

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 <u>at the course level</u> that teachers will need?</b></p> <p><a href="#">Scope and Sequence</a> - This document should be reviewed at the start of the year and each unit for information on language routines, expectations, and possible misconceptions.</p> <p><a href="#">Pacing Guide and Dependency Diagrams K-5</a></p>

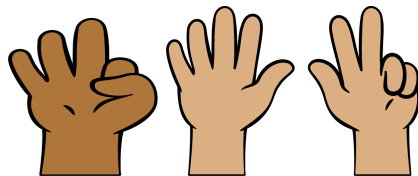
**Unit Overview - FOCUS:**

In this unit, students continue to develop counting concepts and skills, including comparing, while learning to write numbers.

Here, students rely on familiar activity structures to build their counting skills and concepts. First, they count and compare the number of objects, and then do the same with groups of images. The images are given in different arrangements—in lines, arrays, number cube patterns, on 5-frames—to help students connect different representations to the same number.

Use of fingers and 5-frames to represent numbers are emphasized and encouraged because they can help students see the structure of numbers 6–10. (Ten-frames will be introduced in a later unit.) Fingers are also helpful for counting and are always available.

In these materials, quantities represented with fingers are shown, from students' perspective, to start with the left pinky. Numbers 6–10 continue with the thumb on the right hand. When demonstrating numbers on fingers for students, begin with the right pinky so that students see the fingers being held up from left to right.



Students can represent numbers with their fingers in any way, as long as they show the correct number of fingers. It may be helpful to students to hold their fingers down on the table or on their lap to represent 8 and 9.

To compare the number of objects or images, students start by using terms such as “fewer” and “more.” Later, when comparing written numbers, the term “less” is introduced. In general, “less” is used to compare numerals, and “fewer” is used to compare groups of objects. Students may use these terms interchangeably at first, but will develop proficiency with the distinction over time.

**Topic Titles:**

- **Section A: Count and Compare Groups of Objects**
  - Connect quantities with spoken number words.
  - Count and compare up to 10 objects and know the number remains the same regardless of the arrangement of the objects.
- **Section B: Count and Compare Groups of Images**
  - Connect quantities with spoken number words.
  - Count and compare up to 10 images in organized arrangements and know the number remains the same regardless of the order in which the images are counted.
- **Section C: Connect Quantities and Numbers**
  - Connect quantities with spoken number words and written numbers.
  - Understand the relationship between number and quantity.
- **Section D: Compare Numbers**
  - Compare written numbers 1-10.

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

In Unit 1, students learned the structures and routines for activities and centers. As a class, students created norms for their mathematical community. In this unit, students will continue [to build a mathematical community](#) as they deepen their understanding of activities, centers and center work. It may be helpful to refer to the previously-created class norms as students continue to engage in their lessons.

Previously, students answered “how many” and “are there enough” questions and counted groups of up to 10 objects. In this unit, students will build their counting skills and concepts by relying on familiar activity structures. Similar to the previous unit, consider utilizing one-on-one interviews to find out what students know and can do by asking students to say one number for each object, answer how many without counting again, and count on from 5 to tell how many. The end-of-unit assessment is another useful tool.

**Essential Questions:**

1. Why are numbers helpful?
2. What strategies can be used to compare numbers?
3. How are numbers named and quantities related?

**Enduring Understanding:**

**Students answer “how many” questions, count out, and compare groups within 10. Students write a number to represent how many:** Students continue their exploration of number sense through language and object manipulation. Students will engage in comparing collections of items by using language such as bigger/smaller, more/less, greater/fewer. Students will learn that numbers are helpful because they tell us how many. It is quicker to write a number than to draw a picture or take out objects.

**To compare the number of objects or images, students start by using terms such as “fewer” and “more.”** Later, when comparing written numbers, the term “less” is introduced. Students compare sets of objects by looking to see which group visually has more and less, matching strategies, and using their understanding of the number sequence to compare.

**We can write numbers to tell how many there are. Numbers help us communicate “how many” easily.** Counting tells how many are in a set, regardless of their arrangement or the order in which they appear. The last number said when counting a set is the total.

**What Students Will Know: This should be based on the competencies.**

- Quantities 1-10 represented on fingers
- Numerals 1-10
- Fingers can be a math tool

**What students will do: This should be based on the competencies.**

- Say one number for each object.
- Answer how many without counting again.
- Use the structure of 5 (in 5-frames or fingers)

**Unit Specific Vocabulary:**

- Math community
- Picture Book
- Bingo
- Gallery Walk

<ul style="list-style-type: none"> <li>● Count with one-to-one correspondence</li> <li>● Verbal count sequence to 10</li> <li>● The last number said tells the number of objects</li> <li>● Each successive number name refers to a quantity that is one larger</li> <li>● Arrangements of objects does not change the quantity</li> <li>● How to track objects when counting so that objects can be counted in any order and only counted once to get a total</li> <li>● Strategies to compare numbers such as visually seeing which arrangement is more, matching, and the counting sequence</li> <li>● When counting objects, say the number names in standard order, pairing each object with one and only one number name and each number name with one and only one object.</li> <li>● Quantities represented in 5 frames</li> </ul>	<p>to count on from 5 to tell how many.</p> <ul style="list-style-type: none"> <li>● Answer how many about a group that has been rearranged without counting again.</li> <li>● Compare the number of objects in groups.</li> <li>● Use “less,” “more,” “fewer,” and “the same number” to describe comparisons.</li> <li>● Make groups with more, fewer, or the same number of objects than a given group.</li> <li>● Notice the arrangement of objects does not affect the number of objects</li> <li>● Recognize and name quantities 1-10 represented on fingers (eventually without counting)</li> <li>● Subitize</li> <li>● Given a number, count out that many objects</li> <li>● Write numbers 0 to 10</li> <li>● Compare numerals 1-10</li> </ul>	<p>“How do you know?”</p> <p><b>Academic Vocabulary:</b>  Pattern Block  Math Fingers  Tool  5-frame  Connecting Cubes  Counters  <b>Less</b>  <b>More</b>  <b>Fewer</b>  Compare  Same  Different  Arrange  Collection  Group  Object  Organize</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 2 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</a> - Student-friendly</li> <li>● <a href="#">Required Materials</a></li> <li>● <a href="#">IM en Español</a></li> <li>● <a href="#">Pacing Guide and Dependency Diagrams K-5</a></li> </ul>	

**Opportunities for Interdisciplinary Connections:**

Full, Full Full of Love by Trish Cooke

Bee-Bim Bop! By Linda Sue Park

Yoko by Rosemary Wells

Rice & Rocks by Sandra L. Richards

The Little Red Hen (Makes a Pizza) by Philomen Sturges

**Any links, attachments and resources:**

[Instructional Routines Document](#)

[Family Support Materials](#)

**Planning Ideas:**

[Components of a Typical IM Lesson](#)

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

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

[Assessing the Mathematical Practices](#)

<b>Topic # 1: Section A</b>	<b>Topic Name: Section A - Count and Compare Groups of Objects</b>	<b>Duration:</b> Recommended: 6 days (6 lessons)
<p><b>Topic Description:</b></p> <p>In this section, students count to answer “how many” questions and develop their understanding of the connection between quantities and spoken number words.</p> <p>Students are encouraged to use their fingers to count. They may also continue to use any tools and resources from earlier work, such as counting mats and 5-frames, as well as bring objects from home to count. As students count and rearrange objects, students notice that the arrangement of objects does not affect the number of objects (conservation of number). They will continue to build this understanding over time.</p> <p>Students also develop their comparison skills. They start with quantities that are very different and can be compared visually, such as 7 and 2, and relate the comparisons to the terms “more” and “fewer,” which may be new. (Students do not need to produce grammatically accurate language, but the teacher should use “fewer” or “less” as appropriate in context.)</p> <p>Display and write the number associated with a quantity whenever possible. Students will begin recognizing, representing, and writing numbers in the second half of the unit.</p> <p><b>Section Learning Goals</b></p> <ul style="list-style-type: none"> <li>● Connect quantities with spoken number words.</li> <li>● Count and compare up to 10 objects and know the number remains the same regardless of the arrangement of the objects.</li> </ul>		
<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.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>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p><b>Essential Question:</b></p> <ol style="list-style-type: none"> <li>1. What strategies can be used to compare numbers?</li> <li>2. How are numbers named and quantities related?</li> </ol>

