cards from the blackline master for each group of 2. 	<p>Lesson 8 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Glue or tape ● Scissors ● 10-frame and More Dots Cards ● Make Number Cards ● Create a set of 10-frame and More Dot Cards for each student. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Two-color counters <p>Activity 3:</p> <ul style="list-style-type: none"> ● Intro Bingo Center (Stage 4) ● Bingo Stage 4 Gameboard ● Number Cards 	<p>Lesson 9 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Numbers and Expressions Cards ● Create a set of cards from the blackline master for each group of 4. <p>Activity 3:</p> <p>Intro Stage 2 Make or Break Apart Numbers Center</p> <ul style="list-style-type: none"> ● Connecting cubes ● Two-color counters ● Make or Break Apart Numbers Stage 2 Gameboard 	<p>Lesson 10 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 2:</p> <ul style="list-style-type: none"> ● 10-frames ● Two-color counters

	<ul style="list-style-type: none"> Each group of 2 needs around 20 pattern blocks. Gather a group of 18 pattern blocks for the activity synthesis. <p>Cool Down:</p> <ul style="list-style-type: none"> How Many? 			<p>11-19</p> <ul style="list-style-type: none"> Create a set of cards from the blackline master for each group of 4. <p>Cool Down:</p> <ul style="list-style-type: none"> Make 14 	<ul style="list-style-type: none"> Make or Break Apart Numbers Stage 2 Number Mat 11-19 Make or Break Apart Numbers Stage 2 Recording Sheet 	
Assessment	Formative Assessment Strategies: observation, questioning, student discourse. See Checkpoint B Document , Checkpoint B Teacher Guide , and Grade K Unit 6 I Can Self Assessment					
						Section B - Practice Problems
Centers Materials	Grab and Count (Stage 1) Tower Build (Stages 1- 2) Find the Pair (Stage 1)	Number Race (Stage 2) Grab and Count (Stage 1) Tower Build (Stages 1- 2) Find the Pair (Stage 1)	Number Race (Stage 2) Grab and Count (Stage 1) Tower Build (Stages 1- 2) Find the Pair (Stage 1)	<p>During this lesson, students will engage in an additional activity that introduces them to Stage 4 of the Bingo center.</p>	Bingo (Stages 1-4) Number Race (Stage 2) Grab and Count (Stage 1) Tower Build (Stages 1- 2)	Make or Break Apart Numbers (Stages 1- 2) Bingo (Stages 1-4) Number Race (Stage 2) Grab and Count (Stage 1) Tower Build (Stages 1- 2)
<p>Making Meaning:</p> <p>Lesson 5: How Many Fingers? How Many Dots?</p> <ul style="list-style-type: none"> The purpose of this lesson is for students to count to answer “how many” questions about groups of up to 19 images. 						

- [Lesson 5 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 6: [Fingers and 10-frames](#)

- The purpose of this lesson is for students to represent numbers 11-19 with fingers and on a 10-frame.
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

Lesson 7: [Make Numbers with 10 and Some More \(Part 1\)](#)

- The purpose of this lesson is for students to compose numbers using 10 ones and some more ones.
- [Lesson 7 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 8: [Make Numbers with 10 and Some More \(Part 2\)](#)

- The purpose of this lesson is for students to compose numbers 11-19 using 10 ones and some more ones.
- [Lesson 8 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 9: [Expressions and Equations](#)

- The purpose of this lesson is for students to make sense of expressions and equations that represent numbers 11-19.
- [Lesson 9 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 10: [Complete Equations](#)

- The purpose of this lesson is for students to represent numbers 11-19 with equations.
- [Lesson 10 Slides](#)
- [Teacher Presentation Materials](#)

In these lessons students explore representing teen numbers as ten ones and some more in different ways. They explore representing these numbers on ten frames, with expressions, and equations. They investigate the connection between each.

