

Course Title: Mathematics	Full Year	Required
<p>Course Description: The mathematical work for grade 1 is partitioned into 8 units:</p> <ol style="list-style-type: none"> 1. Adding, Subtracting, and Working with Data 2. Addition and Subtraction Story Problems 3. Adding and Subtracting within 20 4. Numbers to 99 5. Adding within 100 6. Length Measurements within 120 units 7. Geometry and Time 8. Putting it All Together <p>In these materials, particularly in units that focus on addition and subtraction, teachers will find terms that refer to problem types, such as Add To, Take From, Put Together or Take Apart, Compare, Result Unknown, and so on. These problem types are based on common addition and subtraction situations, as outlined in Table 1 of the Mathematics Glossary section of the Common Core State Standards.</p>		
<p>Additional Course Information:</p> <p>The big ideas in grade 1 include:</p> <ul style="list-style-type: none"> ● developing understanding of addition, subtraction, and strategies for addition and subtraction within 20 ● developing understanding of whole-number relationships and place value, including grouping in tens and ones ● developing understanding of linear measurement and measuring lengths as iterating length units ● reasoning about attributes of, and composing and decomposing geometric shapes. 	<p>Core Resources:</p> <p>Illustrative Mathematics</p> <p>Instructional Routines and Math Language Routines</p> <p>Glossary - Student-friendly</p> <p>Required Materials</p> <p>IM en Español</p> <p>Developing a Mathematical Community</p>	<p>Are there any attachments <u>at the course level</u> that teachers will need?</p> <p>Scope and Sequence - This document should be reviewed at the start of the year and each unit for information on language routines, expectations, and possible misconceptions.</p> <p>Pacing Guide and Dependency Diagrams K-5</p>

Unit 1: Adding, Subtracting, and Working with Data**Duration: 16 to 17 days****Unit Overview - FOCUS:**

In this unit, students deepen their understanding of addition and subtraction within 10, and extend what they know about organizing objects into categories and representing the quantities.

In kindergarten, students solved addition and subtraction word problems within 10 using objects and drawings. They learned about Put-Together, Result-Unknown problems and worked toward fluency with sums and differences within 5.

The activities in this unit reinforce these understandings and initiate the year-long work of developing fluency with sums and differences within 10. Some problems involve finding sums greater than 10, a skill to be honed throughout the course and with the support of tools such as connecting cubes.

Students also build on the work in kindergarten as they engage with data. Previously, they sorted objects into given categories such as size or shape. Here, students use drawings, symbols, tally marks, and numbers to represent categorical data. They go further by choosing their own categories, interpreting representations with up to three categories, and asking and answering questions about the data.

This opening unit also offers teachers opportunities to introduce mathematical routines and structures for centers, and to develop a shared understanding of what it means to do math and to be a part of a [mathematical community](#).

Unit Learning Goal

- Students add and subtract within 10, and represent and interpret categorical data.

Topic Titles:

- Section A: Add and Subtract within 10
 - Build toward fluency by adding and subtracting within 10 in a way that makes sense to them.
- Section B: Show Us Your Data
 - Organize and represent data.
- Section C: What Does the Data Tell Us?
 - Interpret data representations to ask and answer questions.

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

In kindergarten, students solved addition and subtraction word problems within 10 using objects and drawings. They learned about Put-Together, Result-Unknown problems and worked toward fluency with sums and differences within 5. Students also build on the work in kindergarten as they engage with data. Previously, they sorted objects into given categories such as size or shape.

<p>Essential Questions:</p> <ol style="list-style-type: none"> 1. In what ways can we represent numbers? 2. How can we collect, organize, and represent categorical data in ways others can understand? 	<p>Enduring Understanding:</p> <p>We can utilize different tools, drawings, expressions and equations to represent numbers. Numbers allow us to make sense of the world around us, and these strategies provide us with different ways to see numbers. Numbers can be grouped and represented in a variety of ways to make sense of the world.</p> <p>By asking mathematical questions, we can collect data that gives us more information. We can represent data sets using a variety of representations. These visual representations allow us to organize our data so we can analyze what we know and learn more about our mathematical questions.</p>	
<p>What Students Will Know: This should be based on the competencies.</p> <ul style="list-style-type: none"> ● There are different ways in which we can count and represent objects. ● Counting is related to addition. ● We can use expressions to represent the total number of objects, to represent images, and to represent situations. ● A ten-frame is a tool we can use to organize our objects. ● Each successive number name refers to a quantity that is one larger. ● Adding one or two more is the same as counting one or two more. ● Subtracting 1 or 2 from any number is the same as counting one or two less, or counting back one or two. ● We can sort tools into different categories based on similarities and differences. ● Labeling our categories gives us information about what is inside each group. ● We can use different tools (such as 	<p>What students will do: This should be based on the competencies.</p> <ul style="list-style-type: none"> ● Recognize the number of dots without counting. ● Count all to find the sum. ● Count on to find the sum. ● Know certain sums. ● Represent all, then cross off or remove to find the difference. ● Count back to find the difference. ● Know certain differences. ● Sort objects into categories. ● Represent each object with a picture of the object, symbol, or number. ● Label categories in their representation. ● Count up to 20 objects. ● Relate counting to addition. ● Represent addition within 10 using objects, fingers, mental images, drawings, verbal explanations, expressions/equations ● Organize, interpret, and represent data with up to 3 categories. ● Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in 	<p>Unit Specific Vocabulary: Math Community</p> <p>Academic vocabulary: Sum Difference Count Addition Plus Equal Equal Sign Expressions Subtract Minus Strategy Category Data Survey Sides - Straight, Curved Sort Representation Tally Marks</p>