<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>Enduring Understanding:</b></p> <ul style="list-style-type: none"> <li>● <b>To compare the number of objects or images, students start by using terms such as “fewer” and “more.”</b> Later, when comparing written numbers, the term “less” is introduced. Students compare sets of objects by looking to see which group visually has more and less, matching strategies, and using their understanding of the number sequence to compare.</li> <li>● <b>We can write numbers to tell how many there are. Numbers help us communicate “how many” easily.</b> Counting tells how many are in a set, regardless of their arrangement or the order in which they appear. The last number said when counting a set is the total.</li> </ul>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Quantities 1-10 represented on fingers</li> <li>● Numerals 1-10</li> <li>● Fingers can be a math tool</li> <li>● The last number said when counting tells the number of objects</li> <li>● Verbal count sequence to 10</li> <li>● Arrangements of objects does not change the quantity</li> <li>● Strategies to compare numbers such as visually seeing which arrangement is more, matching, and the counting sequence</li> </ul>	<p><b>Topic Vocabulary:</b>  Picture Book  Bingo  Gallery Walk</p> <p><b>Academic vocabulary:</b>  Pattern Block  Math Fingers  Math Story  Tool  Connecting Cubes  Counters  <b>More</b>  <b>Fewer</b></p>

	<p>Compare Same Different Arrange Collection Group <b>Less</b> Order “How do you know?” Object Organize Five-Frame Keeping track</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Compare the number of objects in groups.</li> <li>● Use “less”, “more”, “fewer”, and “the same number” to describe comparisons.</li> <li>● Make groups with more, fewer, or the same number of objects than a given group.</li> <li>● Notice the arrangement of objects does not affect the number of objects</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <p><a href="#">Grade K Unit 2 I Can Self Assessment</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> <p><b>Teacher Journal Reflection Questions:</b>  <b>Lesson 1:</b> When do your students feel successful in math? How do you know?  <b>Lesson 2:</b> What was the best question you asked students today? Why would you consider it the best based on what</p>

students said or did?

**Lesson 3:** Who got to do math today in class and how do you know? Identify the norms or routines that allowed those students to engage in mathematics. How can you adjust these norms and routines so all students do math tomorrow?

**Lesson 4:** What evidence have students given that they understand the comparison language of more and fewer?

**Lesson 5:** How did the work of the previous lesson lay the foundation for students to be successful in the first activity of this lesson?

**Lesson 6:** Students shared their thinking multiple times in this lesson. What have you noticed about the language students use? What support can you offer to students who struggle to communicate their ideas orally?

**Lesson 7:** Students shared their thinking multiple times in this lesson. What have you noticed about the language students use? What support can you offer to students who struggle to communicate their ideas orally?

## 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 - Count and Compare Groups of Objects</b>	<b>Grade Level and Unit: Kindergarten, Unit 2</b>
<b>Description of Task:</b> Students will use connecting cubes to build towers in order to compare their cube towers using comparison language.	<b>Purpose of Task:</b> The purpose of this task is for students to have multiple opportunities to compare groups of objects and describe their comparisons using the language “more,” “fewer,” and “the same number.” In making comparisons, students have a reason to use language precisely (MP6).
<b>Background of Students/Learning Progression:</b> In this unit, students continue to develop counting concepts and skills, including comparing, while learning to write numbers.  Previously, students answered “how many” and “are there enough” questions and counted groups of up to 10 objects. They also learned the structures and routines for activities and centers.	<b>Ensure all competencies are addressed in the task:</b>  <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
<b>Getting Started:</b> In the lessons that make up Topic 1 - Section A of Unit 2, students will be asked: <ul style="list-style-type: none"><li>• What can you count in the picture?</li><li>• How would you count them?</li></ul>	



[IM Talking Math Photo](#)

**Section A**

IM Lesson	<a href="#"><u>L1: Fingers as a Math Tool</u></a>	<a href="#"><u>L2: Count and Arrange</u></a>	<a href="#"><u>L3: Groups that Look Very Different</u></a>	<a href="#"><u>L4: Groups that Look Alike</u></a>	<a href="#"><u>L5: Make Groups of More, Fewer, or the Same</u></a>	<a href="#"><u>L6: Use More, Fewer, or the Same Number to Describe Groups</u></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>Investigate/Create and Produce</b>
<b>Naugatuck Math Competency</b>	K.NS.1, K.NS.2, K.NS.3	K.NS.1, K.NS.3	K.NS.1, K.NS.2, K.NS.3	K.NS.1, K.NS.2, K.NS.3	K.NS.1, K.NS.2, K.NS.3	K.NS.1, K.NS.2, K.NS.3
<b>Math Practice Standards</b>	MP 2, MP 7, MP 8	MP 8		MP 1, MP 6		MP 6
<b>Lesson Purpose</b>	The purpose of this lesson is for students to recognize, name, and show quantities with their fingers.	The purpose of this lesson is for students to count objects and notice that the arrangement of a group of objects does not change the number of objects.	The purpose of this lesson is for students to compare groups of objects with very different quantities.	The purpose of this lesson is for students to compare groups of objects that are close in quantity.	The purpose of this lesson is for students to make groups that have more, fewer, or the same number of objects as another group.	The purpose of this lesson is for students to use comparison language to describe the number of objects in groups.
<b>Vocabulary Focus</b>	Math fingers, tool, pattern blocks	5-Frame, connecting cubes, counters, track, arrange, object	Group, different, more, fewer, less	Math story, same	Same	
<b>Lesson Materials/Resources</b>	<a href="#"><u>Lesson 1 Slides</u></a> <a href="#"><u>Teacher Presentation</u></a>	<a href="#"><u>Lesson 2 Slides</u></a> <a href="#"><u>Teacher Presentation</u></a>	<a href="#"><u>Lesson 3 Slides</u></a> <a href="#"><u>Teacher Presentation</u></a>	<a href="#"><u>Lesson 4 Slides</u></a> <a href="#"><u>Teacher Presentation</u></a>	<a href="#"><u>Lesson 5 Slides</u></a> <a href="#"><u>Teacher Presentation</u></a>	<a href="#"><u>Lesson 6 Slides</u></a> <a href="#"><u>Teacher Presentation</u></a>

	<p><a href="#">Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 3:</b> Intro to Math Fingers (Stage 1)</p> <ul style="list-style-type: none"> <li>• <a href="#">Math Fingers (Stage 1)</a></li> </ul>	<p><a href="#">Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">5-Frames</a></li> <li>• Connecting cubes</li> </ul> <p><b>Activity 2:</b> Intro Shake and Spill (Stage 1)</p> <ul style="list-style-type: none"> <li>• Each group of 2 needs 10 two-colored counters, 1 cup, five frames</li> </ul>	<p><a href="#">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 a bag with 8 to 10 green triangle pattern blocks and 1 to 3 orange square pattern blocks.</li> <li>• 6 connecting cubes and 2 pattern blocks needed for display</li> <li>• 8 orange square pattern blocks and 2 green triangle pattern blocks needed for display.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>• Each group of 2 needs a bag of green triangle and orange square pattern blocks from the previous activity.</li> </ul> <p><b>Activity 3:</b> Intro to Number Race (Stage 1)</p> <ul style="list-style-type: none"> <li>• <a href="#">Number Race Stage 1 Recording Sheet for Tracing</a></li> <li>• <a href="#">Number Mat 1-10</a></li> <li>• Each group of 2 needs 1 connecting cube.</li> </ul>	<p><a href="#">Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 2:</b> Intro to Shake and Spill (Stage 2)</p> <ul style="list-style-type: none"> <li>• Each group of 2 needs 10 two-color counters and 1 cup.</li> </ul>	<p><a href="#">Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b> Intro Less, Same, More (Stage 1)</p> <ul style="list-style-type: none"> <li>• <a href="#">Less, Same, More Mat</a></li> <li>• Each group of 2 needs at least 2 collections of between 2 and 9 objects.</li> </ul> <p><b>Activity 2:</b> Intro Math Fingers (Stage 2)</p> <ul style="list-style-type: none"> <li>• <a href="#">Math Fingers (Stage 2)</a></li> </ul>	<p><a href="#">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 needs three bags of 10 or fewer cubes:</li> <li>• Bag 1: fewer red cubes than blue cubes</li> <li>• Bag 2: more red cubes than blue cubes</li> <li>• Bag 3: the same number of red and blue cubes</li> </ul>
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Assessment	Formative Assessment Strategies: observation, questioning, student discourse. See <a href="#">Checkpoint A Document</a> , <a href="#">Checkpoint A Teacher Guide</a> , and <a href="#">Grade K Unit 2 I Can Self Assessment</a>					
Centers Materials	<a href="#">Pattern Block</a> (Stages 1-3)	<a href="#">Pattern Block</a> (Stages 1-3)	<a href="#">Pattern Block</a> (Stages 1-3)	<a href="#">Pattern Block</a> (Stages 1-3)	<a href="#">Pattern Block</a> (Stages 1-3)	<a href="#">Pattern Block</a> (Stages 1-3)
	<a href="#">Picture Books</a> (Stages 1 and 2)	<a href="#">Picture Books</a> (Stages 1 and 2)	<a href="#">Picture Books</a> (Stages 1 and 2)	<a href="#">Picture Books</a> (Stages 1 and 2)	<a href="#">Picture Books</a> (Stages 1 and 2)	<a href="#">Picture Books</a> (Stages 1 and 2)
		<a href="#">Math Fingers</a> (Stage 1)	<a href="#">Math Fingers</a> (Stage 1)	<a href="#">Math Fingers</a> (Stage 1)	<a href="#">Math Fingers</a> (Stage 1)	<a href="#">Math Fingers</a> (Stage 1)
			<a href="#">Shake and Spill</a> (Stage 1)	<a href="#">Shake and Spill</a> (Stages 1 and 2)	<a href="#">Shake and Spill</a> (Stages 1 and 2)	<a href="#">Shake and Spill</a> (Stages 1 and 2)
				<a href="#">Number Race</a> (Stage 1)	<a href="#">Number Race</a> (Stage 1)	<a href="#">Number Race</a> (Stage 1)
					<a href="#">Less. Same. More</a> (Stage 1)	<a href="#">Less. Same. More</a> (Stage 1)

