

Course Title: Grade 3 Mathematics	Full Year	Required
<p><b>Course Description:</b></p> <p>The mathematical work for grade 3 is partitioned into 8 units:</p> <ol style="list-style-type: none"> <li>1. Introducing Multiplication</li> <li>2. Area and Multiplication</li> <li>3. Wrapping Up Addition and Subtraction within 1,000</li> <li>4. Relating Multiplication to Division</li> <li>5. Fractions as Numbers</li> <li>6. Measuring Length, Time, Liquid Volume, and Weight</li> <li>7. Two-dimensional Shapes and Perimeter</li> <li>8. Putting it All Together</li> </ol>		
<p><b>Additional Course Information:</b></p> <p>The big ideas in grade 3 include:</p> <ul style="list-style-type: none"> <li>● developing understanding of multiplication and division and strategies for multiplication and division within 100</li> <li>● developing understanding of fractions, especially unit fractions (fractions with numerator 1)</li> <li>● developing understanding of the structure of rectangular arrays and of area</li> <li>● describing and analyzing two-dimensional shapes</li> </ul>	<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><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:**

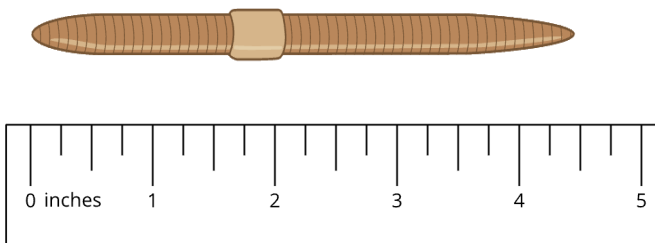
In this unit, students measure length, weight, liquid volume, and time. They begin with a study of length measurement, building on their recent work with fractions.

In grade 2, students measured lengths using informal and formal units to the nearest whole number. They plotted length data on line plots. Here, students explore length measurements in halves and fourths of an inch. They use a ruler to collect measurements and then display the data on line plots, learning about mixed numbers and revisiting equivalent fractions along the way.

Kiran says that the worm is  $4\frac{2}{4}$  inches long.

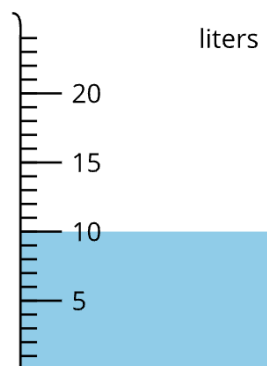
Jada says that the worm is  $4\frac{1}{2}$  inches long.

Use the ruler to explain how both of their measurements are correct.



Next, students learn about standard units for measuring weight (kilograms and grams) and liquid volume (liters). To build a sense of weights such as 1 gram or 1 kilogram, students hold common objects such as paper clips and bottles of water.

To gain familiarity with liters, they fill a container with water by the liter and estimate the volume of everyday containers such as pots, tubs, and buckets. They then use the scale on measurement tools to measure and represent liquid volume.



**Topic Titles:**

- Section A: Measurement Data on Line Plots
  - Measure lengths using rulers marked with halves and fourths of an inch to generate data for making a line plot.
- Section B: Weight and Liquid Volume
  - Measure and estimate weights and liquid volumes of objects.
- Section C: Problems Involving Time
  - Solve problems involving addition and subtraction of time intervals in minutes.
  - Tell time to the minute.
- Section D: Measurement Problems in Context
  - Solve problems involving the four operations and measurement contexts.

<p>From there, students move on to measure time. In grade 2, they told and wrote time to the nearest 5 minutes. Now, they tell time to the minute, using the relationship between the hour hand and the minute hand to make sense of times such as 3:57 p.m.</p> <p>In the final section of the unit, students make sense of and solve problems related to all three measurements. The work here allows students to continue to develop their fluency with addition and subtraction within 1,000 and understanding of properties of operations. It also prompts them to use the relationship between multiplication and division to solve problems.</p>		
<p><b>Coherence: How does this unit build on and connect to prior knowledge and learning?</b></p> <p>In grade 2, students measured lengths using informal and formal units to the nearest whole number. They plotted length data on line plots.</p>		
<p><b>Essential Questions:</b></p> <ol style="list-style-type: none"> <li>How do we measure objects?</li> <li>How do we tell time?</li> </ol>	<p><b>Enduring Understanding:</b></p> <ul style="list-style-type: none"> <li><b>We can measure different attributes of objects.</b> Measuring length, weight, and volume precisely means using fractions and mixed numbers as well as a variety of tools, like a ruler. We can use line plots to organize our thinking and to collect data.</li> <li><b>Using the relationship between the hour and and the minute hands helps us to make sense of time.</b> We can use a variety of strategies to tell time like skip counting by five and 10. We can also use what we know about addition and subtraction to determine time intervals.</li> </ul>	
<p><b>What Students Will Know:</b></p> <ul style="list-style-type: none"> <li>A ruler is a tool to measure the length of an object</li> <li>We can partition inches to get a more precise measurement</li> <li>Rulers are partitioned to show halves and quarters of an inch</li> <li>Mixed numbers are numbers that</li> </ul>	<p><b>What students will do:</b></p> <ul style="list-style-type: none"> <li>Measure lengths using a ruler marked with halves of an inch.</li> <li>Measure lengths using rulers marked with fourths of an inch.</li> <li>Measure lengths using a ruler marked with both halves and fourths of an inch.</li> <li>Use equivalent fractions to describe length measurements.</li> </ul>	<p><b>Unit Specific Vocabulary:</b></p> <p><b>Academic vocabulary</b>  mixed number (Lesson 1)  gram (Lesson 6)  kilogram (Lesson 6)  weight (Lesson 6 &amp; 8)  liquid volume (Lesson 7)  liter (Lesson 7)</p>

combine whole numbers and fractions less than 1

- Lengths can be named in more than one way
- Line plots can display measurement data and include fractions
- Weight is a measure of how heavy something is; weight is a measurable attribute
- Grams and kilograms are metric units for measuring weight
- Liquid volume is a measurable attribute; liters can be used to measure liquid volume
- The marks on a ruler is similar to the marks on a container used to measure liquid volume
- The marks between the numbers on a clock help us to tell time to the minute
- The numbers on a clock show 5 minute increments
- We can use what we know about addition and subtraction to help us with elapsed time
- Sometimes, tape diagrams are more helpful than other diagrams because they represent the continuous nature of contexts
- Sometimes, we need to figure out missing information before solving the problem
- We need to consider real-world constraints when working with mathematical situations
- We can use math to justify our