Create and Produce:

Lesson 10: [Complete Equations](#) (Activity 2 Make the Equations True)

- The purpose of this lesson is for students to represent numbers 11-19 with equations.
- [Lesson 10 Slides](#)
- [Teacher Presentation Materials](#)

Students find the numbers that make each equation true. They may use 10-frames, drawings, and/or counters to represent and show their thinking. Students may show multiple ways to make each equation true. While there are many possible equations to represent each number, students have only composed and decomposed numbers 11–19 as ten ones and some more ones throughout this unit, which makes $10 + \underline{\quad}$ the most likely way for students to fill in the equations.

Communicate and Present:

Invite students to share their representations.

In lesson 10, Activity 2, students will use counters and 10-frames as well as drawings to find the numbers that make the equations true. Students will then share their thinking and understanding of ten and some more showing their representations and/or explaining how they know. Ask, “how did you figure out what numbers were missing?”

Reflection:

- [IM Reflection Practices](#)

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

Topic # 3: Section C

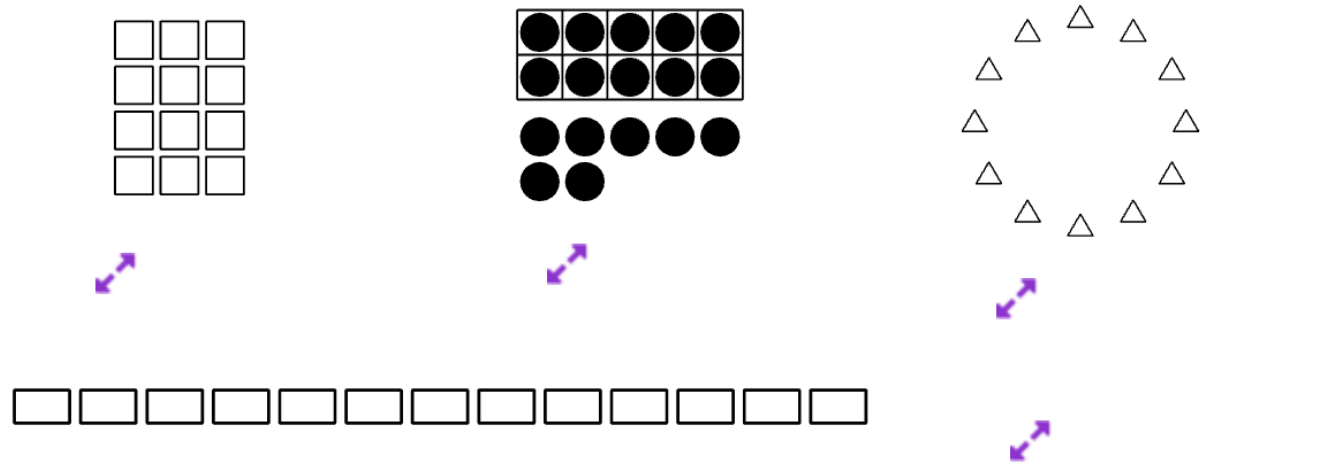
Topic Name: Section C - Count Groups of 11-20 Images

Duration:

Recommended: 3 days (3 lessons)

Topic Description:

In this short section, students count groups of up to 20 images arranged in lines, arrays, circles, and on 10-frames.



Images arranged in a circle can be tricky to count, motivating a greater need to keep track of what has been counted. Students use their understanding that teen numbers are composed of 10 ones and some ones to help them count and keep track of groups of up to 20 images and then to write numbers to represent such quantities.

Throughout this section, students should have continued access to the reference sheet that shows numbers 11–20 with dots in 10-frames.

Section Learning Goals

- Count groups of up to 20 objects.