**Making Meaning:**

**Lesson 1: [Fingers as a Math Tool](#)**

- The purpose of this lesson is for students to recognize, name, and show quantities with their fingers.
- [Lesson 1 Slides](#)
- [Teacher Presentation Materials](#)

**Lesson 2: [Count and Arrange](#)**

- The purpose of this lesson is for students to count objects and notice that the arrangement of a group of objects does not change the number of objects.
- [Lesson 2 Slides](#)
- [Teacher Presentation Materials](#)

### **Lesson 3: [Groups that Look Very Different](#)**

- The purpose of this lesson is for students to compare groups of objects with very different quantities.
- [Lesson 3 Slides](#)
- [Teacher Presentation Materials](#)

### **Lesson 4: [Groups that Look Alike](#)**

- The purpose of this lesson is for students to compare groups of objects that are close in quantity.
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

### **Investigation:**

#### **Lesson 5: [Make Groups of More, Fewer, or the Same](#)**

- The purpose of this lesson is for students to make groups that have more, fewer, or the same number of objects as another group.
- Students make groups that have fewer, the same, and more objects than a given group. Students choose a collection of objects and place all the objects at the top of the mat. They then make new groups that have fewer, the same, or more objects.
- [Lesson 5 Slides](#)
- [Teacher Presentation Materials](#)

#### **Lesson 6: [Use More, Fewer, or the Same Number to Describe Groups](#) - Warm Up and Activity 1**

- The purpose of this activity is for students to consider different comparison statements and find the group of objects that matches each statement.
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

Activities in Lessons 5 and 6 (Warm Up and Activity 1) best represent investigation as students are putting their tools together in order to conceptualize how the different tools can be used to communicate different ideas. For example, the objects can be used to represent numbers and compare collections to understand comparisons.

#### **Create and Produce: Lesson 6 Activity 2 and Activity 3**

- The purpose of this lesson is for students to use comparison language to describe the number of objects in groups.

- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

In lesson 6, Activity 2, students will build cube towers and compare their towers with a partner. They have multiple opportunities to compare groups of objects and describe their comparisons using the language “more,” “fewer,” and “the same number.” In making comparisons, students compare their cube towers using precise language.

Activity 2:

- The purpose of this activity is for students to have multiple opportunities to compare groups of objects and describe their comparisons using the language “more,” “fewer,” and “the same number.”
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

Monitor students as they build their cube towers and talk with a partner to compare their towers. Listen for students using the precise vocabulary ‘more,’ ‘fewer,’ and ‘the same number’ to describe and compare their towers.

**Communicate and Present:**

Invite students to share their towers with their classmates. If needed ask, “How can we use ‘more,’ ‘fewer,’ or ‘the same number’ to talk about these towers?”

**Reflection:**

- [IM Reflection Practices](#)

Call some students up to the front of the room in order to make a group of 6 students and another group of 9 students.

“How can we use ‘more,’ ‘fewer,’ or ‘the same number’ to describe the number of students in these groups?”

How can we compare groups of students?

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

**Complete File with Resources and Task:**



<b>Topic # 2: Section B</b>	<b>Topic Name: Section B - Count and Compare Groups of Images</b>	<b>Duration:</b> Recommended: 5 days (5 lessons)
<p><b>Topic Description:</b></p> <p>Students begin this section by counting images for the first time. This can be more challenging, as images cannot be rearranged, and students may not have limited experience with keeping track of counted items.</p> <p>Students encounter groups of images in lines, arrays, 5-frames, number cube arrangements, and on fingers. They may be able to determine the cardinality of some groups of images without counting (subitize), which is a valid way to answer “how many” questions.</p> <p>Images arranged on 5-frames and images of fingers allow students to work with the structure of “5 and some more.” Repeated experience with this structure can help students see that they can count on from 5 to determine how many images there are.</p> <p>Here, students also answer “are there enough” questions.</p> <p><b>Section Learning Goals</b></p> <ul style="list-style-type: none"> <li>● Connect quantities with spoken number words.</li> <li>● Count and compare up to 10 images in organized arrangements and know the number remains the same regardless of the order in which the images are counted.</li> </ul>		
<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems</b></p> <p><b>K.NS.1</b> can tell the number of objects using counting and instant visual recognition. (K.CC.B.4-5)</p> <p><b>K.NS.2</b> I can compare quantities and numbers. (K.CC.C.6-7)</p>		<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p><b>Essential Question</b></p> <ol style="list-style-type: none"> <li>1. Why are numbers helpful?</li> <li>2. What strategies can be used to compare numbers?</li> <li>3. How are numbers named and quantities related?</li> </ol> <p><b>Enduring Understanding</b></p> <ul style="list-style-type: none"> <li>● Students answer “how many”</li> </ul>

	<p><b>questions, count out, and compare groups within 10. Students write a number to represent how many:</b></p> <p>Students continue their exploration of number sense through language and object manipulation. Students will engage in comparing collections of items by using language such as bigger/smaller, more/less, greater/fewer. Students will learn that numbers are helpful because they tell us how many. It is quicker to write a number than to draw a picture or take out objects.</p> <ul style="list-style-type: none"> <li>● <b>To compare the number of objects or images, students start by using terms such as “fewer” and “more.”</b> Later, when comparing written numbers, the term “less” is introduced. Students compare sets of objects by looking to see which group visually has more and less, matching strategies, and using their understanding of the number sequence to compare.</li> <li>● <b>We can write numbers to tell how many there are. Numbers help us communicate “how many” easily.</b> Counting tells how many are in a set, regardless of their arrangement or the order in which they appear. The last number said when counting a set is the total.</li> </ul>
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**In this Topic, students will know:**

**Topic Vocabulary:**

<ul style="list-style-type: none"> <li>● When counting objects, say the number names in standard order, pairing each object with one and only one number name and each number name with one and only one object.</li> <li>● The last number name said tells the number of objects counted.</li> <li>● The number of objects is the same regardless of their arrangement or the order in which they were counted as long as each object was only counted once.</li> <li>● Each successive number name refers to a quantity that is one larger.</li> </ul>	<p>Bingo</p> <p><b>Academic vocabulary</b></p> <p>Pattern Block Math Fingers Math Story Tool 5-frame Connecting Cubes Counters</p> <p><b>More</b></p> <p><b>Fewer</b></p> <p>Compare Same Different Arrange Collection Group</p> <p><b>Less</b></p> <p>Order</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Say one number for each object.</li> <li>● Answer how many without counting again.</li> <li>● Use the structure of 5 (in 5-frames or fingers) to count on from 5 to tell how many.</li> <li>● Compare the number of images in groups.</li> <li>● Use “more,” “fewer,” and “the same number” to describe comparisons.</li> <li>● Make groups with more, fewer, or the same number of images than a given group.</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Student Journal Prompts and Reflection Practices</a></li> <li>● <a href="#">Grade K Unit 2 I Can Self Assessment</a></li> </ul> <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> </ul>

- PLCs
- Planning for small groups

**Teacher Journal Reflection Questions:**

**Lesson 7:** In an upcoming section, students will count images organized in circles. What do you notice in their work from today's lesson that you might leverage in that future lesson?