- Interpret line plots that display measurement data in fractions of an inch.
- Create a line plot where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters—to represent measurement data.
- Generate measurement data by measuring lengths using a ruler marked with halves and fourths of an inch.
- Measure and estimate weights of objects using standard units of grams (g) and kilograms (kg).
- Estimate and compare liquid volumes of containers using informal units and liters.
- Understand liquid volume as the amount of space that a liquid takes up.
- Measure and estimate liquid volumes of objects using standard units of liters (L).
- Tell and write time to the nearest minute.
- Solve problems involving addition and subtraction of time intervals in minutes in a way that makes sense to them.
- Solve problems involving addition and subtraction of time intervals in minutes.
- Ask and answer questions about situations involving measurements.
- Interpret representations of situations involving measurements.
- Determine information that is needed to solve measurement problems.
- Solve one-step word problems involving weight.
- Reason about quantities, questions, and solutions that make sense in measurement problems.
- Solve one-step word problems involving time and liquid volume.

<p>decisions</p>	<ul style="list-style-type: none"> <li>● Analyze strategies for solving problems and for presenting solutions.</li> <li>● Use the four operations to solve one-step word problems involving measurements.</li> <li>● Apply knowledge of measurement and operations to design a game.</li> <li>● Ask and answer questions about situations involving measurements.</li> <li>● Interpret representations of situations involving measurements.</li> <li>● Determine information that is needed to solve measurement problems.</li> <li>● Solve one-step word problems involving weight.</li> <li>● Reason about quantities, questions, and solutions that make sense in measurement problems.</li> <li>● Solve one-step word problems involving time and liquid volume.</li> <li>● Analyze strategies for solving problems and for presenting solutions.</li> </ul>	
<p><b>Entry Level Assessment and Connection to Unit:</b>  <a href="#">Section A: Pre-Unit Practice Problems</a>  <a href="#">Section B: Pre-Unit Practice Problems</a>  <a href="#">Section C: Pre-Unit Practice Problems</a>  <a href="#">Section D: Pre-Unit Practice Problems</a></p>	<p><b>Unit Materials, Resources and Technology:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Illustrative Mathematics</a></li> <li>● <a href="#">Instructional Routines and Math Language Routines</a></li> <li>● <a href="#">Glossary - Student-friendly</a></li> <li>● <a href="#">Required Materials</a></li> <li>● <a href="#">IM en Español</a></li> <li>● <a href="#">Pacing Guide and Dependency Diagrams K-5</a></li> </ul>	
<p><b>Opportunities for Interdisciplinary Connections:</b>  Any scientific tool can be connected as they measure, weigh and calculate volume. Students take data and put it on a line plot.</p>		

**Any links, attachments and resources:**

[Instructional Routines Document](#)

[Family Support Materials](#)

**Planning Ideas:**

[Components of a Typical IM Lesson](#)

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

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

[Assessing the Mathematical Practices](#)

**Topic # 1 (Section A)****Topic Name: Section A - Measurement Data on Line Plots****Duration:**

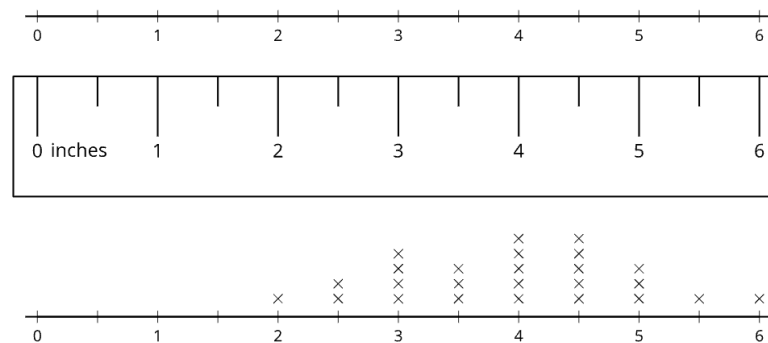
Recommended: 5 days

**Topic Description:**

In this section, students learn to measure lengths in fractions of an inch—first in halves of an inch, and then fourths of an inch. They partition rulers with whole-number inch marks into equal intervals and then use them to measure lengths of objects in the classroom.

Students learn that measurements that are greater than 1 can be expressed with mixed numbers, which combine a whole number and a fraction less than 1.

As they measure with greater levels of precision, students revisit the idea of equivalent fractions. They see that the half-inch marks are also two-fourths of an inch, and that each whole number of inches can also be expressed as some number of halves or fourths.



Students then use their understanding of the number line and rulers to interpret and create line plots that represent lengths measured in half inches and quarter inches. They see that all three representations—number lines, rulers, and line plots—have the same structure, which shows whole-number intervals being partitioned into equal parts.

**Section Learning Goals**

- Measure lengths using rulers marked with halves and fourths of an inch to generate data for making a line plot.

<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems</b> Indicator 4 - I can apply my understanding of fractions for equivalence and comparing.</p> <p><b>Operations and Algebraic Thinking</b> Indicator 4 - I can multiply and divide within 100.</p> <p><b>Measurement and Data Investigations</b> Indicator 3 - I can represent, interpret and display data using a variety of visual models.</p>	<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p>How do we measure objects?</p> <ul style="list-style-type: none"> <li>● <b>We can measure different attributes of objects.</b> Measuring length, weight, and volume precisely means using fractions and mixed numbers as well as a variety of tools, like a ruler. We can use line plots to organize our thinking and to collect data.</li> </ul>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● A ruler is a tool to measure the length of an object</li> <li>● We can partition inches to get a more precise measurement</li> <li>● Rulers are partitioned to show halves and quarters of an inch</li> <li>● Mixed numbers are numbers that combine whole numbers and fractions less than 1</li> <li>● Lengths can be named in more than one way</li> <li>● Line plots can display measurement data and include fractions</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary</b> mixed number (Lesson 1)</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Measure lengths using a ruler marked with halves of an inch.</li> <li>● Measure lengths using rulers marked with fourths of an inch.</li> <li>● Measure lengths using a ruler marked with both halves and fourths of an inch.</li> <li>● Use equivalent fractions to describe length measurements.</li> <li>● Interpret line plots that display measurement data in fractions of an inch.</li> <li>● Create a line plot where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters—to represent measurement data.</li> <li>● Generate measurement data by measuring lengths using a ruler marked with halves and fourths of an inch.</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <hr/> <p><b>Plan for Teacher Reflection:</b></p> <ul style="list-style-type: none"> <li>● Reviewing formative assessments</li> <li>● Developing scaffolds</li> <li>● Collaborative scoring</li> <li>● PLCs</li> <li>● Planning for small groups</li> <li>● Teacher Reflection Prompts in Teacher Guides</li> </ul>