Competencies Addressed:

Understanding and Applying Number Sense:

Essential Question and Enduring Understanding Addressed in this Topic:

Essential Question:

<p>NS.1: I can tell the number of objects using counting and instant visual recognition (K.CC.B.4-5)</p> <p>NS.3: I can count to 100 by ones and tens and can count from a given number within 20. (K.CC.A.1-2)</p> <p>NS.4: I can name and write numbers 0-20 to represent a group of objects. (K.CC.A.3)</p> <p>NS.5: I can work with numbers 11-19 to gain foundations for place value. (K.NBT.A.1)</p> <p>Operations and Algebraic Thinking</p> <p>OA.1: I can represent addition within 10 and fluently add within 5. (K.OA.A.1, K.OA.A.4, K.OA.A.5)</p>	<p>How can we count and represent numbers up to 20?</p> <p>Enduring Understanding: We can use different tools to count and represent numbers up to 20 (using 10-frames, fingers, objects, drawings, expressions, and equations). These tools help us to organize and to see teen numbers as 10 ones and some more ones. Numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● 1:1 correspondence ● "how many" questions ● Numbers have names ● There are symbols that we use to represent numbers ● We can compose and decompose numbers 11-19 as ten one and some more ones ● The total number of a group of objects remains the same after being rearranged ● A full 10-frame or all fingers on two hands represents 10 without counting 	<p>Topic Vocabulary: Add Equation Expression Fewer Less More Number writing reference subtract</p> <p>Academic vocabulary: 10- frame</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Say the count sequence to 20 ● Answer how many without counting again ● Keep track of object that have been counted ● Match model to numeral ● Count on to find the total ● Count on from 10 to find the total ● Count or recognize the ones outside of the 10 ones and use a 10+ n fact to find the total ● Write numbers 11-19 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <p>Grade K Unit 6 I Can Self Assessment</p> <hr/> <p>Plan for Teacher Reflection:</p>

- Draw a model to show a number greater than 10 as a ten frame plus some more
- Keep track of images that have been counted
- Identify a group of 10 images in a group of 11-19 images
- Count all to find the total
- Write numbers 11-20

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

Teacher Journal Reflection Questions:

Lesson 11: What connections did students make between the different strategies shared? What questions did you ask to help make the connections more visible?

Lesson 12: As you finish up this unit, reflect on the norms and activities that have supported each student in learning math. List ways you have seen each student grow as a young mathematician throughout this work. List ways you have seen yourself grow as a teacher. What will you continue to do and what will you improve upon in the next unit?

Lesson 13: How did students use 10-frames to reason about or explain how the equation is true? If students did not use a 10-frame, how did they explain the connection?

Topic 3 Task Development

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

Task Title: Topic 3 - Count Groups of 11-20 Images	Grade Level and Unit: Kindergarten, Unit 6
Description of Task: Students will count and represent groups up to 20 as well as use a written number to express the number.	Purpose of Task: The purpose of this task is for students to count groups up to 20 arranged in lines, arrays, circles and 10-frames and use written numerals to represent numbers.
Background of Students/Learning Progression: In this short section, students count groups of up to 20 images arranged in lines, arrays, circles, and on 10-frames. Images arranged in a circle can be tricky to count, motivating a greater need to keep track of what has been counted. Students use their understanding that teen numbers are composed of 10 ones and some ones to help them count and keep track of groups of up to 20 images and then to write numbers to represent such quantities. Throughout this section, students should have continued access to the reference sheet that shows numbers 11–20 with dots in 10-frames.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
Getting Started: In the lessons that make up Topic 3 - Section C of Unit 6, students will be asked: How many do you see and how do you see them?	



Section C

IM Lesson	L11: Count Images (Part 1)	L12: Count Images (Part 2)	L13: Fingerprint Animals
Learning Cycle Model	Making Meaning	Investigate	Create/Produce
Naugatuck Math Competency	K.NS.1, K.NS.3, K.NS. 5	K.NS.1, K.OA.1	K.NS.1, K.NS.3, K.NS.4, K.NS.5, K.OA.1
Math Practice Standards	MP 2, MP6, MP7	MP6	MP4
Lesson Purpose	The purpose of this lesson is for students to use the 10 ones and some more ones structure of numbers 11-19 to help them count groups of up to 19 images.	The purpose of this lesson is for students to count to answer “how many” questions about groups of up to 20 images and keep track of images that have been counted.	The purpose of this lesson is for students to use their understanding of numbers 11-19 to make a number book.