**Lesson 8:** Revisit the norms you established as a class about doing mathematics. Which norms are working and which might need revision? Are there any norms you or your students might want to add?

**Lesson 9:** Reflect on your experience with the Act It Out routine in the curriculum. What moves or questions have improved the learning for each or your students during this routine? What improvements would you make next time?

**Lesson 10:** What question do you wish you had asked today? When and why should you have asked it?

**Lesson 11:** In a future section, students will compare written numbers 1–10. What strategies do you anticipate students will use to compare written numbers? How are these strategies the same and different from the strategies students have used to compare the number of images in groups in this section?

## 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 - Count and Compare Groups of Images	Grade Level and Unit: Kindergarten, Unit 2
<p><b>Description of Task:</b> Students draw a group of things. Then they show their group to your partner and say one of the sentences.”</p> <ul style="list-style-type: none"><li>● “Draw a group that has more things than my group.”</li><li>● “Draw a group that has fewer things than my group.”</li><li>● “Draw a group that has the same number of things as my group.”</li></ul> <p>Partners will draw a group next to their partner’s group and tell you how many things are in the group, and say a sentence using ‘more’, ‘fewer’, or ‘the same number’.”</p>	<p><b>Purpose of Task:</b> The purpose of this activity is for students to draw groups of images that have more, fewer, or the same number of images as a group drawn by their partner. Students use comparison language as they describe the group their partner should draw. The synthesis builds on an idea introduced in the previous lesson. Students see that when creating a group that is more than another group, you first have to make the same amount and then add more (MP8).</p>
<p><b>Background of Students/Learning Progression:</b> Students should be becoming more familiar with using the words more, fewer, or the same number to compare. Students have been exploring the understanding that they can count objects in a different arrangement to get the same total and that it is necessary to keep track of the items that they are counting. Students have been counting groups of objects and then comparing groups.</p> <p>In this section, students count many different groups of things. They gain efficiency with tracking which ones they counted to make sure that they only counted each object one time. They also compare the number of things in groups using “more,” “fewer,” and “the same number.”</p> <p>Sometimes students can just see that there are more objects in one groups than another. Sometimes students have to match or count to figure out which group has fewer. Students explore this further in this group of lessons.</p>	<p><b>Ensure all competencies are addressed in the task:</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, all competencies are addressed</li><li><input type="checkbox"/> No - Task needs modification</li></ul>
<p><b>Getting Started:</b> Lesson 7 (Warm Up)</p> <ul style="list-style-type: none"><li>● <a href="#">Lesson 7 Slides</a></li></ul>	

- [Teacher Presentation Materials](#)

The purpose of this warm-up is for students to experience a new version of the Questions About Us routine. Students consider concepts of numbers in a familiar context. Students stand up to indicate if they prefer dogs or cats. Because all students are standing, it is difficult to determine how many students prefer dogs and how many prefer cats. Students think of ways to organize the groups of students to make them easier to count. The purpose of the synthesis is for students to think of ways they can record how many students chose cats and dogs.

In this next series of lessons students will count groups of up to 10 images/objects and find ways to track objects to make sure they have found a way to count all of the objects in any order to get the total. This warm up will provide students with an opportunity to brainstorm ways to effectively find ways to keep track while counting and to investigate counting numbers in any order to get the same total.

**Section B**

IM Lesson	<a href="#">L7: Count Images in Different Arrangements</a>	<a href="#">L8: Compare Matching Images</a>	<a href="#">L9: More, Fewer, or the Same</a>	<a href="#">L10: Find More or Fewer</a>	<a href="#">L11: Create Groups of Images</a>
Learning Cycle Model	Making Meaning	Making Meaning	Making Meaning	Investigate	Investigate/Create and Produce
Naugatuck Math Competency	K.NS.1	K.NS.1, K.NS.2	K.NS.1, K.NS.2	K.NS.1, K.NS.2	K.NS.1, K.NS.2
Math Practice Standards	MP 8	MP 7	MP 7	MP 6, MP 8	MP 8
Lesson Purpose	The purpose of this lesson is for students to count groups of up to 10 images and understand that the order counted does not change the number of images.	The purpose of this lesson is for students to compare groups of up to 10 images.	The purpose of this lesson is for students to identify groups that have more, less, or the same number as a given group of images.	The purpose of this lesson is for students to compare the number of images in groups and use “fewer”, “more”, and “the same number” to describe their relative size.	The purpose of this lesson is for students to create groups of images with more, fewer, or the same number of images as a given group.
Vocabulary Focus				more, fewer, same number	

<b>Lesson Materials/ Resources</b>	<p><a href="#">Lesson 7 Slides</a></p> <p><a href="#">Teacher Presentation Materials</a></p> <p><a href="#">Student Pages</a></p> <p>Chart Paper</p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Images in Stations</a></li> <li>• Cut out images from blackline masters</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>• Images from Activity 1</li> <li>• Counters</li> </ul> <p><b>Activity 3:</b></p> <p>Intro Math Stories (Stage 1)</p> <ul style="list-style-type: none"> <li>• <a href="#">Math Stories Stage 1 and 4 Pictures</a></li> <li>• <a href="#">Math Stories Stage 1 Recording Sheet</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>Warm Up:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Questions About Us Chart</a></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>Warm Up:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Questions About Us Chart</a></li> </ul> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Compare 5-frame Cards</a></li> <li>• One set for each student</li> </ul> <p><b>Activity 3:</b></p> <p>Intro to Bingo (Stage 1)</p> <ul style="list-style-type: none"> <li>• <a href="#">Bingo Stages 1-3 Gameboard</a></li> <li>• <a href="#">Bingo Stage 1 Cards</a></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 href="#">Questions About Us Chart</a></li> <li>• Gather the completed Questions About Us: Apples or Bananas chart from a previous lesson.</li> </ul> <p><b>Activity 2:</b></p> <p>Intro Less, Same, More (Stage 2)</p> <ul style="list-style-type: none"> <li>• <a href="#">Less, Same, More Mat</a></li> <li>• <a href="#">Image Cards Grade K</a></li> <li>• Create a T-chart labeled "Fewer than 5" and "More than 5".</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>Warm Up:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Questions About Us Chart</a></li> </ul> <p><b>Activity 2:</b></p> <p>Intro Less, Same, More (Stage 3)</p> <ul style="list-style-type: none"> <li>• <a href="#">Less, Same, More Mat</a></li> <li>• <a href="#">Image Cards Grade K</a></li> <li>• Each group of 2 needs a set of cards from blackline masters</li> <li>• Sheet protectors</li> </ul>
<b>Assessment</b>	<p><b>Formative Assessment Strategies: observation, questioning, student discourse.</b></p> <p>See <a href="#">Checkpoint B Document</a>, <a href="#">Checkpoint B Teacher Guide</a>, and <a href="#">Grade K Unit 2 I Can Self Assessment</a></p>				
	<p><a href="#">Section B - Practice Problems</a></p>				

<b>Centers Materials</b>	<a href="#">Connecting Cubes</a> (Stages 1-3)  <a href="#">Number Race</a> (Stage 1)	<a href="#">Connecting Cubes</a> (Stages 1-3)  <a href="#">Number Race</a> (Stage 1)  <a href="#">Math Stories</a> (Stage 1)	<a href="#">Connecting Cubes</a> (Stages 1-3)  <a href="#">Number Race</a> (Stage 1)  <a href="#">Math Stories</a> (Stage 1)	<a href="#">Connecting Cubes</a> (Stages 1-3)  <a href="#">Number Race</a> (Stage 1)  <a href="#">Math Stories</a> (Stage 1)  <a href="#">Bingo</a> (Stage 1)  <a href="#">Less, Same, More</a> (Stages 1 and 2)	<a href="#">Connecting Cubes</a> (Stages 1-3)  <a href="#">Number Race</a> (Stage 1)  <a href="#">Math Stories</a> (Stage 1)  <a href="#">Bingo</a> (Stage 1)  <a href="#">Less, Same, More</a> (Stages 1 -3)
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**Making Meaning:**