## 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 - Measurement Data on Line Plots</b>			<b>Grade Level and Unit: Grade 3, Unit 6</b>		
<b>Description of Task:</b> In this task, students create a line plot using the measurement data that they generated earlier and display their group's line plot for all to see.			<b>Purpose of Task:</b> The purpose of this lesson is for students to generate measurement data and represent them on a line plot.		
<b>Background of Students/Learning Progression:</b> In a previous lesson, students analyzed line plots that included measurements in halves and fourths of an inch. In this lesson, students collect measurement data, represent them on a line plot, and analyze line plots that represent different data sets (MP2).			<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> The purpose of this warm-up is to invite students to share what they know about inches. Later in the lesson, students will explore lengths that are not a whole-number of inches.					
<ul style="list-style-type: none"> <li>• Display the question--What do you know about inches?</li> <li>• "What do you know about inches?"</li> <li>• 1 minute: quiet think time</li> <li>• Record responses.</li> </ul>					
<b>Section A</b>					
IM Lesson	<a href="#">L1: Measure in Halves of an Inch</a>	<a href="#">L2: Measure in Fourths of an Inch</a>	<a href="#">L3: Measure in Halves and Fourths of an Inch</a>	<a href="#">L4: Interpret Measurement Data on Line Plots</a>	<a href="#">L5: Represent Measurement Data on Line Plots</a>
Learning Cycle Model	Make Meaning	Make Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	3.MD.3	3.MD.3	3.MD.3, 3.NS.4	3.MD.3	3.MD.3, 3.OA.4
Math Practice Standards	MP 6	MP 6	MP 6	MP 5	MP 2

<b>Lesson Purpose</b>	The purpose of this lesson is for students to measure lengths that are fractions of an inch and relate these measurements to fractions on a number line.	The purpose of this lesson is for students to measure length using a ruler marked with fourths of an inch.	The purpose of this lesson is for students to use what they know about fraction equivalence to measure with a ruler that is marked with halves and fourths of an inch.	The purpose of this lesson is for students to make sense of line plots that represent measurements to the nearest half or fourth of an inch.	The purpose of this lesson is for students to generate measurement data and represent them on a line plot.
<b>Teacher Facing Learning Goal</b>	Measure lengths using a ruler marked with halves of an inch.	Measure lengths using rulers marked with fourths of an inch.	<ul style="list-style-type: none"> <li>• Measure lengths using a ruler marked with both halves and fourths of an inch.</li> <li>• Use equivalent fractions to describe length measurements</li> </ul>	Interpret line plots that display measurement data in fractions of an inch.	<ul style="list-style-type: none"> <li>• Create a line plot where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters—to represent measurement data.</li> <li>• Generate measurement data by measuring lengths using a ruler marked with halves and fourths of an inch.</li> </ul>
<b>Vocabulary Focus</b>	mixed number				
<b>Lesson Materials/ Resources</b>	<p><a href="#">Lesson 1 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b> Make copies and cut out the rulers from the blackline master (5 rulers per page).</p> <p><b>Activity 2:</b> Each student needs a ruler from the previous activity.</p> <p><b>Materials to Copy</b> <a href="#">Measure Around the Room</a></p>	<p><a href="#">Lesson 2 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b> Each group of 2 will need a ruler that didn't get partitioned in the previous lesson.</p> <p><b>Activity 2:</b> Each group of 2 will need the rulers from previous activities: one that was partitioned into half inches and another partitioned into quarter inches.</p>	<p><a href="#">Lesson 3 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Warm-up:</b></p> <ul style="list-style-type: none"> <li>• Each group of 2 needs the rulers from the previous lesson.</li> <li>• Cut out a ruler from the blackline master for each student.</li> </ul> <p><b>Activity 1:</b> Each student needs a ruler marked with half inches and quarter inches from the warm-up.</p> <p><b>Activity 2:</b></p>	<p><a href="#">Lesson 4 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Materials to Gather</b> Glue or tape Materials from a previous lesson Scissors Tools for creating a visual display</p> <p><b>Activity 1:</b> Each group of 4 needs a ruler marked with half inches and quarter inches from a previous</p>	<p><a href="#">Lesson 5 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p>

			<p>Each student needs a ruler marked with half inches and quarter inches from the previous activity.</p> <p><b>Materials to Gather</b> Rulers (inches)</p> <p><b>Materials to Copy</b> <a href="#">Notice and Wonder Rulers</a></p>		<p>lesson.</p> <p><b>Materials to Copy</b> <a href="#">Let's Make a Line Plot</a></p>
	<a href="#">Cooldown: Length in Half Inches</a>	<a href="#">Cooldown: Which Ruler?</a>	<a href="#">Cooldown: How Long?</a>	<a href="#">Cooldown: Interpret and Choose</a>	<a href="#">Cooldown: Complete the Line Plot</a>
Additional Resource: <a href="#">Section A Practice Problems</a>					
<b>Assessment</b>	<b>Formative Assessment Strategies: observation, questioning, student discourse: <a href="#">Monitoring Sheet</a></b> <b>See <a href="#">Section A Checkpoint Assessment</a>, <a href="#">Section A Checkpoint Teacher's Guide</a></b>				
<b>Centers Materials</b>	<ul style="list-style-type: none"> <li>• <a href="#">Estimate and Measure</a> (1–4), Stage 2: Centimeters and Inches (Supporting)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 1: Inches and Centimeters (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Estimate and Measure</a> (1–4), Stage 2: Centimeters and Inches (Supporting)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 1: Inches and Centimeters (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Estimate and Measure</a> (1–4), Stage 3: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 1: Inches and Centimeters (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Estimate and Measure</a> (1–4), Stage 3: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 1: Inches and Centimeters (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Estimate and Measure</a> (1–4), Stage 3: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 1: Inches and Centimeters (Supporting)</li> </ul>
<p><b>Making Meaning:</b></p> <p><a href="#">Lesson 1: Measure in Halves of an Inch</a></p> <ul style="list-style-type: none"> <li>• The purpose of this lesson is for students to measure lengths that are fractions of an inch and relate these measurements to fractions on a number line.</li> <li>• <a href="#">Teacher presentation materials</a></li> <li>• <a href="#">Slides</a></li> </ul>					

