

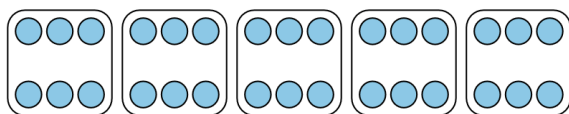
Course Title: Mathematics	Full Year	Required
<p>Course Description:</p> <p>The mathematical work for grade 3 is partitioned into 8 units:</p> <ol style="list-style-type: none"> 1. Introducing Multiplication 2. Area and Multiplication 3. Wrapping Up Addition and Subtraction within 1,000 4. Relating Multiplication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

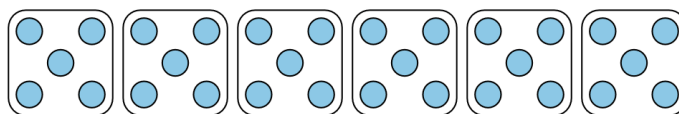
This unit introduces students to the concept of division and its relationship to multiplication.

Here, students make sense of division also in terms of equal-size groups. For instance, the expression $30 \div 5$ can represent putting 30 objects into 5 equal groups, or putting 30 objects into groups of 5. They see that, in general, dividing can mean finding the size of each group, or finding the number of equal groups.

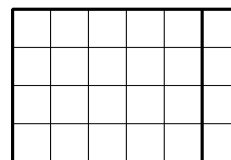
30 objects put into 5 equal groups



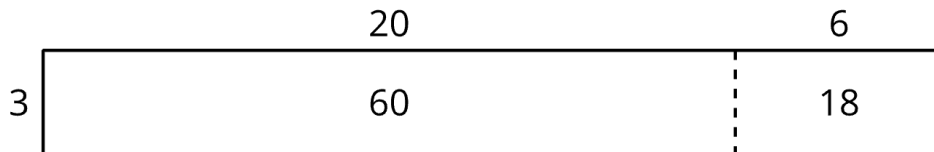
30 objects put into groups of 5



Students use the relationship between multiplication and division to develop fluency with single-digit multiplication and division facts. They continue to reason about products of two numbers in terms of the area of rectangles whose side lengths represent the factors, decomposing side lengths and applying properties of operations along the way.



As they multiply numbers greater than 10, students see that it is helpful to decompose the two-digit factor into tens and ones and distribute the multiplication. For instance, to find the value of 26×3 , they can decompose the 26 into 20 and 6, and then multiply each by 3.



Topic Titles:

- Section A: What is Division?
 - Represent and solve “how many groups?” and “how many in each group?” problems.
- Section B: Relate Multiplication and Division
 - Understand division as a missing-factor problem.
 - Use properties of operations to develop fluency with single-digit multiplication facts, and their related division facts.
- Section C: Multiplying Larger Numbers
 - Use properties of operations and place value understanding to develop strategies to multiply within 100 and to multiply one-digit numbers by a multiple of 10.
- Section D: Dividing Larger Numbers
 - Use properties of operations, place value understanding, and the relationship between multiplication and division to divide within 100.

Toward the end of the unit, students solve two-step problems that involve all four operations. In some situations, they work with expressions that use parentheses to indicate which operation is completed first (for example: $276 + (45 \div 5) = ?$).

Coherence: How does this unit build on and connect to prior knowledge and learning?
 Previously, students learned that multiplication can be understood in terms of equal-size groups. The expression 5×2 can represent the total number of objects when there are 5 groups of 2 objects, or when there are 2 groups of 5 objects.

In this unit, students will utilize their understanding of representing multiplication by the number of groups and how many objects are in the group. They will connect this understanding to division and how division can be utilized to make equal groups of objects.

Essential Questions:

1. What is division?
2. How can we use what we know about multiplication to solve division problems?

Enduring Understanding:

- **Division is the process by which we determine how many groups or how many in each group.** We can use what we know about multiplication to help us understand division. We can think of division as finding the missing factor in a multiplication problem.
- **We can use the properties of operations and place value to solve division problems.** We can apply the properties of operations and place value that we used for multiplication to develop strategies to divide larger numbers.

What Students Will Know:

- We can use division to determine “how many groups?” or “how many in each group?”
- Products are the total number of objects in a given number of groups of equal size
- We can use our understanding of multiplication to determine “how many groups?” or “how many in each group?”

What students will do:

- Solve “how many groups?” problems in a way that makes sense to them.
- Solve “how many in each group?” problems in a way that makes sense to them.
- Interpret and relate drawings and descriptions of division situations.
- Understand that a division situation may involve finding an unknown number of groups or finding an unknown number of objects in each group.
- Interpret division expressions.
- Understand that the same division expression can

Unit Specific Vocabulary:

Academic vocabulary
 division (Lesson 2)
 divisor (Lesson 4)
 quotient (Lesson 6)

- We use
- \div to represent division.
- The divisor is the number we are dividing by
- We can write division expressions to represent situations
- Multiplication and division are related; both operations involve equal groups
- Division can be thought of as an unknown factor problem
- The result in a division equation is called a quotient
- We can use products that we know to determine unknown quotients
- There are patterns and structures in the multiplication table that highlight properties of multiplication and is helpful for multiplying numbers
- Multiplying two numbers in any order gives the same product (commutative property). We can use this observation to find unknown products.
- We can use area diagrams and expressions to represent multiplication strategies
- We can use the distributive property to find products of single-digit factors using facts we know
- There are different ways to solve problems
- Parentheses are used to specify which operation happens first in the equation
- Our equations should match what is happening in the situation
- Multiplication and division are related
- We can use strategies based on

be used to represent both types of division situations.