**Lesson 7: [Count Images in Different Arrangements](#)**

- The purpose of this lesson is for students to count groups of up to 10 images and understand that the order counted does not change the number of images.
- [Teacher presentation materials](#)
- [Lesson 7 Slides](#)

**Lesson 8: [Compare Matching Images](#)**

- The purpose of this lesson is for students to compare groups of up to 10
- [Teacher presentation materials](#)
- [Lesson 8 Slides](#)

**Lesson 9: [More, Fewer, or the Same](#)**

- The purpose of this lesson is for students to identify groups that have more, less, or the same number as a given group of images
- [Teacher Presentation Materials](#)
- [Lesson 9 Slides](#)

**Investigation:**

**Lesson 10: [Find More or Fewer](#)**

- The purpose of this lesson is for students to compare the number of images in groups and use “fewer”, “more”, and “the same number” to describe their relative size.
- [Teacher Presentation Materials](#)
- [Lesson 10 Slides](#)

**Lesson 11: [Create Groups of Images](#) (Warm Up only)**

- The purpose of this lesson is for students to create groups of images with more, fewer, or the same number of images as a given group
- [Teacher Presentation Materials](#)
- [Lesson 11 Slides](#)







**Create and Produce:**

**Lesson 11: [Create Groups of Images](#)**

- The purpose of this lesson is for students to create groups of images with more, fewer, or the same number of images as a given group
- [Teacher Presentation Materials](#)
- [Lesson 11 Slides](#)

**Activity 1 and 2 -**

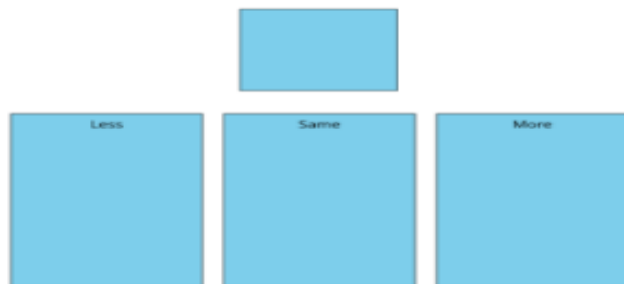
**Activity 1** - Partners will create groups with more, fewer, or the same number of things as another group. Students will draw a group of things and then tell their partner to draw a group with the same, fewer, or more things. Together they will create posters showing these comparisons.

my group	my partner's group
	
	
	

**Activity 2** - Students will draw a card and place it at the top of the mat. They will figure out how many things are on the card.

They will draw three groups in the squares (less, same, more). Draw one group that has fewer things, one group that has the same number of things, and one group that has more things.”

Partners should check to be sure they agree with the groups their partner made.



<p><b>Communicate and Present:</b>  After partners count objects in different arrangements they will communicate how they were able to compare the number objects in one group compared to another group. They will describe how they knew how to create groups with more and less than their partner's amount. In activity 2, students should choose one of the groups that they drew to describe with a sentence using 'more,' 'fewer,' or 'the same number'."</p>	<p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">IM Reflection Practices</a></li> <li>• <a href="#">Grade K Unit 2 I Can Self Assessment</a></li> </ul> <p>Ask students what strategies they use to compare numbers.</p>
<p><b>Notes: Follow lessons in numerical order</b></p>	<p><b>Complete File with Resources and Task:</b></p>

<b>Topic # 3: Section C</b>	<b>Topic Name: Section C- Connect Quantities and Numbers</b>	<b>Duration:</b> Recommended: 5 days (5 lessons)
<p><b>Topic Description:</b> Previously, students counted and made connections between quantities and spoken number words. In this section, students write numbers to represent quantities. To develop students’ familiarity with written numbers, consider providing a reference sheet with numbers and quantities in 5-frames.</p> <p>Students also explore new counting tasks: counting images arranged in a circle, and counting objects or drawing images to represent given numbers. Images arranged in a circle are harder to quantify than those in lines, arrays, or frames because there is no defined starting or stopping point. It requires students to develop a method to keep track of which images they have counted.</p> <p>Creating or drawing a collection with a specified number of items is also more demanding as students need to keep track of the number they are representing and how many they have already counted. In many activities, students have opportunities to look for and make use of structure to help them with the tasks at hand (MP7).</p> <p><b>Section Learning Goals</b></p> <ul style="list-style-type: none"> <li>● Connect quantities with spoken number words and written numbers.</li> <li>● Understand the relationship between number and quantity.</li> </ul>		
<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.2</b> I can compare quantities and numbers. (K.CC.C.6-7)</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 Questions:</b></p> <ol style="list-style-type: none"> <li>1. Why are numbers helpful?</li> <li>2. How are numbers named and quantities related?</li> </ol> <p><b>Enduring Understanding</b></p> <ul style="list-style-type: none"> <li>● <b>Students answer “how many” questions, count out, and compare groups within 10. Students write a number to represent how many:</b> Students continue their exploration of number sense through language and</li> </ul>	

	<p>object manipulation. Students will engage in comparing collections of items by using language such as bigger/smaller, more/less, greater/fewer. Students will learn that numbers are helpful because they tell us how many. It is quicker to write a number than to draw a picture or take out objects.</p> <ul style="list-style-type: none"> <li>● <b>We can write numbers to tell how many there are. Numbers help us communicate “how many” easily.</b> Counting tells how many are in a set, regardless of their arrangement or the order in which they appear. The last number said when counting a set is the total.</li> </ul>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Numerals and quantities are related</li> <li>● How to keep track when counting objects in different arrangements</li> <li>● Quantities represented in 5-frames</li> <li>● Written numerals 1-10</li> </ul>	<p><b>Topic Vocabulary:</b>  “How do you know?”  <b>Academic vocabulary</b></p> <p>Objects  Collection  Geoblocks  Math Fingers  Pattern Blocks  Arrange  Organize  Same  Different  Counters  5-Frame  Track</p>

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

- Write numbers 1-10.
- Match groups of objects or images to the spoken number word that tells how many.
- Count out 1–10 objects or draw 1-10 images to match a given number.

**Plan for Student Reflection:**

- [Student Journal Prompts and Reflection Practices](#)
- [Grade K Unit 2 I Can Self Assessment](#)

**Plan for Teacher Reflection:**

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

**Teacher Journal Reflection Questions:**

**Lesson 12:** Which centers from this unit can be used to support students in building an understanding that the arrangement of objects does not change the quantity?

**Lesson 13:** How effective were your questions in supporting students' thinking today? What did students say or do that showed they were effective?

**Lesson 14:** In the next lesson, students draw groups of images to represent numbers. What did you learn about each student in today's activities that is helpful in planning for the counting activity tomorrow?

**Lesson 15:** Think about a time you recently made a mistake during math class. How did you leverage your mistake to show students that mistakes are just learning in process?

**Lesson 16:** The CCSS require students to compare two numbers between 1 and 10 presented as written numerals. How has the work of this section helped students prepare to meet this standard?

### 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 - Connect Quantities and Numbers</b>	<b>Grade Level and Unit: Kindergarten, Unit 2</b>
<b>Description of Task:</b> Students are given a number and will create a poster representing that number in a variety of ways. After students create their posters and present them to their classmates in a gallery walk the teacher can facilitate a discussion in the lesson synthesis to check for understanding in another way. Show the image from part of a poster and ask which number poster this belongs to. Be sure to show images arranged in a variety of arrangements and notice how students are keeping track of the number of items.	<b>Purpose of Task:</b> The purpose of this activity is for students to draw multiple images to match a number. Students work in small groups to draw many different groups with the number on their poster. After students create their posters, they participate in a gallery walk.
<b>Background of Students/Learning Progression:</b> Previously, students counted and made connections between quantities and spoken number words. In this section, students write numbers to represent quantities. Also students have been exploring counting objects in different arrangements to get the same total. In this section, students develop a method to keep track of the images they have counted because there is no defined starting or stopping point. Students will build on their understanding of connecting different representations to the same 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>  <b>Lesson 12 Warm Up</b> <ul style="list-style-type: none"><li>● <a href="#">Lesson 12 Slides</a></li><li>● <a href="#">Teacher Presentation Materials</a></li></ul> The purpose of this How Many Do You See is for students to recognize and name groups of images and describe how they see the images. This is	

the first time students complete the full warm-up routine, with 3 images that are flashed quickly for the students to see. The first two images show 3 in different arrangements, which builds the understanding that the same quantity can be represented in different ways. The third image builds on the second image with two more dots added in a different color to encourage students to see the image as both 5 dots as well as a group of 3 dots and a group of 2 dots.