<p>connecting cubes and tally marks) to represent data.</p> <ul style="list-style-type: none"> • Different representations can be helpful in different ways to answer questions about categorical data. 	<p>one category than another.</p>	
<p>Entry Level Assessment and Connection to Unit:</p> <p>Section A: Pre-Unit Practice Problems</p> <p>Section B: Pre-Unit Practice Problems</p> <p>Section C: Pre-Unit Practice Problems</p>	<p>Unit Materials, Resources and Technology:</p> <ul style="list-style-type: none"> • Illustrative Mathematics • Instructional Routines and Math Language Routines • Glossary - Student-friendly • Required Materials • IM en Español • Pacing Guide and Dependency Diagrams K-5 • End of Unit 1 Assessment • End of Unit 1 Assessment Teacher Guide 	
<p>Opportunities for Interdisciplinary Connections:</p> <p><i>Science</i></p> <ul style="list-style-type: none"> • Counting collections • Collecting data • Asking scientific questions • Comparing and contrasting • Making categories <p><i>Literacy</i></p> <ul style="list-style-type: none"> • Comparing and contrasting • Explaining reasoning • Asking questions 		

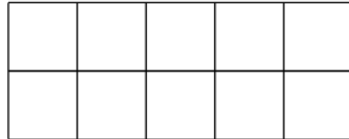
<p>Any links, attachments and resources:</p> <p>Instructional Routines Document</p> <p>Family Support Materials Unit 1</p>	<p>Planning Ideas:</p> <p>Components of a Typical IM Lesson</p> <p>What To Know About IM When Planning</p> <p>Where to Find the Mathematical Practices in the Units</p> <p>Assessing the Mathematical Practices</p>
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Topic # 1 (Section A)	Topic Name: Section A - Add and Subtract within 10	Duration: Recommended: 6 days
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Topic Description:

In this section, students engage with addition and subtraction within 10 through activities and centers. The work here allows teachers to assess students’ understanding of addition and subtraction, as well as their fluency with facts within 5, a kindergarten goal.

There is an emphasis on adding and subtracting 1 or 2 to encourage students to count on or count back, which helps to build their awareness of how addition and subtraction relates to counting. To support this development, give students access to two-color counters and 10-frames throughout this section.



Section Learning Goals

- Build toward fluency by adding and subtracting within 10 in a way that makes sense to them.

<p>Competencies Addressed:</p> <p>Operations and Algebraic Thinking</p> <p>1.OA.2.1 - I can add within 20 using strategies.</p> <p>1.OA.2.2 - I can subtract within 20 using strategies.</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Question In what ways can we represent numbers?</p> <p>Enduring Understanding We can utilize different tools, drawings, expressions and equations to represent numbers. Numbers allow us to make sense of the world around us, and these strategies provide us with different ways to see</p>
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	<p>numbers. Numbers can be grouped and represented in a variety of ways to make sense of the world.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● There are different ways in which we can count and represent objects. ● Counting is related to addition. ● We can use expressions to represent the total number of objects, to represent images, and to represent situations. ● A ten-frame is a tool we can use to organize our objects. ● Each successive number name refers to a quantity that is one larger. ● Adding one or two more is the same as counting one or two more. ● Subtracting 1 or 2 from any number is the same as counting one or two less, or counting back one or two. 	<p>Topic Vocabulary: Math Community</p> <p>Academic vocabulary Sum Difference Count Addition Plus Equal Equal Sign Expressions Subtract Minus Strategy</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Recognize the number of dots without counting. ● Count all to find the sum. ● Count on to find the sum. ● Know certain sums. ● Represent all, then cross off or remove to find the difference. ● Count back to find the difference. ● Know certain differences. ● Count up to 20 objects ● Relate counting to addition ● Represent addition within 10 using objects, fingers, mental images, drawings, verbal explanations, expressions/equations 	<p>Plan for Student Reflection: Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection: Lesson 1: Reflect on the tone in the classroom during the first lesson of the year. How are you feeling about teaching math, and how are your students feeling about participating in the mathematics this year? How can you tell? Lesson 2: How are you facilitating the creation of a productive Mathematical Community? Where can you point to evidence of this for students to see?</p>

Lesson 3: Reflect on whether or not you were able to circulate and hear student thinking while students worked in centers. If you were, what routines or structures helped students work independently? If you were not, what routines or structures can you establish to ensure that you are able to circulate and talk to students as they work?

Lesson 4: What strategy did most students use in their work today? What surprised you about student thinking?

Lesson 5: 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?

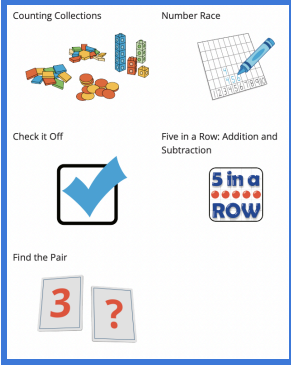
Lesson 6: Students worked in centers a lot in this section. What structures have you put in place to make center time successful for all students? What additional structures or procedures could be helpful to introduce?

