

Course Title: Mathematics	Full Year	Required
<p><b>Course Description:</b>            The mathematical work for kindergarten is partitioned into 8 units:</p> <ul style="list-style-type: none"> <li>● Math in Our World</li> <li>● Numbers 1–10</li> <li>● Flat Shapes All Around Us</li> <li>● Understanding Addition and Subtraction</li> <li>● Composing and Decomposing Numbers to 10</li> <li>● Numbers 0–20</li> <li>● Solid Shapes All Around Us</li> <li>● Putting it All Together</li> </ul> <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><b>Additional Course Information:</b></p> <p>The big ideas in Kindergarten include:</p> <ul style="list-style-type: none"> <li>● Representing and comparing whole numbers, initially with sets of objects;</li> <li>● Understanding and applying addition and subtraction; and</li> <li>● Describing shapes and space.</li> <li>● Deeply understanding the concept that counting up is an addition process (+1/adding one more)</li> </ul> <p>More time in kindergarten is devoted to numbers than to other topics.</p>	<p><b>Core Resources:</b></p> <p><a href="#">Illustrative Mathematics</a></p> <p><a href="#">Instructional Routines and Math Language Routines</a></p> <p><a href="#">Glossary - Student-friendly</a></p> <p><a href="#">Required Materials</a></p> <p><a href="#">IM en Español</a></p> <p><a href="#">Developing a Mathematical Community</a></p> <p><a href="#">Counting on Counting Collections Blog</a></p>	<p><b>Are there any attachments at the course level that teachers will need?</b></p> <p><a href="#">Scope and Sequence</a> - This document should be reviewed at the start of the year and each unit for information on language routines, expectations, and possible misconceptions.</p> <p><a href="#">Pacing Guide and Dependency Diagrams K-5</a></p>

## Unit 8: Putting It All Together

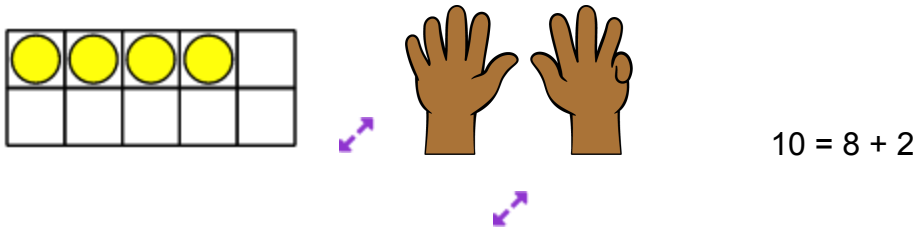
Duration: 22 - 23 days

### Unit Overview - FOCUS:

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

Section A focuses on concepts of counting and comparing. Section B highlights the presence of math in students' school community. Section C enables students to practice composing and decomposing numbers within 5, as well as adding and subtracting within 5. Section D focuses on composing and decomposing 10.

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



The content here lays the foundation for grade 1, where students add and subtract fluently within 10 and count and compare larger quantities. Students will also learn about ten as a unit, which is the basis for understanding place value in the base-ten system.

### Topic Titles:

#### Section A: Counting and Comparing

- Count and compare groups of objects and images.
- Represent and write numbers up to 20.

#### Section B: Math in Our School

- Represent and write quantities and numbers up to 20.

#### Section C: Fluency Within 5

- Fluently add and subtract within 5.

#### Section D: All About 10

- Use understanding of 10 to work with numbers to 20.

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

In Units 1 - 7, students learned how to count up to 20 objects in different arrangements with the understanding that the total is the same regardless of the order in which the objects were counted. Students learned strategies to compare numbers within 10. Previously students composed and decomposed numbers from 11 to 19 into ten ones and some more ones. Students represented addition and subtraction within 10 using a variety of strategies such as with objects, drawings, and expressions/equations.

Students will build on these essential concepts to help them see the structure of 5 and use the structure to build fluency within 5. They will have further opportunities to gain fluency with the partitions of 5. They will build on their understanding of the structure of 10 with more opportunities to compose and decompose 10. They will explore the world around them to see math in their world. In addition, they will build their understanding of story problems.

**Essential Questions:**

1. How can we use the count sequence to compare and order numbers?
2. Why is it important to represent numbers in different ways?
3. How can we organize our thinking around mathematical concepts?

**Enduring Understanding**

**The counting sequence tells us one more and one less of a given number.** The count sequence helps us count objects and compare numbers in an efficient way.

**Representing numbers in different ways helps us to develop and build fluency.** We can use our fingers to begin developing our understanding of the structure of 5. By naming the partitions of 5 (1 and 4, 2 and 3, 0 and 5) we can use these combinations to build our fluency with addition, subtraction, and missing part situations. The combinations of 10 are 9 and 1, 8 and 2, 7 and 3, 6 and 4, 5 and 5, and 10 and 0. The structure of 10 can be used to estimate and extend understanding to 20. We can use tools such as our fingers, bead racks and 10-frames to help us make sense of 10.

**Expressions and equations are ways we can organize our mathematical thinking.** Writing expressions and equations can help us describe what is happening in story problems and help us to determine missing information.

**What Students Will Know:**

- Quantities using counting and instant visual recognition.
- We can compare quantities and numbers.
- Counting on from a given number helps us count without restarting.
- We can name and write a number to represent a specific set of objects.
- Numbers 11-19 are made up of ten ones

**What students will do:**

- Count and compare quantities in groups.
- Count, read, and write numbers up to 20.
- Use numbers and their knowledge of the count sequence to compare groups of objects.
- Count, read, and write numbers up to 20.
- Use objects, drawings, numbers, words, and expressions or equations to represent quantities up to 20.

**Unit Specific Vocabulary:**

Compare  
Fewer  
Pattern  
Story problem  
One more  
One less  
Number Book  
More  
More than

<p>and some more ones</p> <ul style="list-style-type: none"> <li>• The next number said in the count sequence is one more</li> <li>• Objects, drawings, expressions/equations can be used to represent addition and subtraction</li> <li>• We can tell stories using math</li> <li>• Math can be found everywhere</li> <li>• All combinations of 5 (4 and 1, 2 and 3, 5 and 0)</li> <li>• There are different ways to represent 5</li> <li>• The value of all expressions fluently within 5</li> <li>• Numbers 11-19 are made up of 10 ones and some more ones</li> </ul>	<ul style="list-style-type: none"> <li>• Use objects, drawings, or equations to represent a word problem</li> <li>• Count to answer “how many” question</li> <li>• Develop a variety of mathematical questions</li> <li>• Find math in their community</li> <li>• Fluently add within 5</li> <li>• Fluently subtract within 5</li> <li>• Say the missing part with a total up to 5</li> <li>• Write expressions to represent different compositions and decompositions to 5</li> <li>• Use objects and other tools to compose and decompose 10 in multiple ways</li> <li>• Say the other part to make 10 when given one part using tools</li> <li>• Write expressions and equations to represent compositions and decompositions to 10</li> <li>• Compose and decompose 11-19 with 10 ones and some more ones</li> </ul>	<p>Less than Same Expression Equation Feedback Represent Compose Decompose Total Expression Code Value Sort Hidden Estimate</p> <p><b>Academic Vocabulary:</b> Organize Collection Order Subitize</p>
<p><b>Entry Level Assessment and Connection to Unit:</b></p>	<p><b>Unit Materials, Resources and Technology:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Unit 8 Teacher Guide</a></li> <li>• <a href="#">Illustrative Mathematics</a></li> <li>• <a href="#">Instructional Routines and Math Language Routines</a></li> <li>• <a href="#">Glossary - Student-friendly</a></li> <li>• <a href="#">Required Materials</a></li> <li>• <a href="#">IM en Español</a></li> <li>• <a href="#">Pacing Guide and Dependency Diagrams K-5</a></li> </ul>	
<p><b>Opportunities for Interdisciplinary Connections:</b></p> <p><u><a href="#">One Is a Snail, Ten Is a Crab: A Counting by Feet Book by April Pulley Sayre and Jeff Sayre</a></u>  <u><a href="#">Fish Eyes by Lois Ehlert</a></u></p>		