- Solve “how many groups?” and “how many in each group?” problems.
- Write division expressions to represent division situations.
- Explain the relationship between multiplication and division equations.
- Interpret division equations and multiplication equations with a missing factor.
- Represent situations involving equal groups using multiplication and division equations with a symbol for the unknown quantity.
- Use multiplication and division within 100 to solve problems involving equal groups.
- Identify known single-digit multiplication facts and their related division facts.
- Identify arithmetic patterns in the multiplication table and use them to find unknown multiplication facts.
- Recognize that multiplication is commutative.
- Use area diagrams to explore strategies based on properties of multiplication.
- Apply associative and distributive properties of multiplication to find products within 100.
- Recognize that multiplication is associative and can be distributed over addition.
- Multiply one-digit whole numbers by multiples of 10 using strategies based on place value and the properties of operations.
- Multiply within 100, where one factor is a teen number, in a way that makes sense to them.
- Make sense of representations of multiplication (base-ten blocks and area diagrams) where one factor is a teen number.
- Multiply within 100, where one factor is a teen number.

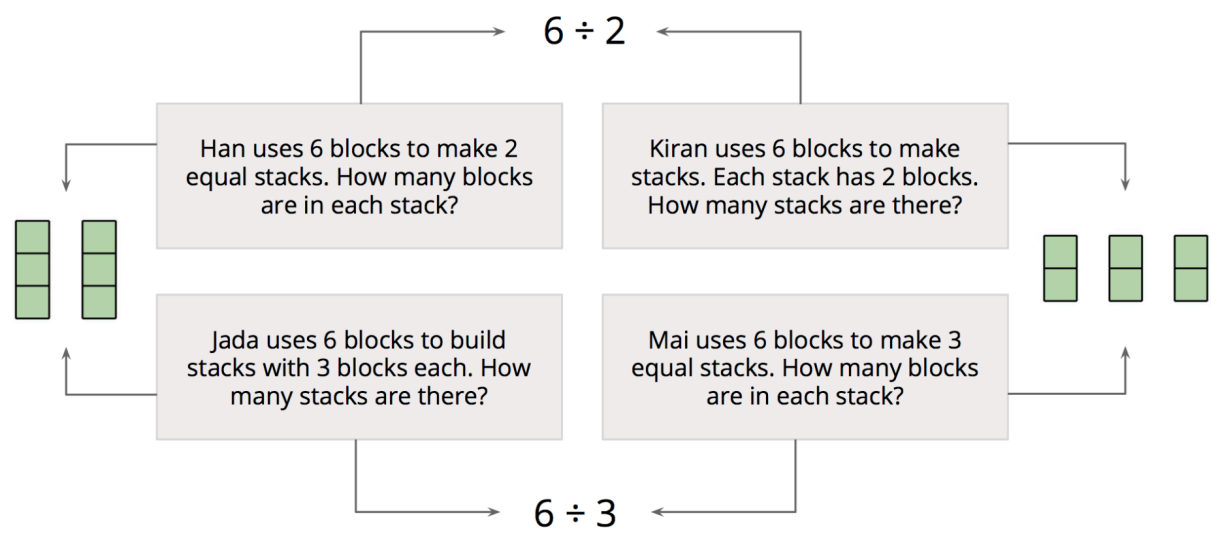
<p>properties of operations to multiply larger numbers</p> <ul style="list-style-type: none"> ● The interpretations of division still apply when dividing larger numbers ● The divisor can be seen as either the number of groups or the size of each group ● Depending on the numbers involved, one interpretation of division may be more useful or productive than the other ● It is helpful to use tens and ones to make equal groups (for example, to think of 84 as 8 tens and 4 ones, rather than 84 ones) ● We sometimes need to decompose tens into ones ● Equations can be used to represent addition, subtraction, multiplication, and division. ● We can write equations with a letter standing for an unknown quantity to represent problems. ● We can use multiplication and division to model real-world design problems. 	<ul style="list-style-type: none"> ● Multiply within 100, where one factor is greater than 20. ● Use properties based on place value and properties of operations to multiply. ● Represent two-step word problems using equations with a letter standing for the unknown quantity. ● Solve two-step word problems using the four operations. ● Solve problems involving division within 100, with quotients over 10, in a way that makes sense to them. ● Recognize that division of larger numbers can still mean finding the number of groups or finding the size of each group. ● Use base-ten blocks to represent division where the quotient is more than 10. ● Analyze strategies for representing and reasoning about division. ● Divide within 100 using strategies based on place value and properties of operations. ● Represent two-step word problems using equations with a letter standing for the unknown quantity. ● Solve two-step word problems using the four operations. ● Represent and solve “How many groups?” and “How many in each group?” problems in a real-world context. ● Solve two-step problems in a real-world context. 	
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<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>Section D: 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
<p>Opportunities for Interdisciplinary Connections:</p> <p>Students can connect to science with the community garden project and growing plants (How much water, sun, and soil each plant needs. What to do if a plant is unhealthy.)</p>	
<p>Any links, attachments and resources:</p> <p>Instructional Routines Document</p> <p>Family Support Materials</p>	<p>Planning Ideas:</p> <p>Components of a Typical IM Lesson</p> <p>What To Know About IM When Planning</p> <p>Where to Find the Mathematical Practices in the Units</p> <p>Assessing the Mathematical Practices</p>

Topic # 1 (Section A)	Topic Name: Section A - What is Division?	Duration: Recommended: 5 days
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Topic Description:
 In this section, students encounter situations involving the questions “how many in each group?” and “how many groups?” They make sense of division in terms of finding the answers to these questions.

The focus here is on interpreting descriptions, diagrams, and expressions that represent division situations. Students see that the same diagram or expression can represent different questions. For example, the expression $6 \div 2$ can represent two different questions about 6 blocks being put into stacks of 2 or into 2 equal stacks.



Later, students generalize their observations about division situations and interpret division expressions without a context.

- Section Learning Goals**
- Represent and solve “how many groups?” and “how many in each group?” problems.

<p>Competencies Addressed:</p> <p>Understanding and Applying Number Systems</p> <p>Indicator 5 - I can use my understanding of place value and properties of operations to add and subtract whole numbers.</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 2 - I can represent and interpret multiplication and division expressions.</p> <p>Indicator 5 - I can solve multi-step problems using the four operations and assess the reasonableness of my answers.</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>What is division?</p> <ul style="list-style-type: none"> ● Division is the process by which we determine how many groups or how many in each group. We can use what we know about multiplication to help us understand division. We can think of division as finding the missing factor in a multiplication problem.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● We can use division to determine “how many groups?” or “how many in each group?” ● Products are the total number of objects in a given number of groups of equal size ● We can use our understanding of multiplication to determine “how many groups?” or “how many in each group?” ● We use \div to represent division. ● The divisor is the number we are dividing by ● We can write division expressions to represent situations 	<p>Topic Vocabulary:</p> <p>Academic vocabulary division (Lesson 2) divisor (Lesson 4)</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Solve “how many groups?” problems in a way that makes sense to them. ● Solve “how many in each group?” problems in a way that makes sense to them. ● Interpret and relate drawings and descriptions of division situations. ● Understand that a division situation may involve finding an unknown number of groups or finding an unknown number of objects in each group. ● Interpret division expressions. ● Understand that the same division expression can be used to represent both types of division situations. ● Solve “how many groups?” and “how many in each group?” problems. ● Write division expressions to represent division situations. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs ● Planning for small groups

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 - What is Division?	Grade Level and Unit: Grade 3, Unit 4
Description of Task: Students learn about and use the relationship between multiplication and division, place value understanding, and the properties of operations to multiply and divide whole numbers within 100. They also represent and solve two-step word problems using the four operations.	Purpose of Task: The purpose of this task is for students to write division expressions to represent division situations and solve “how many groups?” and “how many in each group?” problems.
Background of Students/Learning Progression: Previously, students learned that multiplication can be understood in terms of equal-size groups. The expression 5×2 can represent the total number of objects when there are 5 groups of 2 objects, or when there are 2 groups of 5 objects.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification

Section A

IM Lesson	L1: How Many Groups?	L2: How Many in Each Group?	L3: Division Situation Drawings	L4: Interpret Division Expressions	L5: Write Division Expressions
Learning Cycle Model	Make Meaning	Making Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	3.OA.2, 3.OA.5	3.OA.2, 3.OA.5	3.NS.5, 3.OA.2	3.NS.5, 3.OA.2	3.NS.5, 3.OA.2, 3.OA.5
Math Practice Standards	MP 6	MP 6, 7		MP 2	MP 3
Lesson Purpose	The purpose of this lesson is for students to solve “how many groups?” problems in a way that makes sense to them.	The purpose of this lesson is for students to solve “how many in each group?” problems in a way that makes sense to them.	The purpose of this lesson is for students to interpret descriptions or drawings of division situations and recognize whether they involve finding an	The purpose of this lesson is for students to interpret division expressions and understand that the same division expression can be used	The purpose of this lesson is for students to write division expressions to represent division situations and solve “how many groups?”

			unknown number of groups or finding an unknown number of objects in each group.	to represent both types of division situations.	and “how many in each group?” problems.
Teacher Facing Learning Goal	Solve “how many groups?” problems in a way that makes sense to them.	Solve “how many in each group?” problems in a way that makes sense to them.	<ul style="list-style-type: none"> • Interpret and relate drawings and descriptions of division situations. • Understand that a division situation may involve finding an unknown number of groups or finding an unknown number of objects in each group. 	<ul style="list-style-type: none"> • Interpret division expressions. • Understand that the same division expression can be used to represent both types of division situations. 	<ul style="list-style-type: none"> • Solve “how many groups?” and “how many in each group?” problems. • Write division expressions to represent division situations.
Vocabulary Focus		division		divisor	
Lesson Materials/ Resources	Lesson 1 Slides Teacher Materials Student Pages Materials to Gather Connecting cubes or counters Tools for creating a visual display	Lesson 2 Slides Teacher Materials Student Pages Activity 3: Gather the 2–3 posters from the previous lesson and this lesson that highlight counting the groups in a “how many groups?” problem and finding how many in each group in a “how many in each group?” problem. Materials to Gather Connecting cubes or counters Tools for creating a visual	Lesson 3 Slides Teacher Materials Student Pages	Lesson 4 Slides Teacher Materials Student Pages	Lesson 5 Slides Teacher Materials Student Pages Materials to Gather Tools for creating a visual display Materials to Copy Card Sort: All About Bugs

	Cooldown: How Many Bags?	Cooldown: Apples in a Bag	Cooldown: Party Favors	Cooldown: Han's Tops	Cooldown: Ant Legs
Additional Resource: Section A Practice Problems					
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section A Checkpoint Assessment , Section A Checkpoint Teacher's Guide				
Centers Materials	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 2: Factors 1–5 (Supporting) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • Capture Squares (1–3), Stage 6: Multiply with 1–5 (Supporting) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • Capture Squares (1–3), Stage 6: Multiply with 1–5 (Supporting) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting)

Making Meaning:

[Lesson 1: How Many Groups?](#)

- The purpose of this lesson is for students to solve “how many groups?” problems in a way that makes sense to them.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 2: How Many in Each Group?](#)

- The purpose of this lesson is for students to solve “how many in each group?” problems in a way that makes sense to them.
- [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](#)

Investigate:

[Lesson 3: Division Situation Drawings](#)

- The purpose of this lesson is for students to interpret descriptions or drawings of division situations and recognize whether they involve finding an unknown number of groups or finding an unknown number of objects in each group.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 4: Interpret Division Expressions](#)

- The purpose of this lesson is for students to interpret division expressions and understand that the same division expression can be used to represent both types of division situations.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

[Lesson 5: Write Division Expressions](#)

- The purpose of this lesson is for students to write division expressions to represent division situations and solve “how many groups?” and “how many in each group?” problems.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

Invite students to share the expression for each situation.

Consider asking:

“What does each number represent in the expression?”

“Where do you see the number of groups in the expression?”

“Where do you see the number of objects in each group in the expression?”

“What is the same about the two types of division problems?” (They both involve putting things into equal groups.)

“What is different about them?” (Sometimes we know how many things are in each group and we need to find how many groups we can make. Sometimes we know how many groups there are, but we need to find how many things are in each group.)

Reflection:

“What are some of the big ideas we have learned about division?” (Division is about equal groups. We can find how many groups or how many there are in each group. We can represent division with drawings. We can write division expressions to represent division situations.)

Organize the class ideas on a chart with two columns, with representations of “how many groups?” in one column and those of “how many in each group?” in the other (as in the student lesson summary).

Notes: Follow the lessons in numerical order

Complete File with Resources and Task:

Task-Based Learning Plan Format for Topic 1

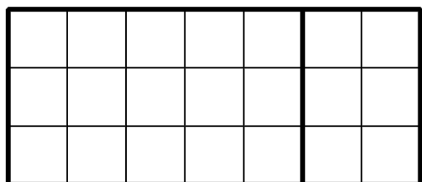
Topic # 2 (Section B)	Topic Name: Section B - Relate Multiplication and Division	Duration: Recommended: 6 days
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Topic Description:

In this section, students explicitly relate division to the missing factor in a multiplication equation. For example, the quotient in $30 \div 6 = \underline{\quad}$ is the missing factor in $\underline{\quad} \times 6 = 30$. They use this insight and their knowledge of multiplication facts to identify division facts.

To develop fluency, students reason about patterns in a multiplication table and notice that multiplication is commutative. For instance, if they know the value of 4×7 , they also know that of 7×4 .

Students also reason about the product of two factors by decomposing one of the factors. For instance, to find the value of 7×3 , they can decompose the 7 into 5 and 2 and find the value of $(5 \times 3) + (2 \times 3)$. Visually, the product can be represented by the area of a 7-by-3 rectangle that has been decomposed into two rectangles that are 5 by 3 and 2 by 3.



This line of reasoning develops students' intuition for the distributive property of multiplication. (Note that students are not expected to know the names of the properties of operations.)

Section Learning Goals

- Understand division as a missing-factor problem.
- Use properties of operations to develop fluency with single-digit multiplication facts, and their related division facts.

<p>Competencies Addressed:</p> <p>Measurement and Data Investigations</p> <p>Indicator 4 - I understand and can apply concepts of area and perimeter.</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>What is division?</p> <ul style="list-style-type: none"> • Division is the process by which we
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<p>Understanding and Applying Number Systems</p> <p>Indicator 1 - I understand that numbers hold value (whole numbers).</p> <p>Operations and Algebraic Thinking</p> <p>Indicator 1 - I can analyze and explain patterns.</p> <p>Indicator 2 - I can represent and interpret multiplication and division expressions.</p> <p>Indicator 3 - I can apply the properties of operations to multiply and divide.</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>determine how many groups or how many in each group. We can use what we know about multiplication to help us understand division. We can think of division as finding the missing factor in a multiplication problem.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Multiplication and division are related; both operations involve equal groups ● Division can be thought of as an unknown factor problem ● The result in a division equation is called a quotient ● We can use products that we know to determine unknown quotients ● There are patterns and structures in the multiplication table that highlight properties of multiplication and is helpful for multiplying numbers ● Multiplying two numbers in any order gives the same product (commutative property). We can use this observation to find unknown products. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary quotient (Lesson 6)</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Explain the relationship between multiplication and division equations. ● Interpret division equations and multiplication equations with a missing factor. ● Represent situations involving equal groups using multiplication and division equations with a symbol for the unknown quantity. ● Use multiplication and division within 100 to solve problems involving equal groups. ● Identify known single-digit multiplication facts and their related division facts. ● Identify arithmetic patterns in the multiplication table and use them to find unknown 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments

multiplication facts.

- Recognize that multiplication is commutative.
- Use area diagrams to explore strategies based on properties of multiplication.
- Apply associative and distributive properties of multiplication to find products within 100.
- Recognize that multiplication is associative and can be distributed over addition.

- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups
- Teacher Reflection Prompts in Teacher Guides

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 - Relate Multiplication and Division	Grade Level and Unit: Grade 3, Unit 4
Description of Task: Students learn about and use the relationship between multiplication and division, place value understanding, and the properties of operations to multiply and divide whole numbers within 100. They also represent and solve two-step word problems using the four operations.	Purpose of Task: The purpose of this task is for students to use area diagrams to explore multiplication strategies based on properties of operations and represent multiplication strategies on an ungridded rectangle.
Background of Students/Learning Progression: Previously, students examined patterns in the multiplication table and used them to find products within 100 and to notice properties of multiplication—the commutative property, in particular. They also used gridded rectangles to represent strategies based on the distributive and associative properties.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification

Section B

IM Lesson	L6: Division as an Unknown Factor	L7: Relate Multiplication and Division	L8: Relate Quotients to Familiar Products	L9: Patterns in the Multiplication Table	L10: Explore Multiplication Strategies with Rectangles	L11: Multiplication Strategies on Ungridded Rectangles
Learning Cycle Model	Making Meaning	Making Meaning	Investigate	Investigate	Create and Produce	Create and Produce
Naugatuck Math Competency	3.OA.2, 3.OA.3	3.NS.1, 3.OA.2, 3.OA.3, 3.OA.5	3.OA.3, 3.OA.4	3.OA.1, 3.OA.4	3.OA.4	3.OA.4
Math Practice Standards	MP 2, 3	MP 3	MP 7	MP 6, 7, 8	MP 1, 2	
Lesson Purpose	The purpose of this lesson is for students to relate multiplication and	The purpose of this lesson is for students to use the relationship	The purpose of this lesson is for students to practice identifying	The purpose of this lesson is for students to identify and explain	The purpose of this lesson is for students to use area diagrams to explore	The purpose of this lesson is for students to represent

	division and recognize division as an unknown factor problem.	between multiplication and division to write equations and solve problems.	multiplication facts within 100 and to use products they know to determine unknown quotients.	patterns in the multiplication table.	multiplication strategies based on properties of operations.	multiplication strategies on an ungridded rectangle.
Teacher Facing Learning Goal	<ul style="list-style-type: none"> ● Explain the relationship between multiplication and division equations. ● Interpret division equations and multiplication equations with a missing factor. 	<ul style="list-style-type: none"> ● Represent situations involving equal groups using multiplication and division equations with a symbol for the unknown quantity. ● Use multiplication and division within 100 to solve problems involving equal groups. 	Identify known single-digit multiplication facts and their related division facts.	<ul style="list-style-type: none"> ● Identify arithmetic patterns in the multiplication table and use them to find unknown multiplication facts. ● Recognize that multiplication is commutative. 	Use area diagrams to explore strategies based on properties of multiplication.	<ul style="list-style-type: none"> ● Apply associative and distributive properties of multiplication to find products within 100. ● Recognize that multiplication is associative and can be distributed over addition.
Vocabulary Focus	quotient					
Lesson Materials/ Resources	Lesson 6 Slides Teacher Materials Student Pages	Lesson 7 Slides Teacher Materials Student Pages Materials to Copy Division Round Table	Lesson 8 Slides Teacher Materials Student Pages Activity 1: <ul style="list-style-type: none"> ● Create a set of cards from the blackline master for each group of 2. ● The Multiplication Fact sort cards from this activity will be used again in the next activity. Activity 2: Each group of 2 needs	Lesson 9 Slides Teacher Materials Student Pages	Lesson 10 Slides Teacher Materials Student Pages Materials to Gather Colored pencils, crayons, or markers	Lesson 11 Slides Teacher Materials Student Pages Activity 2: Create a set of cards from the blackline master for each group of 2 or 4. Materials to Copy <ul style="list-style-type: none"> ● Centimeter Grid Paper - Standard ● Card Sort: Different Expressions, Same Rectangle

			a set of cards from the previous activity. Materials to Copy <ul style="list-style-type: none"> • Card Sort: Multiplication • Card Sort: Multiplication Recording Sheet 			
	Cooldown: Boxed Muffins	Cooldown: Sharing Roses	Cooldown: Multiplication and Division Facts	Cooldown: Find the Missing Product	Cooldown: Mark or Shade Parts to Find Area	Cooldown: Expressions for a Rectangle
Additional Resource: Section B Practice Problems						
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section B Checkpoint Assessment , Section B Checkpoint Teacher's Guide					
Centers Materials	<ul style="list-style-type: none"> • Capture Squares (1–3), Stage 6: Multiply with 1–5 (Supporting) • Five in a Row: Multiplication (3–5), Stage 2: Factors 1–9 (Supporting) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 3: Factors 1–10 (Addressing) • Capture Squares (1–3), Stage 7: Multiply with 6–9 (Addressing) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 3: Factors 1–10 (Addressing) • Capture Squares (1–3), Stage 7: Multiply with 6–9 (Addressing) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 3: Factors 1–10 (Addressing) • Capture Squares (1–3), Stage 7: Multiply with 6–9 (Addressing) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 3: Factors 1–10 (Addressing) • Capture Squares (1–3), Stage 7: Multiply with 6–9 (Addressing) 	<ul style="list-style-type: none"> • Rectangle Rumble (3–5), Stage 3: Factors 1–10 (Addressing) • Capture Squares (1–3), Stage 7: Multiply with 6–9 (Addressing)

Making Meaning:

[Lesson 6: Division as an Unknown Factor](#)

- The purpose of this lesson is for students to relate multiplication and division and recognize division as an unknown factor problem.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 7: Relate Multiplication and Division](#)

- The purpose of this lesson is for students to use the relationship between multiplication and division to write equations and solve problems.
- [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](#)

Investigate:

[Lesson 8: Relate Quotients to Familiar Products](#)

- The purpose of this lesson is for students to practice identifying multiplication facts within 100 and to use products they know to determine unknown quotients.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 9: Patterns in the Multiplication Table](#)

- The purpose of this lesson is for students to identify and explain patterns in the multiplication table.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

[Lesson 10: Explore Multiplication with Rectangles](#)

- The purpose of this lesson is for students to use area diagrams to explore multiplication strategies based on properties of operations.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 11: Multiplication Strategies on Ungridded Rectangles](#)

- The purpose of this lesson is for students to represent multiplication strategies on an ungridded rectangle.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

“What were some strategies for decomposing the rectangles to find their areas?”

Reflection:

“What expressions show us that we can decompose one

<p>(Partition one side into smaller parts and find the area of smaller rectangles within the original one. Partitioning the rectangle into two halves and finding the area of each half and then doubling it.)</p> <p>“How might these strategies help us multiply two numbers?” (They show that we can break apart or decompose one of the numbers and multiply smaller numbers and then combine the results. Using diagrams and writing expressions can help us see and record the parts.)</p>	<p>of the factors, then multiply them separately?” (E and K, C and L, B and I)</p> <p>Display the expressions on cards F and G.</p> <p>“What do these expressions show us about multiplication?” (When there are more than 2 factors, we can decide which two factors to multiply first without changing the result).</p>
<p>Notes: Follow lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p> <p>Task-Based Learning Plan Format for Topic 2</p>

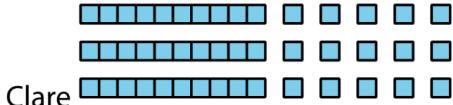
Topic # 3 (Section C)	Topic Name: Section C - Multiplying Larger Numbers	Duration: Recommended: 6 days
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Topic Description:
 In this section, students use various strategies based on place value and properties of operations to multiply larger numbers.

Students first multiply one-digit numbers and multiples of 10 and observe the associative property of multiplication. They interpret 3×20 to mean 3 groups of 2 tens, which is 6 tens. This means 3×20 can be evaluated by finding $3 \times 2 \times 10$ or 6×10 .

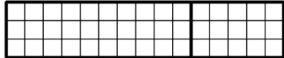
These insights enable students to then multiply other one- and two-digit factors (not limited to multiples of 10) and find products within 100.

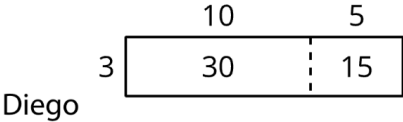
The representations used here (base-ten blocks, gridded rectangles, and not gridded diagrams) encourage students to also use their understanding of place value and to decompose two-digit factors into tens and ones as they multiply.



Clare

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Section Learning Goals

- Use properties of operations and place value understanding to develop strategies to multiply within 100 and to multiply one-digit numbers by a multiple of 10.

<p>Competencies Addressed:</p> <p>Measurement and Data Investigations Indicator 4 - I understand and can apply concepts of area and perimeter.</p> <p>Understanding and Applying Number Systems Indicator 1 - I understand that numbers hold value (whole numbers).</p> <p>Operations and Algebraic Thinking</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>How can we use what we know about multiplication to solve division problems?</p> <p>We can use the properties of operations and place value to solve division problems. We can</p>
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<p>Indicator 3 - I can apply the properties of operations to multiply and divide. Indicator 5 - I can solve multi-step problems using the four operations and assess the reasonableness of my answers.</p>	<p>apply the properties of operations and place value that we used for multiplication to develop strategies to divide larger numbers.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● We can use area diagrams and expressions to represent multiplication strategies ● We can use the distributive property to find products of single-digit factors using facts we know ● There are different ways to solve problems ● Parentheses are used to specify which operation happens first in the equation ● Our equations should match what is happening in the situation 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Multiply one-digit whole numbers by multiples of 10 using strategies based on place value and the properties of operations. ● Multiply within 100, where one factor is a teen number, in a way that makes sense to them. ● Make sense of representations of multiplication (base-ten blocks and area diagrams) where one factor is a teen number. ● Multiply within 100, where one factor is a teen number. ● Multiply within 100, where one factor is greater than 20. ● Use properties based on place value and properties of operations to multiply. ● Represent two-step word problems using equations with a letter standing for the unknown quantity. ● Solve two-step word problems using the four operations. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring ● PLCs ● Planning for small groups ● Teacher Reflection Prompts in Teacher Guides

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 - Multiplying Larger Numbers	Grade Level and Unit: Grade 3 Unit 4
Description of Task: Students consider a situation and think about all the mathematical questions they could ask about it. This gives students a chance to make sense of the situation before they are asked to solve problems. They also solve two-step word problems using all four operations. Students should be encouraged to solve the problem first or write the equation first, depending on their preference.	Purpose of Task: The purpose of this task is for students to solve two-step problems using all four operations.
Background of Students/Learning Progression: Previously, students have solved two-step problems involving addition, subtraction, and multiplication. Here they consider what mathematical questions could be asked about a situation and then solve two-step problems that include division where the factors are limited to single-digit numbers.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification

Section C

IM Lesson	L12: Multiplying Multiples of Ten	L13: Solve Problems With Equal Groups	L14: Ways to Represent Multiplication of Teen Numbers	L15: Equal Groups, Larger Numbers	L16: Multiplying Numbers Larger than 20	L17: Use the Four Operations to Solve Problems
Learning Cycle Model	Making Meaning	Making Meaning	Investigate	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	3.NS.1	3.OA.3, 3.OA.5	3.OA.3	3.MD.4, 3.OA.3, 3.OA.5	3.OA.3	3.NS.1, 3.OA.3, 3.OA.5
Math Practice Standards	MP 7	MP 5	MP 2	MP 3, 6	MP 7	MP 2
Lesson Purpose	The purpose of this lesson is for students to multiply one-digit numbers by multiples of 10.	The purpose of this lesson is for students to solve problems involving multiplication within 100, where one factor	The purpose of this lesson is for students to make sense of representations of the multiplication of teen numbers.	The purpose of this lesson is for students to multiply within 100, where one factor is a teen number.	The purpose of this lesson is for students to multiply within 100, where one factor is greater than 20.	The purpose of this lesson is for students to solve two-step problems using all four operations.

		is a teen number, in a way that makes sense to them.				
Teacher Facing Learning Goals	Multiply one-digit whole numbers by multiples of 10 using strategies based on place value and the properties of operations.	Multiply within 100, where one factor is a teen number, in a way that makes sense to them.	Make sense of representations of multiplication (base-ten blocks and area diagrams) where one factor is a teen number.	Multiply within 100, where one factor is a teen number.	Multiply within 100, where one factor is greater than 20. Use properties based on place value and properties of operations to multiply.	Represent two-step word problems using equations with a letter standing for the unknown quantity. Solve two-step word problems using the four operations.
Vocabulary Focus						
Lesson Materials/ Resources	Lesson 12 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks Materials to Copy Centimeter Grid Paper - Standard	Lesson 13 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks Connecting cubes or counters Tools for creating a visual display Materials to Copy Centimeter Grid Paper - Standard	Lesson 14 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks	Lesson 15 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks Sticky notes Tools for creating a visual display Materials to Copy Centimeter Grid Paper - Standard	Lesson 16 Slides Teacher Materials Student Pages Activity 3: Create a set of cards from the blackline master for each group of 2. Materials to Gather Base-ten blocks Materials to Copy Centimeter Grid Paper - Standard Number Cards (0-10) (in the center kit)	Lesson 17 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks Materials to Copy Centimeter Grid Paper - Standard
	Cooldown: What's the	Cooldown: Bags of	Cooldown: Multiply	Cooldown: Find the	Cooldown: Multiply	Cooldown: Andre's

	Value?	Oranges	and Explain	Area	Numbers Greater than 20	Balloon
Additional Resource: Section C Practice Problems						
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section C Checkpoint Assessment, Section C Checkpoint Teacher's Guide					
Centers Materials	<ul style="list-style-type: none"> • Compare (1–5), Stage 3: Multiply within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 2: Add and Subtract within 20 (Supporting) • How Close? (1–5), Stage 4: Add to 1,000 (Supporting) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 2: Add and Subtract within 20 (Supporting) • How Close? (1–5), Stage 4: Add to 1,000 (Supporting) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 3: Multiply within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 3: Multiply within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 3: Multiply within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing)

Making Meaning:

[Lesson 12: Multiplying Multiples of Ten](#)

- The purpose of this lesson is for students to multiply one-digit numbers by multiples of 10.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 13: Solve Problems With Equal Groups](#)

- The purpose of this lesson is for students to solve problems involving multiplication within 100, where one factor is a teen number, in a way that makes sense to them.
- [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](#)

Investigate:

Lesson 14: Ways to Represent Multiplication of Teen Numbers

- The purpose of this lesson is for students to make sense of representations of the multiplication of teen numbers.
- [Teacher presentation materials](#)
- [Slides](#)

Lesson 15: Equal Groups, Larger Numbers

- The purpose of this lesson is for students to multiply within 100, where one factor is a teen number.
- [Teacher presentation materials](#)
- [Slides](#)

Lesson 16: Multiplying Numbers Larger than 20

- The purpose of this lesson is for students to multiply within 100, where one factor is greater than 20.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

Lesson 17: Use the Four Operations to Solve Problems

- The purpose of this lesson is for students to solve two-step problems using all four operations.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

“What information did we use in the problem?” (The number of guests at the party. The number of guests in Room A. The number of tables in Room B.)
“How could we record an equation with a letter for the unknown quantity that would represent the problem? Explain your reasoning.”

If students don’t use parentheses, say: “In this equation, we can use parentheses to show that we subtracted first.”

“The parentheses show us that the subtraction is done first in the equation to represent the problem. Keep this in mind as you work on the next activity.”

Reflection:

“Today we used multiplication, division, addition, and subtraction to solve two-step problems. What were some strategies that were helpful as you solved these types of problems?” (It was helpful to represent the situation with a drawing to help me think about what was happening in the situation. It helped to think about the information that I needed. It helped to think about how to represent each part of the problem before I put

<p>“Where do we see _____ from the problem in the equation?” “What information from the situation did we need to solve and write our equation?” “How are parentheses used in the equation?”</p>	<p>it all together into an equation.)</p>
<p>Notes: Follow lessons in numerical order.</p>	<p>Complete File with Resources and Task: Task-Based Learning Plan Format for Topic 1</p>

Topic # 4 (Section D)	Topic Name: Section D - Dividing Larger Numbers	Duration: Recommended: 6 days								
<p>Topic Description: In this section, students perform division in which the quotient or divisor is larger than 10. They apply what they know about place value, the two interpretations of division, and the relationship between multiplication and division to divide larger numbers.</p> <p>The numbers in the division expressions encourage students to see the divisor as either the number of groups or the number in each group. For example, they may interpret $57 \div 3$ to mean dividing 57 into 3 equal groups. However, given $90 \div 15$, students may make groups of 15 and see how many are needed to make 90. This flexibility helps students choose methods that are most efficient for them for any given problem.</p> <p>Students also use the relationship between multiplication and division and place value understanding to find quotients. For instance, to find the value of $78 \div 3$, students may reason as follows:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">$3 \times 10 = 30$</td> <td style="text-align: center;">$3 \times 20 = 60$</td> </tr> <tr> <td style="text-align: center;">$3 \times 10 = 30$</td> <td style="text-align: center;">$3 \times 6 = 18$</td> </tr> <tr> <td style="text-align: center;">$3 \times 6 = 18$</td> <td style="text-align: center;">$20 + 6 = 26$</td> </tr> <tr> <td style="text-align: center;">$10 + 10 + 6 = 26$</td> <td></td> </tr> </table> <p>In both cases, students see that there are 3 groups of 26 in 78.</p> <p>Section Learning Goals</p> <ul style="list-style-type: none"> Use properties of operations, place value understanding, and the relationship between multiplication and division to divide within 100. 			$3 \times 10 = 30$	$3 \times 20 = 60$	$3 \times 10 = 30$	$3 \times 6 = 18$	$3 \times 6 = 18$	$20 + 6 = 26$	$10 + 10 + 6 = 26$	
$3 \times 10 = 30$	$3 \times 20 = 60$									
$3 \times 10 = 30$	$3 \times 6 = 18$									
$3 \times 6 = 18$	$20 + 6 = 26$									
$10 + 10 + 6 = 26$										
<p>Competencies Addressed:</p> <p>Measurement and Data Investigations Indicator 4 - I understand and can apply concepts of area and perimeter.</p> <p>Understanding and Applying Number Systems Indicator 1 - I understand that numbers hold value (whole numbers).</p>		<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>How can we use what we know about multiplication to solve division problems?</p> <p>We can use the properties of operations and</p>								

<p>Operations and Algebraic Thinking</p> <p>Indicator 2 - I can represent and interpret multiplication and division expressions.</p> <p>Indicator 3 - I can apply the properties of operations to multiply and divide.</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>place value to solve division problems. We can apply the properties of operations and place value that we used for multiplication to develop strategies to divide larger numbers.</p>
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Multiplication and division are related ● We can use strategies based on properties of operations to multiply larger numbers ● The interpretations of division still apply when dividing larger numbers ● The divisor can be seen as either the number of groups or the size of each group ● Depending on the numbers involved, one interpretation of division may be more useful or productive than the other ● It is helpful to use tens and ones to make equal groups (for example, to think of 84 as 8 tens and 4 ones, rather than 84 ones) ● We sometimes need to decompose tens into ones ● Equations can be used to represent addition, subtraction, multiplication, and division. ● We can write equations with a letter standing for an unknown quantity to represent problems. ● We can use multiplication and division to model real-world design problems. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Solve problems involving division within 100, with quotients over 10, in a way that makes sense to them. ● Recognize that division of larger numbers can still mean finding the number of groups or finding the size of each group. ● Use base-ten blocks to represent division where the quotient is more than 10. ● Analyze strategies for representing and reasoning about division. ● Divide within 100 using strategies based on place value and properties of operations. ● Represent two-step word problems using equations with a letter standing for the unknown quantity. ● Solve two-step word problems using the four operations. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <ul style="list-style-type: none"> ● Reviewing formative assessments ● Developing scaffolds ● Collaborative scoring

- Represent and solve “How many groups?” and “How many in each group?” problems in a real-world context.
- Solve two-step problems in a real-world context.

- PLCs
- Planning for small groups
- Teacher Reflection Prompts in Teacher Guides

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.

Task Title: Topic 4 - Dividing Larger Numbers	Grade Level and Unit: Grade3, Unit 4
<p>Description of Task: In this task, students use their understanding of multiplication and division to plan a school garden. In the first activity, students solve problems that involve the spacing between plants in a row and between the rows. In the second activity, they plan a garden. They choose the types of vegetables and fruit to grow, how many plants to grow, and the arrangement of the plants. They also consider the yield of the garden. Students represent their plans with diagrams and expressions or equations.</p>	<p>Purpose of Task: The purpose of this lesson is to use multiplication and division to model a real-world design problem.</p>
<p>Background of Students/Learning Progression: In previous lessons, students multiplied and divided numbers within 100. They related division to multiplication by understanding division as an unknown factor problem. They used properties of operations and place value understanding to develop strategies to multiply and divide within 100.</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

Section D

IM Lesson	L18: Larger Numbers in Equal Groups	L19: Ways to Divide Larger Numbers	L20: Strategies for Dividing	L21: Solve Problems Using the Four Operations	L22: School Community Garden
Learning Cycle Model	Making Meaning	Making Meaning	Investigate	Investigate	Create and Produce
Naugatuck Math Competency	3.OA.2, 3.OA.5	3.NS.1, 3.OA.2, 3.OA.3, 3.OA.4	3.OA.3, 3.OA.4	3.OA.5	3.MD.4, 3.OA.2, 3.OA.3, 3.OA.5
Math Practice Standards				MP 1	MP 4
Lesson Purpose	The purpose of this lesson is for students to	The purpose of this lesson is for students to	The purpose of this lesson is for students to	The purpose of this lesson is for students to	The purpose of this lesson is to use

	solve problems involving division within 100, with quotients over 10, in a way that makes sense to them.	recognize that the two interpretations of division still apply when dividing larger numbers and to use base-ten diagrams to interpret and represent division within 100.	analyze representations and strategies for finding quotients with larger numbers and to divide within 100.	represent and solve two-step word problems using the four operations.	multiplication and division to model a real-world design problem.
Teacher Facing Learning Goals	Solve problems involving division within 100, with quotients over 10, in a way that makes sense to them.	<ul style="list-style-type: none"> Recognize that division of larger numbers can still mean finding the number of groups or finding the size of each group. Use base-ten blocks to represent division where the quotient is more than 10. 	<ul style="list-style-type: none"> Analyze strategies for representing and reasoning about division. Divide within 100 using strategies based on place value and properties of operations. 	<ul style="list-style-type: none"> Represent two-step word problems using equations with a letter standing for the unknown quantity. Solve two-step word problems using the four operations. 	<ul style="list-style-type: none"> Represent and solve “How many groups?” and “How many in each group?” problems in a real-world context. Solve two-step problems in a real-world context.
Vocabulary Focus					
Lesson Materials/ Resources	Lesson 18 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks Connecting cubes or counters Materials to Copy Centimeter Grid Paper - Standard	Lesson 19 Slides Teacher Materials Student Pages Materials to Gather Base-ten blocks	Lesson 20 Slides Teacher Materials Student Pages Activity 3: Create a set of cards from the blackline master for each group of 2. Remove the cards with two-digit divisors. Materials to Gather Base-ten blocks	Lesson 21 Slides Teacher Materials Student Pages	Lesson 22 Slides Teacher Materials Student Pages Materials to Copy Centimeter Grid Paper - Standard

			Materials to Copy Centimeter Grid Paper - Standard Compare Stage 4 Division Cards		
	Cooldown: Recess Teams	Cooldown: Find the Value	Cooldown: One More Division	Cooldown: Apples at the Farm Stand	
Additional Resource: Section D Practice Problems					
Assessment	Formative Assessment Strategies: observation, questioning, student discourse: Monitoring Sheet See Section D Checkpoint Assessment , Section D Checkpoint Teacher's Guide Unit 4 Assessment , Unit 4 Teacher Guide				
Centers Materials	<ul style="list-style-type: none"> • Compare (1–5), Stage 4: Divide within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 4: Divide within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing) • Can You Draw It? (1–5), Stage 2: Grade 2 Shapes (Supporting) 	<ul style="list-style-type: none"> • Compare (1–5), Stage 4: Divide within 100 (Addressing) • How Close? (1–5), Stage 5: Multiply to 100 (Addressing) • Can You Draw It? (1–5), Stage 2: Grade 2 Shapes (Supporting) 		

Making Meaning:

[Lesson 18: Larger Numbers in Equal Groups](#)

- The purpose of this lesson is for students to solve problems involving division within 100, with quotients over 10, in a way that makes sense to them.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 19: Ways to Divide Larger Numbers](#)

- The purpose of this lesson is for students to recognize that the two interpretations of division still apply when dividing larger numbers and to use base-ten diagrams to interpret and represent division within 100.
- [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](#)

Investigate:

[Lesson 20: Strategies for Dividing](#)

- The purpose of this lesson is for students to analyze representations and strategies for finding quotients with larger numbers and to divide within 100.
- [Teacher presentation materials](#)
- [Slides](#)

[Lesson 21: Solve Problems Using the Four Operations](#)

- The purpose of this lesson is for students to represent and solve two-step word problems using the four operations.
- [Teacher presentation materials](#)
- [Slides](#)

Create and Produce:

[Lesson 22: School Community Garden](#)

- The purpose of this lesson is for students to use multiplication and division to model a real-world design problem.
- [Teacher presentation materials](#)
- [Slides](#)

Communicate and Present:

Reflection:

<p>Invite previously selected students to share. “How did the diagrams help you think about the problem?” “Where do you see the numbers from the equation in the diagram?”</p>	<p>“Today, many of you used multiplication and division to arrange your plants and find out how much you could harvest from your garden.”</p> <p>“Besides arrangements of plants and the harvest, what else should we consider to maintain a garden?” (How much water, sun, and soil each plant needs. What to do if a plant is unhealthy.)</p>
<p>Notes:</p>	<p>Complete File with Resources and Task:</p> <p>Task-Based Learning Plan Format for Topic 1</p>