Utilize additional strategies for Teacher Reflection:

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

Topic 1 Task Development

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

Task Title: Topic 1 - Add and Subtract within 10	Grade Level and Unit: Grade 1, Unit 1
<p>Description of Task: Students choose from any stage of previously introduced centers and are encouraged to choose the center that will be most helpful for them at this time.</p> <p>After completing the center, students will create a way to present their understanding through words, drawings, written work, and/or visuals.</p>	<p>Purpose of Task:</p>  <p>The purpose of Lesson 6, Activity 2 (Choice Time) is for students to choose from activities that focus on counting up to 20 objects or adding and subtracting within 10.</p>
<p>Background of Students/Learning Progression: In kindergarten, students solved addition and subtraction word problems within 10 using objects and drawings. They learned about Put-Together, Result-Unknown problems and worked toward fluency with sums and differences within 5.</p>	<p>Ensure all competencies are addressed in the task:</p> <ul style="list-style-type: none"><input type="checkbox"/> Yes, all competencies are addressed<input type="checkbox"/> No - Task needs modification
<p>Getting Started:</p> <p>Lesson 1: Count and Add: Warm-Up ONLY: What Do You Know About Math?</p> <ul style="list-style-type: none">• The purpose of this lesson is for students to count objects and relate counting to addition.• Teacher presentation materials• Slides <p>The purpose of this activity is to elicit ideas students have about doing math. Students learn the What Do You Know About _____ routine, which will be used throughout the year. This routine provides an opportunity for all students to contribute to the conversation and for the teacher to listen to what knowledge students already have.</p>	

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

Learning Cycle Model Process

Section A

IM Lesson	L1: Count and Add	L2: Explore Expressions and Sums	L3: Add 1 or 2	L4: More Work with 1 and 2	L5: Explore Addition and Subtraction	L6: Center Day 1
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Making Meaning	Making Meaning	Making Meaning	Investigate & Create and Produce
Naugatuck Math Competency	1.OA.1, 1.OA.2	1.OA.1, 1.OA.2	1.OA.1, 1.OA.2	1.OA.1, 1.OA.2	1.OA.1, 1.OA.2	1.OA.1, 1.OA.2
Math Practice Standards	MP 2	MP 2, 6	MP 7, 8	MP 7, 8		
Lesson Purpose	The purpose of this lesson is for students to count objects and relate counting to addition.	The purpose of this lesson is to write addition expressions within 10 and find the sums.	The purpose of this lesson is for students to add within 10 when one addend is 1 or 2.	The purpose of this lesson is for students to subtract 1 or 2 within 10.	The purpose of this lesson is for students to add and subtract within 10.	The purpose of this lesson is for students to practice adding and subtracting within 10.
Teacher Facing Learning Goal	<ul style="list-style-type: none"> Count and represent a collection of objects. Relate counting to addition. 	Write addition expressions within 10 based on images and add in a way that makes sense to them.	Add within 10, given expressions with an addend of 1 or 2, in a way that makes sense to them.	Subtract within 10, given expressions in which 1 or 2 is subtracted, in a way that makes sense to them.	Add and subtract within 10 in a way that makes sense to them.	Add and subtract within 10 in a way that makes sense to them.
Vocabulary Focus	-	sum	-	-	difference	-
Lesson Structure	Warm-up: 10 minutes What Do You Know About Math? Activity 1: 20 minutes Revisit Counting Collections, Up to 20 Activity 2: 20 minutes	Warm-up: 10 minutes Choral Count: Count to 41 Activity 1: 15 minutes Matching Dot Cards and Expressions Activity 2: 20 minutes	Warm-up: 10 minutes How Many Do You See: Dot Cubes Activity 1: 20 minutes Introduce Five in a Row: Add & Subtract, Add 1 or 2	Warm-up: 10 minutes Number Talk: Add 1 or 2 Activity 1: 20 minutes Introduce Five in a Row: Add & Subtract, Subtract 1 or 2	Warm-up: 10 minutes Number Talk: Subtract 1 or 2 Activity 1: 20 minutes Introduce Check it Off, Subtract within 10 Activity 2: 20 minutes	Warm-up: 10 minutes Which One Doesn't Belong: Math Tools Activity 1: 20 minutes Revisit Find the Pair, Make 10 Activity 2: 20 minutes

	Introduce: Number Race, Add to 10 Synthesis: 10 minutes	Introduce: Check it Off, Add within 10 Synthesis: 10 minutes Cooldown: 5 minutes	Activity 2: 20 minutes Centers: Choice Time Synthesis: 10 minutes	Activity 2: 20 minutes Centers: Choice Time Synthesis: 10 minutes	Centers: Choice Time Synthesis: 10 minutes	Centers: Choice Time Synthesis: 10 minutes
Material to Gather	<ul style="list-style-type: none"> • Collections of 20 objects • Dot cubes 	<ul style="list-style-type: none"> • 10-frames • Dot cubes • Two-color counters 	<ul style="list-style-type: none"> • 10-frames • Materials from previous centers • Number cards 0–10 • Two-color counters 	<ul style="list-style-type: none"> • 10-frames • Materials from a previous activity • Materials from previous centers • Number cards 0–10 • Two-color counters 	<ul style="list-style-type: none"> • 10-frames • Materials from previous centers • Number cards 0–10 • Two-color counters 	<ul style="list-style-type: none"> • 10-frames • Materials from previous centers • Number cards 0–10 • Two-color counters
Lesson Materials/ Resources	Lesson 1 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> • For each group of two, create one collection of up to 20 objects such as buttons, counters, connecting cubes, paper clips, square tiles. • Give each group two Counting Collections Stages 1 and 2 Recording Sheet, and access to 10-Frames. Activity 2: <ul style="list-style-type: none"> • Give each group two Number Race Stage 3 	Lesson 2 Slides Teacher Materials Student Pages Activity 1: No additional material needed Activity 2: <ul style="list-style-type: none"> • Give each group a set of Number Cards (0-10), two Check It Off Stage 1 Recording Sheet Grade 1, and access to 10-Frames. and two-color counters. Cool Down: Expressions and Sums	Lesson 3 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> • Each group of 2 needs a set of . • Give each group a set of Number Cards (0-10), a Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard, two-color counters, and access to 10-Frames. Activity 2: Centers - see below	Lesson 4 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> • Each group of 2 needs a set of Number Cards (0-10), two Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard from the previous lesson, 10-Frames, and access to two-colored counters. Activity 2: Centers - see below	Lesson 5 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> • Give each group a set of Number Cards (0-10), two Check It Off Stage 2 Recording Sheet, and access to two-color counters and 10-Frames. Activity 2: Centers - see below	Lesson 6 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> • Give each group a set of Number Cards (0-10), Find the Pair Stage 2 Recording Sheet, and access to 10-Frames and two-color counters. Activity 2: Centers - see below