One Duck Stuck by Phyllis Root

**Any links, attachments and resources:**

[Instructional Routines Document](#)

[Family Support Materials](#)

**Planning Ideas:**

[Components of a Typical IM Lesson](#)

[What To Know About IM When Planning](#)

[Where to Find the Mathematical Practices in the Units](#)

[Assessing the Mathematical Practices](#)

**Topic # 1: Section A**

**Topic Name: Section A - Counting and Comparing**

**Duration:**

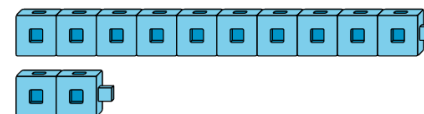
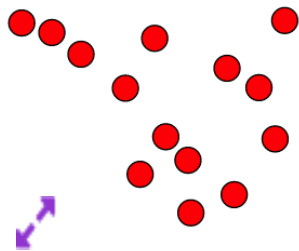
Recommended: 5 days (5 lessons)

**Topic Description:**

In this section, students count and compare collections of up to 20 objects. The focus is on the count sequence up to 20 and using it to determine 1 more or 1 less than a given quantity or number, both with and without a context.

*Compare the groups of objects.*

*Explain how you know which group has more objects.*



*There were 10 people on the bus. Then 1 person got off the bus.*

*How many people are on the bus now?*

*1, 2, 3, 4, 5, 6, 7, 8, 9, 10*

Many of the activities in this section are optional because the standards do not expect students to compare quantities or numbers greater than 10. This work prepares students to relate counting to addition and subtraction in grade 1.

**Section Learning Goals**

- Count and compare groups of objects and images.
- Represent and write numbers up to 20.

<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems:</b></p> <p><b>K.NS.1</b> I can tell the number of objects using counting and instant visual recognition. (K.CC.B.4-5)</p> <p>K.NS.2</p> <p><b>K.NS.3</b> I can count to 100 by ones and by tens and can count from a given number within 20. (K.CC.A.1-2)</p> <p><b>K.NS.4</b> I can name and write numbers 0-20 to represent a group of objects. (K.CC.A.3)</p> <p><b>K.NS.5</b> I can work with numbers 11-19 to gain foundations for place value. (K.NBT.A.1)</p> <p><b>Operations and Algebraic Thinking:</b></p> <p><b>K.OA.3</b> I can solve addition and subtraction word problems within 10. (K.OA.A.3)</p> <p><b>Measurement and Data:</b></p> <p><b>K.MD.2</b> I can classify objects and count the number of objects in each category. (K.MD.B.3)</p>	<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p><b>Essential Question:</b> How can we use the count sequence to compare and order numbers?</p> <p><b>Enduring Understanding:</b> <b>The counting sequence tells us one more and one less of a given number.</b> The count sequence helps us count objects and compare numbers in an efficient way.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Quantities using counting and instant visual recognition.</li> <li>● We can compare quantities and numbers.</li> <li>● Counting on from a given number helps us count without restarting.</li> <li>● Name and write numbers 0-20 to represent a group of objects.</li> <li>● Numbers 11-19 are made up of ten ones and some more ones</li> <li>● The next number said in the count sequence is one more</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p>Compare Fewer Pattern Story problem One more One less</p> <p><b>Academic vocabulary:</b></p> <p>Organize Collection Order</p>

**In this Topic, students will be able to:**

- Count and compare quantities in groups.
- Count, read, and write numbers up to 20.
- Use numbers and their knowledge of the count sequence to compare groups of objects.
- Use the count sequence to find a number that is one more or one less

**Plan for Student Reflection:**

[Student Journal Prompts and Reflection Practices](#)

**Plan for Teacher Reflection:**

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

**Teacher Journal Reflection Questions:**

**Lesson 1:** In the beginning of the year, students compared groups of objects by matching them. In what ways have their strategies for comparing progressed?

**Lesson 2:** As students worked together today, where did you see evidence of the mathematical community established over the course of the school year?

**Lesson 3:** In the next lesson, students will determine one more and one less than a given number with no story problem context. How does the work of this lesson prepare students for that work?

**Lesson 4:** Look for students you have not observed doing items on the Section A checklist. Identify opportunities to observe these students in the next lesson.

**Lesson 5:** Were you able to circulate and hear student thinking while students worked together in the second activity? If so, what routines or structures helped students work independently? If not, what routines or structures can you establish to ensure that you are able to circulate and talk to students as they work in groups?

## Topic 1 Task Development

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

<b>Task Title: Topic 1 - Counting and Comparing</b>	<b>Grade Level and Unit: Kindergarten, Unit 8</b>
<b>Description of Task:</b> Students will use numeral cards 1-20 that are not in sequence and write the numerals in order 1-20.	<b>Purpose of Task:</b> The purpose of this task is for students to apply their understanding of one more and one less than a given number up to 20 without objects and relating one more and one less to the count sequence.
<b>Background of Students/Learning Progression:</b> In this unit, students continue to develop their understanding of using the count sequence to compare numbers and to find one more or one less than a given number.  Previously students sorted objects into given categories and categories that they created. Students wrote numbers to represent quantities and compared quantities. In previous units, students used objects and drawings to represent and solve Add To, Result Unknown and Take From, Result Unknown story problems. Students used their knowledge of the count sequence to solve story problems involving adding and subtracting one. Students initially counted out objects and added or subtracted one object to determine one more or one less than a given number.	<b>Ensure all competencies are addressed in the task:</b>  <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
<b>Getting Started:</b> In this lessons that make up Topic 1 - Section A of Unit 8, students will: <ul style="list-style-type: none"><li>● Start counting a number within 100 and notice patterns within the count sequence. The purpose of this Choral Count is to invite students to practice counting and notice patterns in the count (MP7, MP8). These understandings help students develop fluency and will be helpful later in this series of lessons when students will use their knowledge of count sequence to compare groups of objects.</li><li>● Lesson 1 Warm Up: Choral Count - Start counting at 57 (teacher records the count) and stop at 77. “What patterns do you see?”</li></ul>	

								57	58	59
60	61	62	63	64	65	66	67	68	69	
70	71	72	73	74	75	76	77			

**Section A**

IM Lesson	<a href="#">L1: Sort, Count and Compare Groups of Objects</a>	<a href="#">L2: Count and Compare Collections</a>	<a href="#">L3: Count to Add and Subtract</a>	<a href="#">L4: One More and One Less</a>	<a href="#">L5: Order Numbers 1-20</a>
<b>Learning Cycle Model</b>	<b>Making Meaning</b>	<b>Making Meaning</b>	<b>Making Meaning</b>	<b>Making Meaning</b>	<b>Investigate</b>
<b>Naugatuck Math Competency</b>	K.NS.1, K.NS.3, K.NS.4 K.MD.2	K.NS.1, K.NS.4, K.NS.5	K.NS.1, K.NS.3, K.OA.3	K.NS.1	K.NS.3, K.NS.4
<b>Math Practice Standards</b>	MP 8	-	MP 8	MP 8	MP 8
<b>Lesson Purpose</b>	The purpose of this lesson is for students to sort, count, and compare groups of up to 10 objects.	The purpose of this lesson is for students to count and compare collections of up to 20 objects.	The purpose of this lesson is for students to use their knowledge of the count sequence to solve story problems involving adding or subtracting 1.	The purpose of this lesson is for students to use their knowledge of the count sequence to determine one more and one less than groups of objects and numbers.	The purpose of this lesson is for students to put numbers 1–20 in order and use their knowledge of the count sequence to identify one more or one less than a given number.
<b>Vocabulary Focus</b>	compare, fewer, pattern	organize, collection	story problem	one more, one less	order

