Subject Area: Mathematics Grade Level: 4	Bedminster Township School

Unit #: 1
Whole Numbers: Place Value, Comparisons, Addition and Subtraction

Dates: September - October	**Time Frame:** 27 days

Overview

In the "Place Value" lessons of this unit, students learn about reading and writing large numbers and will use place-value charts and expanded notation to help compare numbers. Additionally, students will practice their ability to think flexibly about place value in order to compute numbers.

In the "Rounding Whole Numbers" lessons of this unit, students will learn and practice rounding numbers by noticing how far they are from benchmark numbers (such as ten or one hundred).

In the "Addition and Subtraction" lessons of this unit, students will continue to use a variety of methods to add and subtract using what they know about breaking apart numbers by place value. Students will develop an understanding of adding and subtracting by place value by visualizing what is happening when they regroup numbers.

Enduring Understandings

- Use what you know about place value to read, write, and compare multi-digit numbers.
- Understanding that each place in a number is ten times greater than the place to it's right to help determine the value of numbers.
- Use what you know about place value to round numbers and to add and subtract multi-digit numbers.

SKILL AND KNOWLEDGE OBJECTIVES

Routine Objectives:
- Use the Try-Discuss-Connect routine to establish best practices during an *i-Ready Classroom Mathematics* lesson. (Lesson 0)
- Have students learn how to make sense of problems, explain their thinking, and discuss strategies used to solve problems. (Lesson 0)
- Help students understand how to appropriately critique and compare the solution strategies. (Lesson 0)
- Establish hand signals such as thumbs-up or thumbs-down for students to signal agreement or disagreement with strategies and student responses, as well as provide the teacher with formative feedback. (Lesson 0)
- Help students develop good use of mathematical language and support sense-making as they learn to ask good questions, clearly describe their thinking to others, and reword and refine mathematical ideas. (Lesson 0)
- Apply math knowledge and modeling techniques to new, similar problems. (Lesson 0)
- Students will be introduced to the Math Practice Standards to use throughout the year. (Lesson 0)

Content Objectives:
- Use a place-value chart to understand the value of each digit in a number. (Lesson 1)
- Identify the value of a digit based on its position in a number. (Lesson 1)
- Demonstrate how moving from one place-value position to the next greatest position changes the value of a digit by a multiple of ten. (Lesson 1)
- Show that any number can be represented in different ways. (Lesson 1)
- Use standard form, word form, and expanded form to read and write multi-digit whole numbers. (Lesson 1)
- Use symbols (<,>, =) to show the relationship between two multi-digit numbers. (Lesson 2).
- Compare multi-digit numbers in order to solve word problems. (Lesson 2).
- Round multi-digit whole numbers to any place. (Lesson 3)
- Explain how to round a multi-digit number to a specific place-value. (Lesson 3)
- Use place-value strategies to add two or more multi-digit whole numbers. (Lesson 4)
- Develop fluency with the standard algorithm for addition when adding multi-digit whole numbers up to 999,999. (Lesson 4)
- Use an estimating strategy with rounded numbers to check for reasonableness of a sum. (Lesson 4)
- Use place-value strategies to subtract multi-digit whole numbers. (Lesson 5)
- Develop fluency with the standard algorithm for subtraction when subtracting whole numbers up to 999,999. (Lesson 5)
- Use addition to check differences. (Lesson 5)
- Use an estimating strategy with rounded numbers to check for reasonableness of a difference. (Lesson 5)

Language Routine Objectives:
- three read
- turn and talk
- co-craft questions and problems (optional)
- collect and display
- say it another way
- compare and connect

Language Routine Procedure:
1. Assess prior knowledge of academic vocabulary words.
2. Pronounce the academic vocabulary words.
3. Define the academic vocabulary words.
4. Use the academic vocabulary words.

Language Objectives:
- Read and write multi-digit whole numbers in standard form, word form, and expanded form. (Lesson 1)
- Tell the value of each digit in a number. (Lesson 1)
- Tell how the value of a digit changes when it moves one place to the left or right. (Lesson 1)
- Read aloud inequality statements comparing two whole numbers. (Lesson 2).
- Compare multi-digit numbers using place value charts and expanded form. (Lesson 2).
- Write inequality statements using symbols <, >, and = to compare numbers. (Lesson 2).
- Orally define and use the terms compare, greater than, less than and equal to when discussing comparisons. (Lesson 2).
- Tell how to round a multi-digit number to a specific place value. (Lesson 3)
- Draw number lines to round multi-digit numbers. (Lesson 3)
- Fill in place value charts to round whole numbers to a specific place value. (Lesson 3)
- Tell when and how to use regrouping in adding multi-digit whole numbers. (Lesson 4)
- Record sums using the standard algorithm using the standard algorithm for addition. (Lesson 4)
- Explain the meaning of regrouping notation. (Lesson 4)
- Discuss connections among place-value strategies used to add multi-digit numbers. (Lesson 4)
- Tell when and how to use regrouping in subtracting multi-digit whole numbers. (Lesson 5)
- Record differences using the standard algorithm for subtraction. (Lesson 5)

- Explain the meaning of regrouping notation. (Lesson 5)
- Discuss connections among place-value strategies used to subtract multi-digit numbers. (Lesson 5)

ASSESSMENTS

Pre-Assessment:
- Prerequisites Report (in *Teacher Digital Experience*)
- Starts (in *Teacher Guide*)
- Renaissance benchmark

Formative Assessment:
- Whole-class and partner discussion
- Whiteboard work
- Close: Exit Ticket (in *Student Worktext*)
- Lesson Quizzes (attached in unit breakdown and also in *Teacher Toolbox*)

Self-Reflection/Self-Assessment:
- Unit Skills Self-Check (in *Student Worktext*)
- Apply It (in *Student Worktext)*
- Reflect Questions (in *Student Worktext*)
- Self Reflection (in *Student Worktext)*
- Math Journal Questions (in *Student Worktext)*
- Unit Review (in *Student Worktext)*

Summative Assessment:
- Performance Task (in *Student Worktext)*
- Mid-Unit Assessment - Form A & Form B (also in *Teacher Toolbox*)
- Unit Assessment - Form A & Form B (also in *Teacher Toolbox*)

RESOURCES

i-Ready Classroom Mathematics **Grade 4:**

→ **PRINT RESOURCES:**
- **In-Class Instruction and Practice:**
  - *Teacher's Guide*
    - Lesson Progression
    - ELL Language Expectations
    - Connect to Culture
    - Discussion Prompts and Instructional Support
  - *Student Worktext* (Use the blue pages for in-class instruction and practice)
- **Independent Practice for School or Home**
  - *Teacher's Guide*
    - Additional Practice
    - Cumulative Practice
  - *Student Worktext* (Use the green pages for independent practice)
    - Additional Practice
    - Cumulative Practice
  - *Teacher Toolbox*
    - Fluency and Skills Practice
    - Unit Game
    - Cumulative Practice
- **Assessments and Reports**
  - *Teacher's Guide*
    - Starts
    - Support Whole Group/Partner Discussion
    - Ask/Listen Fors
    - Common Misconceptions
    - Error Alerts
    - Close: Exit Ticket
  - *Student Worktext*
    - Self Checks
    - Apply It

- ■ Reflect Questions
- ■ Self Reflection
- ■ Math Journal Questions
- ■ Unit Review
  - ○ *Teacher Toolbox*
    - ■ Editable Lesson Quizzes
    - ■ Editable Mid-Unit and Unit Assessments
- ● **Differentiation**
  - ○ *Before the Unit/Lesson: Prerequisites Report*
    - ■ Prerequisites Report: Resources
  - ○ *During the Lesson: Teacher's Guide*
    - ■ Hands-On Activities or Visual Models
    - ■ Deepen Understanding
    - ■ ELL Differentiated Instruction
    - ■ Refine Sessions
  - ○ *After the Lesson: Teacher Toolbox*
    - ■ Reteach: Tools for Instruction
    - ■ Reinforce: Math Center Activities
    - ■ Extend: Enrichment Activities
- → **DIGITAL RESOURCES**
  - ● **In-Class Instruction and Practice:**
    - ○ Interactive Tutorials
    - ○ Digital Math Tools
    - ○ PowerPoint Slides
  - ● **Independent Practice for School or Home**
    - ○ Digital Math Tools
    - ○ Learning Games
    - ○ Interactive Practice
  - ● **Assessments and Reports**
    - ○ Diagnostic
    - ○ Lesson, Mid-Unit, and Unit Comprehension Checks
    - ○ Prerequisites Report
    - ○ Comprehension Check Reports
  - ● **Differentiation**
    - ○ *Interactive Tutorials*
    - ○ *Digital Math Tools*
    - ○ *Learning Games*

STANDARDS

NJ Student Learning Standards (NJSLS) for Mathematics:

- ● 4NBT A. Generalize place value understanding for multi-digit whole numbers.
  - ○ 4NBT A.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.
  - ○ 4NBT A.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
  - ○ 4NBT A.3. Use place value understanding to round multi-digit whole numbers to any place.
- ● 4NBT B. Use place value understanding and properties of operations to perform multi-digit arithmetic.
  - ○ 4NBT B.1. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Standards for Mathematical Practice (SMP):

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.

7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NJ Student Learning Standards (NJSLS) for English Language Arts:
- **RI.4.4.** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- **RI.4.7**. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- **RL.4.7.** Make connections between specific descriptions and directions in a text and a visual or oral representation of the text.
- **SL.4.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.4.1.A.** Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.4.1.B.** Follow agreed-upon rules for discussions and carry out assigned roles.
- **SL.4.1.C.** Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
- **SL.4.1.D.** Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **SL.4.2.** Paraphrase portions of a text read aloud or information presented in diverse media and formats (e.g.,visually, quantitatively, and orally).
- **SL.4.3.** Identify the reasons and evidence a speaker provides to support particular points.

2020 NJ Student Learning Standards (NJSLS) for Social Studies:
- **6.1.2.HistoryCC.1:** Use multiple sources to create a chronological sequence of events that describes how and why your community has changed over time.
- **6.1.2.HistoryCC.2:** Use a timeline of important events to make inferences about the "big picture" of history.

2020 NJ Student Learning Standards (NJSLS) - Standard 9: 21st Century Life and Careers:
Career Ready Practices:
- **CRP2** Apply appropriate academic and technical skills
- **CRP4** Communicate clearly and effectively and with reason
- **CRP8** Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP11** Use technology to enhance productivity.
- **CRP12.** Work productively in teams while using cultural global competence

2020 NJ Core Curriculum Content Standards - Computer Science and Design Thinking
- **8.1.5.DA.1:** Collect, organize, and display data in order to highlight relationships or support a claim.
- **8.1.5.AP.1**: Compare and refine multiple algorithms for the same tasks and determine which is appropriate.
- **8.2.5.ED.2**: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
- **8.2.5.ED.3**: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- **8.2.5.ITH.2:** Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.

SOCIAL AND EMOTIONAL COMPETENCIES - activities/topics [optional]
Self-Awareness and Self-Management:
- Students begin the school year or instructional unit by drawing what being a mathematician "looks and feels like" to them. Students are encouraged to add more affirmative language as they learn more math skills. Similar to a feeling chart with "Today, I feel like…," students would be encouraged to write or say, "As a mathematician, I feel… [satisfied that I solved this problem, curious or confused about that solution, etc.]."
- Lead discussions that encourage students to reflect on barriers they may encounter when completing an assignment (e.g., finding a computer) and that also help them think about ways they can overcome them, including how to approach others for help (e.g., how to politely ask the teacher for help).