	Gameboards and two dot cubes.					
Assessment	Formative Assessment Strategies: observation, questioning, student discourse See Section A Checkpoint Assessment (Monitoring Sheet) , Section A Checkpoint Teacher's Guide					
						Section A Practice Problems
Centers Materials	Counting Collections, Stage 1 Number Race, Stage 3	Check it Off Stage 1	Counting Collections, Stage 1 Number Race, Stage 3 Check it Off Stage 1 Five in a Row: Addition and Subtraction Stage 1	Counting Collections, Stage 1 Number Race, Stage 3 Check it Off Stage 1 Five in a Row: Addition and Subtraction Stage 1	Counting Collections, Stage 1 Number Race, Stage 3 Check It Off Stage 2 Five in a Row: Addition and Subtraction Stage 1	Counting Collections, Stage 1 Number Race, Stage 3 Check It Off Stage 2 Five in a Row: Addition and Subtraction Stage 1 Find the Pair, Stage 2

Making Meaning:

[Lesson 1: Count and Add](#): Activities 1,2, & Lesson Synthesis ONLY

- The purpose of this lesson is for students to count objects and relate counting to addition.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 2: Explore Expressions and Sums](#)

- The purpose of this lesson is to write addition expressions within 10 and find the sums.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 3: Add 1 or 2](#)

- The purpose of this lesson is for students to add within 10 when one addend is 1 or 2.
- [Teacher presentation materials](#)

- [Slides](#)

[Lesson 4: More Work with 1 and 2](#)

- The purpose of this lesson is for students to subtract 1 or 2 within 10.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 5: Explore Addition and Subtraction](#)

- The purpose of this lesson is for students to subtract 1 or 2 within 10.
- [Teacher presentation materials](#)
- [Slides](#)

As teachers facilitate these lessons, it is imperative that they also take the time to build a mathematical community with the ideas from Illustrative Mathematics. As the content of the units become more complex, “doing math” may look different compared to other curriculum resources. Illustrative Mathematics values students creating meaning with their peers, so it is essential that students understand what doing math looks and feels like along with norms that allow this work to be successful.

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint A: Teacher Instructions](#)

[Checkpoint A Table](#)

Investigate:

[Lesson 6: Center Day 1:](#) Warm-Up and Activity 1 ONLY

- The purpose of this lesson is for students to practice adding and subtracting within 10.
- [Teacher presentation materials](#)
- [Slides](#)

Through centers, students will have the opportunity to continue their investigations of previous lessons. As students engage in centers, teachers may utilize the Checkpoint document to note which students are progressing and which students need additional support.

Create and Produce:

[Lesson 6: Center Day 1:](#) Activity 2 ONLY

- The purpose of this lesson is for students to practice adding and subtracting within 10.
- [Teacher presentation materials](#)
- [Slides](#)

The purpose of Lesson 6, Activity 2 (Choice Time) is for students to choose from activities that focus on counting up to 20 objects or adding and subtracting within 10. Students choose from any stage of previously introduced centers and are encouraged to choose the center that will be most helpful for them at this time.

- Counting Collections
- Number Race
- Check it Off
- Five in a Row: Addition and Subtraction
- Find the Pair

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

Communicate and Present:

From Lesson 6, Activity 2

Students share what they produced in Lesson 6, Activity 2.

In the synthesis, students discuss ways they can continue building fluency with addition and subtraction within 10 at home. Consider sending home copies of the center activities for students to play at home.

Reflection:

From Lesson 6, Activity 2

“We have been playing a lot of games to help us build fluency with addition and subtraction within 10. How can you continue working on addition and subtraction at home?” (I could use flash cards. I could play these games with my family.)

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

[Task-Based Learning Plan Format for Unit 1 Topic 1](#)

Topic # 2 (Section B)	Topic Name: Section B - Show Us Your Data	Duration: Recommended: 4 days
<p>Topic Description:</p> <p>Section Learning Goals</p> <ul style="list-style-type: none"> Organize and represent data. <p>In this section, students organize and represent data. They begin by sorting objects into categories of their choice, describing their categories, and counting the number of objects in each category.</p> <div data-bbox="743 602 1318 849" data-label="Image"> </div> <p>Next, students learn to collect data by conducting a survey. No specific data representations are required in grade 1, so students record and organize data in a way that makes sense to them. They may represent the results using objects, symbols, tally marks, or numbers. Students then make sense of one another's representations (MP1).</p>		
<p>Competencies Addressed:</p> <p>Measurement and Data Investigations</p> <p>3. I can represent and interpret data.</p> <p>Operations and Algebraic Thinking</p> <p>1. I can add within 20 using strategies.</p> <p>2. I can subtract within 20</p>		<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Question In what ways can we represent numbers?</p> <p>Enduring Understanding We can utilize different tools, drawings, expressions and equations to represent numbers. Numbers allow us to make sense of the world around us, and these strategies provide us with different ways to see numbers. Numbers can be grouped and represented</p>

	in a variety of ways to make sense of the world.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● We can sort tools into different categories based on similarities and differences. ● Labeling our categories gives us information about what is inside each group. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Category Data Survey Sides - Straight, Curved Sort Representation</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Sort objects into categories. ● Represent each object with a picture of the object, symbol, or number. ● Label categories in their representation ● Organize, interpret, and represent data with up to 3 categories ● Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than another 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 7: In kindergarten, students compared two- and three-dimensional shapes and used informal language to describe how they were alike and different. What informal language did students use to describe shapes today? How did the Collect and Display routine help students develop more language to describe objects?</p> <p>Lesson 8: After the gallery walk and the discussion about what makes a representation easy to interpret, what representations do you anticipate students making for data they collect in the next lesson? Why do you think they will choose these representations?</p>

Lesson 9: Reflect on times you observed students listening to one another's ideas today in class. What norms would help each student better attend to their classmates' ideas in future lessons?