**Section C**

IM Lesson	<a href="#">L12: Connect Quantities and Numbers</a>	<a href="#">L13: Numbers in Many Ways</a>	<a href="#">L14: Count Out Objects</a>	<a href="#">L15: Draw Groups of Things</a>	<a href="#">L16: Write Numbers to Represent Quantities</a>
Learning Cycle Model	Making Meaning	Making Meaning	Investigate	Investigate/Create and Produce	Create and Produce
Naugatuck Math Competency	K.NS.1, K.NS.4	K.NS.1, K.NS.4	K.NS.1, K.NS.2	K.NS.1, K.NS.4	K.NS.1, K.NS.4
Math Practice Standards		MP 7, MP 8			MP 2
Lesson Purpose	The purpose of this lesson is for students to connect quantities to written and spoken numbers.	The purpose of this lesson is for students to connect groups of images in different arrangements to spoken and written numbers.	The purpose of this lesson is for students to count out a given number of objects to match a number.	The purpose of this lesson is for students to draw a given number of images.	The purpose of this lesson is for students to write numbers to represent quantities.
Vocabulary Focus	Math Tools Connecting Cubes	Pattern Blocks	Counters 5 Frames	Geoblocks	
Lesson Materials/ Resources	<a href="#">Lesson 12 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <ul style="list-style-type: none"> <li>Colored pencils, crayons, or markers</li> </ul> <b>Activity 1:</b> <ul style="list-style-type: none"> <li>Each group of 4 needs 4 bags. One bag each with: 5</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><a href="#">Reference Sheet Numbers (1–10) with 5-Frames</a></li> </ul> <b>Activity 2:</b> <ul style="list-style-type: none"> <li><a href="#">Circle Cards</a></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><a href="#">Pizza Reference Sheet (0-10)</a></li> <li>Create a set of number cards from the blackline master</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 group of 4 students need a piece of chart paper with a number (1-10) written at the</li> </ul>	<a href="#">Lesson 16 Slides</a>  <a href="#">Teacher Presentation Materials</a>  <a href="#">Student Pages</a>  <b>Activity 1:</b> Revisiting Math Stories (Stage 1) <ul style="list-style-type: none"> <li><a href="#">Math Stories Stage 1 and 4 Pictures</a></li> <li><a href="#">Math Stories Stage 1 Recording Sheet</a></li> </ul>

	<p>objects, 7 objects, 8 objects, and 9 objects.</p> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each group of 4 needs 1 bag of 1-10 objects labeled with a letter.</li> <li><a href="#">Reference Sheet Numbers (1–10) with 5-Frames</a></li> </ul> <p><b>Activity 3:</b></p> <ul style="list-style-type: none"> <li>Revisit Number Race (Stage 2)</li> <li><a href="#">Number Race Stage 1 Recording Sheet for Tracing</a></li> <li><a href="#">Number Mat 1-10</a></li> <li>Each student needs recording</li> <li>Each group of 2 needs number mat and connecting cube</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Sort By Number Mat 1-10</a></li> <li>Cut out images in circle cards from the blackline master to make a set of cards for each group of 2. Add these cards to the <b>Image Cards from a previous lesson.</b></li> </ul>	<p>for each group of 2. Remove the cards with 0 from the sets.</p> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li><a href="#">Reference Sheet Numbers</a></li> <li>Chart paper</li> <li>Connecting cubes</li> <li>Counters</li> <li>Geoblocks</li> <li>Pattern blocks</li> <li>Each group of 2 to 4 students needs a piece of chart paper with a number (1-10) written at the top.</li> </ul> <p><b>Activity 3:</b> Intro Bingo (Stage 2)</p> <ul style="list-style-type: none"> <li><a href="#">Bingo Stages 1-3 Gameboard</a></li> <li><a href="#">Number Cards (0-10)</a></li> </ul>	<p>top.</p> <p><b>Activity 2:</b> Intro Math Libs (Stage 1)</p> <ul style="list-style-type: none"> <li><a href="#">Math Libs Scenes</a></li> <li><a href="#">Math Libs Number Mat 1-10</a></li> <li>Each student gets a connecting cube and two copies of a page from Math Lib Scenes</li> </ul>	<p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Sticky notes for each group</li> <li>Each student needs a brown paper (not see through) bag with 1 to 10 objects inside - such as buttons, connecting cubes, or pencils, small items, etc.</li> </ul>
<b>Assessment</b>	<p><b>Formative Assessment Strategies:</b> observation, questioning, student discourse. See <a href="#">Checkpoint C Document</a>, <a href="#">Checkpoint C Teacher Guide</a>, and <a href="#">Grade K Unit 2 I Can Self Assessment</a></p>				
	<p><a href="#">Section C - Practice Problems</a></p>				
<b>Centers Materials</b>	<p><a href="#">Geoblocks</a> (Stage 1-2)</p> <p><a href="#">Math Fingers</a> (Stages 1-2)</p>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Geoblocks</a> (Stage 1-2)</p> <p><a href="#">Math Fingers</a> (Stages 1-2)</p>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Geoblocks</a> (Stage 1-2)</p> <p><a href="#">Math Fingers</a> (Stages 1-2)</p>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Geoblocks</a> (Stage 1-2)</p> <p><a href="#">Math Fingers</a> (Stages 1-2)</p> <p><a href="#">Bingo</a> (Stages 2)</p>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Geoblocks</a> (Stage 1-2)</p> <p><a href="#">Math Fingers</a> (Stages 1-2)</p> <p><a href="#">Bingo</a> (Stages 2)</p> <p><a href="#">Math Libs</a> (Stage 1)</p> <p><a href="#">Math Stories</a> (Stage 1)</p>

## **Making Meaning:**

### **Lesson 12: [Connect Quantities and Numbers](#)**

- The purpose of this lesson is for students to connect quantities to written and spoken numbers.
- [Teacher Presentation Materials](#)
- [Lesson 12 Slides](#)

### **Lesson 13: [Numbers in Many Ways](#)**

- The purpose of this lesson is for students to connect groups of images in different arrangements to spoken and written numbers.
- [Teacher Presentation Materials](#)
- [Lesson 13 Slides](#)

## **Investigation:**

### **Lesson 14: [Count Out Objects](#)**

- The purpose of this lesson is for students to count out a given number of objects to match a number.
- [Teacher Presentation Materials](#)
- [Lesson 14 Slides](#)

The purpose of this activity is for students to count out objects to match a number. Students recognize numbers 1-10 and count out objects to represent the number. Students are putting toppings on a pizza. One student picks a card and shows it to their partner. The partner puts that many pizza toppings on the pizza and checks to make sure their partner put the right number of toppings on the pizza.

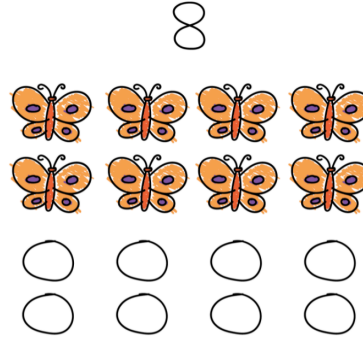
Counting out objects requires students to remember which number they need to stop at while also matching each object with one number. In this lesson, students create multiple groups with the same number of objects that match written numbers. Students investigate showing their number in different arrangements.

**Create and Produce:**

**Lesson 15: [Draw Groups of Things](#)**

- The purpose of this lesson is for students to draw a given number of images.
- [Teacher Presentation Materials](#)
- [Lesson 15 Slides](#)

Activity 1 - In activity 1, the purpose of this activity is for students to draw images to match a number. Students work in small groups to draw many different groups with the number on their poster. After students create their posters, they participate in a gallery walk. Students work with their group to create as many different ways as they can to represent their number on their poster as shown below.