- Routinely give students the opportunity to reflect on when they have had success in math or what kinds of problems/puzzles they prefer. Also ask students why they like the types of materials they identified, e.g., "Why do you think you liked this problem, especially?," "Why do you think you like solving those kinds of problems/puzzles?," "Will you share with me the strategy that helped you solve this problem?".
- At the end of each session (daily) or lesson (weekly), have students complete the *How Does This Math Make Me Feel?* **Sheet** to learn to become more self-aware about how they feel about the topics they are learning.
- At the end of the unit, have students self-assess progress toward their learning goals and help support a Growth Mindset by reviewing the skills on the **Student Worktext Self Reflection** page. Encourage students to revisit the work they did in each lesson.

Social Awareness:
- During the *DIscuss It* portion of the daily lessons, build respect for diversity in the classroom by having students share their different perspectives on situations or solution strategies for the same problem.
- Lead discussions about taking different approaches to problem solutions, identifying feelings and thoughts of others who adopt these strategies.

Relationship Skills:
- Teach lessons on nonverbal classroom signals to encourage listening. For example, the class might use common hand signals to show agreement, to request clarification, or to recognize a different strategy.
- Have students work in pairs during daily lessons. For example, students can play partner games during the Fluency Practice portion of daily lessons to build fluency

Responsible Decision-Making:
- Encourage students to reflect on how they approached mathematics "today," including in journals or pair shares. Ask them to include how their choices could be repeated if successful or improved in order to be more successful.

Interdisciplinary Connections
- Read just right books in the content areas
- Use mentor texts to deliver Social Studies content
- Compare content area ideas and issues to what our characters deal with in out read alouds and mentor texts
- Apply reading skills and strategies to the reading we do in the content areas
- Apply spelling strategies
- Apply grammar skills
- Analyze illustrations in books for details
- Illustrate a passage that was just read to show detail ideas and lessons

21st Century Skills Intergration
- Use venn diagrams and T chart to compare and contrast events
- Use highlighters, notecards, post-its and other tools to keep track of sory events details and ideas.

"Add and Build Your Vocabulary" lessons are at the beginning of each unit.

- Lesson 1 Vocabulary: period, standard form, word form, digit, expanded form, place value
- Lesson 2 Vocabulary: compare, equal sign =, greater than >, less than <
- Lesson 3 Vocabulary: estimate (verb), round
- Lesson 4 Vocabulary: reasonable, regroup, addend, algorithm, estimate (verb), round, sum
- Lesson 5 Vocabulary: algorithm, difference, estimate (noun), estimate (verb), reasonable, regroup, sum

DAYS 1 & 2	Day 3	Day 4	Day 5	Day 6
Pre-Assessment / Active Prior Knowledge	**Lesson 0:** Try-Discuss-Connect Routine	**Lesson 0:** Try-Discuss-Connect Routine	**Lesson 0:** Try-Discuss-Connect Routine	**Lesson 0:** Try-Discuss-Connect Routine
Materials: • Unit and Lesson Support PDF • Yearly Pacing for Prerequisites PDF	**Session 1:** Rounding to the Nearest Hundred	**Session 2:** Rounding to the Nearest Hundred	**Session 3:** Using Place Value Strategies to Add	**Session 4:** Using Place Value Strategies to Add
Activities: Students take the Diagnostic Assessment. It takes two days to administer. See i-Ready Classroom Central for information.	**Objective:** Students will get used to the 3 Reads method and Try-Discuss-Connect Routine.	**Objective:** Students will get used to sharing their ideas and listening and responding to others' strategies.	**Objective:** Students will get used to the 3 Reads method and Try-Discuss-Connect Routine.	**Objective:** Students will get used to sharing their ideas and listening and responding to others' strategies.
	Materials: • Lessons for the First Five Days • Try Discuss Connect Routine Slides • Rounding to the Nearest Hundred handout • Rounding to the Nearest Hundred answer key • Integrating Language and Mathematics teacher resource • Understanding the Try-Discuss-Connect Instructional Routine teacher resource	**Materials:** • Lessons for the First Five Days • Try Discuss Connect Routine Slides • Rounding to the Nearest Hundred handout • Rounding to the Nearest Hundred answer key • Integrating Language and Mathematics teacher resource • Understanding the Try-Discuss-Connect Instructional Routine teacher resource	**Materials:** • Lessons for the First Five Days • Try Discuss Connect Routine Slides • Using Place Value to Add student page • Using Place Value to Add answer key • Integrating Language and Mathematics teacher resource • Understanding the Try-Discuss-Connect Instructional Routine teacher resource	**Materials:** • Lessons for the First Five Days • Try Discuss Connect Routine Slides • Using Place Value to Add student page • Using Place Value to Add answer key • Integrating Language and Mathematics teacher resource • Understanding the Try-Discuss-Connect Instructional Routine teacher resource • Student Discourse Cards
	(All links can also be found under Classroom Resources tab on the Teacher Toolbox in the Teacher Digital Experience)	**(All links can also be found under Classroom Resources tab on the Teacher Toolbox in the Teacher Digital Experience)**	**(All links can also be found under Classroom Resources tab on the Teacher Toolbox in the Teacher Digital Experience)**	**(All links can also be found under Classroom Resources tab on the Teacher Toolbox in the Teacher Digital Experience)**
	Activities: 1) Display the "Try It" slide. Teach students the 3 Reads to make sense of the problem. Turn and talk about the important numbers and concepts in the problem. 2) Pass out the Rounding to the Nearest Hundred handout. Then have students work on solving the problem. 3) Move on to the "Discuss It" slide. Discuss the answers found using the discussion starters on this slide. Use the Collect and Discuss routine to share students' work. Use the Rounding to the Nearest Hundred answer key to check.	**Activities:** 1) Continue the discussion from yesterday using the "Discuss It" slide. 2) Use the Compare and Connect strategy to have students see similarities and differences in their thinking. 3) Display the "Picture It" slide. Call on students to repeat and rephrase others' ideas about how they visualize the problem. 4) Review expectations for turn and talks and have students practice turning and talking about what they picture while reading this problem. 5) Display the "Solve It" slide. Repeat steps 3 and 4 with this slide. 6) Display the "Connect It" slide and have students complete the "Connect It questions on their student page. Instruct students to turn and talk about their responses. 7) Display the "Apply It" and individually or in small groups have students solve the problem. 8) Wrap up and have students turn and talk about how they could help someone with this problem without telling them the answer. **Additional Practice:** Student	**Activities:** 1) Display the "Try It" slide and have students practice the 3 reads to understand the problem. 2) Hand out the Using Place Value to Add student page. 3) Have students complete the first page and instruct them to show their thinking multiple ways if possible. 4) Display the "Discuss It" slide. Remind students that the point of discussing is to be able to retell and rephrase what their peers are thinking. 5) Model partner talking with a student. Ask, why did you choose that strategy?	**Activities:** 1) Display the "Discuss It" slide. Continue the conversation from the last session. Share some samples from yesterday. 2) Ask students to share their thoughts with the class. Introduce the "Discourse Cards" to support students' conversations. 3) Use the repeat and rephrase strategy to get students to actively listen to their classmates. 4) Use the "Compare and Connect" routine to discuss the similarities between strategies. Answer these questions: How are they the same? How are they different? How are they connected? 5) Display the "Picture It" slide. Have students turn and talk about how this slide is showing the problem. 6) Have students repeat and rephrase classmates' ideas. 7) Display the "Model It" slide. Students should now be comparing strategies. Repeat steps 5 and 6. 8) Display the "Connect It" slide. Tell students to work on their own to complete the Connect It questions on their student pages. Afterward,

		pages 5-6 could be given for homework or extra practice.		have students turn and talk about their responses. 9) Display the next "Connect It" slide. Give students time to think and reflect on the past two sessions. Then have them answer the reflection question and turn and talk to discuss the answers to these questions. 10) Display the "Apply It" slide. Have students independently answer the Apply It questions. Then turn and talk to answer a prompt from the Discourse Cards. Have a few students repeat and rephrase responses of their peers. **Additional Practice:** Student pages 5-6 could be given for homework or extra practice.
Day 7 **Lesson 1:** Understand Place Value **Session 1:** Explore - Place Value **Objective:** Students will be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. Students will be able to read and write multi-digit whole numbers using base-ten numerals, number name and expanded form. **Materials:** ● Student Worktext pages 5-6 ● Teacher's Guide Volume 1 pages 5-8 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (10 index cards or pieces of paper) ● Discourse Cards ● Additional Practice: Student Worktext pages 7-8 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Model It (10 minutes) 3) Discuss It (5 minutes) 4) Model It (10 minutes) 5) Discuss It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice:** Student Worktext pages 7-8	**Day 8** **Lesson 1:** Understand Place Value **Session 2:** Develop - Understanding of Place Value **Objective:** Students will be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. Students will be able to read and write multi-digit whole numbers using base-ten numerals, number name and expanded form. **Materials:** ● Student Worktext pages 9-10 ● Teacher's Guide Volume 1 pages 9-10 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (base-ten blocks for pairs of students: 2 thousands cubes, 13 hundreds flats, 14 tens rods and 16 ones units) ● Discourse Cards ● Additional Practice: Student Worktext pages 11-12 ● Fluency Extra Practice: Understanding of Place Value (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Model It: Place Value Charts (5 minutes) 3) Discuss It (5 minutes) 4) Model It: Expanded Form (5 minutes) 5) Discuss It (5 minutes) 6) Connect It (15 minutes) 7) Close: Exit Ticket (5 minutes)	**Day 9** **Lesson 1:** Understand Place Value **Session 3:** Refine - Ideas About Place Value **Objective:** Students will be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. Students will be able to read and write multi-digit whole numbers using base-ten numerals, number name and expanded form. **Materials:** ● Student Worktext pages 13-14 ● Teacher's Guide Volume 1 pages 13-14 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Base-Ten Blocks ● Discourse Cards ● Lesson 1 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Apply It (35 minutes) 3) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 1 Quiz or Digital Comprehension Check	**Day 10** **Lesson 2:** Compare Whole Numbers **Session 1:** Explore - Comparing Whole Numbers **Objective:** Students will be able to compare two multi-digit numbers based on meanings of the digits in each place, using >, <, and = symbols to record the results of comparisons. Students will be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. **Materials:** ● Student Worktext pages 17-18 ● Teacher's Guide Volume 1 pages 17-18 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (base-ten blocks for pairs of students: 18 thousands cubes, 20 hundreds flats, 20 tens rods, 20 ones units) ● Digital Math Tool: Number Line ● Discourse Cards ● Interactive Tutorial: Prerequisite Review: Understanding Place Value ● Additional Practice: Student Worktext pages 19-20 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student	**Day 11** **Lesson 2:** Compare Whole Numbers **Session 2:** Develop - Comparing Multi-Digit Numbers **Objective:** Students will be able to compare two multi-digit numbers based on meanings of the digits in each place, using >, <, and = symbols to record the results of comparisons. Students will be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. **Materials:** ● Student Worktext pages 21-24 ● Teacher's Guide Volume 1 pages 21-24 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (2 colored pencils different colors for each pair, 2 copies of the Activity Sheet: Digit Cards) ● Digital Math Tool: Number Line ● Discourse Cards ● Additional Practice: Student Worktext pages 25-27 ● Fluency Extra Practice: Comparing Multi-Digit Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes)