Lesson 10: Reflect on what you saw and heard as students worked in centers today. Whose ideas were heard, valued, and accepted? How can you adjust the group structure or norms during the next center time to ensure each student's ideas are a pa

Utilize additional strategies for Teacher Reflection:

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

Topic 2 Task Development

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

Task Title: Topic 2 - Show Us Your Data	Grade Level and Unit: Grade 1, Unit 1
Description of Task: Students collect information, or data, about their class and discuss how to organize it in a way that others will understand. Next, they represent on paper the class data collected during the previous activity. Students will then interpret the similarities and differences of those representations.	Purpose of Task: The purpose of this task is for students to collect categorical data about the class, organize it, and represent it in a way others can understand.
Background of Students/Learning Progression: In kindergarten, students sorted objects into given categories such as size or shape. Students in Kindergarten classify objects into categories, initially specified by the teacher and perhaps eventually elicited from students. For example, in a science context, the teacher might ask students in the class to sort pictures of various organisms into two piles: organisms with wings and those without wings. Students can then count the number of specimens in each pile. Students can use these category counts and their understanding of cardinality to say whether there are more specimens with wings or without wings. (From the Achieve the Core: Progression Documents: Measurement & Data K-5)	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
Getting Started: Lesson 7: Sort Math Tools: Warm-Up ONLY - Notice and Wonder: Math Tools <ul style="list-style-type: none">• The purpose of this activity is to elicit language students have to describe math tools which will be useful when students sort them in a later activity. The activity provides an opportunity for students to describe mathematical objects in different ways, including non-mathematical characteristics such as color as well as mathematical characteristics such as the number of corners and the category or properties of the shapes.• Teacher presentation materials• Slides	

Learning Cycle Model Process

Section B

IM Lesson	L7: Sort Math Tools	L8: Sort and Count Shape Cards	L9: What is Your Favorite__?	L10: Center Day 2
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Making Meaning, Investigate, & Create and Produce	*Additional Learning
Naugatuck Math Competency	1.MD.3, 1.OA.1, 1.OA.2	1.MD.3	1.MD.3, 1.OA.1, 1.OA.2	1.NBT.1, 1.OA.1, 1.OA.2
Math Practice Standards	MP 3, 6	MP 3, 6	MP 3	
Lesson Purpose	The purpose of this lesson is for students to sort objects into categories and tell how many objects are in each category.	The purpose of this lesson is for students to sort shapes and create a representation that shows the number of shapes in each category.	The purpose of this lesson is for students to collect categorical data about the class, organize it, and represent it in a way others can understand.	The purpose of this lesson is for students to add and subtract within 10.
Teacher Facing Learning Goal	<ul style="list-style-type: none"> Describe (orally) the categories chosen for sorting math tools and tell how many in each category. Sort math tools into categories in a way that makes sense to them. 	<ul style="list-style-type: none"> Represent how many shapes are in each category. Sort shapes into three categories. 	<ul style="list-style-type: none"> Organize and represent categorical data about the class. Organize and represent data. 	Add and subtract within 10.
Vocabulary Focus	category	-	data survey	-
Lesson Structure	Warm-up: 10 minutes Notice and Wonder: Math Tools Activity 1: 10 minutes Sort Objects Activity 2: 15 minutes How Did They Sort? Activity 3: 15 minutes Centers: Choice Time Synthesis: 10 minutes	Warm-up: 10 minutes Which One Doesn't Belong: Show Quantities Activity 1: 10 minutes Sort Shapes Activity 2: 15 minutes Show Your Sort Activity 3: 15 minutes Shape Sort Gallery Walk Synthesis: 10 minutes	Warm-up: 10 minutes How Many Do You See: Dots and More Dots Activity 1: 15 minutes A Class Survey Activity 2: 15 minutes Show Our Class Data Activity 3: 10 minutes Different Ways to Show Data Synthesis: 10 minutes	Warm-up: 10 minutes Choral Count: Count by 10 Activity 1: 20 minutes Revisit What's Behind My Back, 10 Cubes Activity 2: 20 minutes Centers: Choice Time Synthesis: 10 minutes