### [Lesson 2: Measure in Fourths of an Inch](#)

- The purpose of this lesson is for students to measure length using a ruler marked with fourths of an inch.
- [Teacher presentation materials](#)
- [Slides](#)

### **Investigate:**

#### [Lesson 3: Measure in Halves and Fourths of an Inch](#)

- The purpose of this lesson is for students to use what they know about fraction equivalence to measure with a ruler that is marked with halves and fourths of an inch.
- [Teacher presentation materials](#)
- [Slides](#)

#### [Lesson 4: Interpret Measurement Data on Line Plots](#)

- The purpose of this lesson is for students to make sense of line plots that represent measurements to the nearest half or fourth of an inch.
- [Teacher presentation materials](#)
- [Slides](#)

### **Create and Produce:**

#### [Lesson 5: Represent Measurement Data on Line Plots](#)

- The purpose of this lesson is for students to generate measurement data and represent them on a line plot.
- [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 A: Assessment](#)

[Checkpoint A: Teacher Guide](#)

### **Communicate and Present:**

- Ask students to display their posters.

“How are the line plots alike?” (They all show lengths in inches and at least 10 x’s.

### **Reflection:**

Discuss students' observations from the gallery walk.

Consider asking: “What did you learn about line plots in the past few lessons?” (They are used to show

<p>They all show at least one stack of x's that is taller.)</p> <p>“How are they different?”</p> <p>“Why did the line plots have different scales?”</p> <p>“How did you use multiplication facts that you already know to find some of the other products?” (I knew that <math>3 \times 10</math> is 30, so <math>3 \times 13</math> would be 3 groups of 10 and 3 groups of 3 which is 39. Once I knew <math>3 \times 13</math>, I was able to find <math>6 \times 13</math> by doubling 39 which is 78.)</p>	<p>measurements, including fractions of an inch. We can choose the scale of the line plot based on the measurements. We can get some information about the data more easily from a line plot than from a list.)</p>
<p><b>Notes: Follow lessons in numerical order.</b></p>	<p><b>Complete File with Resources and Task:</b></p> <p>Task-Based Learning Plan Format for Topic 1</p>

<p><b>Topic # 2 (Section B)</b></p>	<p><b>Topic Name: Section B - Weight and Liquid Volume</b></p>	<p><b>Duration:</b></p>
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Recommended: 3 days

**Topic Description:**

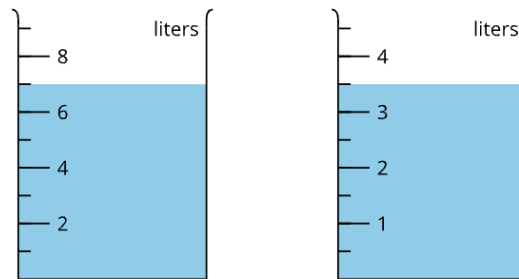
In earlier grades, students learned that weight is a measurable attribute and directly compared the weights of two objects. In this section, they learn that weight is a measure of how heavy something is and that grams and kilograms are units for measuring weight.

To establish some benchmarks for weights, they hold objects of different numbers of grams and kilograms. Then, they estimate the weight of other objects relative to those benchmarks.

Next, students learn that liquid volume is the amount of space that a liquid takes up. They first use informal units (such as plastic cups, spoons, and so on) to compare the liquid volume that two containers can hold before learning about liters as a unit for measurement.

Students gain concrete experience with the new unit by filling a large container in 1-liter increments. They also estimate the liquid volume of everyday objects such as a sink, a bucket, and a bathtub.

Later, students make sense of fractional units of liquid volume, learn to read the scale on liquid measurement tools (such as beakers), and compare the scales to the marks on rulers.



**Section Learning Goals**

- Measure and estimate weights and liquid volumes of objects.

**Competencies Addressed:**

**Understanding and Applying Number Systems**

Indicator 3 - I understand fractions hold value.

Indicator 4 - I can apply my understanding of fractions for equivalence and comparing.

**Operations and Algebraic Thinking**

Indicator 4 - I can multiply and divide within 100.

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


How do we measure objects?

- **We can measure different attributes of objects.** Measuring length, weight, and volume precisely means using fractions and mixed numbers as well as a variety

<p><b>Measurement and Data Investigations</b></p> <p>Indicator 2 - I can solve problems involving measurement.</p>	<p>of tools, like a ruler. We can use line plots to organize our thinking and to collect data.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Weight is a measure of how heavy something is; weight is a measurable attribute</li> <li>● Grams and kilograms are metric units for measuring weight</li> <li>● Liquid volume is a measurable attribute; liters can be used to measure liquid volume</li> <li>● The marks on a ruler is similar to the marks on a container used to measure liquid volume</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary</b>  gram (Lesson 6)  kilogram (Lesson 6)  weight (Lesson 6 &amp; 8)  liquid volume (Lesson 7)  liter (Lesson 7)</p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Measure and estimate weights of objects using standard units of grams (g) and kilograms (kg).</li> <li>● Estimate and compare liquid volumes of containers using informal units and liters.</li> <li>● Understand liquid volume as the amount of space that a liquid takes up.</li> <li>● Measure and estimate liquid volumes of objects using standard units of liters (L).</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <hr/> <p><b>Plan for Teacher Reflection:</b></p> <ul style="list-style-type: none"> <li>● Reviewing formative assessments</li> <li>● Developing scaffolds</li> <li>● Collaborative scoring</li> <li>● PLCs</li> <li>● Planning for small groups</li> <li>● Teacher Reflection Prompts in Teacher Guides</li> </ul>


## Topic 2 Task Development

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

<b>Task Title: Topic 2 - Weight and Liquid Volume</b>	<b>Grade Level and Unit: Grade 3, Unit</b>
<b>Description of Task:</b> Students compare the liter marks on a container for measuring liquid volume to the marks on a ruler before they use images of containers marked in liters to determine or show the volume of liquid in each container.	<b>Purpose of Task:</b> The purpose of this activity is for students to measure liquid volume using liters.
<b>Background of Students/Learning Progression:</b> In previous lessons, students learned that liquid volume is a measurable attribute and that liters can be used to measure liquid volume. Students use this experience to match containers with estimated liquid volumes they can hold. They compare the marks on a ruler to the marks on a container and learn to use a container with liter marks to measure liquid volume.	<b>Ensure all competencies are addressed in the task:</b> <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>
<b>Getting Started:</b> The purpose of this warm-up is to elicit the idea that weight can be measured. While students may notice and wonder many things about this image, how weight can be measured is the important discussion point.  What do you notice? What do you wonder? 	