<p style="text-align: center;"><b>Lesson Materials/ Resources</b></p>	<p><a href="#">Lesson 1 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a bag with 2 different colored beads or other objects, with up to 10 of each color.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Students need the bags of beads and their representations from the previous activity.</li> </ul>	<p><a href="#">Lesson 2 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a collection of 11–20 objects.</li> <li>Give each student a collection of objects and access to <a href="#">10-frames</a>.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Students need their collection of objects and representation from the previous activity.</li> </ul>	<p><a href="#">Lesson 3 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activities 1 and 1:</b></p> <ul style="list-style-type: none"> <li>Give each group of two students access to connecting cubes and <a href="#">10-frames</a>.</li> </ul> <p><b>Cool Down:</b></p> <ul style="list-style-type: none"> <li><a href="#">Cool Down Page</a></li> </ul>	<p><a href="#">Lesson 4 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 needs 1 connecting cube and at least 20 two-color counters.</li> <li><a href="#">Number Mat 1-20</a></li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Colored pencils, crayons, or markers</li> <li>Materials from a previous activity</li> <li><a href="#">One More, One Less Mat</a></li> </ul>	<p><a href="#">Lesson 5 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Give each group of 4 students a set of number cards, not in sequence.</li> <li><a href="#">Number Cards 1-20</a></li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 needs one card from <a href="#">Number Clues</a>.</li> </ul>
<p style="text-align: center;"><b>Assessment</b></p>	<p>Formative Assessment Strategies: observation, questioning, student discourse. See <a href="#">Checkpoint A Document</a>, <a href="#">Checkpoint A Teacher Guide</a></p>				
<p style="text-align: center;"><b>Centers Materials</b></p>	<p><a href="#">Less, Same, More</a></p> <p><a href="#">Math Fingers</a></p> <p><a href="#">Tower Build</a></p> <p><a href="#">Math Stories</a></p>	<p><a href="#">Less, Same, More</a></p> <p><a href="#">Math Fingers</a></p> <p><a href="#">Tower Build</a></p> <p><a href="#">Math Stories</a></p>	<p><a href="#">Less, Same, More</a></p> <p><a href="#">Math Fingers</a></p> <p><a href="#">Tower Build</a></p> <p><a href="#">Math Stories</a></p>	<p><a href="#">Less, Same, More</a></p> <p><a href="#">Math Fingers</a></p> <p><a href="#">Tower Build</a></p> <p><a href="#">Math Stories</a></p>	<p><a href="#">Less, Same, More</a></p> <p><a href="#">Math Fingers</a></p> <p><a href="#">Tower Build</a></p> <p><a href="#">Math Stories</a></p>

	<a href="#">Which One</a>	<a href="#">Which One</a>	<a href="#">Which One</a>	<a href="#">Which One</a>	<a href="#">Which One</a>
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**Making Meaning:**

**Lesson 1: [Sort, Count and Compare Groups of Objects](#)**

- The purpose of this lesson is for students to sort, count, and compare groups of up to 10 objects.
- [Lesson 1 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 2: [Count and Compare Collections](#)**

- The purpose of this lesson is for students to count and compare collections of up to 20 objects.
- [Lesson 2 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 3: [Count to Add and Subtract](#)**

- The purpose of this lesson is for students to use their knowledge of the count sequence to solve story problems involving adding or subtracting 1.
- [Lesson 3 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 4: [One More and One Less](#)**

- The purpose of this lesson is for students to use their knowledge of the count sequence to determine one more and one less than groups of objects and numbers.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

**Investigation:**

**Lesson 5: [Order Numbers 1-20](#)**

- The purpose of this lesson is for students to put numbers 1–20 in order and use their knowledge of the count sequence to identify one more or one less than a given number.
- [Lesson 5 Slides](#)
- [Teacher Presentation Materials](#)

Activities 1 and 2: Order Numbers and Number Clues

In activity 1 students will use numeral cards 1-20 that are not in sequence and write the numerals in order 1-20.

Monitor students as they work with a partner to put the numbers in order.

Listen for students using the count sequence and patterns to determine which number comes before and after.

In activity 2 , students will use their knowledge of the number sequence to find the number that matches clues with one more and one less. Numbers 1–20 are displayed around the room. The numbers may be displayed in order, or the sequence of numbers can be mixed up for more of a challenge.

**Communicate and Present:**

**Lesson 5: [Order Numbers 1-20](#)**

- The purpose of this lesson is for students to put numbers 1–20 in order and use their knowledge of the count sequence to identify one more or one less than a given number.
- [Lesson 5 Slides](#)
- [Teacher Presentation Materials](#)

In lesson 5, Activity 2, students will use their knowledge of the number sequence to find the number that matches clues with one more and one less. Numbers 1–20 are displayed around the room. The numbers may be displayed in order, or the sequence of numbers can be mixed up for more of a challenge. When students find their number they should share with the other people at the number how they knew which number to go to based on their clue and decide whether or not everyone is at the correct number.

Monitor for a group that notices there are 2 different clues that match the number and discuss why they both match.

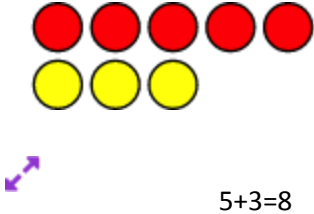
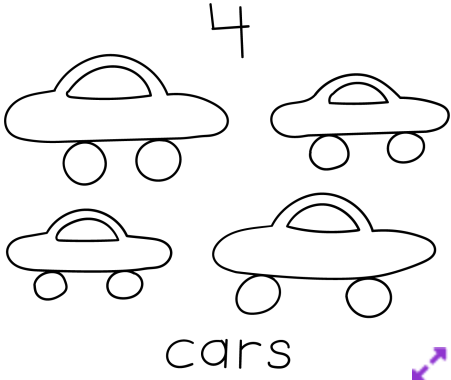
**Reflection:**

- [IM Reflection Practices](#)

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

**Complete File with Resources and Task:**



<b>Topic # 2: Section B</b>	<b>Topic Name: Section B - Math In Our School</b>	<b>Duration:</b> Recommended: 6 days (6 lessons)
<p><b>Topic Description:</b>  In this section, students explore and describe the math around them. They participate in activities that allow them to notice, record, ask questions, and tell stories about math in their community.</p> <p>First, students record quantities that they see in their school as they make their own number book. Next, they ask and answer their own mathematical questions, such as: “How many tiles are there from the office to the cafeteria?” or “Are there more doors or more windows in the library?”</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div data-bbox="268 621 579 833" style="text-align: center;">  <p>5+3=8</p> </div> <div data-bbox="737 602 1360 768" style="text-align: center;"> <p><i>There are 5 pictures on one side of the hallway.</i></p> <p><i>There are 3 pictures on the other side of the hallway.</i></p> <p><i>How many pictures are there in the hallway?</i></p> </div> <div data-bbox="1371 553 1818 930" style="text-align: center;">  <p>cars</p> </div> </div> <p>Finally, students create, share, and solve story problems about their environment and community. While the school building is used as a context, the activities in this section can be adapted for students to do in their home community.</p> <p><b>Section Learning Goals</b></p> <ul style="list-style-type: none"> <li>• Represent and write quantities and numbers up to 20.</li> </ul>		
<p><b>Competencies Addressed:</b></p> <p><b>K.NS.1</b> I can tell the number of objects using counting and instant visual recognition. (K.CC.B.4-5)</p> <p><b>K.NS.4</b> I can name and write numbers 0-20 to represent a group of objects. (K.CC.A.3)</p>		<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p><b>Essential Question:</b>  How can we organize our thinking around mathematical concepts?</p>