**Lesson 16: [Write Numbers to Represent Quantities](#)**

- The purpose of this lesson is for students to write numbers to represent quantities.
- [Teacher Presentation Materials](#)
- [Lesson 16 Slides](#)

**Communicate and Present:**

**Lesson 15 - Activity 1**

- “Walk around and look at the posters that other groups made. What do you notice? How are the other posters the same as your poster? How are they different?”
- 5 minutes: gallery walk
- Then try to switch the way of asking the question to, “Diego drew these apples. Which number poster did he draw these apples for? How do you know?”

**Lesson 16 - Activity 2 Mystery Bags**

**Reflection:**

- [IM Reflection Practices](#)
- [Grade K Unit 2 I Can Self Assessment](#)

<ul style="list-style-type: none"><li>• Students determine how many objects are in a mystery bag. They work with a partner to share ideas to figure out the total number of objects and write the number on a sticky note. Partners share strategies for figuring out the total number.</li></ul>	
<b>Notes: Follow lessons in numerical order.</b>	<b>Complete File with Resources and Task:</b>

<b>Topic # 4: Section D</b>	<b>Topic Name: Section D - Compare Numbers</b>	<b>Duration:</b> Recommended: 6 days (6 lessons)
<p><b>Topic Description:</b></p> <p>In this section, students develop their capacity to compare written numbers. As they count, students can see that the numbers get larger and that there is 1 more each time. Here, they determine “1 more” and “1 less” than a given number or group of objects, strengthening their understanding of the relationships between numbers and the foundation for comparing numbers.</p> <p>Students may compare written numbers in several ways:</p> <ul style="list-style-type: none"> <li>• Create representations of each number and use the representations to compare.</li> <li>• Use number sense (for instance, that 10 is a “big” number) or mental images of numbers (for instance, 4 relates to 4 fingers).</li> <li>• Use the knowledge of the count sequence: that numbers that come later in the count sequence are greater.</li> </ul> <p>Students who use number sense or mental images may be able to easily compare some numbers but not others. For instance, they may know that 9 is close to 10 or all the fingers in two hands and 4 is associated with fingers in one hand, so 9 is more than 4.</p> <p><b>Section Learning Goals</b></p> <ul style="list-style-type: none"> <li>• Compare written numbers 1–10.</li> </ul>		
<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.2.</b> I can compare quantities and numbers. (K.CC.C.6-7)</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 Questions:</b></p> <ol style="list-style-type: none"> <li>1. Why are numbers helpful?</li> <li>2. What strategies can be used to compare numbers?</li> <li>3. How are numbers named and quantities related?</li> </ol>

	<p><b>Enduring Understanding:</b>  <b>Students answer “how many” questions, count out, and compare groups within 10. Students write a number to represent how many:</b>  Students continue their exploration of number sense through language and object manipulation. Students will engage in comparing collections of items by using language such as bigger/smaller, more/less, greater/fewer. Students will learn that numbers are helpful because they tell us how many. It is quicker to write a number than to draw a picture or take out objects.</p> <p><b>To compare the number of objects or images, students start by using terms such as “fewer” and “more.”</b> Later, when comparing written numbers, the term “less” is introduced. Students compare sets of objects by looking to see which group visually has more and less, matching strategies, and using their understanding of the number sequence to compare.</p> <p><b>We can write numbers to tell how many there are. Numbers help us communicate “how many” easily.</b> Counting tells how many are in a set, regardless of their arrangement or the order in which they appear. The last number said when counting a set is the total.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>• Numerals 1-10</li> </ul>	<p><b>Topic Vocabulary:</b>  Gallery Walk</p>

<ul style="list-style-type: none"> <li>● Count with one-to-one correspondence</li> <li>● The last number said tells the number of objects</li> <li>● Each successive number name refers to a quantity that is one larger</li> <li>● Arrangements of objects does not change the quantity</li> <li>● How to track objects when counting so that objects can be counted in any order and only counted once to get a total</li> <li>● Strategies to compare numbers such as visually seeing which arrangement is more, matching, and the counting sequence</li> </ul>	<p><b>Academic vocabulary</b></p> <p>Order</p> <p>“Are there enough?”</p> <p>“How do you know?”</p> <p>Describe</p> <p><b>Less</b></p> <p>Same</p> <p><b>More</b></p> <p>Compare</p> <p><b>Fewer</b></p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Compare the number of objects or images in groups.</li> <li>● Use “less,” “more,” “fewer,” and “the same number” to describe comparisons.</li> <li>● Make groups with more, fewer, or the same number of objects than a given group.</li> <li>● Notice the arrangement of objects does not affect the number of objects</li> <li>● Subitize</li> <li>● Given a number, count out that many objects</li> <li>● Write numbers 0 to 10</li> <li>● Compare numerals 1-10</li> <li>● Represent and compare quantities and numbers 0-10 with drawings and objects.</li> <li>● Use knowledge of the count sequence or understanding of magnitude of numbers to compare numbers.</li> <li>● Order numbers 1-10</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Student Journal Prompts and Reflection Practices</a></li> <li>● <a href="#">Grade K Unit 2 I Can Self Assessment</a></li> </ul> <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> <p><b>Teacher Journal Reflection Questions:</b></p> <p><b>Lesson 17:</b> In the first activity, students created towers for numbers. How does this relate to the standard K.CC.B.4.c? (K.CC.B.4.c: Understand that each successive number name refers to a quantity that is one larger.)</p> <p><b>Lesson 18:</b> In future lessons, students will compare written numbers 1-10. How does the work with one more</p>

and one less help prepare students for this work?

**Lesson 19:** What makes someone good at math? In what ways are you making assumptions about which of your students are good at math?

**Lesson 20:** In this lesson, students represented numbers in different ways. What connections did students make between the different representations?

**Lesson 21:** 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 Unit 3?

**Lesson 22:** Check-in with your norms and routines. Are they promoting engagement from all of your students? Are there any adjustments you might make so that all students do math tomorrow?

## 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 - Compare Numbers</b>	<b>Grade Level and Unit: Kindergarten, Unit 2</b>
<b>Description of Task:</b> Students take orders with up to 10 of any toppings for up to 3 types of toppings and create a visual representation of the order. They analyze their orders by comparing the different quantities. When students make choices and adhere to mathematical constraints, they model with mathematics (MP4).	<b>Purpose of Task:</b> The purpose of this task is for students to connect quantities with spoken number words and written numbers and to write numbers independently up to 10. This activity gives students an opportunity to practice their counting fluency and to demonstrate understanding of written numbers corresponding with specific quantities, regardless of arrangement.
<b>Background of Students/Learning Progression:</b> Students have been using the words more, fewer, or the same number to compare groups of objects. Students have been exploring the understanding that they can count objects and images in a different arrangement to get the same total and that it is necessary to keep track of the items that they are counting. Students have been counting groups of objects and images, and then comparing groups. Students have been connecting quantities to written and spoken numbers. Students have been drawing given number of images and writing numbers to represent the quantities.  In this section, students develop their capacity to compare written numbers. As they count, students can see that the numbers get larger and that there is 1 more each time. Here, they determine “1 more” and “1 less” than a given number or group of objects, strengthening their understanding of the relationships between numbers and the foundation for comparing numbers.	<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:

### Lesson 17: Order Towers and Numbers (Warm-up only)

- [Lesson 17 Slides](#)
- [Teacher Presentation Materials](#)

The purpose of this warm-up is to allow students to connect language to mathematical representation, and consider different representations for the same quantity. This will be useful when students need to create and compare representations of quantities in a later activity. This warm-up gives students opportunities to make sense of problems (MP1).