<p>Materials to Gather</p>	<p>Materials to Gather</p> <ul style="list-style-type: none"> ● Inch tiles ● Materials from a previous activity ● Materials from previous centers ● Pattern blocks ● Two-color counters 	<p>Materials to Gather</p> <ul style="list-style-type: none"> ● Colored pencils or crayons ● Materials from a previous activity 	<p>Materials to Gather</p> <ul style="list-style-type: none"> ● Colored pencils or crayons ● Connecting cubes ● Materials from a previous activity 	<p>Materials to Gather</p> <ul style="list-style-type: none"> ● 10-frames ● Connecting cubes ● Materials from previous centers ● Two-color counters
<p>Lesson Materials/ Resources</p>	<p>Lesson 7 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each group of 2 needs a bag of math tools (with a small handful of inch tiles, pattern blocks, and two-color counters) ● Each group of 2 needs access to the Two-Column Table, Three-Column Table. <p>Activity 2:</p> <ul style="list-style-type: none"> ● The math tool sorts from previous activity. <p>Activity 3:</p> <ul style="list-style-type: none"> ● Centers - see below 	<p>Lesson 8 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Materials to Copy</p> <ul style="list-style-type: none"> ● <p>Activity 1:</p> <ul style="list-style-type: none"> ● Create a set of Shape Cards from the blackline master for each group of 2. ● Have extra copies of the Three-Column Table from a previous lesson available for students. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Have extra copies of the Three-Column Table from a previous lesson available for students. <p>Activity 3:</p> <ul style="list-style-type: none"> ● Display students' representations of their shape-sorts on tables or walls so they are easily seen as students walk around. 	<p>Lesson 9 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each group of 2 needs access to red, blue, and yellow connecting cubes. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Have extra copies of the Three-Column Table from a previous lesson available for students. <p>Activity 3:</p> <ul style="list-style-type: none"> ● Students need their representations from the previous activity. 	<p>Lesson 10 Slides</p> <p>Teacher Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> ● Each group needs two What's Behind My Back Stage 2 Recording Sheet Grade 1, ten connecting cubes, access to 10-frames and two-color counters. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Centers - see below
<p>Assessment</p>	<p>Formative Assessment Strategies: observation, questioning, student discourse See Section B Checkpoint Assessment (Monitoring Sheet), Section B Checkpoint Teacher's Guide</p>			

				Section B Practice Problems
Centers Materials	Counting Collections, Stage 1 Number Race, Stage 3 Check It Off Stage 2 Five in a Row: Addition and Subtraction, Stage 2 Find the Pair, Stage 2			Check It Off Stage 2 Five in a Row: Addition and Subtraction, Stage 2 Find the Pair, Stage 2 What's Behind My Back, Stage 2

Making Meaning:

[Lesson 7: Sort Math Tools:](#) Activity 1 & 2 ONLY

- The purpose of this lesson is for students to sort objects into categories and tell how many objects are in each category.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 8: Sort and Count Shape Cards](#)

- The purpose of this lesson is for students to sort shapes and create a representation that shows the number of shapes in each category.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 9: What is Your Favorite _____ ?:](#) Warm-Up ONLY - How Many Do You See: Dots and More Dots

- The purpose of this warm-up is for students to use their ability to know without counting (subitize) the number of dots.
- [Teacher presentation materials](#)
- [Slides](#)

Through these lessons, students will have multiple opportunities to sort objects into different categories and create representations to show their categories. As they sort objects, it is important that teachers push students to justify why they created certain groups. As students are engaging in these lessons, they will have numerous opportunities to build fluency with their counting. Note which students are progressing through the Checkpoint document and which students need additional support.

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint B: Teacher Instructions](#)

[Checkpoint B Table](#)

Investigate:

Lesson 9: What is Your Favorite _____? Activity 1 ONLY - A Class Survey

- The purpose of this activity is for students to collect information, or data, about their class and discuss how to organize it in a way that others will understand.
- [Teacher presentation materials](#)
- [Slides](#)

In this activity, students will be collecting information from their class and organizing the information. This activity reiterates that we can organize information in different ways, which helps us to see different things around our data set.

Create and Produce:

Lesson 9: What is Your Favorite _____? Activity 2 ONLY - Show Our Class Data

- The purpose of this activity is for students to represent on paper the class data collected during the previous activity.
- [Teacher presentation materials](#)
- [Slides](#)

Students determine how they want to represent their data which was represented by cubes in the previous activity. Representations may include squares (as cubes), tally marks, or number symbols. Students also label their representations.

Communicate and Present:

Lesson 9: What is Your Favorite _____? Activity 3 ONLY - Different Ways to Show Data

- The purpose of this activity is for students to interpret the representations created in Activity 2.
- [Teacher presentation materials](#)
- [Slides](#)

Reflection:

Lesson 9 (Lesson Synthesis):

“Today we saw that there are different ways to show our data on paper. What are some things we should remember when doing this?” (It helps to label each group. We can use

<p>Student pairs from Activity 2 find a group that represented the data in a different way. With their partner, they talk about what they notice is the same about each representation and what they notice is different.</p>	<p>numbers to show how many are in each group. We can use tally marks or other shapes to show how many are in each group.)</p>
<p>Additional Learning:</p> <p>Lesson 10: Center Day 2</p> <ul style="list-style-type: none">• The purpose of this lesson is for students to add and subtract within 10.• Teacher presentation materials• Slides	
<p>Notes: Follow lessons in numerical order</p>	<p>Complete File with Resources and Task:</p> <p>Task-Based Learning Plan Format for Unit 1 Topic 2</p>

Topic # 3 (Section C)	Topic Name: Section C - What Does the Data Tell Us?	Duration: Recommended: 5 days
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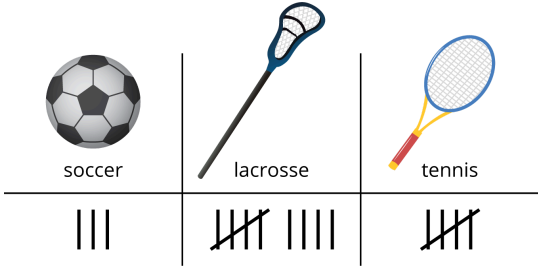
Topic Description:

Section Learning Goals

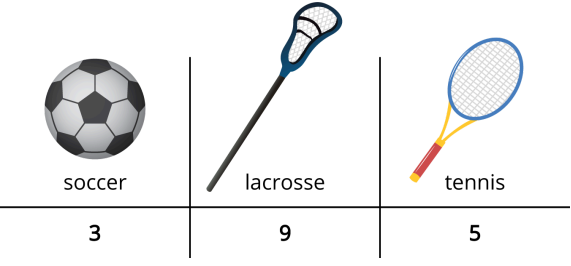
- Interpret data representations to ask and answer questions.