Vocabulary Focus			
<p>Lesson Materials/ Resources</p>	<p>Lesson 11 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 2:</p> <ul style="list-style-type: none"> • Students need access to at least 2 different colored crayons, colored pencils, or markers. 	<p>Lesson 12 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 2:</p> <ul style="list-style-type: none"> • Connecting cubes <p>Activity 3:</p> <ul style="list-style-type: none"> • Intro Find the Pair center (Stage 2) • 10-frames • Connecting cubes or counters • Find the Pair Stage 2 Recording Sheet • Number Cards 0-10 <p>Cool Down:</p> <ul style="list-style-type: none"> • How Many Triangles? 	<p>Lesson 13 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Optional Lesson</p> <p>Activity 1:</p> <ul style="list-style-type: none"> • Cut each blackline master in half. Each group of 3 needs 9 half-sheets. • Each group of 3 needs an ink pad. • Colored pencils/crayons/markers • Fingerprint Animals on the 10-frame
<p>Assessment</p>	<p>Formative Assessment Strategies: observation, questioning, student discourse. See Checkpoint C Document, Checkpoint C Teacher Guide, and Grade K Unit 6 I Can Self Assessment</p>		
			<p>Section C - Practice Problems</p> <p>End of Unit 6 Assessment</p> <p>End of Unit 6 Assessment Teacher Guide</p>
<p>Centers Materials</p>	<p>Find the Value of Expressions (Stage 1)</p> <p>Make or Break Apart Numbers (Stages 1- 2)</p>	<p>Find the Value of Expressions (Stage 1)</p> <p>Make or Break Apart Numbers (Stages 1- 2)</p>	<p>This lesson does not utilize centers.</p>

	Bingo (Stages 1-4)	Bingo (Stages 1-4)	
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Making Meaning:

Lesson 11: [Count Images \(Part 1\)](#)

- The purpose of this lesson is for students to use the 10 ones and some more ones structure of numbers 11-19 to help them count groups of up to 19 images.
- [Lesson 11 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

Lesson 12: [Count Images \(Part 2\)](#)

- The purpose of this lesson is for students to count to answer “how many” questions about groups of up to 20 images and keep track of images that have been counted.
- [Lesson 12 Slides](#)
- [Teacher Presentation Materials](#)

Activities in Lesson 12 best represent investigation as sit allow students to apply their counting skills to counting images arranged in a circle.

Create and Produce:

Lesson 13: [Fingerprint Animals \(Activity 1\)](#)

- The purpose of this lesson is for students to use their understanding of numbers 11-19 to make a number book.
- [Lesson 13 Slides](#)
- [Teacher Presentation Materials](#)

In lesson 13, Activity 1, students will create fingerprint animals for numbers 11-19. Each student will represent a teen number with their fingerprints and ten frames. Then, they can decorate their fingerprint to look like an animal. The pages will be organized into a number book.

Monitor students as they create their finger print animals.

Listen for students using the precise vocabulary to explain where they see each part of the equation on the page.

<p>Communicate and Present: Invite students to share their fingerprint animals created in the previous section and explain their thinking about their represented equation.</p> <p>Lesson 13: Fingerprint Animals (Activity 2)</p> <ul style="list-style-type: none"> • The purpose of this lesson is for students to use their understanding of numbers 11-19 to make a number book. • Lesson 13 Slides • Teacher Presentation Materials <p>In lesson 13, Activity 2, students will share the fingerprint animals that they created in Activity 1 and work with their group to put all of the pages in order to create a book.</p> <p>In a whole group debrief, it may be helpful to showcase specific students' examples and allow them to share their process with the class. Note which students' strategies may be helpful to share with the entire class rather than every student sharing.</p>	<p>Reflection:</p> <ul style="list-style-type: none"> • IM Reflection Practices
<p>Notes: Follow the lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p>