### Section D

IM Lesson	<a href="#">L17: Order Towers and Numbers</a>	<a href="#">L18: 1 More 1 Less with Towers and Numbers</a>	<a href="#">L19: Compare Numbers and Images</a>	<a href="#">L20: Represent and Compare Numbers</a>	<a href="#">L21: Compare Numbers</a>	<a href="#">L22: The Pizzeria</a>
Learning Cycle Model	Making Meaning	Making Meaning	Making Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	K.NS.1, K.NS.2	K.NS.1, K.NS.2	K.NS.1, K.NS.2	K.NS.1, K.NS.2, K.NS.4	K.NS.2, K.NS.4	K.NS.1, K.NS.2, K.NS.4
Math Practice Standards		MP 7	MP 1, MP 7	MP 1, MP 5, MP 6	MP 1, MP 5	MP 4, MP.6
Lesson Purpose	The purpose of this lesson is for students to order numbers from 1–10.	The purpose of this lesson is for students to identify 1 more or 1 less than a given number.	The purpose of this lesson is for students to compare groups of images and numbers 1-10.	The purpose of this lesson is for students to represent and compare quantities and numbers to 10.	The purpose of this lesson is for students to compare numbers 1–10.	The purpose of this lesson is for students to apply skills and their understanding of numbers 1-10 in the context of pizza toppings.
Vocabulary Focus	Less, more, compare	Less, more, compare	Same, less, more, compare	Same, less, more, compare	Same, less, more, compare	Same, less, more, compare, gallery walk
Lesson Materials/ Resources	<a href="#">Lesson 17 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 18 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 19 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 20 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 21 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 22 Slides</a> <a href="#">Teacher Presentation Materials</a> <a href="#">Student Pages</a>

	<p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 needs 10 connecting cubes and a set of number cards</li> <li><a href="#">Number Cards (0-10)</a></li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Materials from previous activity</li> </ul>	<p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 needs cube towers constructed for numbers 1-10 and a set of number cards</li> <li><a href="#">Number Cards (0-10)</a></li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Each student needs 10 connecting cubes</li> </ul>	<p><b>Activity 2:</b></p> <p>Intro Less, Same, More (Stage 4)</p> <ul style="list-style-type: none"> <li>Each group of 2 needs mats and cards</li> <li><a href="#">Less, Same, More Mat</a></li> <li><a href="#">Number and Image Cards</a></li> </ul>	<p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Each group of 2 needs ½ sheet of chart paper, and access to colored pencils, crayons, or markers</li> <li>Connecting cubes or counters</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Charts from Activity 1</li> </ul>	<p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Connecting cubes or counters ( at least 20 per group of 2)</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Connecting cubes or counters ( at least 20 per group of 2) and number mat</li> <li><a href="#">Number Mat 1-10</a></li> </ul>	<p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Colored pencils or crayons</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Colored pencils or crayons</li> <li><a href="#">Pizza Order Sheet</a></li> </ul> <p><b>Section D - Practice Problems</b></p>
<b>Assessment</b>	<p>Formative Assessment Strategies: observation, questioning, student discourse.  See <a href="#">Checkpoint D Document</a>, <a href="#">Checkpoint D Teacher Guide</a>, and <a href="#">Grade K Unit 2 I Can Self Assessment</a></p>					
	<p><a href="#">Section D - Practice Problems</a></p> <p><a href="#">End of Unit 2 Assessment</a></p> <p><a href="#">End of Unit 2 Assessment Teacher Guide</a></p>					
<b>Centers Materials</b>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Math Libs</a> (Stage 1)</p> <p><a href="#">Math Stories</a> (Stage 1)</p>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Math Libs</a> (Stage 1)</p> <p><a href="#">Math Stories</a> (Stage 1)</p>	<p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Math Libs</a> (Stage 1)</p> <p><a href="#">Math Stories</a> (Stage 1)</p>	<p><a href="#">Less, Same, More</a> (Stage 1-4)</p> <p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Math Libs</a> (Stage 1)</p>	<p><a href="#">Less, Same, More</a> (Stage 1-4)</p> <p><a href="#">Number Race</a> (Stage 1)</p> <p><a href="#">Math Libs</a> (Stage 1)</p>	

## **Making Meaning:**

### **Lesson 17: Order Towers and Numbers (Activities only)**

- The purpose of this lesson is for students to order numbers from 1–10.
- [Lesson 17 Slides](#)
- [Teacher Presentation Materials](#)

### **Lesson 18: 1 More 1 Less with Towers and Numbers**

- The purpose of this lesson is for students to identify one more or one less of a given number.
- [Lesson 18 Slides](#)
- [Teacher Presentation Materials](#)

### **Lesson 19: Compare Numbers and Images**

- The purpose of this lesson is for students to compare groups and images of numbers.
- [Lesson 19 Slides](#)
- [Teacher Presentation Materials](#)

## **Investigation:**

### **Lesson 20: Represent and Compare Numbers**

- The purpose of this lesson is for students to represent and compare quantities and numbers 1-10.
- [Lesson 20 Slides](#)
- [Teacher Presentation Materials](#)

#### **Activity 1 : Represent Numbers**

The purpose of this activity is for students to represent a number from 1–10 in different ways. Students write the number, use objects to create groups, and draw groups of images. Students use these representations while they take a gallery walk in the next activity. Students use appropriate tools strategically as they choose which objects to use and how to organize them to represent their number (MP5).

#### **Activity 2: Gallery Walk: Different Representations**

The purpose of this activity is for students to look at different representations of numbers 1–10 that their classmates made. Students compare two numbers, using the numbers or any of the representations on the charts. They make comparison statements using the words, "more", "less", and "the same number." When students share how they compare their numbers, they use their own mathematical vocabulary and listen to others' thinking (MP6).

### **Lesson 21: Compare Numbers**

- The purpose of this lesson is for students to compare numbers 1-10.
- [Lesson 21 Slides](#)
- [Teacher Presentation Materials](#)

#### **Activity 1 : Which Numbers is More?**

The purpose of this activity is for students to compare numbers in a way that makes sense to them. Students can use physical objects or make drawings to represent each number (MP5), and match or count to compare. Students can also use their knowledge of the count sequence and understanding that each successive number refers to a quantity that is one more to compare the numbers. In the synthesis students describe how creating representations of numbers helps to compare numbers.

#### **Activity 2: Which Number is Less?**

The purpose of this activity is for students to write and compare numbers 1–10. Students compare numbers in any way that makes sense to them.

### **Create and Produce:**

#### **Lesson 22: The Pizzeria**

- The purpose of this lesson is for students to apply skills and their understanding of numbers 1-10 in the context of pizza toppings.
- [Lesson 22 Slides](#)
- [Teacher Presentation Materials](#)

#### **Activity 1: Class Pizza Order**

The purpose of this activity is for students to write numbers and draw images to represent each written number. In this activity the teacher walks students through taking a class order. Students draw the toppings on the pizza and then make comparisons in the synthesis.

Students take a class order for a pizza and make the order. In doing so, they connect the spoken number with the written number and a representation of the number. When students translate a mathematical answer back into the context of a real world situation, they model with mathematics (MP4).

#### **Activity 2: More Pizza Orders (creating only)**

The purpose of this task is for students to connect quantities with spoken number words and written numbers and to write numbers independently up to 10. This activity gives students an opportunity to practice their counting fluency and to demonstrate understanding of written numbers corresponding with specific quantities, regardless of arrangement.

Students continue to take orders with up to 10 of any toppings for up to 3 types of toppings and create a visual representation of the order. They analyze their orders by comparing the different quantities. When students make choices and adhere to mathematical constraints, they model with mathematics (MP4).

**Communicate and Present:**

**Lesson 22: The Pizzeria (Using Activity 2 creation)**

- The purpose of this lesson is for students to apply skills and their understanding of numbers 1-10 in the context of pizza toppings.
- [Lesson 22 Slides](#)
- [Teacher Presentation Materials](#)

The purpose of this task is for students to look at different visual representations of pizzas with toppings that their classmates made. Students will make comparison statements using the words, "more", "less", and "the same number." When students share how they compare their pizzas, they use their own mathematical vocabulary and listen to others' thinking (MP6).

- Display 2–3 pizzas from students for all to see.
- "Which pizzas have more than 6 \_\_\_\_\_ [topping of your choice]? How can you tell?"
- Count as a class or invite a student to count the toppings.
- "Which pizzas have less than 4 \_\_\_\_\_ [topping of your choice]? How can you tell?"
- Count as a class or invite a student to count the toppings.
- Display only one pizza.
- "How do you know your pizzas are exactly what the customer ordered?" (When I count each topping they match the number on the order.)

**Reflection:**

- [IM Reflection Practices](#)
- [Grade K Unit 2 I Can Self Assessment](#)

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

**Complete File with Resources and Task:**