The focus of this section is on interpreting data represented in different ways and on asking and answering questions about them.

Students analyze representations of data and respond to “how many in each category” and “how many in all” questions. They consider which representation (tallies or numbers) is most helpful in answering certain types of questions. They also think about questions that could be asked given a representation of data.



soccer lacrosse tennis



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3 9 5

Students begin responding to written questions in this section. To support students with the reading demand, consider reading the questions aloud or arranging students to work with a partner.

<p>Competencies Addressed:</p> <p>Measurement and Data Investigations</p> <p>1.MD.3. I can represent and interpret data.</p> <p>Operations and Algebraic Thinking</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Question</p> <p>How can we collect, organize, and represent categorical data in ways others can understand?</p>
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<p>1.OA.1. I can add within 20 using strategies.</p> <p>1.OA.2. I can subtract within 20</p>	<p>Enduring Understanding</p> <p>By asking mathematical questions, we can collect data that gives us more information. We can represent data sets using a variety of representations. These visual representations allow us to organize our data so we can analyze what we know and learn more about our mathematical questions.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> Different representations can be helpful in different ways to answer questions about categorical data. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p> <p>Tally Marks</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> Organize, interpret, and represent data with up to 3 categories Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than another 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 11: What types of statements did students make about the data? What do these statements tell you about how prepared students are to answer “how many in each category” and “how many in all” questions in upcoming lessons?</p> <p>Lesson 12: Identify ways the math community you are working to foster is going well. What aspects would you like to work on? What actions can you take to improve those areas?</p> <p>Lesson 13: What makes someone good at math? In what ways are you making assumptions about</p>

which of your students are good at math?

Lesson 14: How effective were your questions in supporting students' thinking today? What did students say or do that showed they were effective?

Lesson 15: How did the student work that you selected impact the direction of the discussion? What student work might you pick next time if you taught the lesson again?

Utilize additional strategies for Teacher Reflection:

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

Topic 3 Task Development

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

Task Title: Topic 3 - What Does the Data Tell Us?	Grade Level and Unit: Grade 1, Unit 1
Description of Task: Students will create posters to show what they learned about that class that they would like to share. Posters may include drawings, tallies, numbers, equations, and tables to show what they learned. Pairs of students will get into groups of 4 to show and present what they learned from the survey, including the question that was asked in the survey.	Purpose of Task: The purpose of this task is for students to create a survey, collect and represent data, and ask and answer questions related to the data.
Background of Students/Learning Progression: In previous lessons from Unit 1 Topic 2, students sorted objects into categories and told how many objects were in each category. They created representations to show the number of objects in each category. Students collected categorical data about their class, organized it, and represented it in a way that could be understood by others.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
Getting Started: Lesson 11: Class Pet Surveys : Warm-Up ONLY - Notice and Wonder: Tally Marks <ul style="list-style-type: none">• The purpose of this warm-up is to elicit the idea that tally marks are organized in groups of five, like the 5-frame. This will be useful when students answer questions about data represented with tally marks in a later activity.c• Teacher presentation materials• Slides While students may notice and wonder many things about these images, the fact that a group of five tally marks is shown with four straight lines and one diagonal line through them is the most important discussion point.	

Learning Cycle Model Process

Section C

IM Lesson	L11: Class Pet Surveys	L12: How Many?	L13: Questions About Data	L14: Center Day 3	L15: Animals in the Jungle
Learning Cycle Model	Getting Started & Making Meaning	Making Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	1.MD.3, 1.OA.1, 1.OA.2	1.MD.3, 1.NBT.2	1.MD.3, 1.OA.1, 1.OA.2	1.MD.3, 1.OA.1, 1.OA.2	1.MD.3
Math Practice Standards		MP 2	MP 6		MP 4
Lesson Purpose	The purpose of this lesson is for students to write and evaluate statements based on data in a visual representation.	The purpose of this lesson is for students to answer “how many in each category” and “how many in all” questions about data and explain their thinking.	The purpose of this lesson is for students to ask questions about data that can be answered by a given data representation.	The purpose of this lesson is for students to practice working with data and adding and subtracting within 10.	The purpose of this lesson is for students to create a survey, collect and represent data, and ask and answer questions related to the data.
Teacher Facing Learning Goals	<ul style="list-style-type: none"> Determine whether statements about data are true or false. Write statements about data from a visual representation. 	Answer “how many in each category” and “how many in all” questions about data represented in different ways.	Ask and answer questions about data.	<ul style="list-style-type: none"> Build toward fluency by adding and subtracting within 10 in a way that makes sense to them. Sort objects into categories and represent the sort. 	<ul style="list-style-type: none"> Collect, organize, and represent data from survey questions. Create questions related to survey data. Interpret data to answer questions.
Vocabulary Focus					
Lesson Structure	<p>Warm-up: 10 minutes Notice and Wonder: Tally Marks</p> <p>Activity 1: 10 minutes Jada’s Class Pet Survey</p> <p>Activity 2: 10 minutes Interpret Data About Class Pets</p> <p>Activity 3: 15 minutes</p>	<p>Warm-up: 10 minutes Choral Count: Count on from 30</p> <p>Activity 1: 20 minutes Data Represented with Tally Marks</p> <p>Activity 2: 15 minutes Data Represented with Numbers</p> <p>Synthesis: 10 minutes Cooldown: 5 minutes</p>	<p>Warm-up: 10 minutes Number Talk: Plus or Minus 1 or 2</p> <p>Activity 1: 10 minutes Can You Answer It?</p> <p>Activity 2: 20 minutes Ask Questions</p> <p>Activity 3: 10 minutes Answer Questions</p>	<p>Warm-up: 10 minutes Number Talk: Plus or Minus 2</p> <p>Activity 1: 20 minutes Introduce Sort and Display, Any Way</p> <p>Activity 2: 20 minutes Centers: Choice Time</p> <p>Synthesis: 10 minutes</p>	<p>Warm-up: 10 minutes Notice and Wonder: Wild Animals</p> <p>Activity 1: 25 minutes Collect Survey Data</p> <p>Activity 2: 20 minutes Ask Our Own Questions</p> <p>Activity 3: 20 minutes Share Data</p>