<p><b>Operations and Algebraic Thinking:</b></p> <p><b>K.OA.1</b> I can represent addition within 10 and fluently add within 5. (K.OA.A.1, K.OA.A.5)</p> <p><b>K.OA.2</b> I can represent subtraction within 10 and fluently subtract within 5.(K.OA.A.1, K.OA.A.5)</p> <p><b>K.OA.3</b> I can solve addition and subtraction word problems within 10. (K.OA.A.2)</p> <p><b>Measurement and Data:</b></p> <p><b>K.MD.2</b> I can classify objects and count the number of objects in each category. (K.MD.B.3)</p>	<p><b>Enduring Understanding:</b></p> <p><b>Expressions and equations are ways we can organize our mathematical thinking.</b> Writing expressions and equations can help us describe what is happening in story problems and help us to determine missing information.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>• Objects, drawings, expressions/equations can be used to represent addition and subtraction</li> <li>• We can tell stories using math</li> <li>• Math can be found everywhere</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p>Number Book More More than Less than Same Expression Equation Feedback Represent</p> <p><b>Academic vocabulary:</b></p> <p>Subitize</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Count, read, and write numbers up to 20.</li> <li>• Use objects, drawings, numbers, words, and expressions or equations to represent quantities up to 20.</li> <li>• Use objects, drawings, or equations to represent a word problem</li> <li>• Count to answer “how many” question</li> <li>• Develop a variety of mathematical questions</li> <li>• Find math in their community</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <hr/> <p><b>Plan for Teacher Reflection:</b></p> <ul style="list-style-type: none"> <li>• Reviewing formative assessments</li> <li>• Developing scaffolds</li> <li>• Collaborative scoring</li> <li>• PLCs</li> <li>• Planning for small groups</li> </ul>

**Teacher Journal Reflection Questions:**

**Lesson 6:** If you were to teach this lesson over again, what activity would you redo? How would your proposed changes support student learning?

**Lesson 7:** Students used numbers, pictures, and words in their number books. How have you seen each student progress in their ability to create and make connections between multiple representations of numbers?

**Lesson 8:** When can you incorporate different types of questions, such as “Are there more apples or oranges?” or “Which line is longer?” throughout the day?

**Lesson 9:** MP1 asks students to make sense of problems and persevere in solving them. MP5 asks students to use appropriate tools strategically. Where did you see evidence of students engaging in these mathematical practices throughout the lesson?

**Lesson 10:** 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?

**Lesson 11:** Reflect on how comfortable your students are asking questions of you and of each other. What can you do to encourage students to ask questions?

## Topic 2 Task Development

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

<b>Task Title: Topic 2 - Math In Our School</b>	<b>Grade Level and Unit: Kindergarten, Unit 8</b>
<b>Description of Task:</b> Students will create number books. Also, students will write a story problem about their school community and make a poster to show their story problem.	<b>Purpose of Task:</b> The purpose of this task is for students to notice math in everyday situations. When students identify objects around them that they can count they make a first step toward quantifying their world.
<b>Background of Students/Learning Progression:</b> In this unit, students continue to develop their understanding of story problems. They will discover math in their own community and represent the math that they find. They will build on their ability to ask and answer questions.  Previously, students represented addition and subtraction within 10 by acting out situations, using objects, drawings and writing expressions/equations. Students counted objects in different arrangements and answered “how many” questions.	<b>Ensure all competencies are addressed in the task:</b>  <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
<b>Getting Started:</b> In this Notice and Wonder Warm up from Lesson 6, students will: <ul style="list-style-type: none"><li>• Discuss what they notice and wonder about the following picture.</li><li>• The purpose of this warm-up is to elicit the idea that there are lots of things to count around us and different ways to count them, which will be useful for the activities in this section. While students may notice and wonder many things about these hands, the number of hands and fingers are the important discussion points.</li></ul>	



Section B

IM Lesson	<a href="#">L6 : Create Number Books (Part 1)</a>	<a href="#">L7: Create Number Books (Part 2)</a>	<a href="#">L8 : Find Someone Who, Find Someone That</a>	<a href="#">L9 : Where's the Math?</a>	<a href="#">L10 : Tell Stories About Our School</a>	<a href="#">L11 : Share Story Problems</a>
Learning Cycle Model	Investigate	Create/Produce	Making Meaning	Making Meaning	Investigate/Create and Produce	Create/Produce
Naugatuck Math Competency	K.NS.1, K.NS.4	K.NS.1, K.NS.4 K.OA.1, K.OA.2	K.NS.1, K.NS.4 K.OA. 1, K.OA.2, K.OA.3 K.MD.2	K.NS.1, K.NS.4 K.OA. 1, K.OA.2, K.OA.3 K.MD.2	K.NS.1, K.NS.4 K.OA. 1, K.OA.2, K.OA.3 K.MD.2	K.OA. 1, K.OA.2, K.OA.3
Math Practice Standards	MP 4	MP 3	MP 3	MP 4	MP 2, MP 4	MP 2
Lesson Purpose	The purpose of this lesson is for students to use numbers to represent objects in their environment.	The purpose of this lesson is for students to use numbers to represent objects in their environment.	The purpose of this lesson is for students to answer mathematical questions about their classmates and community.	The purpose of this lesson is for students to ask and answer mathematical questions about their school community.	The purpose of this lesson is for students to develop story problems about their school community.	The purpose of this lesson is for students to represent and solve story problems about their school community.

Vocabulary Focus	Number Book	Subitize, more, same, expression, equation, feedback	More than, less than			Represent
<p><b>Lesson Materials/Resources</b></p>	<p><a href="#">Lesson 6 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each group of two needs access to a variety of number books to look through.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Give each student a clipboard with a blank piece of paper.</li> </ul>	<p><a href="#">Lesson 7 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a number book and access to colored pencils, crayons, and markers.</li> </ul> <p>● <a href="#">Number Book</a></p> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Students need the number book that they created in the previous activity.</li> </ul> <p><b>Cool Down:</b></p> <ul style="list-style-type: none"> <li><a href="#">Cool Down Page</a></li> </ul>	<p><a href="#">Lesson 8 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a clipboard and the <a href="#">Find Someone Who Recording Sheet</a></li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 students need access to 10-frames, geoblocks, and solid shapes.</li> </ul>	<p><a href="#">Lesson 9 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a clipboard with a blank piece of paper.</li> </ul> <p><b>Activity 2:</b></p> <p>Each group of 2 needs access to :</p> <ul style="list-style-type: none"> <li><a href="#">10-frames</a></li> <li>Connecting cubes</li> <li>Geoblocks</li> <li>Pattern blocks</li> <li>Solid shapes</li> <li>Two-color counters</li> </ul>	<p><a href="#">Lesson 10 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Warm-Up:</b></p> <ul style="list-style-type: none"> <li>A picture of your own school community that students can tell stories about, or the image in the book.</li> </ul> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a clipboard with a blank piece of paper.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each student needs paper, crayons, pencil</li> <li><b>*Save this work for tomorrow</b></li> </ul>	<p><a href="#">Lesson 11 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each student needs a piece of chart paper, connecting cubes or two-color counters, and crayons.</li> <li>Each student needs the story problem they came up with in L10 Activity 2 yesterday.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each student needs his/her poster from previous activity</li> </ul>
<b>Assessment</b>	<p>Formative Assessment Strategies: observation, questioning, student discourse. See <a href="#">Checkpoint B Document</a>, <a href="#">Checkpoint B Teacher Guide</a></p>					

<b>Centers Materials</b>	<a href="#">Picture Books</a> <a href="#">Find the Pair</a> <a href="#">Math Stories</a> <a href="#">Build Shapes</a> <a href="#">Make or Break Apart Numbers</a>	This lesson does not utilize centers.	This lesson does not utilize centers.	This lesson does not utilize centers.	<a href="#">Picture Books</a> <a href="#">Find the Pair</a> <a href="#">Math Stories</a> <a href="#">Build Shapes</a> <a href="#">Make or Break Apart Numbers</a>	This lesson does not utilize centers.
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**Investigation:**

Throughout this section, note that there are multiple opportunities to engage in the Learning Cycle model. In this particular section, students will engage in investigation as well as create and produce several times.