## Section B

IM Lesson	<a href="#">L6: Estimate and Measure Weight</a>	<a href="#">L7: Introduction to Liquid Volume</a>	<a href="#">L8: Estimate and Measure Liquid Volume</a>
Learning Cycle Model	Make Meaning	Investigate	Create and Produce
Naugatuck Math Competency	3.MD.2	3.MD.2	3.MD.2, 3.OA.4
Math Practice Standards		MP 1, 3, 4	MP 3, 4
Lesson Purpose	The purpose of this lesson is for students to learn to measure and estimate the weight of objects in grams or kilograms.	The purpose of this lesson is to introduce students to the measurement of liquid volume.	The purpose of this lesson is for students to use liters to measure and estimate liquid volumes.
Teacher Facing Learning Goal	Measure and estimate weights of objects using standard units of grams (g) and kilograms (kg).	<ul style="list-style-type: none"> <li>Estimate and compare liquid volumes of containers using informal units and liters.</li> <li>Understand liquid volume as the amount of space that a liquid takes up.</li> </ul>	Measure and estimate liquid volumes of objects using standard units of liters (L).
Vocabulary Focus	gram kilogram weight	liquid volume liter	weight
Lesson Materials/ Resources	<p><a href="#">Lesson 6 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Create a set of metric weights (1 kilogram, 2 kilograms, 1 gram, 10 grams, 100 grams). Weights can be made by filling bags with the following quantities of objects: <ul style="list-style-type: none"> <li>for 1 kilogram: 1,000 jumbo paper clips or a 1 liter bottle filled with water</li> </ul> </li> </ul>	<p><a href="#">Lesson 7 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <p>Each group of 4 needs:</p> <ul style="list-style-type: none"> <li>a supply of water (1 liter bottles would work and could be reused for the next activity)</li> <li>two containers that are different in shape, but close in size, each labeled with “A” and “B”</li> <li>a small container labeled with “unit,” such as</li> </ul>	<p><a href="#">Lesson 8 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p>

	<ul style="list-style-type: none"> <li>• for 1 gram: 1 large paper clip</li> <li>• Create a poster with the labels “less than 1 gram,” “between 1 gram and 100 grams,” “between 100 grams and 1 kilogram,” and “over 1 kilogram” for the synthesis.</li> <li>• If possible, gather scales (analog and digital), primary balances, and any other available weight measurement tools for the synthesis of Estimate Weight activity. Prepare enough tools for each group of students to have one, or prepare one for a whole-class weighing demonstration.</li> </ul> <p><b>Materials to Gather</b> Chart paper Markers</p>	<p>a large spoon, film canister, or a small measuring cup</p> <ul style="list-style-type: none"> <li>• a tray or towel to work on (optional)</li> </ul>  <p><b>Activity 2:</b> Gather the following materials:</p> <ul style="list-style-type: none"> <li>• a large clear container that can be written on, such as a gallon water jug with top removed or clear storage bin</li> <li>• 1-liter container (1-liter water bottle, measuring cup, etc.)</li> <li>• a supply of water (enough to fill the larger container)</li> <li>• OR the Liquid Volume in Liters video: <a href="https://vimeo.com/451620298">https://vimeo.com/451620298</a></li> </ul> <p><b>Materials to Gather</b> Markers (dry-erase)</p>	
	<a href="#">Cooldown: About a Kilogram</a>	<a href="#">Cooldown: Liquid Volume Reflection</a>	<a href="#">Cooldown: Measure in Liters</a>
Additional Resource: <a href="#">Section B Practice Problems</a>			
<b>Assessment</b>	<b>Formative Assessment Strategies: observation, questioning, student discourse: <a href="#">Monitoring Sheet</a></b> See <a href="#">Section B Checkpoint Assessment</a> , <a href="#">Section B Checkpoint Teacher’s Guide</a>		
<b>Centers Materials</b>	<ul style="list-style-type: none"> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> </ul>

**Making Meaning:**

**[Lesson 6: Estimate and Measure Weight](#)**

- The purpose of this lesson is for students to learn to measure and estimate the weight of objects in grams or kilograms.
- [Teacher presentation materials](#)
- [Slides](#)

**Investigate:**

**[Lesson 7: Introduction to Liquid Volume](#)**

- The purpose of this lesson is to introduce students to the measurement of liquid volume.
- [Teacher presentation materials](#)
- [Slides](#)

**Create and Produce:**

**[Lesson 8: Estimate and Measure Liquid Volume](#)**

- The purpose of this lesson is for students to use liters to measure and estimate liquid volumes.
- [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 B: Assessment](#)

[Checkpoint B: Teacher Guide](#)

**Communicate and Present:**

“What strategies were useful as you estimated the liquid volume that different containers can hold?”

“If the level of the liquid was between two numbers, how did you figure out what the marks represented?”