	Additional Practice: Students Worktext pages 11-12 **Fluency Extra Practice**: Understanding of Place Value (can be printed or filled in online)		Worktext pages 19-20	**Additional Practice**: Student worktext pages 25-27 **Fluency Extra Practice**: Comparing Multi-Digit Numbers (can be printed or filled in online)
Day 12 **Lesson 2:** Compare Whole Numbers **Session 3:** Refine - Comparing Whole Numbers **Objective:** Students will be able to compare two multi-digit numbers based on meanings of the digits in each place, using >, <, and = symbols to record the results of comparisons. Students will be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. **Materials:** ● Student Worktext pages 27-30 ● Teacher's Guide Volume 1 pages 27-30 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity: Conduct A Number Hunt (for each student: newspaper, magazines, books, other print materials) ● Discourse Cards ● Digital Math Tool: Number Line ● Lesson 2 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Example & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 2 Quiz or Digital Comprehension Check	**Day 13** **Lesson 3:** Round Whole Numbers **Session 1:** Explore - Rounding Whole Numbers **Objective:** Students will be able to use place value understanding to round multi-digit whole numbers to any place. **Materials:** ● Student Worktext pages 33-34 ● Teacher's Guide Volume 1 pages 33-34 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Discourse Cards ● Visual Model (Rounding Hill) ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 35-36 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 35-36	**Day 14** **Lesson 3:** Round Whole Numbers **Session 2:** Develop - Rounding Whole Numbers **Objective:** Students will be able to use place value understanding to round multi-digit whole numbers to any place. **Materials:** ● Student Worktext pages 37-40 ● Teacher's Guide Volume 1 pages 37-40 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Discourse Cards ● Digital Math Tool: Number Line ● Hands-On Activity (per pair: 2 copies of the Activity Sheet: Digit Cards) ● Additional Practice: Student Worktext pages 41-42 ● Fluency Extra Practice: Rounding Whole Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 41-42 **Fluency Extra Practice**: Rounding Whole Numbers (can be printed or filled in online)	**Day 15** **Lesson 3:** Round Whole Numbers **Session 3:** Refine - Rounding Whole Numbers **Objective:** Students will be able to use place value understanding to round multi-digit whole numbers to any place. **Materials:** ● Student Worktext pages 43-46 ● Teacher's Guide Volume 1 pages 43-46 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Discourse Cards ● Digital Math Tool: Number Line ● Hands-On Activity (per pair: spinner numbers 0-9, index cards labeled with place value names: tens, hundreds, thousands, ten thousands, and hundred thousands and Activity Sheet Number Lines) ● Lesson 3 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Example & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 3 Quiz or Digital Comprehension Check	**Day 16** **Lesson 4:** Add Whole Numbers **Session 1:** Explore - Adding Whole Numbers **Objective:** Students will be able to fluently add multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 49-50 ● Teacher's Guide Volume 1 pages 49-50 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each student: color tiles - 3 yellow, 15 green, 9 blue, 8 red) ● Digital Math Tool: Number Line ● Discourse Cards ● Interactive Tutorial - Prerequisite Review: Add and Subtract Within 1,000 ● Additional Practice: Student Worktext pages 51-52 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 51-52
Day 17 **Lesson 4:** Add Whole Numbers **Session 2:** Develop - Using Strategies to Add **Objective:** Students will be able to fluently add multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 53-56 ● Teacher's Guide Volume 1	**Day 18** **Lesson 4:** Add Whole Numbers **Session 3:** Develop - Using the Standard Algorithm to Add Greater Numbers **Objective:** Students will be able to fluently add multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 59-62	**Day 19** **Lesson 4:** Add Whole Numbers **Session 4:** Refine - Adding Whole Numbers **Objective:** Students will be able to fluently add multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 65-68 ● Teacher's Guide Volume	**Day 20** **Lesson 5:** Subtract Whole Numbers **Session 1:** Explore - Subtracting Whole Numbers **Objective:** Students will be able to fluently subtract multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 71-72 ● Teacher's Guide Volume	**Day 21** **Lesson 5:** Subtract Whole Numbers **Session 2:** Develop - Using Strategies to Subtract **Objective:** Students will be able to fluently subtract multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 75-78 ● Teacher's Guide Volume

1 pages 53-56 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each pair: base-ten blocks - 7 thousands cubes, 17 hundreds flats, 9 ten rods, 12 ones units) ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 57-58 ● Discourse Cards ● Fluency Extra Practice: Using Strategies to Add (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Tickets (5 minutes) **Additional Practice**: Student Worktext pages 57-58 **Fluency Extra Practice:** Using Strategies to Add	● Teacher's Guide Volume 1 pages 59-62 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each pair: 8 thousands cubes, 13 hundreds flats, 15 ten rods, 14 ones units) ● Digital Math Tool: Number Line ● Discourse Cards ● Additional Practice: Student Worktext pages 63-64 ● Fluency Extra Practice: Using the Standard Algorithm to Add Greater Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student worktext pages 63-64 **Fluency Extra Practice:** Using the Standard Algorithm to Add Greater Numbers	1 pages 65-68 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each pair: play money - 12 $1 bills, 13 $10 bills, 15 $100 bills, 4 $1000 bills) ● Digital Math Tool: Number Line ● Discourse Cards ● Lesson 4 Quiz (need to copy or print) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Example & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 4 Quiz or Digital Comprehension Check	1 pages 71-72 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Number Line ● Discourse Cards ● Digital Math Tool: Digital Base-Ten Blocks ● Additional Practice: Student Worktext pages 73-74 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 73-74	1 pages 75-78 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each pair: base-ten blocks - 7 thousands cubes, 14 hundreds flats, 13 tens rods, 6 ones units) ● Digital Math Tool: Number Line ● Discourse Cards ● Additional Practice: Student Worktext pages 79-80 ● Fluency Extra Practice: Usings Strategies to Subtract (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (5 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 79-80 **Fluency Extra Practice:** Usings Strategies to Subtract
Day 22 **Lesson 5:** Subtract Whole Numbers **Session 3:** Develop - Using the Standard Algorithm to Add Greater Numbers **Objective:** Students will be able to fluently subtract multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 81-84 ● Teacher's Guide Volume 1 pages 81-84 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each pair: 2 copies of the Activity Sheet: Digit Cards) ● Digital Math Tool: Number Line ● Discourse Cards ● Fluency Extra Practice: Usings the Standard Algorithm to Subtract Greater Numbers (can be printed or filled in online)	**Day 23** **Lesson 5:** Subtract Whole Numbers **Session 4:** Refine - Adding Whole Numbers **Objective:** Students will be able to fluently subtract multi-digit whole numbers using the standard algorithm. **Materials:** ● Student Worktext pages 87-90 ● Teacher's Guide Volume 1 pages 87-90 ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Hands-On Activity (for each pair: play money - 11 $1 bills, 17 $10 bills, 11 $100 bills, 6 $1,000 bills) ● Digital Math Tool: Number Line ● Discourse Cards ● Lesson 5 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher	**Day 24** **Lesson:** Math in Action **Session 1:** Work with Whole Numbers **Objective:** Students will be able to generalize place value understanding for multi-digit whole numbers. Students will be able to use place value understanding and properties to perform multi-digit arithmetic. **Materials:** ● Student Worktext pages 92-97 ● Teacher's Guide Volume 1 pages 92-97 ● Discourse Cards ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● For *Blog Site Visitors*: each student needs a copy of Solution Sheet 2 and each pair needs grid paper, scissors, tape ● For *Max's Summary*: each student needs a copy of Solution Sheet 1 ● Digital Math Tool: Number Line	**Day 25** **Lesson:** Math in Action **Session 2:** Work with Whole Numbers **Objective:** Students will be able to generalize place value understanding for multi-digit whole numbers. Students will be able to use place value understanding and properties to perform multi-digit arithmetic. **Materials:** ● Student Worktext pages 98-99 ● Teacher's Guide Volume 1 pages 98-99 ● Discourse Cards ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Digital Math Tool: Number Line **Activities:** As outlined in the Teacher Guide Volume 1: 1) Persevere On Your Own: Blog Site Visitors - Solve It (20 minutes)	**Day 26** **Lesson:** Unit Review **Materials:** ● Student Worktext pages 100-102 ● Teacher's Guide Volume 1 pages 100-102a ● Discourse Cards ● Activity Sheet: Hundred Thousands Place-Value Chart ● Base-Ten Blocks (available for students as needed) ● Digital Math Tool: Digital Base-Ten Blocks ● Unit Game: Subtraction Action (Per pair: Recording Sheet, 2 copies of the Activity Sheet Digital Cards) ● Literacy Connections: A Short History of Easter Island and Literacy Connections "Easter Island" Problems: Rounding Numbers (answer key online) ● Digital Math Tool: Number Line ● Vocabulary Cards to Review Unit Vocabulary (Student Worktext & Teacher's Guide pages 103-104) **Activities:** As outlined in the Teacher

Activities: As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Independent Practice:** Student Worktext pages 85-86 **Fluency Extra Practice:** Usings the Standard Algorithm to Subtract Greater Numbers	Guide Volume 1: 1) Start (5 minutes) 2) Example & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment:** Lesson 5 Quiz or Digital Comprehension Check After the quiz, have students complete the **Self-Reflection** (page 91 in their Worktext).	**Activities:** As outlined in the Teacher Guide Volume 1: 1) Study an Example Problem and Solution: Blog Site Visitors - Example Problem and Solution (15 minutes) 2) Try Another Approach: Blog Site Visitors - Plan It (5 minutes) - Solve It (10 minutes) - Reflect (5 minutes) 3) Discuss Models and Strategies: Max's Summary - Plan It and Solve It (10 minutes) - Reflect (5 minutes)	- Reflect (5 minutes) 2) Blog Topics - Solve It (20 minutes) - Reflect (5 minutes)	Guide Volume 1: 1) Walk students through the Unit Review. 2) Have students work in pairs or small groups on the Performance Task. 3) Explain the Subtraction Action game and give students time to play. Optional: Literacy Connections: A Short History of Easter Island and Literacy Connections "Easter Island" Problems: Rounding Numbers Optional: Vocabulary Cards to Review Unit Vocabulary
Day 27 **Lesson:** Unit 1 Assessment **Materials:** ● Teacher's Guide Volume 1 pages 102b-102e ● Unit 1 Assessment **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.				