**Lesson 6: [Create Number Books \(Part 2\)](#)**

- The purpose of this lesson is for students to use numbers to represent objects in their environment.
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

This lesson is investigation because students explore number books to identify common features of books about numbers, such as having numbers and drawings on each page. Then students take a walk to investigate important objects or features in their school community and connect them to numbers. When students identify objects around them that they can count they make a first step toward quantifying their world. They will use this information to later create their own number books in the next lesson.

**Create and Produce:**

**Lesson 7: [Create Number Books \(Part 2\) \(Activity 1\)](#)**

- The purpose of this lesson is for students to use numbers to represent objects in their environment.
- [Lesson 7 Slides](#)
- [Teacher Presentation Materials](#)

The purpose of this activity is for students to create a number book about their school community. Students share their work with a partner, receive feedback, and then improve their work.

## Communicate and Present:

### Lesson 7: [Create Number Books \(Part 2\)](#) (Activity 2)

- The purpose of this lesson is for students to use numbers to represent objects in their environment.
- [Lesson 7 Slides](#)
- [Teacher Presentation Materials](#)

#### Activity 2: Share Number Books

The purpose of this activity is for students to share the number books that they created in the previous activity. Then students should find the page that they are most proud of in their book. Ask, “Why are you proud of this page?” and “How did your partner help you make this page even better?”

## Making Meaning:

### Lesson 8: [Find Someone Who, Find Someone That](#)

- The purpose of this lesson is for students to answer mathematical questions about their classmates and community.
- [Lesson 8 Slides](#)
- [Teacher Presentation Materials](#)

### Lesson 9: [Where’s the Math?](#)

- The purpose of this lesson is for students to ask and answer mathematical questions about their school community.
- [Lesson 9 Slides](#)
- [Teacher Presentation Materials](#)

## Investigation:

### Lesson 10: [Tell Stories About Our School](#)

- The purpose of this lesson is for students to develop story problems about their school community.
- [Lesson 10 Slides](#)
- [Teacher Presentation Materials](#)

In lesson 10, Activity 2, students will write a story problem about their school community. Activity 1 in lesson 10 sets the groundwork for this work as students take a walk and begin brainstorming ideas. This is investigation because as they walk they take notice of mathematical ideas that they see focusing on things that they can tell a story problem about.

**Create and Produce:**

**[Lesson 11 : Share Story Problems \(Activity 1\)](#)**

- The purpose of this lesson is for students to represent and solve story problems about their school community.
- [Lesson 11 Slides](#)
- [Teacher Presentation Materials](#)

In **lesson 11, Activity 1**, students will create a poster to display their story problem. Students can create a poster about another student’s story problem or work together with partners and make a joint poster about one story problem.

**Communicate and Present:**

Invite half the class to stand next to their poster while the other half of the class walks around and looks at the posters. As students walk around, have them think about how each poster is the same as and different from their poster. Have students think of any ideas that he/she may want to add or change about their poster.

**[Lesson 11 : Share Story Problems](#)**

- The purpose of this lesson is for students to represent and solve story problems about their school community.
- [Lesson 11 Slides](#)
- [Teacher Presentation Materials](#)

In Lesson 11, Activity 2, students will share how they represented their story problems and make connections between different representations.

**Reflection:**

- [IM Reflection Practices](#)

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

**Complete File with Resources and Task:**



Topic # 3: Section C

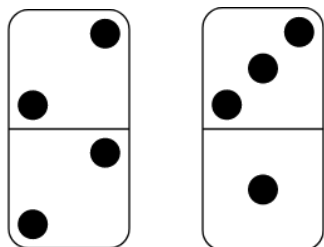
Topic Name: Section C - Fluency Within 5

Duration:

Recommended: 5 days (5 lessons)

**Topic Description:**

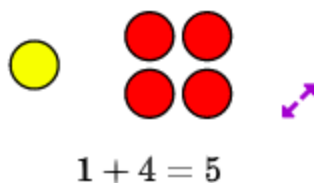
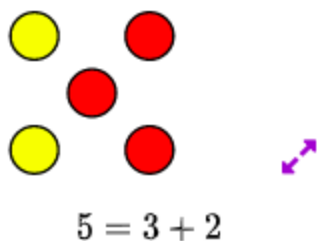
In this section, students develop fluency with adding and subtracting within 5. Repeated practice with different compositions of numbers to 5 prepares students to fluently find the value of addition and subtraction expressions.



Students use a variety of tools and representations for their work with the numbers 1–5.

For instance, they sort domino cards based on the number of dots they have and sort addition and subtraction expressions by their value.

In the final lesson, students apply what they learned and use objects and equations to find a missing part with a total of up to 5.



$5 - \underline{3} = 2$

$5 - \underline{\quad} = 2$

**Section Learning Goals**

- Fluently add and subtract within 5.

**Competencies Addressed:**

**Understanding and Applying Number Systems:**

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

**Essential Question:**

<p><b>K.NS.2</b> I can compare quantities and numbers. (K.CC.C.6-7)</p> <p><b>K.NS.3</b> I can count to 100 by ones and by tens and can count from a given number within 20 (K.CC.A.1-2)</p> <p><b>Operations and Algebraic Thinking:</b></p> <p><b>K.OA.1</b> 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><b>K.OA.2</b> I can represent subtraction within 10 and fluently subtract within 5 (K.OA.A.1, K.OA.A.5)</p> <p><b>K.OA.3</b> I can solve addition and subtraction word problems within 10. (K.OA.A.2)</p> <p><b>K.OA.4</b> I can break apart numbers 1-10 into pairs in more than one way. (K.OA.A.3)</p> <p><b>Measurement and Data</b></p> <p><b>K.MD.2</b> I can classify objects and count the number of objects in each category. (K.MD.B.3)</p>	<p>Why is it important to represent numbers in different ways?</p> <p><b>Enduring Understanding:</b>  <b>Representing numbers in different ways helps us to develop and build fluency.</b> We can use our fingers to begin developing our understanding of the structure of 5. By naming the partitions of 5 (1 and 4, 2, and 3, 0 and 5) we can use these combinations to build our fluency with addition, subtraction, and missing part situations. The combinations of 10 are 9 and 1, 8 and 2, 7 and 3, 6 and 4, 5 and 5, and 10 and 0. The structure of 10 can be used to estimate and extend understanding to 20. We can use tools such as our fingers, bead racks and 10-frames to help us make sense of 10.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>• All combinations of 5 (4 and 1, 2 and 3, 5 and 0)</li> <li>• Ways to represent 5</li> <li>• The value of all expressions fluently within 5</li> </ul>	<p><b>Topic Vocabulary</b></p> <p>Compose  Decompose  Total  Expression  Code  Value  Sort  Hidden</p> <p><b>Academic Vocabulary:</b></p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Fluently add within 5</li> <li>• Fluently subtract within 5</li> <li>• Say the missing part with a total up to 5</li> <li>• Write expressions to represent different compositions and decompositions to 5</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p>

**Plan for Teacher Reflection:**

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

**Teacher Journal Reflection Questions:**

**Lesson 12:** As students worked with their partners and 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 part of the collective learning?