**Reflection:**

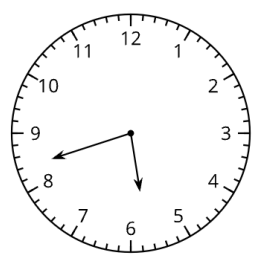
“What are some tips you would give someone as they use containers marked in liters to measure liquid volume?” (You have to know that the zero mark is the bottom of the container. The amount of liters goes up as you fill the container. Each mark represents a liter. If the

	level of the liquid is in between numbers, you need to figure out what the marks in between the numbers represent.)
<b>Notes: Follow lessons in numerical order.</b>	<b>Complete File with Resources and Task:</b> Task-Based Learning Plan Format for Topic 2

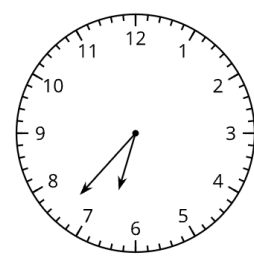
<b>Topic # 3 (Section C)</b>	<b>Topic Name: Section C - Problems Involving Time</b>	<b>Duration:</b> Recommended: 3 days
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**Topic Description:**  
 In this section, students learn to tell and write time to the nearest minute and to show given time on an analog clock. They also solve elapsed time problems with an unknown start time, unknown duration, or unknown end time.

*Han got on the bus:*



*Han got off the bus:*

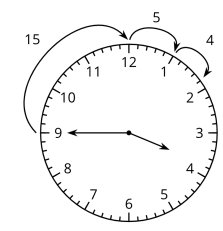


*For how many minutes was Han on the bus?*

To reason about the problems, students can use any representation that makes sense to them, such as tables, words, equations, or marks on a clock. They also examine a variety of reasoning strategies and adjust their approach depending on the problem at hand.

*Elena arrived at the bus stop at 3:45 p.m. She waited 24 minutes for her bus to arrive. What time did the bus arrive?*

*Show your thinking. Organize it so it can be followed by others.*



As they solve problems, students continue to build their fluency with multiplication (especially multiples of 5, 10, and 15), addition, and subtraction.

**Section Learning Goals**

<ul style="list-style-type: none"> <li>● Solve problems involving addition and subtraction of time intervals in minutes.</li> <li>● Tell time to the minute.</li> </ul>	
<p><b>Competencies Addressed:</b></p> <p><b>Measurement and Data Investigations</b></p> <p>Indicator 1 - I can solve problems involving time intervals to the nearest minute.</p>	<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p>How do we tell time?</p> <p><b>Using the relationship between the hour and and the minute hands helps us to make sense of time.</b> We can use a variety of strategies to tell time like skip counting by five and 10. We can also use what we know about addition and subtraction to determine time intervals.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● The marks between the numbers on a clock help us to tell time to the minute</li> <li>● The numbers on a clock show 5 minute increments</li> <li>● We can use what we know about addition and subtraction to help us with elapsed time</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary</b></p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Tell and write time to the nearest minute.</li> <li>● Solve problems involving addition and subtraction of time intervals in minutes in a way that makes sense to them.</li> <li>● Solve problems involving addition and subtraction of time intervals in minutes.</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p>
	<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>



## 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 - Problems Involving Time</b>	<b>Grade Level and Unit: Grade 3, Unit</b>
<b>Description of Task:</b> In this task, students use any strategy and representation to solve problems involving elapsed time. The problems involve unknowns in all positions: start time, end time, and duration. When students recognize the mathematical features of familiar real-world objects and use those features to solve problems, they model with mathematics (MP4).	<b>Purpose of Task:</b> The purpose of this task is for students to solve problems involving addition and subtraction of time intervals in minutes.
<b>Background of Students/Learning Progression:</b> Students worked with time in grade 2 and again in previous lessons in grade 3.	<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

### Section C

IM Lesson	<a href="#">L9: Time to the Nearest Minute</a>	<a href="#">L10: Solve Problems Involving Time (Part 1)</a>	<a href="#">L11: Solve Problems Involving Time (Part 2)</a>
<b>Learning Cycle Model</b>	<b>Make Meaning</b>	<b>Investigate</b>	<b>Create and Produce</b>
<b>Naugatuck Math Competency</b>	3.MD.1	3.MD.1	3.MD.1
<b>Math Practice Standards</b>	MP 6	MP 2, 8	MP 2, 4
<b>Lesson Purpose</b>	The purpose of this lesson is for students to tell and write time to the nearest minute.	The purpose of this lesson is for students to solve problems involving addition and subtraction of time intervals in minutes in a way that makes sense to them.	The purpose of this lesson is for students to solve problems involving addition and subtraction of time intervals in minutes.

<b>Teacher Facing Learning Goals</b>	Tell and write time to the nearest minute.	Solve problems involving addition and subtraction of time intervals in minutes in a way that makes sense to them.	Solve problems involving addition and subtraction of time intervals in minutes.
<b>Vocabulary Focus</b>			
<b>Lesson Materials/ Resources</b>	<a href="#">Lesson 9 Slides</a> <a href="#">Teacher Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 10 Slides</a> <a href="#">Teacher Materials</a> <a href="#">Student Pages</a>	<a href="#">Lesson 11 Slides</a> <a href="#">Teacher Materials</a> <a href="#">Student Pages</a>  <b>Activity 1:</b> Display students' ideas from the lesson synthesis in the previous lesson.  <b>Materials to Gather</b> Materials from a previous activity
	<a href="#">Cooldown: Times Like These</a>	<a href="#">Cooldown: Soccer Time</a>	<a href="#">Cooldown: Time and Time Again</a>
	Additional Resource: <a href="#">Section C Practice Problems</a>		
<b>Assessment</b>	<b>Formative Assessment Strategies: observation, questioning, student discourse: <a href="#">Monitoring Sheet</a></b> <b>See <a href="#">Section C Checkpoint Assessment</a>, <a href="#">Section C Checkpoint Teacher's Guide</a></b>		
<b>Centers Materials</b>	<ul style="list-style-type: none"> <li>• <a href="#">Creating Line Plots</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> <li>• <a href="#">Target Measurements</a> (2–5), Stage 2: Quarter Inches (Addressing)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Number Puzzles</a>: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Supporting)</li> <li>• <a href="#">Target Numbers</a> (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Number Puzzles</a>: Addition and Subtraction (1–4), Stage 5: Within 1,000 (Supporting)</li> <li>• <a href="#">Target Numbers</a> (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Supporting)</li> </ul>

### Making Meaning:

#### [Lesson 9: Time to the Nearest Minute](#)

- The purpose of this lesson is for students to tell and write time to the nearest minute.
- [Teacher presentation materials](#)
- [Slides](#)

**Investigate:**

**[Lesson 10: Solve Problems Involving Time \(Part 1\)](#)**

- The purpose of this lesson is for students to solve problems involving addition and subtraction of time intervals in minutes in a way that makes sense to them.
- [Teacher presentation materials](#)
- [Slides](#)

**Create and Produce:**

**[Lesson 11: Solve Problems Involving Time \(Part 2\)](#)**

- The purpose of this lesson is for students to solve problems involving addition and subtraction of time intervals in minutes.
- [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: Assessment](#)

[Checkpoint C: Teacher Guide](#)

**Communicate and Present:**

- For each problem, invite groups to share what they filled in and how they solved the problem.
- Keep the problems displayed.
- “How are these problems alike?” (They are all about doing an activity for a certain amount of time.)
- “How are they different?” (They are about different activities and give different kinds of information. Sometimes we know the start time and end time. Other times we know either the start time or end time, and how much time passed. We are solving for different things.)
- Highlight ideas about how the problems had different unknowns (start, end, and time that passed).