Differentiate Instruction, depending on individual student needs (students with an IEP, 504, or Intervention Plan; ELL Students; Students At Risk; Gifted Students) **by:**

Presentation Accommodations

- Use alternate texts at lower readability level
- Work with fewer items per page or line and/or materials in a larger print size
- Use magnification device, screen reader, or Braille / Nemeth Code
- Use audio amplification device (e.g., hearing aid(s), auditory trainer, sound-field system (which may require teacher use of microphone)
- Be given a written list of instructions
- Record a lesson, instead of taking notes
- Have another student share class notes with him
- Be given an outline of a lesson
- Be given a copy of teacher's lecture notes
- Be given a study guide to assist in preparing for assessments
- Use visual presentations of verbal material, such as word webs and visual organizers
- Use manipulatives to teach or demonstrate concepts

Response Accommodations

- Use sign language, a communication device, Braille, other technology, or native language other than English
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to type notes or give responses in class

Setting Accommodations

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he learns best (for example, near the teacher & away from distractions)
- Use special lighting or acoustics
- Take a test in small group setting
- Use sensory tools such as an exercise band that can be looped around a chair's legs (so fidgety kids can kick it and quietly get their energy out)
- Use noise buffers such as headphones, earphones, or earplugs

Timing Accommodations
- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Scheduling Accommodations
- Take more time to complete a project
- Take a test in several timed sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization Skills Accommodations
- Use an alarm to help with time management
- Mark texts with a highlighter

Assignment Modifications
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum Modifications
- Learn different material (such as continuing to work on multiplication while classmates move on to fractions, or moving ahead to an extension concept/skill while classmates continue to work on a core skill)
- Get graded or assessed using a different standard than the one for classmate

Subject Area: Mathematics Grade Level: 4	Bedminster Township School
Unit #: 2 **Operations: Multiplication, Division, and Algebraic Thinking**	
Dates: November - December	**Time Frame:** 27 days

Overview

In the "Multiplicative Comparison" lessons of this unit, students will begin to establish the relationship between the factors in a multiplication problem (the two numbers being multiplied) and the product (the results). Students will describe such relationships using comparative words, such as, "35 is 7 times as many as 5." Students will group pictures, bar models, or partitioned arrays as good visuals to reinforce this association. After students have modeled problems routinely with concrete and visual models, they will begin to use equations. Students will work on the "unknown" number being both the factor or product.

In the "Factors and Multiples" lessons of this unit, students will learn that prime numbers have exactly two factors (1 and the number itself) and that composite numbers have more than two factors. Students will be given time to experiment with arrays and area models to establish and understand if numbers are prime or composite. Through the exploration of factors and multiples, students should begin to notice patterns and establish some helpful rules to remember these types of numbers.

In the "Connecting Factors and Multiples to Word Problems and Equations" lessons of this unit, students will represent problem situations with equations using the four operations and symbols for unknowns. Additionally, they will use a variety of strategies to find the unknowns including making bar models and writing and solving equations.

In the "Connecting Factors and Multiples to Patterns" lesson of this unit, students will be exposed to various types of number patterns to help develop flexible thinking, logic and reasoning. Students will use patterns to develop a correlation between the pattern elements and their attributes. They may also connect the pattern element and the ordinal place of each element. Questioning students about these insights will help them to make associations such as, "I know every third shape is a rectangle, so all shapes in a position that is a multiple of 3 will be rectangles."

Enduring Understandings

- Solve problems involving multiplicative comparisons by using multiplication or division.
- Know basic multiplication facts to help find the factors of a number.
- Use rules to generate or extend a number or shape pattern.

SKILL AND KNOWLEDGE OBJECTIVES

Routine Objectives:
- Use the Try-Discuss-Connect routine to establish best practices during an *i-Ready Classroom Mathematics* lesson. (Lesson 0)
- Have students learn how to make sense of problems, explain their thinking, and discuss strategies used to solve problems. (Lesson 0)
- Help students understand how to appropriately critique and compare the solution strategies. (Lesson 0)
- Establish hand signals such as thumbs-up or thumbs-down for students to signal agreement or disagreement with strategies and student responses, as well as provide the teacher with formative feedback. (Lesson 0)
- Help students develop good use of mathematical language and support sense-making as they learn to ask good questions, clearly describe their thinking to others, and reword and refine mathematical ideas. (Lesson 0)
- Apply math knowledge and modeling techniques to new, similar problems. (Lesson 0)
- Students will be introduced to the Math Practice Standards to use throughout the year. (Lesson 0)

Content Objectives:
- Use a multiplication equation to represent the relationship between numbers as a multiplicative comparison. (Lesson 6)
- Identify a multiplication equation as showing two ways to describe a product as a comparison between two factors. (Lesson 6)
- Write an equation to represent a multiplicative comparison described in a word problem. (Lesson 6)
- Write a word problem using a multiplicative comparison to describe a given multiplication equation. (Lesson 6)
- Use drawings and symbols to represent a word problem involving multiplicative comparison. (Lesson 7)
- Use equations to solve for the unknown in multiplicative comparison problems. (Lesson 7)
- Solve word problems involving multiplicative comparisons by using multiplication or division. (Lesson 7)
- Distinguish between multiplicative comparison and additive comparison. (Lesson 7)
- Use basic multiplication facts to list all the factors of a number. (Lesson 8)
- Use basic multiplication facts to determine whether a number is a multiple of another number. (Lesson 8)
- Use rules to generate or extend a number pattern. (Lesson 9)
- Use manipulatives or drawings to show a shape pattern. (Lesson 9)
- Describe, analyze, and extend patterns in numbers and shapes. (Lesson 9)
- Use equations with a letter standing for the unknown to represent multi-step word problems and solve these equations. (Lesson 10)
- Interpret the remainder in a division word problem. (Lesson 10)
- Use estimation strategies to check that an answer is reasonable. (Lesson 10)

Language Routine Objectives:
- three read

- turn and talk
- co-craft questions and problems (optional)
- collect and display
- say it another way
- compare and connect

Language Routine Procedure:

1. Assess prior knowledge of academic vocabulary words.
2. Pronounce the academic vocabulary words.
3. Define the academic vocabulary words.
4. Use the academic vocabulary words.

Language Objectives:

- Write a multiplication equation to represent a multiplicative comparison between two numbers. (Lesson 6)
- Write a multiplication equation to represent a multiplicative comparison described in a word problem. (Lesson 6)
- Describe a real-world comparison situation that can be represented by a given multiplication equation. (Lesson 6)
- Discuss multiplicative comparison using the phrase *times as many*. (Lesson 7)
- Draw a diagram to represent a word problem involving a multiplicative comparison. (Lesson 7)
- Write an equation to solve for the unknown in a multiplicative comparison problem. (Lesson 7)
- Summarize word problems involving a multiplicative comparison and tell whether to use multiplication or division. (Lesson 7)
- List the factors of a whole number. (Lesson 8)
- Skip-count aloud or silently to find multiples of 2, 5, and 10. (Lesson 8)
- Draw diagrams to justify arguments about factors, multiples, prime numbers, and composite numbers. (Lesson 8)
- Orally define and use in discussion the key mathematical terms *factor, factor pair, multiple, composite number and prime number*. (Lesson 8)
- Extend a shape or number pattern. (Lesson 9)
- Describe attributes of numbers or shapes in a pattern to help identify features in patterns. (Lesson 9)
- Identify features in a pattern. (Lesson 9)
- Draw a diagram to represent and solve multi-step word problems. (Lesson 10)
- Write equations with a letter standing for the unknown to represent and solve multi-step word problems. (Lesson 10)
- Compare different approaches to writing equations, identify connections among them, and justify an approach used to solve a word problem. (Lesson 10)
- Tell whether a solution is reasonable by comparing the results to an estimate. (Lesson 10)
- Tell the specific meaning of a remainder in a particular division word problem and how it affects the answer. (Lesson 10)

21st Century LIfe and Careers Objectives:

- Students analyze data to determine the best financial decision *(Lesson 7)*
- Explore the importance of solving word problems in daily life. *(Lesson 7)*
- Break apart word problems in order to find relevant data. *(Lesson 7)*

ASSESSMENTS

Pre-Assessment:

- Prerequisites Report (in *Teacher Digital Experience*)
- Starts (in *Teacher Guide*)
- Renaissance benchmark

Formative Assessment:
- Whole-class and partner discussion
- Whiteboard work
- Close: Exit Ticket (in *Student Worktext)*
- Lesson Quizzes (attached in unit breakdown and also in *Teacher Toolbox*)

Self-Reflection/Self-Assessment:
- Unit Skills Self-Check (in *Student Worktext*)
- Apply It (in *Student Worktext)*
- Reflect Questions (in *Student Worktext)*
- Self Reflection (in *Student Worktext)*
- Math Journal Questions (in *Student Worktext)*
- Unit Review (in *Student Worktext)*

Summative Assessment:
- Performance Task (in *Student Worktext)*
- Mid-Unit Assessment - Form A & Form B (also in *Teacher Toolbox*)
- Unit Assessment - Form A & Form B (also in *Teacher Toolbox*)

RESOURCES

i-Ready Classroom Mathematics **Grade 4:**
→ **PRINT RESOURCES:**
- **In-Class Instruction and Practice:**
  - *Teacher's Guide*
    - Lesson Progression
    - ELL Language Expectations
    - Connect to Culture
    - Discussion Prompts and Instructional Support
  - *Student Worktext* (Use the blue pages for in-class instruction and practice)
- **Independent Practice for School or Home**
  - *Teacher's Guide*
    - Additional Practice
    - Cumulative Practice
  - *Student Worktext* (Use the green pages for independent practice)
    - Additional Practice
    - Cumulative Practice
  - *Teacher Toolbox*
    - Fluency and Skills Practice
    - Unit Game
    - Cumulative Practice
- **Assessments and Reports**
  - *Teacher's Guide*
    - Starts
    - Support Whole Group/Partner Discussion
    - Ask/Listen Fors
    - Common Misconceptions
    - Error Alerts
    - Close: Exit Ticket
  - *Student Worktext*
    - Self Checks
    - Apply It
    - Reflect Questions
    - Self Reflection
    - Math Journal Questions
    - Unit Review
  - *Teacher Toolbox*
    - Editable Lesson Quizzes
    - Editable Mid-Unit and Unit Assessments
- **Differentiation**
  - *Before the Unit/Lesson: Prerequisites Report*

■ Prerequisites Report: Resources
            ○ *During the Lesson: Teacher's Guide*
                    ■ Hands-On Activities or Visual Models
                    ■ Deepen Understanding
                    ■ ELL Differentiated Instruction
                    ■ Refine Sessions
            ○ *After the Lesson: Teacher Toolbox*
                    ■ Reteach: Tools for Instruction
                    ■ Reinforce: Math Center Activities
                    ■ Extend: Enrichment Activities
→ **DIGITAL RESOURCES**
    ● **In-Class Instruction and Practice:**
        ○ Interactive Tutorials
        ○ Digital Math Tools
        ○ PowerPoint Slides
    ● **Independent Practice for School or Home**
        ○ Digital Math Tools
        ○ Learning Games
        ○ Interactive Practice
    ● **Assessments and Reports**
        ○ Diagnostic
        ○ Lesson, Mid-Unit, and Unit Comprehension Checks
        ○ Prerequisites Report
        ○ Comprehension Check Reports
    ● **Differentiation**
        ○ *Interactive Tutorials*
        ○ *Digital Math Tools*
        ○ *Learning Games*

STANDARDS

NJ Student Learning Standards (NJSLS) for Mathematics:

- 4.NBT.B. Use place value understanding and properties of operations to perform multi-digit arithmetic.
    - 4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
    - 4.NBT.B 6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.OA.A. Use the four operations with whole numbers to solve problems.
    - 4.OA.A.1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
    - 4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
    - 4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Standards for Mathematical Practice (SMP):

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.