	Centers: Choice Time Synthesis: 10 minutes	Favorita Sport Data	Synthesis: 10 minutes		Synthesis: 10 minutes
Materials to Gather	Materials to Gather <ul style="list-style-type: none"> Materials from previous centers 	Materials to Gather <ul style="list-style-type: none"> Connecting cube 	Materials to Gather <ul style="list-style-type: none"> Connecting cubes Materials from a previous activity 	Materials to Gather <ul style="list-style-type: none"> Collections of objects Materials from previous centers 	Materials to Gather <ul style="list-style-type: none"> Materials from a previous activity Tools for creating a visual display
Lesson Materials/ Resources	Lesson 11 Slides Teacher Materials Student Pages Activity 1: Jada’s Class Pet Survey Activity 2: Interpret Data About Class Pets Activity 3: Centers - see below Cool-down: Class Pet Data	Lesson 12 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> Each group of 2 needs a copy of Data Represented with Tally Marks Activity 2: <ul style="list-style-type: none"> Each group of 2 needs a copy of Data Represented with Numbers and access to connecting cubes Cool-down: Favorite Sport Data	Lesson 13 Slides Teacher Materials Student Pages Activity 1: none Activity 2: <ul style="list-style-type: none"> Each group of 2 needs a copy of Favorite Special Class Data Activity 3: <ul style="list-style-type: none"> Display the list of questions from the synthesis in the previous activity. Give students access to connecting cubes 	Lesson 14 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group of 2 a collection of 10–20 objects with up to three attributes and two Sort and Display Stage 1 Recording Sheet. Activity 2: Centers - see below	Lesson 15 Slides Teacher Materials Student Pages Activity 2: <ul style="list-style-type: none"> Students need access to the data they collected and you recorded in Activity 1. Activity 3: <ul style="list-style-type: none"> Students need access to their data and questions from the previous activities. Students need access to materials to create a visual display.
Assessment	Formative Assessment Strategies: observation, questioning, student discourse See Section C Checkpoint Assessment (Monitoring Sheet) , Section C Checkpoint Teacher’s Guide Unit 1 Assessment , Unit 1 Assessment Teacher Guide				Section C Practice Problems
Centers Materials	What’s Behind My Back, Stage 2			What’s Behind My Back, Stage 2	

	Check it Off, Stages 1 and 2 Five in a Row: Addition and Subtraction, Stages 1 and 2 Find the Pair, Stage 2			Number Race, Stage 3 Check it Off, Stages 1 and 2 Five in a Row: Addition and Subtraction, Stages 1 and 2 Find the Pair, Stage 2	
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Making Meaning:

[Lesson 11: Class Pet Surveys:](#)

- The purpose of this lesson is for students to write and evaluate statements based on data in a visual representation.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 12: How Many?](#)

- The purpose of this lesson is for students to answer “how many in each category” and “how many in all” questions about data and explain their thinking.
- [Teacher presentation materials](#)
- [Slides](#)

Checkpoints: These documents for the above lessons provide teachers with a template for collecting data and information on student understanding of skills and concepts.

[Checkpoint C: Teacher Instructions](#)

[Checkpoint C Table](#)

Investigate:

[Lesson 13: Questions About Data](#)

- The purpose of this lesson is for students to ask questions about data that can be answered by a given data representation.
- [Teacher presentation materials](#)

- [Slides](#)

[Lesson 14: Center Day 3](#)

- The purpose of this lesson is for students to practice working with data and adding and subtracting within 10.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

[Lesson 15: Animal in the Jungle:](#)

The purpose of this lesson is for students to create a survey, collect and represent data, and ask and answer questions related to the data.

- [Teacher presentation materials](#)
- [Slides](#)

In Activity 1, students work in groups of 2. They choose one question about animals from a given list to ask their classmates. Then, they will pick three animals from a class generated list that will be the choices in their survey. Partners will decide how to record responses, as well as, how to present the data in an organized way that makes it clear how many people picked each animal.

In Activity 2, students generate questions for their peers that can be answered using the collected data and representations from Activity 1.

Communicate and Present:

[Lesson 15: Animal in the Jungle:](#) Activities 3 - Share Data

- The purpose of this activity is for students to share their findings from the data with their peers.
- [Teacher presentation materials](#)
- [Slides](#)

Students will create posters to show what they learned about that class that they would like to share. Posters may include drawings, tallies, numbers, equations, and tables to show what they learned. Pairs of students will get into groups of 4 to show and present what they learned from the survey, including the question that was asked in the survey.

Reflection:

Reflective Questions from Lesson 15, Activity 3:

- What is one thing you learned from the other pair’s survey?”
- “How does their poster help us see that?”

Reflective Questions from Lesson 15:

“You made lots of choices on your own today so your survey and representations were different from your classmates’. How were they similar? How were they different?”

Notes: Follow lessons in numerical order.

Complete File with Resources and Task:

[Task-Based Learning Plan Format for Unit 1 Topic 3](#)