**Reflection:**

“What are some strategies that you found helpful for solving these problems?” (I can use the same counting strategies that I used for adding and subtracting numbers. I can count by 5, 10, 15, or other numbers. I can use a clock, a number line, or a table to help keep track of the counting. I can also write equations or use words.)

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

**Complete File with Resources and Task:**

Task-Based Learning Plan Format for Topic 1

<b>Topic # 4 (Section D)</b>	<b>Topic Name: Section D - Measurement Problems in Context</b>	<b>Duration:</b> Recommended: 5 days
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**Topic Description:**  
 In this section, students solve problems that involve measurements of weight, liquid volume, and time in the context of a state or county fair. The problems prompt students to use all four operations: addition and subtraction within 1,000, and multiplication and division within 100.

The problems prompt students to make sense of the situations and the questions being asked, consider information that might be needed to answer questions. They explain why they need that information and may need to ask different questions if their partner does not have the information requested (MP1). In each situation, students make sense of quantities and their relationships (MP2).

*At one point during the growing season, a giant pumpkin gained 12 kilograms per day for 7 days.  
 How much weight did the pumpkin gain during that week?*

12	12	12	12	12	12	12
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An optional lesson at the end of the section gives students a chance to examine carnival games and design a game that incorporates concepts of measurement and operations.

**Section Learning Goals**

- Solve problems involving the four operations and measurement contexts.

<p><b>Competencies Addressed:</b></p> <p><b>Understanding and Applying Number Systems</b></p> <p>Indicator 5 - I can use my understanding of place value and properties of operations to add and subtract whole numbers.</p>	<p><b>Essential Question and Enduring Understanding Addressed in this Topic:</b></p> <p>How do we measure objects?</p> <p><b>We can measure different attributes of objects.</b></p>
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<p><b>Operations and Algebraic Thinking</b></p> <p>Indicator 4 - I can multiply and divide within 100.</p> <p>Indicator 5 - I can solve multi-step problems using the four operations and assess the reasonableness of my answers.</p> <p><b>Measurement and Data Investigations</b></p> <p>Indicator 1 - I can solve problems involving time intervals to the nearest minute.</p> <p>Indicator 2 - I can solve problems involving measurement.</p>	<p>Measuring length, weight, and volume precisely means using fractions and mixed numbers as well as a variety of tools, like a ruler. We can use line plots to organize our thinking and to collect data.</p>
<p><b>In this Topic, students will know:</b></p> <ul style="list-style-type: none"> <li>● Sometimes, tape diagrams are more helpful than other diagrams because they represent the continuous nature of contexts</li> <li>● Sometimes, we need to figure out missing information before solving the problem</li> <li>● We need to consider real-world constraints when working with mathematical situations</li> <li>● We can use math to justify our decisions</li> </ul>	<p><b>Topic Vocabulary:</b></p> <p><b>Academic vocabulary</b></p>
<p><b>In this Topic, students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Ask and answer questions about situations involving measurements.</li> <li>● Interpret representations of situations involving measurements.</li> <li>● Determine information that is needed to solve measurement problems.</li> <li>● Solve one-step word problems involving weight.</li> <li>● Reason about quantities, questions, and solutions that make sense in measurement problems.</li> <li>● Solve one-step word problems involving time and liquid volume.</li> <li>● Analyze strategies for solving problems and for presenting solutions.</li> <li>● Use the four operations to solve one-step word problems involving measurements.</li> <li>● Apply knowledge of measurement and operations to design a game.</li> </ul>	<p><b>Plan for Student Reflection:</b></p> <p><a href="#">Student Journal Prompts and Reflection Practices</a></p> <hr/> <p><b>Plan for Teacher Reflection:</b></p> <ul style="list-style-type: none"> <li>● Reviewing formative assessments</li> <li>● Developing scaffolds</li> <li>● Collaborative scoring</li> <li>● PLCs</li> <li>● Planning for small groups</li> <li>● Teacher Reflection Prompts in Teacher Guides</li> </ul>

## 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 - Measurement Problems in Context</b>	<b>Grade Level and Unit: Grade 3, Unit</b>
<b>Description of Task:</b> In this task, students continue to work with the context of a fair. Students analyze games they might see at a carnival such as a penny toss or marble run and consider what makes a good game. They then create their own games with given materials and integrate mathematical ideas from this unit. Students play the game and consider ways to improve it.	<b>Purpose of Task:</b> The purpose of this task is for students to apply their understanding of length measurement, time measurement, and fluency with four operations to design a carnival game.
<b>Background of Students/Learning Progression:</b> Students use what they have learned about volume and measurement in this unit in order to design a game.	<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

### Section D

IM Lesson	<a href="#">L12: Ways to Represent Situations</a>	<a href="#">L13: Problems with Missing Information</a>	<a href="#">L14: What Makes Sense in the Problem?</a>	<a href="#">L15: Ways to Solve Problems and Show Solutions</a>	<a href="#">L16: Design a Carnival Game</a>
Learning Cycle Model	Make Meaning	Make Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	3.MD.2	3.MD.2	3.MD.1, 3.MD.2, 3.NS.5	3.MD.1, 3.MD.2, 3.OA.4, 3.OA.5	<b>Building Towards</b> 3.MD.2
Math Practice Standards	MP 2, 7	MP 1, 6	MP 3, 4	MP 2, 3	MP 4
<b>Lesson Purpose</b>	The purpose of this lesson is for students to make sense of situations involving measurements, interpret representations of the	The purpose of this lesson is for students to determine the information needed to solve problems involving weight.	The purpose of this lesson is for students to consider quantities and questions that make sense in situations and solve	The purpose of this lesson is for students to solve problems using the four operations as they imagine spending a day at the fair.	The purpose of this lesson is for students to apply their understanding of length measurement, time measurement, and fluency

	situations, and ask and answer questions about them.		problems accordingly.		with four operations to design a carnival game.
<b>Teacher Facing Learning Goals</b>	<ul style="list-style-type: none"> <li>Ask and answer questions about situations involving measurements.</li> <li>Interpret representations of situations involving measurements.</li> </ul>	<ul style="list-style-type: none"> <li>Determine information that is needed to solve measurement problems.</li> <li>Solve one-step word problems involving weight.</li> </ul>	<ul style="list-style-type: none"> <li>Reason about quantities, questions, and solutions that make sense in measurement problems.</li> <li>Solve one-step word problems involving time and liquid volume.</li> </ul>	The purpose of this lesson is for students to solve problems using the four operations as they imagine spending a day at the fair.	Apply knowledge of measurement and operations to design a game.
<b>Vocabulary Focus</b>					
<b>Lesson Materials/ Resources</b>	<p><a href="#">Lesson 12 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 2:</b> Create a set of cards from the blackline master for each group of 2.</p> <p><b>Materials to Gather</b> Tools for creating a visual display</p> <p><b>Materials to Copy</b> <a href="#">Card Sort: Giant Pumpkins</a></p>	<p><a href="#">Lesson 13 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Create a set of cards from the blackline master for each group of 2.</li> <li>Keep set 1 separate from set 2.</li> </ul> <p><b>Activity 2:</b></p> <ul style="list-style-type: none"> <li>Create a set of cards from the blackline master for each group of 2.</li> <li>Keep set 1 separate from set 2.</li> </ul> <p><b>Materials to Copy</b> <a href="#">Info Gap: Pig Weigh-Off</a></p> <p><a href="#">Info Gap Pumpkin Weigh-Off Cards</a></p>	<p><a href="#">Lesson 14 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p>	<p><a href="#">Lesson 15 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 2:</b> Display posters from the previous activity.</p> <p><b>Materials to Gather</b> Materials from a previous activity Tools for creating a visual display</p>	<p><a href="#">Lesson 16 Slides</a></p> <p><a href="#">Teacher Materials</a></p> <p><a href="#">Student Pages</a></p> <p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>Gather tape measures, toilet paper tubes, marbles, pennies, paper cups, and a collection of balls that bounce for students to use as they create their games.</li> <li>Other material not included in this list can be made available to students to use to create their games.</li> </ul> <p><b>Materials to Gather</b> Paper clips Pipe cleaners Rulers Tape (painter's or masking)</p>

					Yardsticks
	<a href="#">Cooldown: Which Diagram Matches?</a>	<a href="#">Cooldown: Winner, Winner</a>	<a href="#">Cooldown: A Show at the Carnival</a>	<a href="#">Cooldown: Problem Solving Reflection</a>	
Additional Resource: <a href="#">Section D Practice Problems</a>					
<b>Assessment</b>	<b>Formative Assessment Strategies: observation, questioning, student discourse: <a href="#">Monitoring Sheet</a></b> See <a href="#">Section D Checkpoint Assessment</a> , <a href="#">Section D Checkpoint Teacher's Guide</a> <a href="#">Unit 6 Assessment</a> , <a href="#">Unit 6 Assessment Teacher Guide</a>				
<b>Centers Materials</b>	<ul style="list-style-type: none"> <li>• <a href="#">Number Puzzles: Addition and Subtraction</a> (1–4), Stage 5: Within 1,000 (Supporting)</li> <li>• <a href="#">Target Numbers</a> (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Number Puzzles: Addition and Subtraction</a> (1–4), Stage 5: Within 1,000 (Supporting)</li> <li>• <a href="#">Target Numbers</a> (1–5), Stage 7: Subtract Hundreds, Tens, or Ones (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Compare</a> (1–5), Stage 3: Multiply within 100 (Supporting)</li> <li>• <a href="#">How Close?</a> (1–5), Stage 5: Multiply to 100 (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Compare</a> (1–5), Stage 3: Multiply within 100 (Supporting)</li> <li>• <a href="#">How Close?</a> (1–5), Stage 5: Multiply to 100 (Supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Compare</a> (1–5), Stage 3: Multiply within 100 (Supporting)</li> <li>• <a href="#">How Close?</a> (1–5), Stage 5: Multiply to 100 (Supporting)</li> </ul>

### Making Meaning:

#### [Lesson 12: Ways to Represent Measurement Situations](#)

- The purpose of this lesson is for students to make sense of situations involving measurements, interpret representations of the situations, and ask and answer questions about them
- [Teacher presentation materials](#)
- [Slides](#)

#### [Lesson 13: Problems with Missing Information](#)

- The purpose of this lesson is for students to determine the information needed to solve problems involving weight.
- [Teacher presentation materials](#)
- [Slides](#)

### Investigate:

#### [Lesson 14: What Makes Sense in the Problem?](#)

- The purpose of this lesson is for students to consider quantities and questions that make sense in situations and solve problems accordingly.
- [Teacher presentation materials](#)

- [Slides](#)

**[Lesson 15: Ways to Solve Problems and Show Solutions](#)**

- The purpose of this lesson is for students to solve problems using the four operations as they imagine spending a day at the fair.
- [Teacher presentation materials](#)
- [Slides](#)

**Create and Produce:**

**[Lesson 16: Design a Carnival Game](#)**

- The purpose of this lesson is for students to apply their understanding of length measurement, time measurement, and fluency with four operations to design a carnival game.
- [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 D: Assessment](#)

[Checkpoint D: Teacher Guide](#)

**Communicate and Present:**

“Find another person in the room who you did not work with and describe the rules of your game and how someone wins.”

“How did your group redesign the game?”

**Reflection:**

Invite at least one group to describe the rules of their original and then the redesigned game.

“What changes do you notice?”

“What questions do you have for the designers of the game?”

“If you were a member of this design team, what other ideas do you have to redesign the original game?”

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

**Complete File with Resources and Task:**

Task-Based Learning Plan Format for Topic 1