**Lesson 13:** Students are expected to fluently add and subtract within 5 by the end of kindergarten. How does the work students do in this lesson prepare them to fluently add and subtract within 5?

**Lesson 14:** What part of the lesson went really well today in terms of students' learning? What did you do that made that part go well?

**Lesson 15:** At what points during the lesson did you learn the most about your students' thinking? What structures made those points most valuable in learning about your students? How will you use what you learned in tomorrow's lesson?

**Lesson 16:** Given one part, how do students find the other part to make 5? How do students explain how they found the missing part?

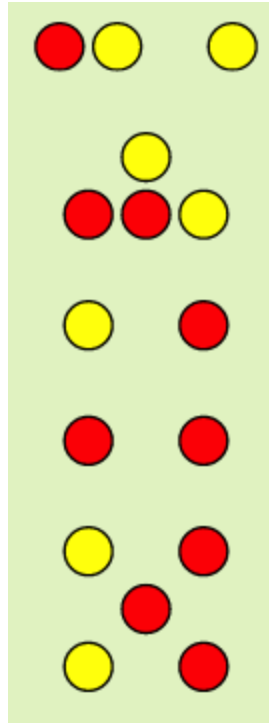
### Topic 3 Task Development

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

<b>Task Title: Topic 3 - Fluency within 5</b>	<b>Grade Level and Unit: Kindergarten, Unit 8</b>
<b>Description of Task:</b> Students will create a set of cards with dot images by coloring in dot arrangements and drawing their own arrangements of up to 5 dots.	<b>Purpose of Task:</b> The purpose of this task is for students to highlight compositions and decompositions of numbers to 5. This will help support building fluency within 5.
<b>Background of Students/Learning Progression:</b> In this unit, students continue to develop their addition and subtraction fluency within 5. Previously, students composed and decomposed numbers to 5. They will continue to identify compositions and decompositions of numbers to 5 to support building their fluency within 5.	<b>Ensure all competencies are addressed in the task:</b> <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification

**Getting Started:** In this lessons 12 Warm Up, How Many Do You See, that makes up Topic 3 - Section C of Unit 8, students will:

- Use subitizing or grouping strategies to describe the images they see.
- This will help students get ready to find different combinations to make a number to support them with building their fluency within 5.



**Section C**

IM Lesson	<a href="#">L12: Make Dot Images</a>	<a href="#">L13 : Dominos to 5</a>	<a href="#">L14 : Sort and Color Expressions and Images within 5</a>	<a href="#">L15: Addition and Subtraction Images within 5</a>	<a href="#">L16 : Parts to Make 5</a>
Learning Cycle Model	Create/Produce	Making Meaning	Investigate	Investigate	Investigate
Naugatuck Math Competency	K.OA.1, K.OA.2, K.OA.3	K.NS.2, K.MD.2 K.OA.1, K.OA.2, K.OA.3	K.NS.3, K.MD.2, K.OA.1, K.OA.2, K.OA.3	K.NS.2, , K.OA.1, K.OA.2, K.OA.3	K.OA.1, K.OA.2

<b>Math Practice Standards</b>	-	MP 2, MP 7	-	MP 7	-
<b>Lesson Purpose</b>	The purpose of this lesson is for students to develop fluency with adding and subtracting within 5 as they identify compositions and decompositions of numbers to 5.	The purpose of this lesson is for students to develop fluency with adding and subtracting within 5 as they identify compositions and decompositions of numbers to 5.	The purpose of this lesson is for students to develop fluency with adding and subtracting within 5.	The purpose of this lesson is for students to develop fluency with adding and subtracting within 5.	The purpose of this lesson is for students to develop fluency with adding and subtracting within 5.
<b>Vocabulary Focus</b>	Compose, decompose	Total, expression	Code, value, expression, sort	Value, expression	Hidden, expression
<b>Lesson Materials/ Resources</b>	<a href="#">Lesson 12 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● <a href="#">Dot Image Cards</a></li> <li>● Each student gets a set of dot cards, colored pencils, crayons, or markers</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each student needs the dot image cards from the previous activity.</li> </ul>	<a href="#">Lesson 13 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Each group of 2 students gets a set of cards and a sorting mat.</li> <li>● <a href="#">Domino Cards</a></li> <li>● <a href="#">Sorting Chart 1-5</a></li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each group of 2 needs the domino cards from the previous activity</li> </ul>	<a href="#">Lesson 14 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Each students needs colored pencils, crayons, or markers</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each group of students gets a set of cards</li> <li>● <a href="#">Expression Cards</a></li> <li>● Expression Cards</li> <li>● <a href="#">Expression Sorting Chart</a></li> </ul>	<a href="#">Lesson 15 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Each student needs one card from the Expression Cards set</li> <li>● <a href="#">Expression Cards</a></li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each group of 2 needs a set of Expression Cards</li> </ul> <b>Cool Down:</b> <ul style="list-style-type: none"> <li>● <a href="#">Cool Down Page</a></li> </ul>	<a href="#">Lesson 16 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Each group of students gets a cup, 5 two-color counters, and two recording sheets</li> <li>● <a href="#">Shake and Spill Stage 4 Recording Sheet Kindergarten</a></li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each students needs access to connecting cubes or two-color counters</li> </ul>

Assessment	Formative Assessment Strategies: observation, questioning, student discourse. See <a href="#">Checkpoint C Document</a> , <a href="#">Checkpoint C Teacher Guide</a>				
<b>Center Materials</b>	<a href="#">5-frames</a>	<a href="#">5-frames</a>	<a href="#">5-frames</a>	<a href="#">5-frames</a>	<a href="#">5-frames</a>
	<a href="#">Roll and Add</a>	<a href="#">Roll and Add</a>	<a href="#">Roll and Add</a>	<a href="#">Roll and Add</a>	<a href="#">Roll and Add</a>
	<a href="#">Bingo</a>	<a href="#">Bingo</a>	<a href="#">Bingo</a>	<a href="#">Bingo</a>	<a href="#">Bingo</a>
	<a href="#">Geoblocks</a>	<a href="#">Geoblocks</a>	<a href="#">Geoblocks</a>	<a href="#">Geoblocks</a>	<a href="#">Geoblocks</a>
	<a href="#">Find the Value of Expressions</a>	<a href="#">Find the Value of Expressions</a>	<a href="#">Find the Value of Expressions</a>	<a href="#">Find the Value of Expressions</a>	<a href="#">Find the Value of Expressions</a>

**Formative Assessment Strategies: observation, questioning, student discourse**

**Make Meaning:**

**Lesson 12: [Make Dot Images \(Activity 1\)](#)**

- The purpose of this lesson is for students to develop fluency with adding and subtracting within 5 as they identify compositions and decompositions of numbers to 5.
- [Lesson 12 Slides](#)
- [Teacher Presentation Materials](#)

Using two different colors students create a set of cards with dot images by coloring in dot arrangements and drawing their own arrangements of up to 5 dots.

**Communicate and Present:**

**Lesson 12: [Make Dot Images \(Activity 2\)](#)**

- The purpose of this lesson is for students to develop fluency with adding and subtracting within 5 as they identify compositions and decompositions of numbers to 5.
- [Lesson 12 Slides](#)
- [Teacher Presentation Materials](#)

Students use the dot cards that they created in activity 1 to do their own version of the How Many Do You See warm-up. The first person will hold up one of their dot cards for their group members to see. The rest of the group members will have time to think. Then they will share how many dots they see and how

they see them. Students should take turns sharing their dot images and explaining their thinking. Notice students who see the dot images in different ways.

### **Making Meaning:**

#### **Lesson 13: [Dominos to 5](#)**

- The purpose of this lesson is for students to develop fluency with adding and subtracting within 5 as they identify compositions and decompositions of numbers to 5.
- [Lesson 13 Slides](#)
- [Teacher Presentation Materials](#)

#### **Lesson 14: [Sort and Color Expressions and Images within 5](#)**

- The purpose of this lesson is for students to develop fluency with adding and subtracting within 5.
- [Lesson 14 Slides](#)
- [Teacher Presentation Materials](#)

#### **Lesson 15: [Addition and Subtraction Images within 5](#)**

- The purpose of this lesson is for students to develop fluency with adding and subtracting within 5.
- [Lesson 15 Slides](#)
- [Teacher Presentation Materials](#)

### **Investigation:**

#### **Lesson 16: [Parts to Make 5](#)**

- The purpose of this lesson is for students to develop fluency with adding and subtracting within 5.
- [Lesson 16 Slides](#)
- [Teacher Presentation Materials](#)

In activity 1 students revisit the Shake and Spill center. They work with a partner to hide some of the counters under the cup. They figure out how many of the counters are hidden.

### **Create and Produce:**

After students engage in Lesson 16 Activity 2, provide students with the opportunity to describe their strategies of how they found the missing part of the equation. To continue this work, have students create missing value equations for a partner to solve. This activity is similar to Activity 2, but instead of finding

<p>the missing value, students will be creating the equations for their peers to find the missing value for. As students are creating their missing value equations, allow students to utilize manipulatives as it may support them creating such equations.</p>	
<p><b>Communicate and Present:</b></p> <p>After the Create and Produce is completed, have students share with the class what strategies and tools they utilized to create their missing value equations. Once the debrief is completed, allow students to share their missing value equations with a partner. At this time, the partner can try to figure out what the missing values are and explain how they know.</p>	<p><b>Reflection:</b></p> <ul style="list-style-type: none"><li>● <a href="#">IM Reflection Practices</a></li></ul>
<p><b>Notes: Follow lessons in numerical order.</b></p>	<p><b>Complete File with Resources and Task:</b></p>

**Topic # 4: Section D**

**Topic Name: Section D - All About Ten**

**Duration:**

Recommended: 5 days (5 lessons)

**Topic Description:**

In this section, students work with 10 as a benchmark when working with numbers within 20. This work prepares them to add within 20 in grade 1, where students will be encouraged to make a ten.

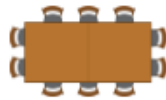
The section begins with students composing and decomposing 10 in different ways and representing these compositions and decompositions with equations. Students then find the number that makes 10 when added to any given number. They also use their understanding of the magnitude of 10 to estimate if groups have more or fewer than 10 items.

Throughout the section, students use fingers, objects, drawings, 10-frames, and equations to represent their thinking. They also create a tool with 10 beads, 5 in each color, to show different compositions of 10.



Finally, students compose and decompose teen numbers 11-19, always working with a group of 10 ones and some more ones.

*“How many students will sit at the table? How many will sit on the rug?  
How many students are there altogether?”*



\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Section Learning Goals**

- Use understanding of 10 to work with numbers to 20.

<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems:</b></p> <p><b>K.NS.1</b> I can tell the number of objects using counting and instant visual recognition. (K.CC.B.4-5)</p> <p><b>K.NS.5</b> I can work with numbers 11-19 to gain foundations for place value. (K.NBT.A.1)</p> <p><b>Operations and Algebraic Thinking:</b></p> <p><b>K.OA.1</b> 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><b>K.OA.2</b> I can represent subtraction within 10 and fluently subtract within 5 (K.OA.A.1, K.OA.A.5)</p> <p><b>K.OA.3</b> I can solve addition and subtraction word problems within 10. (K.OA.A.2)</p> <p><b>K.OA.4</b> I can break apart numbers 1-10 into pairs in more than one way. (K.OA.A.3)</p>	<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p><b>Essential Question:</b> Why is it important to represent numbers in different ways?</p> <p><b>Enduring Understanding:</b> <b>Representing numbers in different ways helps us to develop and build fluency.</b> We can use our fingers to begin developing our understanding of the structure of 5. By naming the partitions of 5 (1 and 4, 2, and 3, 0 and 5) we can use these combinations to build our fluency with addition, subtraction, and missing part situations. The combinations of 10 are 9 and 1, 8 and 2, 7 and 3, 6 and 4, 5 and 5, and 10 and 0. The structure of 10 can be used to estimate and extend understanding to 20. We can use tools such as our fingers, bead racks and 10-frames to help us make sense of 10.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Magnitude of 10</li> <li>● Combinations of 10 using tools</li> <li>● Numbers 11-19 are made up of 10 ones and some more ones</li> </ul>	<p><b>Topic Vocabulary:</b> estimate</p> <p><b>Academic vocabulary:</b> Type here</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Use objects and other tools to compose and decompose 10 in multiple ways</li> <li>● Say the other part to make 10 when given one part using tools</li> <li>● Write expressions and equations to represent compositions and decompositions to 10</li> <li>● Compose and decompose 11-19 with 10 ones and some more ones</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p>

**Plan for Teacher Reflection:**

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

**Teacher Journal Reflection Questions:**

**Lesson 17:** How is the bead tool that students made in this lesson similar to and different from other tools that they have used? How do you anticipate that students will use the bead tools in future lessons?

**Lesson 18:** As students worked together today, where did you see evidence of the mathematical community established over the course of the school year?

**Lesson 19:** What opportunities are you giving students to reflect on their understanding of the mathematical content?

**Lesson 20:** In grade 1, students learn that a group of 10 ones makes a new unit called a ten. How has this work prepared students to understand 10 ones as 1 new unit?

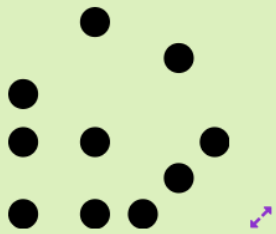
**Lesson 21:** As you finish up this unit, reflect on the norms and activities that have supported each student in learning math. How have you seen each student grow as a young mathematician throughout this work? How have you seen yourself grow as a teacher?

### Topic 4 Task Development

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

<b>Task Title: Topic 4 - All About Ten</b>	<b>Grade Level and Unit: Kindergarten, Unit 8</b>
<b>Description of Task:</b> Students will create a tool to support them with finding the combinations of 10. In the second task students will create a variety of designs to solve a problem and show how more than 10 people can sit at a table and the rug and all fit.	<b>Purpose of Task:</b> The purpose of this task is for students to develop their understanding of the structure of 10. The purpose of the second task is for students to use their understanding of decomposing numbers 11-19 into ten ones and some more ones to solve a problem.
<b>Background of Students/Learning Progression:</b> Previously, students composed and decomposed 10 in multiple ways using their fingers and 10-frames. Students represented 10 in many different ways. Students will continue to develop their understanding of the structure of 10. In a previous unit, students found more than one solution to Put Together/Take Apart, Both Addends Unknown story problems. Students have access to tools used throughout the year, including two-color counters, connecting cubes, fingers, 10-frames, and bead tools, to help them find the number that makes 10.	<b>Ensure all competencies are addressed in the task:</b> <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
<b>Getting Started:</b> In this lesson 17 warm up, Estimation Exploration, that makes up Topic 4 - Section D of Unit 8, students will: <ul style="list-style-type: none"><li>● Estimate the number of dots that they see to help them build their understanding of the structure of 10.</li></ul>	

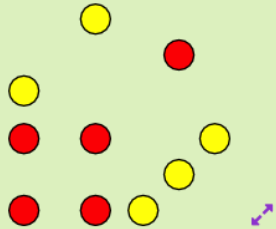
1. How many dots are there?



Record an estimate that is:

too low	about right	too high

2. How many dots are there?



Record an estimate that is:

too low	about right	too high

As students are sharing their answers, ask the question: “How did the second picture help you make an estimate?” (I could see 5 red and 5 yellow. I know that 5 and 5 is 10.)

**Section D**

IM Lesson	<a href="#">L17: Make and Break Apart 10</a>	<a href="#">L18 : All the Ways to Make 10</a>	<a href="#">L19 : Find the Numbers that Make 10</a>	<a href="#">L20 : More or Less than 10?</a>	<a href="#">L 21: Compose and Decompose Numbers 11-19</a>
Learning Cycle Model	Making Meaning	Making Meaning	Making Meaning	Investigate	Create/Produce

<b>Naugatuck Math Competency</b>	K.OA.4	K.NS.1, K.OA.1, K.OA.2, K.OA.3, K.OA.4	K.OA.1, K.OA.2, K.OA.4	K.NS.1,	K.NS.1, K.NS.5
<b>Math Practice Standards</b>		MP 2, MP 5, MP 7	MP 5	MP 3	
<b>Lesson Purpose</b>	The purpose of this lesson is for students to compose and decompose 10 in multiple ways.	The purpose of this lesson is for students to find all of the compositions and decompositions of 10 in the context of a story problem.	The purpose of this lesson is for students to find the number that makes 10 when added to a given number.	The purpose of this lesson is for students to estimate whether a group has more or fewer than 10 objects or images.	The purpose of this lesson is for students to compose and decompose numbers 11–19 using 10 ones and some more ones.
<b>Vocabulary Focus</b>	-	-	-	estimate	-
<b>Lesson Materials/Resources</b>	<a href="#">Lesson 17 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Pipe Cleaners</li> <li>● Beads - 2 colors</li> <li>● Each student needs a pipe cleaner and 10 beads, 5 beads of one color and 5 beads of another color</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each student needs the bead tool that they created in Activity 1.</li> </ul>	<a href="#">Lesson 18 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activities 1 and 2:</b> <ul style="list-style-type: none"> <li>● Each group of 2 needs access to connecting cubes or two-color counters, and <a href="#">10-frames</a></li> <li>● Bead tools(*these will be needed for all the remaining lessons in this unit) created in Lesson 17.</li> </ul> <b>Cool Down:</b> <ul style="list-style-type: none"> <li>● <a href="#">Cool Down Page</a></li> </ul>	<a href="#">Lesson 19 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activities 1 and 2:</b> <ul style="list-style-type: none"> <li>● Each group of 2 students needs access to colored pencils, crayons, or markers, connecting cubes or two-color counters, bead tools, and 10-frames.</li> </ul>	<a href="#">Lesson 20 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> *No additional materials other than student workbook needed for this lesson.	<a href="#">Lesson 21 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>● Each group of 2 needs access to at least 2 collections of 11–19 objects.</li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li>● Each group of 2 needs access to connecting cubes or two-color counters, and <a href="#">10-frames</a></li> </ul>
<b>Assessment</b>	Formative Assessment Strategies: observation, questioning, student discourse.				

See <a href="#">Checkpoint D Document</a> , <a href="#">Checkpoint D Teacher Guide</a>					
<a href="#">End of Unit Assessment</a> <a href="#">End of Unit Assessment Teacher Guide</a>					
<b>Centers Materials</b>	<a href="#">Shake and Spill</a>	<a href="#">Shake and Spill</a>	<a href="#">Shake and Spill</a>	<a href="#">Shake and Spill</a>	<a href="#">Shake and Spill</a>
	<a href="#">Number Race</a>	<a href="#">Number Race</a>	<a href="#">Number Race</a>	<a href="#">Number Race</a>	<a href="#">Number Race</a>
	<a href="#">Grab and Count</a>	<a href="#">Grab and Count</a>	<a href="#">Grab and Count</a>	<a href="#">Grab and Count</a>	<a href="#">Grab and Count</a>
	<a href="#">What's Behind My Back?</a>	<a href="#">What's Behind My Back?</a>	<a href="#">What's Behind My Back?</a>	<a href="#">What's Behind My Back?</a>	<a href="#">What's Behind My Back?</a>
	<a href="#">Pattern Blocks</a>	<a href="#">Pattern Blocks</a>	<a href="#">Pattern Blocks</a>	<a href="#">Pattern Blocks</a>	<a href="#">Pattern Blocks</a>

### Making Meaning:

#### Lesson 17: [Make and Break Apart 10](#)

- The purpose of this lesson is for students to compose and decompose 10 in multiple ways.
- [Lesson 17 Slides](#)
- [Teacher Presentation Materials](#)

The purpose of activity 1 is for students to create a tool that can be used to show different ways to compose and decompose 10. Students use two different colored beads to encourage them to see that 10 can be broken into 2 groups of 5, similar to the 10-frame and fingers. They make different numbers using their new tool to see that the structure of the beads can support them with finding the combinations of 10. In activity 2, students use the new tool that they created to represent different equations. They will show their tool to their partner and discuss the equation represented to make 10.

#### Lesson 18: [All the Ways to Make 10](#)

- The purpose of this lesson is for students to find all of the compositions and decompositions of 10 in the context of a story problem.
- [Lesson 18 Slides](#)
- [Teacher Presentation Materials](#)

#### Lesson 19: [Find the Numbers that Make 10](#)

- The purpose of this lesson is for students to find the number that makes 10 when added to a given number.
- [Lesson 19 Slides](#)

- [Teacher Presentation Materials](#)

**Investigation:**

**Lesson 20: [More or Less than 10?](#)**

- The purpose of this lesson is for students to estimate whether a group has more or fewer than 10 objects or images.
- [Lesson 20 Slides](#)
- [Teacher Presentation Materials](#)

In this lesson, students use their understanding of 10 to estimate how many images there are. Students also investigate the magnitude of 10 and use this understanding to assess the reasonableness of given estimates. The focus on understanding the magnitude of 10 prepares students for work with place value in the base-ten system in grade 1.

**Create and Produce:**

**Lesson 21: [Compose and Decompose Numbers 11-19](#)**

- The purpose of this lesson is for students to compose and decompose numbers 11–19 using 10 ones and some more ones.
- [Lesson 21 Slides](#)
- [Teacher Presentation Materials](#)

In lesson 21, Activity 1, students will work with groups of 11–19 objects to represent a context about students in a classroom where there is room for 10 students to sit at a table and the rest of the students sit on a rug. Students create a design to solve the problem, “Where will they sit?” These designs will show different ways the problem can be solved so some students are sitting at the table and some students are sitting at the rug.

**Communicate and Present:**

Invite students to share their layouts from lesson 21, activity 1.

**Lesson 21: [Compose and Decompose Numbers 11-19](#)**

- The purpose of this lesson is for students to compose and decompose numbers 11–19 using 10 ones and some more ones.
- [Lesson 21 Slides](#)
- [Teacher Presentation Materials](#)

**Reflection:**

- [IM Reflection Practices](#)

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

**Complete File with Resources and Task:**