5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NJ Student Learning Standards (NJSLS) for English Language Arts:
- **RI.4.4.** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- **RI.4.7**. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- **RL.4.7.** Make connections between specific descriptions and directions in a text and a visual or oral representation of the text.
- **SL.4.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.4.1.A.** Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.4.1.B.** Follow agreed-upon rules for discussions and carry out assigned roles.
- **SL.4.1.C.** Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
- **SL.4.1.D.** Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **SL.4.2.** Paraphrase portions of a text read aloud or information presented in diverse media and formats (e.g.,visually, quantitatively, and orally).
- **SL.4.3.** Identify the reasons and evidence a speaker provides to support particular points.

2020 NJ Student Learning Standards (NJSLS) for Social Studies:
- **6.1.2.HistoryCC.1:** Use multiple sources to create a chronological sequence of events that describes how and why your community has changed over time.
- **6.1.2.HistoryCC.2:** Use a timeline of important events to make inferences about the "big picture" of history.

2020 NJ Student Learning Standards (NJSLS) - Standard 9: 21st Century Life and Careers:
Career Ready Practices:
- **CRP2** Apply appropriate academic and technical skills
- **CRP4** Communicate clearly and effectively and with reason
- **CRP8** Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP11** Use technology to enhance productivity.
- **CRP12.** Work productively in teams while using cultural global competence
- **9.1.4.C.1:** Explain why people borrow money and the relationship between credit and debit.
- **9.2.4.A.4:** Explain why knowledge and skills acquired in elementary grades lay the foundation for future academic and career success.
- **9.4.5.CT.1:** Identify and gather relevant data that will aid in the problem solving process.

2020 NJ Core Curriculum Content Standards - Computer Science and Design Thinking
- **8.1.5.DA.1:** Collect, organize, and display data in order to highlight relationships or support a claim.
- **8.1.5.AP.1**: Compare and refine multiple algorithms for the same tasks and determine which is appropriate.
- **8.2.5.ED.2**: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
- **8.2.5.ED.3**: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- **8.2.5.ITH.2:** Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.

SOCIAL AND EMOTIONAL COMPETENCIES - activities/topics [optional]
Self-Awareness and Self-Management:
- Students begin the school year or instructional unit by drawing what being a mathematician "looks and feels like" to them. Students are encouraged to add more affirmative language as they learn more math skills. Similar to a

feeling chart with "Today, I feel like…," students would be encouraged to write or say, "As a mathematician, I feel… [satisfied that I solved this problem, curious or confused about that solution, etc.]."

- Lead discussions that encourage students to reflect on barriers they may encounter when completing an assignment (e.g., finding a computer) and that also help them think about ways they can overcome them, including how to approach others for help (e.g., how to politely ask the teacher for help).
- Routinely give students the opportunity to reflect on when they have had success in math or what kinds of problems/puzzles they prefer. Also ask students why they like the types of materials they identified, e.g., "Why do you think you liked this problem, especially?," "Why do you think you like solving those kinds of problems/puzzles?," "Will you share with me the strategy that helped you solve this problem?".
- At the end of each session (daily) or lesson (weekly), have students complete the *How Does This Math Make Me Feel?* **Sheet** to learn to become more self-aware about how they feel about the topics they are learning.
- At the end of the unit, have students self-assess progress toward their learning goals and help support a Growth Mindset by reviewing the skills on the **Student Worktext Self Reflection** page. Encourage students to revisit the work they did in each lesson.

Social Awareness:
- During the *Discuss It* portion of the daily lessons, build respect for diversity in the classroom by having students share their different perspectives on situations or solution strategies for the same problem.
- Lead discussions about taking different approaches to problem solutions, identifying feelings and thoughts of others who adopt these strategies.

Relationship Skills:
- Teach lessons on nonverbal classroom signals to encourage listening. For example, the class might use common hand signals to show agreement, to request clarification, or to recognize a different strategy.
- Have students work in pairs during daily lessons. For example, students can play partner games during the Fluency Practice portion of daily lessons to build fluency

Responsible Decision-Making:
- Encourage students to reflect on how they approached mathematics "today," including in journals or pair shares. Ask them to include how their choices could be repeated if successful or improved in order to be more successful.

Interdisciplinary Connections
- Read just right books in the content areas
- Use mentor texts to deliver Social Studies content
- Compare content area ideas and issues to what our characters deal with in out read alouds and mentor texts
- Apply reading skills and strategies to the reading we do in the content areas
- Apply spelling strategies
- Apply grammar skills
- Analyze illustrations in books for details
- Illustrate a passage that was just read to show detail ideas and lessons

21st Century Skills Integration
- Use venn diagrams and T chart to compare and contrast events
- Use highlighters, notecards, post-its and other tools to keep track of sory events details and ideas.

Unit 2: Operations: Multiplication, Division, and Algebraic Thinking

"Add and Build Your Vocabulary" lessons are at the beginning of each unit.

- Lesson 6 Vocabulary: multiplicative comparison, equation, factor, multiplication, multiply
- Lesson 7 Vocabulary: symbol, unknown, divide, division, equation, factor, multiplication, multiplicative comparison, multiply
- Lesson 8 Vocabulary: composite number, factor pair, factors of a number, multiple, prime number, array, factor, multiplication, multiply
- Lesson 9 Vocabulary: rule, pattern
- Lesson 10 Vocabulary: expression, remainder, divide, equation, estimate (verb), multiply, reasonable, unknown

DAYS 1 & 2	Day 3	Day 4	Day 5	Day 6
Pre-Assessment / Active Prior Knowledge **Materials:** ● Unit and Lesson Support PDF ● Yearly Pacing for Prerequisites PDF **Activities:** Students take the Diagnostic Assessment. It takes two days to administer. See i-Ready Classroom Central for information.	**Lesson 6:** Understand Multiplication as a Comparison **Session 1:** Explore - Multiplication as a Comparison **Objective:** Students will be able to interpret a multiplication equation as a comparison, using *as many, or as many times as*, to do so. Students will be able to represent verbal statements of multiplicative comparisons as multiplication equations. **Materials:** ● Student Worktext pages 109-110 ● Teacher's Guide Volume 1 pages 109-110 ● Discourse Cards ● Hands-On Activity (for each pair: one dice) ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 111-112 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Model It (10 minutes) 3) Discuss It (5 minutes) 4) Model It (10 minutes) 5) Discuss It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 111-112	**Lesson 6:** Understand Multiplication as a Comparison **Session 2:** Develop - Understanding of Multiplication as a Comparison **Objective:** Students will be able to interpret a multiplication equation as a comparison, using *as many, or as many times as*, to do so. Students will be able to represent verbal statements of multiplicative comparisons as multiplication equations. **Materials:** ● Student Worktext pages 113-114 ● Teacher's Guide Volume 1 pages 113-114 ● Discourse Cards ● Hands-On Activity (for each pair: 52 counters) ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 115-116 ● Fluency Extra Practice: Understanding of Multiplication as a Comparison (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Model It: Bar Models and Equations (5 minutes) 3) Discuss It (5 minutes) 4) Model It: Words and Equations (5 minutes) 5) Discuss It (5 minutes) 6) Connect It (15 minutes) 7) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 115-116 **Fluency Extra Practice:** Understanding of Multiplication as a Comparison	**Lesson 6:** Understand Multiplication as a Comparison **Session 3: Refine** - Ideas about Multiplication as a Comparison **Objective:** Students will be able to interpret a multiplication equation as a comparison, using *as many, or as many times as*, to do so. Students will be able to represent verbal statements of multiplicative comparisons as multiplication equations. **Materials:** ● Student Worktext pages 117-118 ● Teacher's Guide Volume 1 pages 117-118 ● Discourse Cards ● Hands-On Activity (for each pair: 52 counters) ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Lesson 6 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Apply It (35 minutes) 3) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 6 Quiz or Digital Comprehension Check	**Lesson 7:** Multiplication and Division in Word Problems **Session 1:** Explore - Multiplication and Division in Word Problems **Objective:** Students will be able to multiply or divide to solve word problems involving multiplicative comparison, for example, by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **Materials:** ● Student Worktext pages 121-122 ● Teacher's Guide Volume 1 pages 123-124 ● Discourse Cards ● Hands-On Activity (for each pair: 24 counters OR Activity Sheet: 1-Centimeter Grid Paper) ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 123-124 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 123-124
Day 7 **Lesson 7:** Multiplication and	**Day 8** **Lesson 7:** Multiplication and	**Day 9** **Lesson 7:** Multiplication and	**Day 10** **Lesson 8:** Multiples and	**Day 11** **Lesson 8:** Multiples and

Division in Word Problems	Division in Word Problems	Division in Word Problems	Factors	Factors
Session 2: Develop - Multiplication Word Problems **Objective:** Students will be able to multiply or divide to solve word problems involving multiplicative comparison, for example, by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **Materials:** ● Student Worktext pages 125-128 ● Teacher's Guide Volume 1 pages 125-128 ● Discourse Cards ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 129-130 ● Fluency Extra Practice: Multiplication in Word Problems (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 129-130 **Fluency Extra Practice:** Multiplication in Word Problems	**Session 3:** Develop - Division in Word Problems **Objective:** Students will be able to multiply or divide to solve word problems involving multiplicative comparison, for example, by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **Materials:** ● Student Worktext pages 131-134 ● Teacher's Guide Volume 1 pages 131-134 ● Discourse Cards ● Hands-On Activity (for each pair: 20 counters) ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 135-136 ● Fluency Extra Practice: Division in Word Problems (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 135-136 **Fluency Extra Practice:** Division in Word Problems	**Session 4:** Refine - Multiplication and Division in Word Problems **Objective:** Students will be able to multiply or divide to solve word problems involving multiplicative comparison, for example, by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **Materials:** ● Student Worktext pages 137-140 ● Teacher's Guide Volume 1 pages 137-140 ● Discourse Cards ● Hands-On Activity (for each pair: 30 counters) ● Digital Math Tool: Perimeter and Area ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Lesson 7 Quiz or Digital Comprehension Check (need to print or copy) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Example & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 7 Quiz or Digital Comprehension Check	**Session 1:** Explore - Multiples and Factors **Objective:** Students will be able to find all factor pairs for a whole number in the range 1-100. Students will be able to recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Students will be able to determine whether a given whole number in the range 1-100 is prime or composite. **Materials:** ● Student Worktext pages 143-144 ● Teacher's Guide Volume 1 pages 143-144 ● Discourse Cards ● Hands-On Activity (per pair: 50 counters, 5 index cards) ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 145-146 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 145-146	**Session 2:** Develop - Multiples **Objective:** Students will be able to find all factor pairs for a whole number in the range 1-100. Students will be able to recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Students will be able to determine whether a given whole number in the range 1-100 is prime or composite. **Materials:** ● Student Worktext pages 147-150 ● Teacher's Guide Volume 1 pages 147-150 ● Discourse Cards ● Visual Model (for each student: 4 copies of Activity Sheet *Hundred Chart*) ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 151-152 ● Fluency Extra Practice: Multiples (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Picture It & Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 151-152 **Fluency Extra Practice:** Multiples
Day 12 **Lesson 8:** Multiples and Factors **Session 3:** Develop - Factors and Factor Pairs **Objective:** Students will be able to find all factor pairs for a whole number in the range 1-100. Students will be able to recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Students will be able to determine whether a given whole number in the range 1-100 is prime or composite. **Materials:** ● Student Worktext pages 153-156 ● Teacher's Guide Volume	**Day 13** **Lesson 8:** Multiples and Factors **Session 4:** Develop - Prime and Composite Numbers **Objective:** Students will be able to find all factor pairs for a whole number in the range 1-100. Students will be able to recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Students will be able to determine whether a given whole number in the range 1-100 is prime or composite. **Materials:** ● Student Worktext pages 159-162 ● Teacher's Guide Volume	**Day 14** **Lesson 8:** Multiples and Factors **Session 5:** Refine - Multiples and Factors **Objective:** Students will be able to find all factor pairs for a whole number in the range 1-100. Students will be able to recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Students will be able to determine whether a given whole number in the range 1-100 is prime or composite. **Materials:** ● Student Worktext pages 165-168 ● Teacher's Guide Volume	**Day 15** **Lesson:** Mid-Unit 2 Assessment **Materials:** ● Teacher's Guide Volume 1 pages 168c-168f ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Unit 2: Mid-Unit Assessment **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.	**Day 16** **Lesson 9:** Number and Shape Patterns **Session 1:** Explore - Number and Shape Patterns **Objective:** Students will be able to generate a number or shape pattern that follows a given rule. Students will be able to identify apparent features of the pattern that were not obvious in the rule itself. **Materials:** ● Student Worktext pages 171-172 ● Teacher's Guide Volume 1 pages 171-172 ● Discourse Cards ● Additional Practice: Students Worktext pages 173-174

1 pages 153-156 • Discourse Cards • Visual Model (for each pair :Activity Sheet *1-Centimeter Grid Paper*) • Digital Math Tool: Multiplication Models • Digital Math Tool: Number Line • Additional Practice: Student Worktext pages 157-158 • Fluency Extra Practice: Factors & Factor Pairs (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (5 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 157-158 **Fluency Extra Practice:** Factors & Factor Pairs	1 pages 159-162 • Discourse Cards • Visual Model (for each student: Activity Sheet 1-Centimeter Grid Paper) • Digital Math Tool: Multiplication Models • Digital Math Tool: Number Line • Additional Practice: Student Worktext pages 163-164 • Fluency Extra Practice: Prime and Composite Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Picture It & Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 163-164 **Fluency Extra Practice:** Prime and Composite Numbers	1 pages 165-168b • Discourse Cards • Hands-On Activity (per pair: crayons, Activity Sheet *Hundred Chart*) • Digital Math Tool: Multiplication Models • Digital Math Tool: Number Line • Lesson 8 Quiz or Digital Comprehension Check (need to print or copy) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Examples & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 8 Quiz or Digital Comprehension Check		**Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 173-174
Day 17 **Lesson 9:** Number and Shape Patterns **Session 2:** Develop - Number Patterns **Objective:** Students will be able to generate a number or shape pattern that follows a given rule. Students will be able to identify apparent features of the pattern that were not obvious in the rule itself. **Materials:** • Student Worktext pages 175-178 • Teacher's Guide Volume 1 pages 175-178 • Discourse Cards • Additional Practice: Student Worktext 179-180 • Fluency Extra Practice: Number Patterns (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Picture It & Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 179-180 **Fluency Extra Practice:** Number Patterns	**Day 18** **Lesson 9:** Number and Shape Patterns **Session 3:** Develop - Shape Patterns **Objective:** Students will be able to generate a number or shape pattern that follows a given rule. Students will be able to identify apparent features of the pattern that were not obvious in the rule itself. **Materials:** • Student Worktext pages 181-184 • Teacher's Guide Volume 1 pages 181-184 • Discourse Cards • Hands-On Activity (for each pair: 36 pattern blocks - 6 of each: hexagon, square, triangle, trapezoid, parallelogram, rhombus and 6 copies of Activity Sheet *Pattern Blocks)* • Additional Practice: Students Worktext pages 185-186 • Fluency Extra Practice: Shape Patterns (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Picture It & Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes)	**Day 19** **Lesson 9:** Number and Shape Patterns **Session 4:** Refine - Number and Shape Patterns **Objective:** Students will be able to generate a number or shape pattern that follows a given rule. Students will be able to identify apparent features of the pattern that were not obvious in the rule itself. **Materials:** • Student Worktext pages 187-190 • Teacher's Guide Volume 1 pages 187-190b • Discourse Cards • Hands-On Activity (for each pair: 80 unit tiles) • Lesson 9 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Examples & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 9 Quiz or Digital Comprehension Check	**Day 20** **Lesson 10:** Model and Solve Multi-Step Problems **Session 1:** Explore - Modeling and Solving Multi-Step Problems **Objective:** Students will be able to solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. **Materials:** • Student Worktext pages 193-194 • Teacher's Guide Volume 1 pages 193-194 • Discourse Cards • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Digital Math Tool: Number Line • Hands-On Activity (for each students: play money - 17 $1 bills) • Additional Practice: Student Worktext pages 195-196 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Connect It (15 minutes) 5) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 195-196	**Day 21** **Lesson 10:** Model and Solve Multi-Step Problems **Session 2:** Develop - Modeling Multi-Step Problems **Objective:** Students will be able to solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. **Materials:** • Student Worktext pages 197-200 • Teacher's Guide Volume 1 pages 197-200 • Discourse Cards • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Digital Math Tool: Number Line • Hands-On Activity (for each pair: play money - 10 $1 bills) • Additional Practice: Student Worktext pages 201-202 • Fluency Extra Practice: Modeling Multi-Step Problems (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5

	Additional Practice: Student Worktext pages 185-186 **Fluency Extra Practice:** Shape Patterns			minutes) **Additional Practice**: Student Worktext pages 201-202 **Fluency Extra Practice:** Modeling Multi-Step Problems
Day 22 **Lesson 10:** Model and Solve Multi-Step Problems **Session 3:** Develop - Solving Multi-Step Problems **Objective:** Students will be able to solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. **Materials:** ● Student Worktext pages 203-206 ● Teacher's Guide Volume 1 pages 203-206 ● Discourse Cards ● Digital Math Tools: Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Hands-On Activity (for each pair: 6 cups and 51 counters) ● Additional Practice: Student Worktext pages 207-208 ● Fluency Extra Practice: Solving Multi-Step Word Problems (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Try It (10 minutes) 3) Discuss It (10 minutes) 4) Model It & Solve It (5 minutes) 5) Connect It (10 minutes) 6) Close: Exit Ticket (5 minutes) **Additional Practice**: Student Worktext pages 207-208 **Fluency Extra Practice:** Solving Multi-Step Word Problems	**Day 23** **Lesson 10:** Model and Solve Multi-Step Problems **Session 4:** Refine - Modeling and Solving Multi-Step Problems **Objective:** Students will be able to solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. **Materials:** ● Student Worktext pages 209-212 ● Teacher's Guide Volume 1 pages 209-212 ● Discourse Cards ● Digital Math Tools: Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Hands-On Activity (for each student: scissors, Activity Sheet 1-Centimeter Grid Paper) ● Lesson 10 Quiz (need to print or copy) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 minutes) 2) Example & Problems 1-3 (15 minutes) 3) Practice & Small Group Differentiation (20 minutes) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 10 Quiz or Digital Comprehension Check After the quiz, have students complete the **Self-Reflection** (page 213 in their Worktext).	**Day 24** **Lesson:** Math in Action **Session 1:** Solve Multiplication Problems **Objective:** Students will be able to use place value understanding and properties of operations to perform multi-digit arithmetic. Students will be able to use the four operations with whole numbers to solve problems. Students will gain familiarity with factors and multiples. **Materials:** ● Student Worktext pages 214-219 ● Teacher's Guide Volume 1 pages 214a-219 ● Discourse Cards ● For *Pine Cones & Needles*: each students needs a copy of Solution Sheet 2, an assortment of small objects, centimeter rulers, paper, scissors ● For *Numbers in Nature*: each students needs a copy of Solution Sheet 1 ● Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line **Activities:** As outlined in the Teacher Guide Volume 1: 1) Study an Example Problem and Solution: *Pine Cones and Needles* - Example Problem and Solution (15 minutes) 2) Try Another Approach: *Pine Cones and Needles* - Plan It (5 minutes) - Solve It (10 minutes) - Reflect (5 minutes) 3) Discuss Models and Strategies: *Numbers in Nature* - Plan It and Solve It (10 minutes) - Reflect (5 minutes)	**Day 25** **Lesson:** Math in Action **Session 2:** Solve Multiplication Problems **Objective:** Students will be able to use place value understanding and properties of operations to perform multi-digit arithmetic. Students will be able to use the four operations with whole numbers to solve problems. Students will gain familiarity with factors and multiples. **Materials:** ● Student Worktext pages 220-221 ● Teacher's Guide Volume 1 pages 214b, 220-221 ● Discourse Cards ● Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line **Activities:** As outlined in the Teacher Guide Volume 1: 1) Persevere On Your Own: *G.O.'s Planting Project* - Solve It (20 minutes) - Reflect (5 minutes) 2) Persevere On Your Own: *Plant Sale* - Solve It (20 minutes) - Reflect (5 minutes)	**Day 26** **Lesson:** Unit Review **Materials:** ● Student Worktext pages ● Teacher's Guide Volume 1 pages ● Discourse Cards ● Unit Game: Factor Finder (for each pair: Recording Sheet, Game Board, 2 copies of Digit Cards (1-9), 40 counters - 20 each in 2 different colors) ● Literacy Connections: The Model T and Literacy Connection "Model T" Problems: Understand Multiplication as a Comparison (answer key online) ● Vocabulary Cards to Review Unit Vocabulary (Student Worktext & Teacher's Guide pages 225-226) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Review. 2) Have students work in pairs or small groups on the Performance Task. 3) Explain the Factor Finder game and give students time to play. Optional: Social Studies Literacy Connections: The Model T, Activity Sheet and Literacy Connection "Model T" Problems: Understand Multiplication as a Comparison Optional: Vocabulary Cards to Review Unit Vocabulary
Day 27 **Lesson:** Unit 2 Assessment **Materials:** ● Teacher's Guide Volume 1 pages 224b-224e ● Unit 2 Assessment **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.				

Differentiate Instruction, depending on individual student needs (students with an IEP, 504, or Intervention Plan; ELL Students; Students At Risk; Gifted Students) **by:**

Presentation Accommodations
- Use alternate texts at lower readability level
- Work with fewer items per page or line and/or materials in a larger print size
- Use magnification device, screen reader, or Braille / Nemeth Code
- Use audio amplification device (e.g., hearing aid(s), auditory trainer, sound-field system (which may require teacher use of microphone)
- Be given a written list of instructions
- Record a lesson, instead of taking notes
- Have another student share class notes with him
- Be given an outline of a lesson
- Be given a copy of teacher's lecture notes
- Be given a study guide to assist in preparing for assessments
- Use visual presentations of verbal material, such as word webs and visual organizers
- Use manipulatives to teach or demonstrate concepts

Response Accommodations
- Use sign language, a communication device, Braille, other technology, or native language other than English
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to type notes or give responses in class

Setting Accommodations
- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he learns best (for example, near the teacher & away from distractions)
- Use special lighting or acoustics
- Take a test in small group setting
- Use sensory tools such as an exercise band that can be looped around a chair's legs (so fidgety kids can kick it and quietly get their energy out)
- Use noise buffers such as headphones, earphones, or earplugs

Timing Accommodations
- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Scheduling Accommodations
- Take more time to complete a project
- Take a test in several timed sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization Skills Accommodations
- Use an alarm to help with time management
- Mark texts with a highlighter

Assignment Modifications
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum Modifications
- Learn different material (such as continuing to work on multiplication while classmates move on to fractions, or moving ahead to an extension concept/skill while classmates continue to work on a core skill)
- Get graded or assessed using a different standard than the one for classmate

Subject Area: Mathematics **Grade Level:** 4	**Bedminster Township School**

Unit #: 3
Multi-Digit Operations and Measurement: Multiplication, Division, Perimeter and Area

Dates: January - February	**Time Frame:** 27 days

Overview

In the "Multiplying Whole Numbers" lessons of this unit, students will begin to explore ways to use place value and partial products to multiply by one- and two-digit numbers. Students will make sense of multiplication using place-value strategies as well as base-ten blocks. Students will begin to naturally see the area model and then begin drawing the model. Students will begin to relate the area model for multiplication to the factors, partial products, and product of the problem.

Additionally, students will use their understanding of relative size of measurement units to convert within a single system of measurements. The multiplicative relationship between units of measure within the same system will be emphasized. Students will solve problems with two different units of measure by converting to a single unit of measurement prior to computing. Students will be given opportunities to explore and think about whether it is easier or more efficient to convert to one unit over the other.

In the "Dividing Whole Numbers" lessons of this unit, students will understand that one way to divide is to make equal groups. When working with larger dividends, students will use base-ten blocks. Another way to divide is to use an area model in which students take out equal-sized groups. Students will have had experience with using this model and should make the connection between multiplication and division. While using area models, students will make connections to what they know about tens to divide larger groups.

In the "Connecting Multiplication and Division to Area and Perimeter" lessons of this unit, students will be introduced to two formulas for finding the perimeter of a rectangle: (2 x length) + (2 x width) and 2 x (length + width). Students will also learn the formula for area (length x width). Students will be given the opportunity to practice determining area and perimeter as well as determining a missing length or width.

Enduring Understandings

- Use what you know about place value to multiply multi-digit numbers.
- Use what you know about place value to help you divide.
- Understand that units of measurement can be divided into small units. Understand how these units relate to one another to help convert measurements from the larger unit to the smaller unit.
- Use formulas to find the area and perimeter of rectangles.

SKILL AND KNOWLEDGE OBJECTIVES

Routine Objectives:
- Use the Try-Discuss-Connect routine to establish best practices during an *i-Ready Classroom Mathematics* lesson. (Lesson 0)

- Have students learn how to make sense of problems, explain their thinking, and discuss strategies used to solve problems. (Lesson 0)
- Help students understand how to appropriately critique and compare the solution strategies. (Lesson 0)
- Establish hand signals such as thumbs-up or thumbs-down for students to signal agreement or disagreement with strategies and student responses, as well as provide the teacher with formative feedback. (Lesson 0)
- Help students develop good use of mathematical language and support sense-making as they learn to ask good questions, clearly describe their thinking to others, and reword and refine mathematical ideas. (Lesson 0)
- Apply math knowledge and modeling techniques to new, similar problems. (Lesson 0)
- Students will be introduced to the Math Practice Standards to use throughout the year. (Lesson 0)

Content Objectives:
- Multiply whole numbers of up to four digits by one-digit whole numbers. (Lesson 11)
- Use arrays, area models, and partial products to multiply. (Lesson 11)
- Use estimation to determine whether answers are reasonable. (Lesson 11 & 12)
- Multiply a two-digit number by a two-digit number. (Lesson 12)
- Use area models and partial products to multiply. (Lesson 12)
- Identify relative sizes of measurements within one system. (Lesson 13)
- Identify the units of measurement within a measurement system. (Lesson 13)
- Convert measurements from a larger unit to a smaller unit within the same system. (Lesson 13)
- Use a conversion table showing equivalent measurements within the same system. (Lesson 13)
- Multiply whole numbers of up to four digits by one-digit whole numbers. (Lesson 13)
- Multiply a two-digit number by a two-digit number. (Lesson 13)
- Divide to up to three-digit dividends by one-digit divisors, with remainders. (Lesson 14)
- Use rectangular arrays and area models to divide. (Lesson 14)
- Use the relationship between multiplication and division to estimate and find a quotient. (Lesson 14)
- Use place-value understanding and properties of operations to divide. (Lesson 14)
- Divide up to four-digit dividends by one-digit divisors, with remainders. (Lesson 15)
- Use area models and partial quotients to divide. (Lesson 15)
- Use the relationship between multiplication and division to estimate and find a quotient. (Lesson 15)
- Use place-value understanding and properties of operations to divide. (Lesson 15)
- Use the formula for perimeter of a rectangle to solve problems. (Lesson 16)
- Use the formula for area of a rectangle to solve problems. (Lesson 16)

Language Routine Objectives:
- three read
- turn and talk
- co-craft questions and problems (optional)
- collect and display
- say it another way
- compare and connect

Language Routine Procedure:
1. Assess prior knowledge of academic vocabulary words.
2. Pronounce the academic vocabulary words.
3. Define the academic vocabulary words.
4. Use the academic vocabulary words.

Language Objectives:
- Read aloud multiplication problems. (Lesson 11 & 12)
- Draw an array of base-ten blocks to divide. (Lesson 11)
- Draw an area model to multiply. (Lesson 11 & 12)
- Write a solution to a multiplication problem using partial products. (Lesson 11 & 12)
- Tell how each part of an array and an area model relates to the factors, partial products and product of a multiplication problem. (Lesson 11 & 12)

- List the units of measurement within a given system in order of size. (Lesson 13)
- Draw diagrams to visually represent the relationship between units of measurement. (Lesson 13)
- Describe the multiplicative relationship between different-sized units verbally or with equations. (Lesson 13)
- Make tables to show equivalent measurements. (Lesson 13)
- Use the term *convert* in discussions about equivalent measurements. (Lesson 13)
- Read aloud division problems. (Lesson 14 & 15)
- Draw an array and an area model to divide. (Lesson 14 & 15)
- Tell how each part of an array or area model relates to the dividend, divisor, quotient, and remainder for a division problem. (Lesson 14 & 15)
- Explain how to use multiplication to check the answer to a division problem. (Lesson 14 & 15)
- Orally define and use the key mathematical terms *quotient, dividend, divisor*, and *remainder* in discussions about division. (Lesson 14 & 15)
- Summarize in writing how to find the perimeter of a rectangle using words or diagrams and equations. (Lesson 16)
- Summarize in writing how to find the area of a rectangle using words or diagrams and equations. (Lesson 16)
- Restate word problems about area or perimeter of rectangles and determine which to find. (Lesson 16)
- Draw a diagram or write an equation to represent and solve a word problem. (Lesson 16)

ASSESSMENTS

Pre-Assessment:
- Prerequisites Report (in *Teacher Digital Experience*)
- Starts (in *Teacher Guide*)
- Renaissance benchmark

Formative Assessment:
- Whole-class and partner discussion
- Whiteboard work
- Close: Exit Ticket (in *Student Worktext)*
- Lesson Quizzes (attached in unit breakdown and also in *Teacher Toolbox*)

Self-Reflection/Self-Assessment:
- Unit Skills Self-Check (in *Student Worktext*)
- Apply It (in *Student Worktext)*
- Reflect Questions (in *Student Worktext)*
- Self Reflection (in *Student Worktext)*
- Math Journal Questions (in *Student Worktext)*
- Unit Review (in *Student Worktext)*

Summative Assessment:
- Performance Task (in *Student Worktext)*
- Mid-Unit Assessment - Form A & Form B (also in *Teacher Toolbox*)
- Unit Assessment - Form A & Form B (also in *Teacher Toolbox*)

RESOURCES

***i-Ready Classroom Mathematics* Grade 4:**
→ PRINT RESOURCES:
- **In-Class Instruction and Practice:**
  - *Teacher's Guide*
    - Lesson Progression
    - ELL Language Expectations
    - Connect to Culture
    - Discussion Prompts and Instructional Support
  - *Student Worktext* (Use the blue pages for in-class instruction and practice)
- **Independent Practice for School or Home**
  - *Teacher's Guide*
    - Additional Practice
    - Cumulative Practice
  - *Student Worktext* (Use the green pages for independent practice)

- - Additional Practice
    - Cumulative Practice
  - *Teacher Toolbox*
    - Fluency and Skills Practice
    - Unit Game
    - Cumulative Practice
- **Assessments and Reports**
  - *Teacher's Guide*
    - Starts
    - Support Whole Group/Partner Discussion
    - Ask/Listen Fors
    - Common Misconceptions
    - Error Alerts
    - Close: Exit Ticket
  - *Student Worktext*
    - Self Checks
    - Apply It
    - Reflect Questions
    - Self Reflection
    - Math Journal Questions
    - Unit Review
  - *Teacher Toolbox*
    - Editable Lesson Quizzes
    - Editable Mid-Unit and Unit Assessments
- **Differentiation**
  - *Before the Unit/Lesson: Prerequisites Report*
    - Prerequisites Report: Resources
  - *During the Lesson: Teacher's Guide*
    - Hands-On Activities or Visual Models
    - Deepen Understanding
    - ELL Differentiated Instruction
    - Refine Sessions
  - *After the Lesson: Teacher Toolbox*
    - Reteach: Tools for Instruction
    - Reinforce: Math Center Activities
    - Extend: Enrichment Activities
- **→ DIGITAL RESOURCES**
  - **In-Class Instruction and Practice:**
    - Interactive Tutorials
    - Digital Math Tools
    - PowerPoint Slides
  - **Independent Practice for School or Home**
    - Digital Math Tools
    - Learning Games
    - Interactive Practice
  - **Assessments and Reports**
    - Diagnostic
    - Lesson, Mid-Unit, and Unit Comprehension Checks
    - Prerequisites Report
    - Comprehension Check Reports
  - **Differentiation**
    - *Interactive Tutorials*
    - *Digital Math Tools*
    - *Learning Games*

STANDARDS

NJ Student Learning Standards (NJSLS) for Mathematics:
- 4.OA.A. Use the four operations with whole numbers to solve problems.

- ○ 4.OA.A.1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
    - ○ 4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
    - ○ 4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- ● 4.MD.A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
    - ○ 4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm. mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), …
    - ○ 4.MD.A.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

Standards for Mathematical Practice (SMP):
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NJ Student Learning Standards (NJSLS) for English Language Arts:
- **RI.4.4.** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- **RI.4.7**. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- **RL.4.7.** Make connections between specific descriptions and directions in a text and a visual or oral representation of the text.
- **SL.4.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.4.1.A.**Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.4.1.B.**Follow agreed-upon rules for discussions and carry out assigned roles.
- **SL.4.1.C.**Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
- **SL.4.1.D.**Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **SL.4.2.** Paraphrase portions of a text read aloud or information presented in diverse media and formats (e.g.,visually, quantitatively, and orally).
- **SL.4.3.** Identify the reasons and evidence a speaker provides to support particular points.

2020 NJ Student Learning Standards (NJSLS) for Social Studies:
- **6.1.2.HistoryCC.1:** Use multiple sources to create a chronological sequence of events that describes how and why your community has changed over time.
- **6.1.2.HistoryCC.2:** Use a timeline of important events to make inferences about the "big picture" of history.

2020 NJ Student Learning Standards (NJSLS) - Standard 9: 21st Century Life and Careers:

Career Ready Practices:
- **CRP2** Apply appropriate academic and technical skills
- **CRP4** Communicate clearly and effectively and with reason
- **CRP8** Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP11** Use technology to enhance productivity.
- **CRP12.** Work productively in teams while using cultural global competence

2020 NJ Core Curriculum Content Standards - Computer Science and Design Thinking
- **8.1.5.DA.1:** Collect, organize, and display data in order to highlight relationships or support a claim.
- **8.1.5.AP.1**: Compare and refine multiple algorithms for the same tasks and determine which is appropriate.
- **8.2.5.ED.2**: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
- **8.2.5.ED.3**: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- **8.2.5.ITH.2:** Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.

SOCIAL AND EMOTIONAL COMPETENCIES - activities/topics [optional]

Self-Awareness and Self-Management:
- Students begin the school year or instructional unit by drawing what being a mathematician "looks and feels like" to them. Students are encouraged to add more affirmative language as they learn more math skills. Similar to a feeling chart with "Today, I feel like…," students would be encouraged to write or say, "As a mathematician, I feel… [satisfied that I solved this problem, curious or confused about that solution, etc.]."
- Lead discussions that encourage students to reflect on barriers they may encounter when completing an assignment (e.g., finding a computer) and that also help them think about ways they can overcome them, including how to approach others for help (e.g., how to politely ask the teacher for help).
- Routinely give students the opportunity to reflect on when they have had success in math or what kinds of problems/puzzles they prefer. Also ask students why they like the types of materials they identified, e.g., "Why do you think you liked this problem, especially?," "Why do you think you like solving those kinds of problems/puzzles?," "Will you share with me the strategy that helped you solve this problem?".
- At the end of each session (daily) or lesson (weekly), have students complete the ***How Does This Math Make Me Feel?*** **Sheet** to learn to become more self-aware about how they feel about the topics they are learning.
- At the end of the unit, have students self-assess progress toward their learning goals and help support a Growth Mindset by reviewing the skills on the **Student Worktext Self Reflection** page. Encourage students to revisit the work they did in each lesson.

Social Awareness:
- During the *Discuss It* portion of the daily lessons, build respect for diversity in the classroom by having students share their different perspectives on situations or solution strategies for the same problem.
- Lead discussions about taking different approaches to problem solutions, identifying feelings and thoughts of others who adopt these strategies.

Relationship Skills:
- Teach lessons on nonverbal classroom signals to encourage listening. For example, the class might use common hand signals to show agreement, to request clarification, or to recognize a different strategy.
- Have students work in pairs during daily lessons. For example, students can play partner games during the Fluency Practice portion of daily lessons to build fluency

Responsible Decision-Making:
- Encourage students to reflect on how they approached mathematics "today," including in journals or pair shares. Ask them to include how their choices could be repeated if successful or improved in order to be more successful.

Interdisciplinary Connections
- Read just right books in the content areas
- Use mentor texts to deliver Social Studies content
- Compare content area ideas and issues to what our characters deal with in out read alouds and mentor texts
- Apply reading skills and strategies to the reading we do in the content areas
- Apply spelling strategies
- Apply grammar skills

- Analyze illustrations in books for details
- Illustrate a passage that was just read to show detail ideas and lessons

21st Century Skills Intergration
- Use venn diagrams and T chart to compare and contrast events
- Use highlighters, notecards, post-its and other tools to keep track of sory events details and ideas.

Unit 3: Multi-Digit Operations and Measurement: Multiplication, Division, Perimeter and Area

"Add and Build Your Vocabulary" lessons are at the beginning of each unit.

- Lesson 11 Vocabulary; partial products, estimate (noun), estimate (verb), factor, factors of a number, multiple, multiplication, multiply, product, reasonable
- Lesson 12 Vocabulary: estimate (verb), factor, factors of a number, multiple, multiplication, multiply, partial products, product, reasonable
- Lesson 13 Vocabulary: convert, customary system, metric system
- Lesson 14 Vocabulary: dividend, divisor, divide, division, estimate (noun), estimate (verb), multiple, quotient, remainder
- Lesson 15 Vocabulary: partial quotients, divide, dividend, division, divisor, quotient, remainder
- Lesson 16 Vocabulary: formula, area, perimeter

DAYS 1 & 2 Pre-Assessment / Active Prior Knowledge	Day 3 Lesson 11: Multiplying by One-Digit Numbers	Day 4 Lesson 11: Multiplying by One-Digit Numbers	Day 5 Lesson 11: Multiplying by One-Digit Numbers	Day 6 Lesson 11: Multiplying by One-Digit Numbers
Materials: ● Unit and Lesson Support PDF ● Yearly Pacing for Prerequisites PDF **Activities:** Students take the Diagnostic Assessment. It takes two days to administer. See i-Ready Classroom Central for information.	**Session 1:** Explore - Multiplying by One-Digit Numbers **Objective:** Students will be able to multiply a whole number of up to four digits by a one-digit whole number, using strategies based on place value and the properties of operations. Students will illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 231-232 ● Teacher's Guide Volume 1 pages 231-232 ● Discourse Cards ● Digital Math Tools: Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 233-234 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 233-234	**Session 2:** Develop - Multiplying a Three-Digit Number by a One-Digit Number **Objective:** Students will be able to multiply a whole number of up to four digits by a one-digit whole number, using strategies based on place value and the properties of operations. Students will illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 235-238 ● Teacher's Guide Volume 1 pages 235-238 ● Discourse Cards ● Hands-On Activity (for each pair: base-ten blocks - 8 hundred flats, 5 tens rods, 12 ones units) ● Digital Math Tools: Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 239-240 ● Fluency Extra Practice: Multiplying a Three-Digit Number by a One-Digit Number (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 239-240 **Fluency Extra Practice:** Multiplying a Three-Digit Number by a One-Digit Number	**Session 3:** Develop - Multiplying a Four-Digit Number by a One-Digit Number **Objective:** Students will be able to multiply a whole number of up to four digits by a one-digit whole number, using strategies based on place value and the properties of operations. Students will illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 241-244 ● Teacher's Guide Volume 1 pages 241-244 ● Discourse Cards ● Digital Math Tools: Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 245-246 ● Fluency Extra Practice: Multiplying a Four-Digit Number by a One-Digit Number (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 245-246 **Fluency Extra Practice:** Multiplying a Four-Digit Number by a One-Digit Number	**Session 4:** Refine - Multiplying by One-Digit Numbers **Objective:** Students will be able to multiply a whole number of up to four digits by a one-digit whole number, using strategies based on place value and the properties of operations. Students will illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 247-250 ● Teacher's Guide Volume 1 pages 247-250b ● Discourse Cards ● Hands-On Activity (for each pair: play money - 25 $1 bills, 25 $10 bills and 25 $100 bills) ● Digital Math Tools: Base-Ten Blocks ● Digital Math Tool: Multiplication Models ● Digital Math Tool: Number Line ● Lesson 11 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 minutes) **Assessment**: Lesson 11 Quiz or Digital Comprehension Check

Day 7 **Lesson 12:** Multiply by Two-Digit Numbers **Session 1:** Explore - Multiplying by Two-Digit Numbers **Objective:** Students will be able to multiply two two-digit numbers, using strategies based on place value and the properties of operations. Students will be able to illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 253-254 ● Teacher's Guide Volume 1 pages 253-254 ● Discourse Cards ● Hands-On Activity (for each pair: base ten blocks - 1 hundreds flat, 12 tens rods, 55 ones units) ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 255-256 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice:** Student Worktext pages 255-256	**Day 8** **Lesson 12:** Multiply by Two-Digit Numbers **Session 2:** Develop - Multiplying by Two-Digit Numbers **Objective:** Students will be able to multiply two two-digit numbers, using strategies based on place value and the properties of operations. Students will be able to illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 257-260 ● Teacher's Guide Volume 1 pages 257-260 ● Discourse Cards ● Hands-On Activity (for each pair: base-ten blocks - 2 hundreds flats, 14 tens rods, 19 ones units) ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 261-262 ● Fluency Extra Practice: Multiplying by Two-Digit Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice:** Student Worktext pages 261-262 **Fluency Extra Practice:** Multiplying by Two-Digit Numbers	**Day 9** **Lesson 12:** Multiply by Two-Digit Numbers **Session 3:** Refine - Multiplying by Two-Digit Numbers **Objective:** Students will be able to multiply two two-digit numbers, using strategies based on place value and the properties of operations. Students will be able to illustrate and explain the calculations by using equations, rectangular arrays and/or area models. **Materials:** ● Student Worktext pages 263-266 ● Teacher's Guide Volume 1 pages 263-266b ● Discourse Cards ● Hands-On Activity (for each pair: play money - 91 $1 bills, 62 $10 bills, 6 $100 bills) ● Digital Math Tool: Multiplication Models ● Lesson 12 Quiz or Digital Comprehension Check (needs to be printed or copied) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment:** Lesson 12 Quiz or Digital Comprehension Check	**Day 10** **Lesson 13:** Use Multiplication to Convert Measurements **Session 1:** Explore - Using Multiplication to Convert Measurement **Objective:** Students will know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; i, ml; hr, min, sec. Within a single system of measurement, students will be able to express measurement in a larger unit in terms of a smaller unit and record measurement equivalents in a two-column table. **Materials:** ● Student Worktext pages 269-270 ● Teacher's Guide Volume 1 pages 269-270 ● Discourse Cards ● Hands-On Activity (clock with second hand) ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 271-271 ● Interactive Tutorial - Prerequisite Review: Multiply Two-Digit Numbers by Two-Digit Numbers **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice:** Student Worktext pages 271-272	**Day 11** **Lesson 13:** Use Multiplication to Convert Measurements **Session 2:** Develop - Converting Units of Weight and Mass **Objective:** Students will know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; i, ml; hr, min, sec. Within a single system of measurement, students will be able to express measurement in a larger unit in terms of a smaller unit and record measurement equivalents in a two-column table. **Materials:** ● Student Worktext pages 273-276 ● Teacher's Guide Volume 1 pages 273-276 ● Discourse Cards ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 277-278 ● Fluency Extra Practice: Converting Units of Weight and Mass (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice:** Student Worktext pages 277-278 **Fluency Extra Practice:** Converting Units of Weight and Mass
Day 12 **Lesson 13:** Use Multiplication to Convert Measurements **Session 3:** Develop - Converting Units of Liquid Volume **Objective:** Students will know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; i, ml; hr, min, sec. Within a single system of measurement, students will be able to express measurement in a larger unit in terms of a smaller unit and record measurement equivalents in a two-column table. **Materials:** ● Student Worktext pages 279-282 ● Teacher's Guide Volume 1 pages 279-282	**Day 13** **Lesson 13:** Use Multiplication to Convert Measurements **Session 4:** Refine - Using Multiplication to Convert Measurements **Objective:** Students will know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; i, ml; hr, min, sec. Within a single system of measurement, students will be able to express measurement in a larger unit in terms of a smaller unit and record measurement equivalents in a two-column table. **Materials:** ● Student Worktext pages 285-288 ● Teacher's Guide Volume 1 pages 285-288b	**Day 14** **Lesson:** Mid-Unit 3 Assessment **Materials:** ● Teacher's Guide Volume 1 pages 288c-288f ● Digital Math Tool: Multiplication Models ● Unit 3: Mid-Unit Assessment **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.	**Day 15** **Lesson 14:** