

Course Title: Mathematics	Full Year	Required
<p>Course Description: The big ideas in grade 2 include: extending understanding of the base-ten number system, building fluency with addition and subtraction, using standard units of measure, and describing and analyzing shapes. The mathematical work for grade 2 is partitioned into 9 units:</p> <ol style="list-style-type: none"> 1. Adding, Subtracting, and Working with Data 2. Adding and Subtracting within 100 3. Measuring Length 4. Addition and Subtraction on the Number Line 5. Numbers to 1,000 6. Geometry, Time, and Money 7. Adding and Subtracting within 1,000 8. Equal Groups 9. Putting it All Together <p>In these materials, particularly in units that focus on addition and subtraction, teachers will find terms that refer to problem types, such as Add To, Take From, Put Together or Take Apart, Compare, Result Unknown, and so on. These problem types are based on common addition and subtraction situations, as outlined in Table 1 of the Mathematics Glossary section of the Common Core State Standards.</p>		
<p>Additional Course Information:</p> <p>The big ideas in Grade 2 include:</p> <ul style="list-style-type: none"> ● Representing and solving problems involving addition and subtraction ● Adding and subtracting within 20 ● Understanding place value ● Using place value understanding and properties of operations to add and subtract ● Measuring and estimating lengths in standard units ● Relating addition and subtraction to length <p>Required fluency in grade 2 includes:</p> <ul style="list-style-type: none"> ● Single-digit sums and differences (sums from memory by end of Grade 2) ● Add/subtract within 100 	<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:

- Students reason with shapes and their attributes and partition shapes into equal shares, building a foundation for fractions. They relate halves, fourths, and skip-counting by 5 to tell time, and solve story problems involving the values of coins and dollars.

In this unit, students transition from place value and numbers to geometry, time, and money.

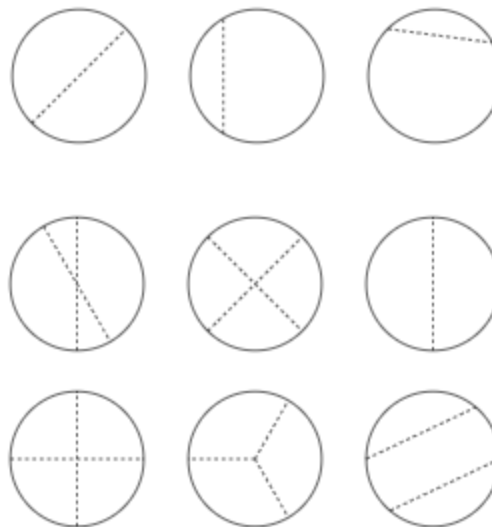
In grade 1, students distinguished between defining and non-defining attributes of shapes, including triangles, rectangles, trapezoids, and circles. Here, they continue to look at attributes of a variety of shapes and see that shapes can be identified by the number of sides and vertices (corners). Students then study three-dimensional (solid) shapes, and identify the two-dimensional (flat) shapes that make up the faces of these solid shapes.

Next, students look at ways to partition shapes and create equal shares. They extend their knowledge of halves and fourths (or quarters) from grade 1 to now include thirds.

Students compose larger shapes from smaller equal-size shapes and partition shapes into two, three, and four equal pieces.

As they develop the language of fractions, students also recognize that a whole can be described as 2 halves, 3 thirds, or 4 fourths, and that equal-size pieces of the same whole need not have the same shape.

Which circles are not examples of circles partitioned into halves, thirds, or fourths?



Later, students use their understanding of halves and fourths (or quarters) to tell time. In grade 1, they learned to tell time to the half hour. Here, they relate a quarter of a circle to the features of an analog

Topic Titles:

- **Section A: Attributes of Shapes**
 - Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
 - Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.
- **Section B: Halves, Thirds, and Fourths**
 - Partition rectangles and circles into halves, thirds, and fourths and name the pieces.
 - Recognize 2 halves, 3 thirds, and 4 fourths as one whole.
 - Understand that equal pieces do not need to be the same shape.
- **Section C: Time on the Clock**
 - Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
- **Section D: The Value of Money**
 - Find the value of a group of bills and coins.

clock. They use “quarter past” and “quarter till” to describe time, and skip-count to tell time in 5-minute intervals. They also learn to associate the notation “a.m.” and “p.m.” with their daily activities.

To continue to build fluency with addition and subtraction within 100, students conclude the unit with a money context. They skip-count, count on from the largest value, and group like coins, and then add or subtract to find the value of a set of coins. Students also solve one- and two-step story problems involving sets of dollars and different coins, and use the symbols \$ and ¢.

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

In grade 1, students distinguished between defining and non-defining attributes of shapes, including triangles, rectangles, trapezoids, and circles. In previous grades, students identified, described, and compared two-dimensional and three-dimensional shapes. In previous grades, students built and drew squares, circles, triangles, rectangles, and hexagons. In a previous unit, students measured and compared the length of the sides of triangles and rectangles with rulers. In previous grades, students identified and described the attributes of three-dimensional (solid) shapes. Students identified and named spheres, cylinders, cones, and cubes in previous grades.

In grade 1, students partitioned shapes into halves and fourths (quarters). They will extend this to thirds in grade 2. In previous grades, students learned that shapes can be made up of other shapes. This understanding about partitioning shapes and parts of a whole is the foundation for students' work with a whole and fraction equivalency in grade 3.

In grade 1, students learned to tell time to the half hour. They related representations of time to the half-hour on analog clocks to circles partitioned into halves. In second grade students will tell time to the nearest five minutes. Previously in grade 2 students used a number line with intervals of 5 and they learned to skip count by 5s, which they can leverage to understand the structure of a clock and telling time to the nearest 5 minutes. In third grade, students will extend their understanding of telling time and tell time to the nearest minute.

Students did not work with money in grade 1, but may be familiar with coins and dollars from their experiences outside of school. In previous units, students learned to use a ten when adding or subtracting within 100. They also used counting on or counting back as a strategy when adding or subtracting, including counting on or counting back by 5 and 10. Previously, students learned to count by 5s and 10s. In grade 2, students will not write dollars and cents using decimal notation, as this notation is reserved for their study of decimals and fractions in grade 4 and beyond.

Essential Questions:

1. How can shapes be recognized, described and compared?
2. How and why do we tell time?

Enduring Understanding:

- **In order to identify, describe and compare shapes, we must understand the unique attributes of individual shapes.** A shape can be identified by the number of sides, vertices or angles. Closed plane shapes and solid figures can be classified and sorted based on their attributes. Closed plane shapes can be partitioned into equal shares. Equal shares must all be the same size but they can be different shapes.

<p>3. What strategies can be used to count and solve problems involving money?</p>	<ul style="list-style-type: none"> ● We tell time using digital or analog clocks for the purpose of understanding how our day is structured. A.M. and P.M. refer to different time periods. The structure of a clock relates to previous learning about partitioning and intervals on a number line. ● We can use skip counting, counting on, and/or addition and subtraction to find the value of a set of coins. Money problems are solved the same as other story problems, but the cent and dollar symbols are included in the answer. We can make sense of the problem using tape diagrams, for example. Students think about 1 dollar as 100 cents so we could subtract more easily from 100. 	
<p>What Students Will Know:</p> <ul style="list-style-type: none"> ● Differences between two-dimensional and three-dimensional shapes. ● Names of two-dimensional (triangles, quadrilaterals, pentagons, and hexagons) and three-dimensional shapes (cube, cylinder, sphere, cone, rectangular prism) and their attributes ● Three-dimensional (solid) shapes can be recognized and described based on their geometric attributes. (examples, cubes have 6 equal-sized square faces and cylinders can be identified by its two circular faces). ● A whole can have equal shares called halves, thirds, and fourths. ● When they partition circles and rectangles into halves, thirds, or fourths, each piece must be equal. ● Equal shares of identical wholes need not have the same shape. ● When a shape is partitioned into 3 equal pieces, the pieces are called thirds. ● 2 halves, 3 thirds, and 4 fourths is one 	<p>What students will do:</p> <ul style="list-style-type: none"> ● Recognize and name shapes (triangles, quadrilaterals, pentagons, and hexagons) based on the number of sides and vertices (corners). ● Describe two-dimensional shapes (e.g., polygon, closed shape, plane shape, vertices, right angles, sides). ● Recognize and draw triangles, quadrilaterals, pentagons, and hexagons. ● Use a ruler to draw shapes with specified side lengths. ● Recognize and describe three-dimensional (solid) shapes based on their geometric attributes (faces). (e.g. cubes have: 6 faces, four edges of the same length on one face, 4 right angles on one face, 8 vertices, solid, 12 edges). ● Compose a new shape from the same equal-size smaller shapes. ● Partition circles and rectangles into halves, thirds, and fourths, and describe the pieces. ● Partition shapes into halves, thirds, and fourths in different ways (For example, they recognize that a square is partitioned into 	<p>Unit Specific Vocabulary:</p> <p>Academic vocabulary</p> <p>Attributes Categories Triangles Quadrilaterals Pentagons Hexagons Sides Corners “Relative size” Category Three-dimensional Solid Faces Cone Cylinder Cube Sphere Rectangular prism Equal-sized Composition Halves Fourths Quarters</p>

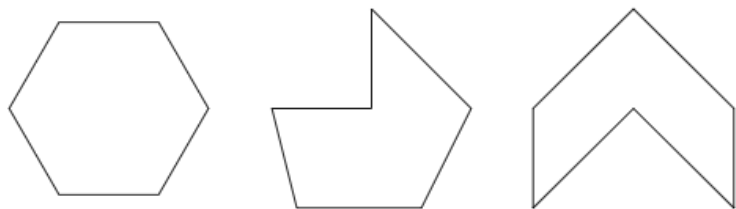
<p>whole.</p> <ul style="list-style-type: none"> ● The connection of partitioning a circle into equal pieces to using the words “half past,” “quarter past,” and “quarter till” to tell time ● There is a connection between a number line with intervals of 5 and the distance between the numbers on the clock, which represents 5 minute intervals. ● The hour hand goes around the clock twice each day, so a.m. and p.m. are used to distinguish between morning and night. ● The value of a penny, nickel, dime and quarter. ● 1 dollar has the same value as 100 cents. ● Different combinations of coins can have the same value. ● Money problems are solved the same as other story problems, but the cent and dollar symbols are included in the answer. 	<p>fourths, whether it is partitioned into equal-size triangles or equal-size squares.)</p> <ul style="list-style-type: none"> ● Recognize and describe a whole shape as 2 halves, 3 thirds, or 4 fourths. ● Tell time to the nearest quarter hour using the language half past, quarter after, and quarter till. ● Tell time to the nearest 5 minutes using an analog and digital clock. ● Relate a.m. and p.m. to specific times and activities during the day. ● Identify pennies, nickels, dimes, and quarters ● Use skip counting and counting on to find the value of a set of coins. ● Use the cent symbol when writing the total value of a collection of coins. ● Find different combinations of coins that have a value of 100 cents. ● Solve addition and subtraction story problems within 100 in the context of money. 	<p>Thirds Partition Whole Half past Quarter past Quarter till Digital clock Analog clock Hour hand Minute hand A.M. P.M. Noon Digital Clock Penny Nickel Dime Value Cent symbol Quarter Dollar</p>
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<p>Entry Level Assessment and Connection to Unit:</p> <p>Section A Pre-Unit Practice Problems Section B Pre-Unit Practice Problems Section C Pre-Unit Practice Problems 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>The concepts of time and money can be connected outside of math and to the real world.</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 - Attributes of Shapes	Duration: Recommended: 5 days (5 lessons)
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Topic Description:

In this section, students identify and draw triangles, quadrilaterals, pentagons, and hexagons. Students are likely familiar with triangles and hexagons given their previous work with pattern blocks. Here, they see that hexagons include any shape with six sides and six corners, and may look different from the pattern block they worked with in the past. For example, each of these shapes is a hexagon:



Students learn to name a shape by counting the sides and corners and come to see that, in any shape, the number of corners is the same as the number of sides. (The term “corners” is used in lieu of “vertices” because the latter requires an understanding of angles, which is developed in grade 4.)

Students come to recognize that some shapes such as rectangles and squares have “square corners,” the informal language for 90-degree angles. As they identify and draw shapes with given attributes, they measure length in centimeters and inches, revisiting previously learned skills.

At the end of the section, students relate two-dimensional (flat) shapes to three-dimensional (solid) shapes. They see that flat shapes make up the faces of solid shapes and identify solid shapes based on the flat shapes that constitute them.

Section Learning Goals

- Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
- Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.

<p>Competencies Addressed:</p> <p>Understanding and Applying Number Systems 2.NS.2 I can count, read, and write whole numbers. (2.NBT.A.2-3) 2.NS.4 I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9)</p> <p>Reasoning with Geometry 2.G.1 I can reason with shapes and their attributes. (2.G.A.1)</p> <p>Measurement and Data Investigations 2.MD.1 I can measure and estimate lengths by selecting and using appropriate tools.(2.MD.A.1-4)</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>How can shapes be recognized, described and compared?</p> <ul style="list-style-type: none"> ● In order to identify, describe and compare shapes, we must understand the unique attributes of individual shapes. A shape can be identified by the number of sides, vertices or angles. Closed plane shapes and solid figures can be classified and sorted based on their attributes. Closed plane shapes can be partitioned into equal shares. Equal shares must all be the same size but they can be different shapes.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● Differences between two-dimensional and three-dimensional shapes. ● Names of two-dimensional (triangles, quadrilaterals, pentagons, and hexagons) and three-dimensional shapes (cube, cylinder, sphere, cone, rectangular prism) and their attributes ● Three-dimensional (solid) shapes can be recognized and described based on their geometric attributes. (examples, cubes have 6 equal-sized square faces and cylinders can be identified by its two circular faces). 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Attributes Categories Triangles Quadrilaterals Pentagons Hexagons Sides Corners “Relative size” Category Three-dimensional Solid Faces Cone Cylinder</p>

	<p>Cube Sphere Rectangular prism</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Recognize and name shapes (triangles, quadrilaterals, pentagons, and hexagons) based on the number of sides and vertices (corners). ● Describe two-dimensional shapes (e.g., polygon, closed shape, plane shape, vertices, right angles, sides). ● Recognize and draw triangles, quadrilaterals, pentagons, and hexagons. ● Use a ruler to draw shapes with specified side lengths. ● Recognize and describe three-dimensional (solid) shapes based on their geometric attributes (faces). (e.g. cubes have: 6 faces, four edges of the same length on one face, 4 right angles on one face, 8 vertices, solid, 12 edges). 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 1: In grade 1, students learned to distinguish between attributes that define a shape and those that do not. How does this understanding help students classify shapes as quadrilaterals, pentagons, and hexagons?</p> <p>Lesson 2: As students identified and drew shapes with given attributes, what evidence did you see that they are building an understanding of the defining attributes of quadrilaterals, pentagons, and hexagons?</p> <p>Lesson 3: Which students came up with an unexpected shape or technique for drawing shapes in today’s lesson? What are some ways you can be more open to the ideas of each and every student?</p> <p>Lesson 4: As students worked in their small groups today, whose ideas were heard, valued, and accepted? How can you adjust the group structure in future lessons to ensure each student’s ideas are part of the collective learning?</p> <p>Lesson 5: As students worked together today, where</p>

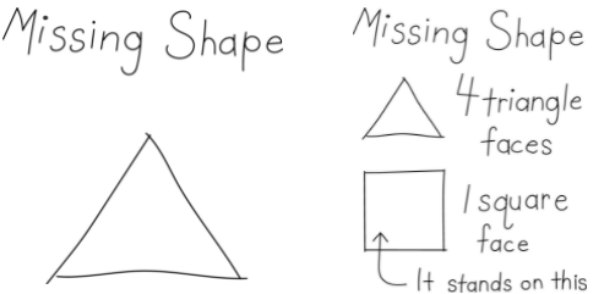
did you see evidence of the mathematical community established over the course of the school year?

Utilize additional strategies for Teacher Reflection:

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

Topic 1 Task Development

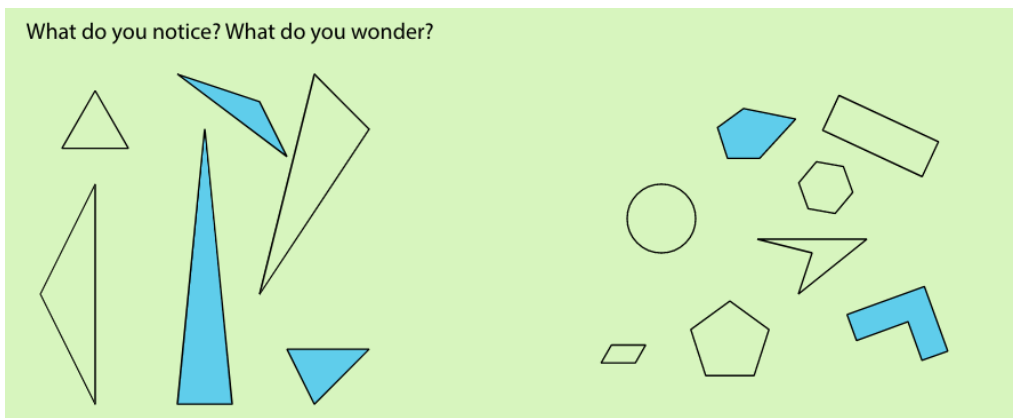
Each Topic has its own Task that serves as a roadmap for instruction during the unit. The task follows the [Learning Cycle Model](#) that drives teaching and learning in Naugatuck Public Schools.

Task Title: Topic 1 - Attributes of Shapes	Grade Level and Unit: Grade 2, Unit 6
<p>Description of Task: Each group will be assigned a solid shape (sphere, cone, cylinder, cube, rectangular prism, square pyramid). They will make a poster for their shape pretending that their shape is missing. See the example below.</p> <p style="text-align: center;"></p> <p>Students can use words, numbers, and pictures to describe their shape. Other groups should be able to figure out which shape they had by looking at their poster. Students will participate in a gallery walk to view the shape posters.</p>	<p>Purpose of Task: The purpose of this task is for students to describe the attributes of three-dimensional shapes and identify these shapes based on their attributes. The activity encourages students to build on their understanding of two-dimensional shapes to describe three-dimensional shapes. When students describe the attributes of solid shapes clearly to others, they use language precisely, including making connections to the attributes of two-dimensional shapes.</p>
<p>Background of Students/Learning Progression: In previous grades, students identified and named spheres, cylinders, cones, and cubes. In grade 1, students learned to distinguish between attributes that define a shape and those that do not. In this task students build on this understanding by precisely describing attributes of three-dimensional shapes and recognizing shapes based on a description of their attributes.</p>	<p>Ensure all competencies are addressed in the task:</p> <ul style="list-style-type: none"><input type="checkbox"/> Yes, all competencies are addressed<input type="checkbox"/> No - Task needs modification
<p>Getting Started: In the lessons that make up Topic 1 - Section A of Unit 6, students will:</p>	

- Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
- Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.

Lesson 1 (Warm Up)

The purpose of this activity is to elicit student ideas about examples and non-examples of triangles and how to describe the attributes of a category of shapes. This will be useful when students determine the defining attributes of quadrilaterals, pentagons, and hexagons in a later activity. While students may notice and wonder many things about these groups of shapes, how the shapes are alike and different are the important discussion points.



“Why do you think these shapes are together?” (They aren’t triangles. They have more than 3 sides. Some have curved lines.)
 “What could we name each group?” (triangles, not triangles)

Section A

IM Lesson	Lesson 1: Identify and Sort Shapes	Lesson 2: Draw Shapes	Lesson 3: Specific Side Lengths	Lesson 4: Solid Shapes	Lesson 5: Center Day 1 (Optional)
Learning Cycle Model	Making Meaning	Investigation	Investigation	Create/Produce	Additional Learning
Naugatuck Math Competency	2.G.1	2.G.1	2.G.1 2.MD.1	2.G.1	2.G.1 2.NS.2 2.NS.4
Math Practice Standards	MP6		MP1, MP6	MP6	

<p>Lesson Purpose</p>	<p>The purpose of this lesson is for students to recognize and name shapes based on the number of sides and vertices (corners). Students name triangles, quadrilaterals, pentagons, and hexagons.</p>	<p>The purpose of this lesson is for students to recognize and draw shapes that have a specified number of sides or corners.</p>	<p>The purpose of this lesson is for students to recognize and draw shapes that have sides with a given length. Students also revisit and practice measuring lengths.</p>	<p>The purpose of this lesson is for students to recognize and describe three-dimensional (solid) shapes based on their geometric attributes (faces).</p>	<p>The purpose of this lesson is for students to practice describing, naming, and drawing triangles, quadrilaterals, and hexagons based on their defining attributes.</p>
<p>Vocabulary Focus</p>	<p>Attributes, categories, triangles, quadrilaterals, pentagons, hexagons, sides, corners, relative size, category</p>			<p>Three-dimensional, solid, faces, sphere, cone, cylinder, cube, rectangular prism</p>	
<p>Lesson Materials/ Resources</p>	<p>Lesson 1 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Give each group of 2 students a set of Shape Cards Grade 2 with the shape names removed - these will be used in the next activity. <p>Activity 2:</p> <ul style="list-style-type: none"> Each group should have access to their cards from the 	<p>Lesson 2 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>No copied materials needed for Activities</p> <p>Cool-down: Name and Draw Shapes</p>	<p>Lesson 3 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Give each student a ruler. <p>Activity 2:</p> <ul style="list-style-type: none"> Give students access to rulers. <p>Cool-down: Draw the Shape</p>	<p>Lesson 4 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Each group of 4 needs a collection of solid shapes (sphere, cone, cylinder, cube, rectangular prism, square pyramid). Students need materials to create a visual display. Create two sample posters to display in 	<p>Lesson 5 Slides</p> <p>Teacher Presentation Materials</p> <p>Student Pages</p> <p>Activity 1:</p> <ul style="list-style-type: none"> Give each group a set of shape cards used in a previous lesson <p>Activity 2:</p> <ul style="list-style-type: none"> Give each group a set of shape cards used in a previous lesson Give each group Centimeter Dot

	<p>previous activity.</p> <p>Activity 3:</p> <ul style="list-style-type: none"> Each group should have access to their cards from the previous activity. <p>Cool-down: Find the Shapes</p>			<p>the launch.</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Each group of 2 needs a copy of Cube Pattern and Shape Design Card Sort Students need access to solid shapes. <p>Cool-down: What Shape is This?</p>	Paper - Standard.
Assessment	<p>Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section A Checkpoint Assessment, Section A Checkpoint Teacher’s Guide</p>				
					Section A Practice Problems
Centers Materials	<p>Can You Draw It? (1–5), Stage 1: Grade 1 Shapes (Supporting)</p> <p>Which One? (K–5), Stage 2: Grade 1 Shapes (Supporting)</p>	<p>Can You Draw It? (1–5), Stage 1: Grade 1 Shapes (Supporting)</p> <p>Which One? (K–5), Stage 2: Grade 1 Shapes (Supporting)</p>	<p>Can You Draw It? (1–5), Stage 1: Grade 1 Shapes (Supporting)</p> <p>Which One? (K–5), Stage 2: Grade 1 Shapes (Supporting)</p>	<p>Can You Draw It? (1–5), Stage 1: Grade 1 Shapes (Supporting)</p> <p>Which One? (K–5), Stage 2: Grade 1 Shapes (Supporting)</p>	

Making Meaning:

In Lesson 1, students learn that they can identify a shape by the number of sides and corners it has. Students sort shapes into examples and non-examples of triangles, quadrilaterals, pentagons, and hexagons. They define triangle, quadrilateral, pentagon, and hexagon based on the number of sides and corners and use these terms to name shapes. Throughout the lesson, students have opportunities to think about how to clearly describe the attributes of shapes to others and consider the precision of their language (MP6). It is not necessary for students to use the term vertices, so they are referred to as “corners” in this unit.

Lesson 1: [Identify and Sort Shapes](#)

- The purpose of this lesson is for students to recognize and name shapes based on the number of sides and vertices (corners). Students name triangles, quadrilaterals, pentagons, and hexagons.
- [Lesson 1 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

In Lesson 2, students recognize and draw shapes based on a given number of sides or corners. Students continue to practice shape vocabulary (quadrilateral, pentagon, hexagon) and describe shapes based on their defining attributes (MP6).

In Lesson 3, students measure sides with rulers to find shapes with specific attributes. Students use their rulers to draw shapes with given side lengths (MP6).

Lesson 2: [Draw Shapes](#)

- The purpose of this lesson is for students to recognize and draw shapes that have a specified number of sides or corners.
- [Lesson 2 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 3: [Specific Side Lengths](#)

- The purpose of this lesson is for students to recognize and draw shapes that have sides with a given length. Students also revisit and practice measuring lengths.
- [Lesson 3 Slides](#)
- [Teacher Presentation Materials](#)

Create and Produce:

In Lesson 4, students identify and describe solid shapes based on their attributes. As students work, they may notice that some solid shapes have faces in common with others, and that some solid shapes can be identified by the number and shape of their faces. For example, students may learn that a cylinder can be identified by its two circular faces, and that cubes have 6 equal-sized square faces (MP7).

The purpose of this activity is for students to describe the attributes of three-dimensional shapes and identify these shapes based on their

attributes. The activity encourages students to build on their understanding of two-dimensional shapes to describe three-dimensional shapes. When students describe the attributes of solid shapes clearly to others, they use language precisely including making connections to the attributes of two-dimensional shapes (MP6).

Lesson 4, Activity 1:

Students will be assigned a solid shape and make a poster for their shape. They will use words, numbers, and pictures. Other groups should be able to figure out which shape you had by looking at your poster.

Ask, “What attributes will be most important to list?”, “What could you draw to illustrate your shape?”, “What is the name of your solid shape?”

Lesson 4: [Solid Shapes](#)

- The purpose of this lesson is for students to recognize and describe three-dimensional (solid) shapes based on their geometric attributes (faces).
- [Lesson 4 Slides](#)
- [Teacher Presentation Materials](#)

Communicate and Present:

Students will take a gallery walk and look at other groups’ posters, think about the details that help them imagine or name the shape.

“What flat shapes could you use to describe this shape to someone?”

“What are some objects at school or at home that are this shape?”

Reflection:

“What is the same and what is different about the ways groups described their solid shape?” (Many groups gave details about the faces of the shapes, and some groups described objects that look like their shape.)

Additional Learning:

In Lesson 5, Activity 1, students learn stage 3 of the Which One center, which was first introduced in Kindergarten. In this new stage, called Grade 2 Shapes, students work with triangles, quadrilaterals and hexagons as they ask their partner yes or no questions to figure out what shape they chose. In Activity 2, students learn stage 2 of the Can You Draw It? center, which was first introduced in Grade 1. In this new stage, also called Grade 2 Shapes, students continue to work with triangles, quadrilaterals and hexagons as they describe and draw two-dimensional shapes.

Lesson 5: [Center Day 1 \(Optional\)](#)

- The purpose of this lesson is for students to practice describing, naming, and drawing triangles, quadrilaterals, and hexagons based on their defining attributes.
- [Lesson 5 Slides](#)
- [Teacher Presentation Materials](#)

Notes: Follow the lessons in numerical order	Complete File with Resources and Task:
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Topic # 2 (Section B)	Topic Name: Section B - Halves, Thirds, and Fourths	Duration: Recommended 5 days (5 lessons)
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Topic Description:

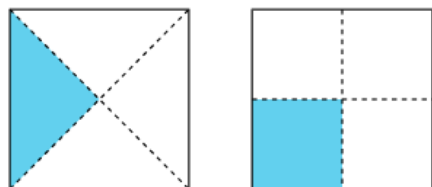
In this section, students learn that shapes can be partitioned into two, three, or four equal pieces called halves, thirds, and fourths or quarters.

Students begin by composing shapes using pattern blocks, initially using any combination. Later, they use a single type of pattern block, which allows them to see the composed shape as partitioned into equal pieces.

In grade 1, students partitioned shapes into two and four equal pieces, and described each piece as a half or a fourth or quarter. (To prepare students to tell time to the quarter hour in the next section, be sure that they hear and use fourths and quarters interchangeably.) Here, they add the term “thirds” to their vocabulary and partition rectangles into halves, thirds, and fourths.

Students then identify equal-size pieces in shapes, which are partitioned in different ways to build an understanding that equal-size pieces of the same whole do not need to be the same shape.

They come to understand that if the whole is partitioned into the same number of equal pieces, the names of the pieces are the same. Students also learn that 2 halves, 3 thirds, and 4 fourths each make up one whole.



Although students are expected to use the language of fractions (halves, thirds, and fourths), they are not expected to use the word “fraction” or see fractions in numerical form until grade 3.

<p>Section Learning Goals:</p> <ul style="list-style-type: none"> ● Partition rectangles and circles into halves, thirds, and fourths and name the pieces. ● Recognize 2 halves, 3 thirds, and 4 fourths as one whole. ● Understand that equal pieces do not need to be the same shape. 	
<p>Competencies Addressed:</p> <p>Understanding and Applying Number Systems 2.NS.1 I understand place value of three-digit numbers. (2.NBT.A.1) 2.NS.2 I can count, read, and write whole numbers. (2.NBT.A.2-3)</p> <p>Reasoning with Geometry 2.G.1 I can reason with shapes and their attributes. (2.G.A.1) 2.G.2 I can use my understanding of equal shares to partition shapes. (2.G.A.2-3)</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Questions</p> <ol style="list-style-type: none"> 1. How can shapes be recognized, described and compared? <p>Enduring Understanding</p> <ul style="list-style-type: none"> ● In order to identify, describe and compare shapes, we must understand the unique attributes of individual shapes. A shape can be identified by the number of sides, vertices or angles. Closed plane shapes and solid figures can be classified and sorted based on their attributes. Closed plane shapes can be partitioned into equal shares. Equal shares must all be the same size but they can be different shapes.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● A whole can have equal shares called halves, thirds, and fourths. ● When they partition circles and rectangles into halves, thirds, or fourths, each piece must be equal. ● Equal shares of identical wholes need not have the same shape. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary “Geometric Language” Equal-sized Composition</p>

<ul style="list-style-type: none"> ● When a shape is partitioned into 3 equal pieces, the pieces are called thirds. ● 2 halves, 3 thirds, and 4 fourths is one whole. 	Halves Fourths Quarters Thirds Partition Whole
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Compose a new shape from the same equal-size smaller shapes. ● Partition circles and rectangles into halves, thirds, and fourths, and describe the pieces. ● Partition shapes into halves, thirds, and fourths in different ways (For example, they recognize that a square is partitioned into fourths, whether it is partitioned into equal-size triangles or equal-size squares.) ● Recognize and describe a whole shape as 2 halves, 3 thirds, or 4 fourths. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p> <hr/> <p>Plan for Teacher Reflection:</p> <p>Lesson 6: In the first section, students spent time describing and drawing shapes with given attributes. How did this work help prepare them for composing and decomposing shapes in this lesson?</p> <p>Lesson 7: In grade 2, students used halves, fourths, and quarters to describe equal pieces of a shape. How did you see students use this vocabulary in today’s lesson? What support can you offer to students to help them use math vocabulary to describe equal pieces of a shape.</p> <p>Lesson 8: What did you say, do, or ask during the lesson synthesis that helped students be clear on the learning of the day? How did previewing the cool-down of the lesson before you started teaching today allow you to help students synthesize their</p>

learning?

Lesson 9: In an upcoming lesson, students will learn to tell time to the half hour and quarter hour. What do you notice in their work from today's lesson that you might leverage in that lesson?

Lesson 10: When do your students feel successful in math? How do you know?

Utilize additional strategies for Teacher Reflection:

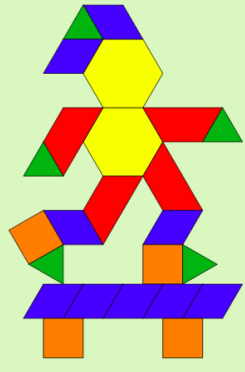
- Reviewing formative assessments
- Developing scaffolds
- Collaborative scoring
- PLCs
- Planning for small groups

Topic 2 Task Development

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

Task Title: Topic 2 - Halves, Thirds, and Fourths	Grade Level and Unit: Grade 2, Unit 6
Description of Task: Equal Shares of the Pie Students will cut (or partition) a circle pie in different ways. Students will be encouraged to use precise language when partitioning their pies and describing their circles. Students will share how they partitioned the pie in the same and different ways as others and share their representations.	Purpose of Task: The purpose of this activity is for students to recognize and describe pieces of circles using the words half of, a third of, and a quarter of.
Background of Students/Learning Progression: In grade 1 students partitioned shapes into halves and fourths/quarters. They learned that the shares need to be equal. In this unit students have been partitioning rectangles and circles into halves, thirds, and fourths and naming the pieces. They recognize 2 halves, 3 thirds, and 4 fourths as one whole. They understand that the pieces need to be equal when partitioning but there are different ways to do this as they see that equal pieces do not need to be the same shape. This understanding about partitioning shapes and parts of a whole is the foundation for students' work with a whole and fraction equivalency in grade 3.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
Getting Started In the lessons that make up Topic 2 - Section B of Unit 6, students will: <ul style="list-style-type: none">● Partition rectangles and circles into halves, thirds, and fourths and name the pieces.● Recognize 2 halves, 3 thirds, and 4 fourths as one whole.● Understand that equal pieces do not need to be the same shape. Lesson 6 (Warm up only) The purpose of this activity is to elicit the idea that shapes can be used to compose other shapes, which will be useful when students compose shapes from equal-size shapes in a later activity. While students may notice and wonder many things about this image, identifying the shapes within the picture and noticing how they work together to compose something larger are the important discussion points.	

What do you notice? What do you wonder?



Review the shape names that were recorded.

“What other shapes do you see in this picture? What other names do you know for these pattern blocks?”

“Some of you said this looks like a person riding a skateboard.”

Consider asking:

“What shapes make up the head and body of the person?”

“What shapes make up the person's arms?”

“What shapes make up the skateboard?”

f Section B

IM Lesson	Lesson 6: Compose and Decompose Shapes	Lesson 7: Make Halves, Thirds, and Fourths	Lesson 8: Are All Pieces Created Equal?	Lesson 9: You Ate the Whole Thing	Lesson 10: Center Day 2 (Optional)
Learning Cycle Model	Making Meaning	Making Meaning	Investigation	Create / Produce	Additional Learning
Naugatuck Math Competency	2.G.1	2.G.3	2.G.3 2.NS.2	2.G.3 2.NS.2	2.G.1 2.NS.1
Math Practice Standards	MP6	MP3, MP6	MP3, MP7	MP8	
Lesson Purpose	The purpose of this lesson is for students to compose shapes and to recognize shapes that are made	The purpose of this lesson is for students to recognize halves, thirds, and fourths, understanding that these terms describe	The purpose of this lesson is for students to understand that equal pieces of an identical whole do not	The purpose of this lesson is for students to recognize 2 halves, 3 thirds, and 4 fourths as one whole.	The purpose of this lesson is for students to work with shapes.

	up of equal-size shapes.	equal pieces of the same whole.	need to be the same shape.		
Vocabulary Focus	“Geometric Language”, equal-sized, composition	Halves, fourths, quarters, thirds, partition		whole	
Lesson Materials/ Resources	Lesson 6 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give students pattern blocks and a copy of Compose a Butterfly. Activity 2: <ul style="list-style-type: none"> Give each student pattern blocks. Give each student a access to Centimeter Dot Paper - Standard and Isometric Dot Paper - Standard Cool-down: Look for Equal-size Shapes	Lesson 7 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each student 3 identical paper rectangles. Give students access to scissors and rulers. Activity 2: <ul style="list-style-type: none"> Give students access to rulers. Cool-down: Name Equal Pieces	Lesson 8 Slides Teacher Presentation Materials Student Pages No copied materials needed for the Activities. Cool-down: Paint a Picture	Lesson 9 Slides Teacher Presentation Materials Student Pages Activity 2: <ul style="list-style-type: none"> Give students access to colored pencils. Cool-down: Partition a Circle	Lesson 10 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Each group of 2 needs the Shape Cards Grade 2 used in previous lessons. Give each student scrap paper. Activity 2: <ul style="list-style-type: none"> Centers - see below
Assessment	Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section B Checkpoint Assessment , Section B Checkpoint Teacher’s Guide				
					Section B Practice Problems

<p style="text-align: center;">Centers Materials</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p> <p>Can You Draw It?, Stage 2</p>
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Making Meaning

In Lesson 6, students continue to practice identifying shapes based on their attributes using the vocabulary from previous lessons. They also extend their understanding of the attributes of shapes by considering how a shape may be composed of other shapes. In particular, this lesson focuses on composing a shape from the same equal-size shape. This lesson prepares students for partitioning shapes into equal-size pieces and naming equal-size pieces in upcoming lessons.

In Lesson 7, students learn that when a shape is partitioned into 3 equal pieces, the pieces are called thirds. They partition shapes into halves, thirds, and fourths. Fourths and quarters should be used interchangeably when discussing 4 equal pieces, so that students are comfortable with both terms.

Lesson 6: [Compose and Decompose Shapes](#)

- The purpose of this lesson is for students to compose shapes and to recognize shapes that are made up of equal-size shapes.
- [Lesson 6 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 7: [Make Halves, Thirds, and Fourth](#)s

- The purpose of this lesson is for students to recognize halves, thirds, and fourths, understanding that these terms describe equal pieces of the same whole.
- [Lesson 7 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

In Lesson 8, students learn that halves, thirds, and fourths of the same whole can be different shapes or have different attributes. For example, they recognize that a square is partitioned into fourths, whether it is partitioned into equal-size triangles or equal-size squares.

Lesson 8: [Are All Pieces Created Equal?](#)

- The purpose of this lesson is for students to understand that equal pieces of an identical whole do not need to be the same shape.
- [Lesson 8 Slides](#)
- [Teacher Presentation Materials](#)
-

Create and Produce:

Lesson 9 Activity 2

The purpose of this activity is for students to recognize and describe pieces of circles using the words half of, a third of, and a quarter of. Students match shapes partitioned into halves and quarters to stories and partition shapes into quarters and halves based on directions. Students can continue to use one fourth when describing a piece, but encourage the use of a quarter as a way to describe the same piece.

In Lesson 9, students continue to practice partitioning circles and describe halves, thirds, and quarters of circles using the language a half of, a third of, and a quarter of to describe a piece of the shape. They also use this language to describe the whole shape as a number of equal pieces. Students recognize that a whole shape can be described as 2 halves, 3 thirds, or 4 fourths. This understanding is the foundation for students' work with a whole and fraction equivalency in grade 3.

Students are going to read some stories with a partner about students sharing pies. Then they will partition and color shapes independently.

- Partition the circle into four equal pieces.
- Shade in a quarter of the circle red.
- Shade in the rest of the circle blue.
- Partition the circle into 2 equal pieces.
- Shade one half of the circle blue.
- Color the other piece yellow.

Lesson 9: [You Ate the Whole Thing](#)

- The purpose of this lesson is for students to recognize 2 halves, 3 thirds, and 4 fourths as one whole.
- [Lesson 9 Slides](#)
- [Teacher Presentation Materials](#)

Communicate and Present:

Students share their representations of pie.

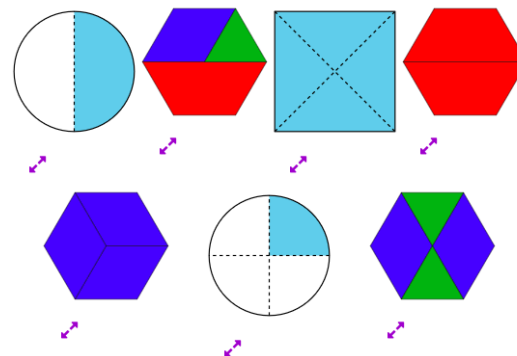
“How are the circles you partitioned and shaded the same? How are they different?”
(They are both circles. They are shaded with different colors. They are partitioned differently. The whole circle is shaded in both. All of the pieces are shaded in both.)

“How much of each circle is shaded?” (4 fourths, 2 halves, the whole circle)

Reflection:

“We have learned a lot about composing and decomposing shapes. Sometimes different-size pieces can make up a whole shape. Sometimes the whole shape is made up of equal-size pieces. We learned that these equal-size pieces of a whole have special names.”

“Each of these shapes has pieces shaded. How would you name each one? Are there any pieces that you are not sure how to name? Explain.” (The first circle shows 2 halves because there are two equal pieces. The first hexagon has some pieces that are not thirds because each piece is a different size. I think the red trapezoid is half because you could use another trapezoid that's the same size to make the whole hexagon, but I'm not sure.)



Additional Learning:

In Lesson 10, Activity 1, students learn stage 2 of the How Are They the Same? center, which was first introduced in grade 1. In this new stage, called Grade 2 Shapes, students develop their understanding of shapes by finding shared attributes. In Activity 2, students choose to continue working on How Are They the Same?, or choose between two previously introduced centers focused on shapes.

Lesson 10: [Center Day 2 \(Optional\)](#)

- The purpose of this lesson is for students to work with shapes.
- [Lesson 10 Slides](#)

- [Teacher Presentation Materials](#)

Notes: Follow lessons in numerical order

Complete File with Resources and Task:

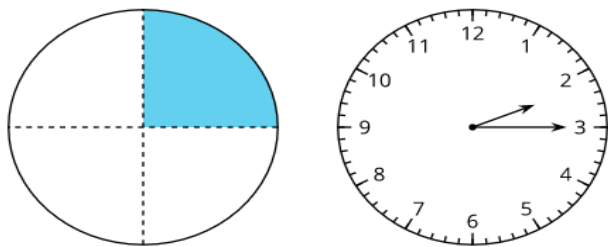
Topic # 3 (Section C)	Topic Name: Section C - Time on the Clock	Duration: Recommended 4 days (4 lessons)
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Topic Description:

In this section, students use their understanding of fourths and quarters to tell time.

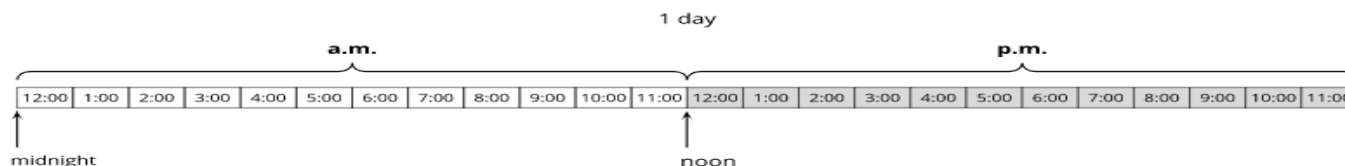
In grade 1, students learned to tell time to the hour and half-hour. Here, they make a connection between the analog clock and circles partitioned into halves or fourths.

Students use the phrases “half past,” “quarter past,” and “quarter till” to tell time. They skip-count by 5 to tell time in 5-minute intervals.



Students recognize that the hour hand on an analog clock moves towards the next hour as time passes. They represent time on analog clocks by drawing the hour and minute hands and writing the time with digits.

Students recognize that, as time passes, the hour hand on an analog clock moves towards the next hour. They learn that each hour comes around twice a day on a 12-hour clock, and is labeled with “a.m.” and “p.m.” to distinguish between times of day. Towards the end of this section, students relate a.m. and p.m. times to their daily activities.



Section Learning Goals

- Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

<p>Competencies Addressed:</p> <p>Understanding and Applying Number Systems 2.NS.2 I can count, read, and write whole numbers. (2.NBT.A.2-3) 2.NS.4 I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9) 2.NS.5 I can use my understanding of place value to subtract. (2.NBT.B.5, 7-9)</p> <p>Reasoning with Geometry 2.G.1 I can reason with shapes and their attributes. (2.G.A.1) 2.G.2 I can use my understanding of equal shares to partition shapes. (2.G.A.2-3)</p> <p>Measurement and Data 2.MD.2 I can tell and write time. (2.MD.C.7)</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <p>Essential Question 1. How and why do we tell time?</p> <p>Enduring Understanding</p> <ul style="list-style-type: none"> ● We tell time using digital or analog clocks for the purpose of understanding how our day is structured. A.M. and P.M. refer to different time periods. The structure of a clock relates to previous learning about partitioning and intervals on a number line.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● The connection of partitioning a circle into equal pieces to using the words “half past,” “quarter past,” and “quarter till” to tell time ● There is a connection between a number line with intervals of 5 and the distance between the numbers on the clock, which represents 5 minute intervals. ● The hour hand goes around the clock twice each day, so a.m. and p.m. are used to distinguish between morning and night. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary Half past Quarter past Quarter till Digital clock Analog clock Hour hand Minute hand A.M. P.M. Noon Digital Clock</p>
<p>In this Topic, students will be able to:</p> <ul style="list-style-type: none"> ● Tell time to the nearest quarter hour using the language half past, quarter after, and quarter till. ● Tell time to the nearest 5 minutes using an analog and digital clock. 	<p>Plan for Student Reflection:</p> <p>Student Journal Prompts and Reflection Practices</p>

- Relate a.m. and p.m. to specific times and activities during the day.

Plan for Teacher Reflection:

Lesson 11: What connections did students make between partitioning circles into halves and quarters and identifying halves and quarters of the clock? How did these connections allow students to more easily tell time using “half past,” “quarter after,” and “quarter till?”

Lesson 12: What unfinished learning or misunderstandings do your students have about telling time? How did you leverage those misconceptions in a positive way to further understanding of the class?

Lesson 13: How helpful is the linear representation of 1 day for developing an understanding of the repeating 12-hour cycle? What more do students need to build an understanding of the hours that make up a.m. versus the hours that make up p.m.?

Lesson 14: Think about which students haven’t shared their strategies in class lately. Were there missed opportunities to highlight their thinking during recent lessons? How can you take advantage of those opportunities when they arise?

Utilize additional strategies for Teacher Reflection:

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

Topic 3 Task Development

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

Task Title: Topic 3 - Time on the Clock	Grade Level and Unit: Grade 2, Unit 6
<p>Description of Task: Students will create an hours in a day timeline to show when they eat breakfast, lunch, dinner, sleep, and do various activities throughout the day. They will share this timeline with their classmates.</p> <p>Then students will create a visual of clocks with activities that take place in the a.m. and p.m. They will draw hands on the clocks to show the times that the activities take place. They will label the given activities a.m. or p.m. but can then add some of their own activities to their display. They will share their visual displays with their classmates and get feedback to improve (such as feedback on how they drew the minute and hour hands on their clocks to show each activity).</p>	<p>Purpose of Task: The purpose of this task is for students to practice telling and writing time from an analog clock, using a.m. and p.m. Students are not expected to draw the hands on the clock precisely, but it is important that they think about the relative position of the hour hand based on the hour and the minutes that have passed. When students explain whether the time is a.m. or p.m. and how they draw the hour hand on the analog clock, they attend to precision.</p>
<p>Background of Students/Learning Progression: In grade 1, students learned to tell time to the half hour. They related representations of time to the half-hour on analog clocks to circles partitioned into halves. In second grade students learned to tell time to the nearest five minutes. They learned the difference between a.m. and p.m. Previously in grade 2 students used a number line with intervals of 5 and they learned to skip count by 5s which they can leverage to understand the structure of a clock and telling time to the nearest 5 minutes. They figured out that the hour hand goes around the clock twice each day, so a.m. and p.m. are used to distinguish between morning and night. In third grade, students will extend their understanding of telling time and tell time to the nearest minute.</p>	<p>Ensure all competencies are addressed in the task:</p> <ul style="list-style-type: none"><input type="checkbox"/> Yes, all competencies are addressed<input type="checkbox"/> No - Task needs modification
<p>Getting Started In the lessons that make up Topic 2 Section C Unit 6, students will:</p> <ul style="list-style-type: none">● Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. <p>Lesson 11 Warm Up: What Do You Know About Ways to Tell Time? The purpose of this What Do You Know About ____? is to invite students to share what they know about telling time. Listen for the words and</p>	

phrases students use that reveal what they know about the tools used to measure and display time (digital and analog clocks), the features of these tools (clock hands), the units used to discuss time (hours, minutes), and common phrases used to talk about time (o'clock, half past). Record these words and phrases on chart paper and add to the chart throughout the section.

Section C

IM Lesson	Lesson 11: Tell Time with Halves and Quarters	Lesson 12: Count by 5 to Tell Time	Lesson 13: Is It a.m. or p.m.?	Lesson 14: Center Day 3 (optional)
Learning Cycle Model	Making Meaning	Investigate	Create/Produce	Additional Learning
Naugatuck Math Competency	2.MD.2	2.MD.2 2.NS.2	2.MD.2	2.G.1 2.NS.4 2.NS.5
Math Practice Standards	MP7	MP8	MP3, MP6	MP7
Lesson Purpose	The purpose of this lesson is for students to tell time with an analog clock using the words half past, quarter past, and quarter till.	The purpose of this lesson is for students to tell time to the nearest 5 minutes on an analog clock.	The purpose of this lesson is for students to read and write time with analog and digital clocks, using a.m. and p.m.	The purpose of this lesson is for students to recognize shapes, describe the attributes of shapes, and practice adding and subtracting within 100.
Vocabulary Focus	Analog clock, half past, quarter past, quarter till, hour hand, minute hand		A.M., P.M. , noon, digital clock	
Lesson Materials/Resources	Lesson 11 Slides Teacher Presentation Materials Student Pages Warm Up: <ul style="list-style-type: none"> Chart Paper Activity 1: <ul style="list-style-type: none"> Gather an analog clock (judy clock) or video of 	Lesson 12 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Give each group a set of Count on the Clock Card Sort 	Lesson 13 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Create the Hours in a Day Timeline for launch and one for each group of students Give each student a 	Lesson 14 Slides Teacher Presentation Materials Student Pages Activity 1: <ul style="list-style-type: none"> Each group needs at least one picture book that shows a variety of shapes throughout the book. Give each student a

	<p>clock</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Give each group a set of Halves and Quarters Clock Sort <p>Cool-down: Tell Time with Halves and Quarters</p>		<p>timeline, scissors, and access to glue.</p> <p>Cool-down: Which Time Is It?</p>	<p>Picture Books Stage 3 Recording Sheet</p> <p>Activity 2:</p> <ul style="list-style-type: none"> Centers - see below
Assessment	<p>Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section C Checkpoint Assessment, Section C Checkpoint Teacher’s Guide</p>			
				Section C Practice Problems
Centers Materials	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Can You Draw It? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Can You Draw It? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>How Are They the Same? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Can You Draw It? (1–5), Stage 2: Grade 2 Shapes (Addressing)</p> <p>Which One? (K–5), Stage 3: Grade 2 Shapes (Addressing)</p>	<p>Capture Squares, Stages 3–4</p> <p>Number Puzzles, Stages 2–4</p> <p>Picture Books, Stage 3</p>

Making Meaning

In Lesson 11, students connect their understanding of partitioning a circle into equal pieces to using the words “half past,” “quarter past,” and “quarter till” to tell time (MP2). Some students may already be familiar with telling time to the nearest 5-minute increments. If they read a clock as 4:15 rather than quarter past 4, ask if they can find another way to state the time using these phrases.

Lesson 11: [Tell Time with Halves and Quarters](#)

- The purpose of this lesson is for students to tell time with an analog clock using the words half past, quarter past, and quarter till.
- [Lesson 11 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

Lesson 12: [Count by 5 to Tell Time](#)

- The purpose of this lesson is for students to tell time to the nearest 5 minutes on an analog clock.
- [Lesson 12 Slides](#)
- [Teacher Presentation Materials](#)

In Lesson 12, students make connections between a number line with intervals of 5 and the distance between the numbers on the clock, which represents 5 minute intervals. Students skip count by 5 in order to tell time.

Create and Produce:

Lesson 13 Activity 1 and 2

Students will create an hours in a day timeline to show when they eat breakfast, lunch, dinner, sleep, and do various activities throughout the day. They will label the time and label if each activity takes place in the a.m. or p.m. They will share this timeline with their classmates.

Then students will create a visual of clocks with activities that take place in the a.m. and p.m. They will draw hands on the clocks to show the times that the activities take place. They will label the given activities a.m. or p.m. but can then add some of their own activities to their display. They will share their visual displays with their classmates and get feedback to improve (such as feedback on how they drew the minute and hour hands on their clocks to show each activity).

Lesson 13: [Is It a.m. or p.m.?](#)

- The purpose of this lesson is for students to read and write time with analog and digital clocks, using a.m. and p.m.
- [Lesson 13 Slides](#)
- [Teacher Presentation Materials](#)

In Lesson 13, students practice telling time to the nearest 5 minutes. Students recognize that the hour hand goes around the clock twice each day, so a.m. and p.m. are used to distinguish between morning and night. Students relate a.m. and p.m. to specific times and activities during the day.

Communicate and Present:

Students will share their visuals from Lesson 13 Activity 1 and 2 with their classmates. Invite students to share whether each activity would be a.m. or p.m. Invite students to share the hour they chose and how they showed the time on the analog clock. Consider asking:

Reflection:

“Today we learned that the hours in a day are split into 2 groups called a.m. and p.m. We learned that a.m. is usually thought of as morning and p.m. is thought of as afternoon and night.”

<p>“Why did you choose this time?” “How did you decide where to draw the minute hand?” “How did you decide where to draw the hour hand?”</p> <p>If students do not explain their choices to their partner or give feedback on how they show the time, consider asking: “Do you agree that this activity would happen in an a.m. time or p.m. time? Why or why not?” “Do you agree or disagree with how your partner drew the hour and minute hand? Explain.” “Do you have any suggestions for how your partner could draw the minute and hour hands to make it easier to read the time?”</p>	<p>Display:</p> <p>wake up eat lunch read a book before bed brush teeth</p> <p>“Tell your partner what time you might do each of these activities. Include a.m. or p.m. with the time.”</p> <p>Share responses.</p>
<p>Additional Learning:</p> <p>In Lesson 14, Activity 1, students revisit stage 3 of the Picture Books center. This center was first introduced in Kindergarten, and this stage in grade 1. In this stage, called Find Shapes, students describe, draw, and name shapes. As students learn more ways to describe shapes and their attributes, the shapes they notice and how they describe and name them may change. In Activity 2, students choose to continue working on Picture Books, or choose between two previously introduced centers focused on adding and subtracting within 100.</p> <p>Lesson 14: Center Day 3 (optional)</p> <ul style="list-style-type: none"> • The purpose of this lesson is for students to recognize shapes, describe the attributes of shapes, and practice adding and subtracting within 100. • Lesson 14 Slides • Teacher Presentation Materials 	
<p>Notes: Follow lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p>

Topic # 4 (Section D)

Topic Name: Section D - The Value of Money

Duration:

Recommended 8 days (7 lessons)

1 additional day for Unit Assessment

Topic Description:

In this section, students learn about money concepts while continuing to develop fluency with addition and subtraction within 100. They identify coins such as quarters, dimes, nickels, and pennies, and find the total value of different coin combinations.

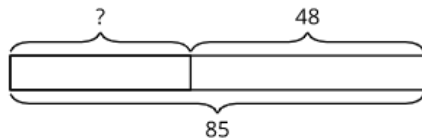


Students learn that 1 dollar has the same value as 100 cents and solve problems involving dollars and cents. Although students will not need to use decimal notation to represent money, they are expected to appropriately use the symbols \$ and ¢.

Mai had some money. Elena has \$48.

They combined their money and now they have \$85.

How much money did Mai have?



Students are likely to have some previous experience with dollars and cents. Encourage them to share their experiences throughout the section. Consider creating an anchor chart of pictures of each coin and its value so that all students can access the content. As much as possible, give students access to real or plastic coins to support their reasoning. A blackline master with images of the coins is provided as an alternative, in case needed.

Section Learning Goals

- Find the value of a group of bills and coins.
- Use addition and subtraction within 100 to solve one- and two-step word problems.

<p>Competencies Addressed:</p> <p>Understanding and Applying Number Systems 2.NS.2 I can count, read, and write whole numbers. (2.NBT.A.2-3) 2.NS.4 I can use my understanding of place value and properties of operations to add. (2.NBT.B.5-9) 2.NS.5 I can use my understanding of place value to subtract. (2.NBT.B.5, 7-9)</p> <p>Operations and Algebraic Thinking 2.OA.3 I can represent and solve problems involving addition and subtraction. (2.OA.A.1, 2 MD.B.5-6)</p> <p>Reasoning with Geometry 2.G.1 I can reason with shapes and their attributes. (2.G.A.1) 2.G.2 I can use my understanding of equal shares to partition shapes. (2.G.A.2-3)</p> <p>Measurement and Data 2.MD.3 I can use my understanding of addition and subtraction to solve problems involving money. (2.MD.C.8)</p>	<p>Essential Question and Enduring Understanding Addressed in this Topic:</p> <ol style="list-style-type: none"> 1. What strategies can be used to count and solve problems involving money? <ul style="list-style-type: none"> ● We can use skip counting, counting on, and/or addition and subtraction to find the value of a set of coins. Money problems are solved the same as other story problems, but the cent and dollar symbols are included in the answer. We can make sense of the problem using tape diagrams, for example. Students think about 1 dollar as 100 cents so we could subtract more easily from 100.
<p>In this Topic, students will know:</p> <ul style="list-style-type: none"> ● The value of a penny, nickel, dime and quarter. ● 1 dollar has the same value as 100 cents. ● Different combinations of coins can have the same value. ● Money problems are solved the same as other story problems, but the cent and dollar symbols are included in the answer. 	<p>Topic Vocabulary:</p> <p>Academic vocabulary</p> <p>Penny Nickel Dime Value Cent symbol (¢) Quarter Dollar \$</p>

In this Topic, students will be able to:

- Identify pennies, nickels, dimes, and quarters
- Use skip counting and counting on to find the value of a set of coins.
- Use the cent symbol when writing the total value of a collection of coins.
- Find different combinations of coins that have a value of 100 cents.
- Solve addition and subtraction story problems within 100 in the context of money.

Plan for Student Reflection:

[Student Journal Prompts and Reflection Practices](#)

Plan for Teacher Reflection:

Lesson 15: What did you learn about your students' understanding of money during this lesson? What did you notice in their work from today's lesson that you might leverage in that future lesson?

Lesson 16: Which students surprised you with their ways of organizing coins and finding total values? How can you leverage what these students know to ensure they develop strategies to solve story problems in the context of money in the upcoming lessons?

Lesson 17: How did students' understanding of base-ten units and place value support them as they combined coins to make 100 cents or a dollar? How can you help make these connections more clear in upcoming lessons?

Lesson 18: Reflect on who participated in math class today. What assumptions are you making about those who did not participate? How can you leverage each of your student's ideas to support them in being seen and heard in tomorrow's math class?

Lesson 19: In previous lessons, students learned about tape diagrams and number lines. How did students use diagrams to make sense of problems in today's lesson? If students did not use diagrams,

how did they make sense of the problems?

Lesson 20: What did you learn about your students' understanding of place value and strategies for addition and subtraction as they solved problems with money in this section? How can you leverage and advance student thinking as they add and subtract within 1,000 in the next unit?

Lesson 21: As you finish up this unit, reflect on the norms and activities that have supported each student in learning math. List ways you have seen each student grow as a young mathematician throughout this work. List ways you have seen yourself grow as a teacher. What will you continue to do and what will you improve upon in Unit 7?

Utilize additional strategies for Teacher Reflection:

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

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 - The Value of Money	Grade Level and Unit: Grade 2, Unit 6
Description of Tasks: The Pattern Block Store Students create two pattern block designs and need to decide which design would cost more money. Each pattern block is worth a different amount of money.	Purpose of Task: The purpose of this task is for students to apply their understanding of composing shapes and addition in the context of money.
Background of Students/Learning Progression: In previous lessons, students found different ways to use pattern blocks to compose the same shape. They also used their understanding of coins and their values to solve addition problems. In this unit students used the language halves, thirds, or fourths to describe ways they compose shapes out of same-size pieces. This task has students use their understanding of shapes, partitioning, and money to solve a problem.	Ensure all competencies are addressed in the task: <input type="checkbox"/> Yes, all competencies are addressed <input type="checkbox"/> No - Task needs modification
Getting Started In the lessons that make up Topic 2 Section D Unit 6, students will: <ul style="list-style-type: none">● Lesson 15 (Warm Up) The purpose of this warm-up is to invite students to share what they know about money. Students did not work with money in grade 1, but may be familiar with coins and dollars from their experiences outside of school. This warm-up allows teachers to hear the language students use to talk about money and how much they know about coins and their values. Ask, “What do you know about money?”	

Section D

IM Lesson	Lesson 15: Identify Pennies, Nickels, and Dimes	Lesson 16: Identify Quarters	Lesson 17: Let's Make a Dollar	Lesson 18: Money Problems	Lesson 19: More Money Problems	Lesson 20: Center Day 4 (optional)	Lesson 21: Pattern Block Puzzles (optional)
Learning Cycle Model	Making Meaning	Making Meaning	Investigation	Investigation	Investigation	Investigation	Create/Produce
Naugatuck Math Competency	2.MD.3 2.NBT.A.2 2.NS.4	2.MD.3 2.NS.2 2.NS.4	2.MD.3 2.NS.4	2.MD.3 2.NS.4 2.OA.3	2.MD.3 2.NS.4, 2.NS.5 2.OA.3	2.G.1 2.MD.3 2.NS.4, 2.NS.5	2.G.1 2.MD.3 2.NS.4 2.OA.3
Math Practice Standards	MP7	MP7, MP8	MP7	MP2	MP2, MP7		MP6
Lesson Purpose	The purpose of this lesson is for students to identify pennies, nickels, and dimes and find the total value of a set of coins.	The purpose of this lesson is for students to identify quarters and find the total value of a set of coins including quarters.	The purpose of this lesson is for students to add and subtract within 100 to find values of 100 cents and recognize a dollar as the same value as 100 cents.	The purpose of this lesson is for students to use addition and subtraction to solve story problems in the context of money.	The purpose of this lesson is for students to solve addition and subtraction story problems within 100 in the context of money.	The purpose of this lesson is for students to compare the value of coin collections and work with shapes.	The purpose of this lesson is for students to apply their understanding of composing shapes and addition in the context of money.
Vocabulary Focus	Money, pennies, nickels, dimes, value, cent symbol	Quarters	Dollar				
Lesson Materials/Resources	Lesson 15 Slides Teacher Presentation Materials Student Pages Activity 1:	Lesson 16 Slides Teacher Presentation Materials Student Pages Activity 1:	Lesson 17 Slides Teacher Presentation Materials Student Pages No materials need	Lesson 18 Slides Teacher Presentation Materials Student Pages No materials	Lesson 19 Slides Teacher Presentation Materials Student Pages No materials	Lesson 20 Slides Teacher Presentation Materials Student Pages Activity 1:	Lesson 21 Slides Teacher Presentation Materials Student Pages Activity 1:

	<ul style="list-style-type: none"> ● Create a money poster to display during the activity launch. ● Cut out money images from the Money Poster Images and tape the dollar bill images. ● Gather collections of real or plastic coins. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Each group of 2 needs access to coins (pennies, nickels, dimes) or Coins to Cut and Count to cut out coins as needed. <p>Cool-down: Do I Have Enough?</p>	<ul style="list-style-type: none"> ● Each group of 2 needs access to coins (pennies, nickels, dimes) or How much is a quarter worth Coins to Cut and Count to cut out coins as needed. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Coins from Activity 1 <p>Cool-down: Tyler's Pocket Change</p>	<p>to be copied for the activities</p> <p>Cool-down: Dollars and Cents</p>	<p>need to be copied for the activities</p> <p>Cool-down: Mai's Supplies</p>	<p>need to be copied for the activities</p> <p>Cool-down: Mai's Money</p>	<ul style="list-style-type: none"> ● Give each group Would You Rather Stage 1 Spinner and Would You Rather Stage 1 Recording Sheet. <p>Activity 2:</p> <ul style="list-style-type: none"> ● Centers - see below 	<ul style="list-style-type: none"> ● Give each student a piece of card stock and each group pattern blocks,
<p>Assessment</p>	<p>Formative Assessment Strategies: observation, questioning, student discourse : Monitoring Sheet See Section D Checkpoint Assessment, Section D Checkpoint Teacher's Guide End of Unit 6 Assessment, End of Unit 6 Assessment Teacher Guide</p>						
	<p>Section D Practice Problems</p>						

Centers Materials	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)	Would You Rather? (2–5) , Stage 1: Money (Addressing)	Would You Rather? (2–5) , Stage 1: Money (Addressing)
	Which One? (K–5) , Stage 3: Grade 2 Shapes (Addressing)	Which One? (K–5) , Stage 3: Grade 2 Shapes (Addressing)	Which One? (K–5) , Stage 3: Grade 2 Shapes (Addressing)	Which One? (K–5) , Stage 3: Grade 2 Shapes (Addressing)	Which One? (K–5) , Stage 3: Grade 2 Shapes (Addressing)	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)	Picture Books (K–5) , Stage 3: Find Shapes (Addressing)
	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)	How Are They the Same? (1–5) , Stage 2: Grade 2 Shapes (Addressing)

Making Meaning

In Lesson 15, students recognize dimes, nickels, and pennies and learn their values. Students find the value of a set of coins by adding within 100. They may also use skip counting or counting on to find the value of a set of coins. When finding total values of a mixed combination of coins, students may group like coins, use multiples of 10 to add within 100, or count on. Students use the cent symbol when writing total values of coin collections.

In Lesson 16, students recognize the quarter and learn its value. They find the value of groups of coins and look for ways to represent the same value with different coins. Throughout the lesson, students make connections between quarters and combinations of other coins and notice that if they look for ways to use coins with a larger value first, they can be more certain they are using the fewest amount of coins (MP8). In both activities, students continue to practice finding the values of coin collections using methods for adding within 100. Throughout the lesson, look for the different ways students find the value of coin collections and organize their thinking. While some students will continue to group like coins and add to find the total value, others will count on from the largest value (25, 35, 45, 50, 55, 56, 57, 58) or look for other ways to use ten (25, 30, 40, 50, 55, 56, 57, 58).

Lesson 15: [Identify Pennies, Nickels, and Dimes](#)

- The purpose of this lesson is for students to identify pennies, nickels, and dimes and find the total value of a set of coins.
- [Lesson 15 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 16: [Identify Quarters](#)

- The purpose of this lesson is for students to identify quarters and find the total value of a set of coins including quarters.
- [Lesson 16 Slides](#)
- [Teacher Presentation Materials](#)

Investigation:

In Lesson 17, students find different combinations of coins that have a value of 100 cents. They learn that a dollar has the same value as 100 cents. Thinking about 1 dollar and 100 cents as the same amount connects to students understanding that a hundred is the same as 10 tens or 100 ones. They can use this understanding to support making a dollar out of dimes and other coin denominations. Students count groups of coins that have a value that is more than 100 cents. Students may count coins to make 100 cents, and then count the value of the coins that are left over.

Students record the value of the coins as “1 dollar and _____ cents.” In grade 2, students will not write dollars and cents using decimal notation, as this notation is reserved for their study of decimals and fractions in grade 4 and beyond.

In Lesson 18, students solve story problems in the context of money. In the first activity, students continue practicing finding the value of a collection of coins and use the coins and their total value to solve problems in the context of a class store. In the second activity, students add and subtract values in cents in the same context, but are not provided images of coins. The second activity also gives students an opportunity to solve two-step story problems where the first step is not explicitly stated.

In Lesson 19, students revisit the more challenging story problem types in the context of money. This includes Compare problems and two-step problems where the steps are not explicitly stated. In the first activity, students revisit using a tape diagram to make sense of problems and match tape diagrams to story problems. In the second activity, students are invited to solve the problems in the way that makes sense to them. Students recognize that money problems are solved the same as other story problems, but the cent and dollar symbols are included in the answer.

In Lesson 20, Activity 1, students learn the first stage of the Would You Rather? center. In this stage of the new center, students practice identifying coins and comparing the value of coin collections. In Activity 2, students choose to continue working on Would you Rather?, or choose between two previously introduced centers focused on shapes.

Lesson 17: [Let’s Make a Dollar](#)

- The purpose of this lesson is for students to add and subtract within 100 to find values of 100 cents and recognize a dollar as the same value as 100 cents.
- [Lesson 17 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 18: [Money Problems](#)

- The purpose of this lesson is for students to use addition and subtraction to solve story problems in the context of money.
- [Lesson 18 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 19: [More Money Problems](#)

- The purpose of this lesson is for students to solve addition and subtraction story problems within 100 in the context of money.
- [Lesson 19 Slides](#)
- [Teacher Presentation Materials](#)

Lesson 20: [Center Day 4 \(optional\)](#)

- The purpose of this lesson is for students to compare the value of coin collections and work with shapes.
- [Lesson 20 Slides](#)
- [Teacher Presentation Materials](#)

Create and Produce:

Lesson 21 Activity 1 and 2 The Pattern Block Store

In Lesson 21, students are provided with an opportunity to apply precursor skills of mathematical modeling. In previous lessons, students found different ways to use pattern blocks to compose the same shape. They also used their understanding of coins and their values to solve addition problems. In the warm-up, students are introduced to the context of a pattern block puzzle and use mathematical language to compare how the shapes are composed. In Activity 1, they create and solve pattern block puzzles. In Activity 2, they solve addition problems involving money within the pattern block puzzles context.

Students create two pattern block designs and need to decide which design would cost more money. Each pattern block is worth a different amount of money.

Lesson 21: [Pattern Block Puzzles \(optional\)](#)

- The purpose of this lesson is for students to apply their understanding of composing shapes and addition in the context of money.
- [Lesson 21 Slides](#)
- [Teacher Presentation Materials](#)

Communicate and Present:

Lesson 21 Activity 2

Reflection:

“How did the number of pieces and the shapes you used affect the price of the design?” (Bigger shapes cost more

<p>Invite students to share their designs and the cost. Ask, "Which of the two puzzles that you sketched do you think will cost more to make? Puzzle 1 or 2?" "Is it possible to redesign the puzzle to save more money?" "How much would the two puzzles you sketched cost at the Pattern Block Store? Show or explain your reasoning."</p>	<p>money. I saw that I could replace the big shape with a few smaller ones to have a lower price.)</p>
<p>Notes: Follow lessons in numerical order.</p>	<p>Complete File with Resources and Task:</p>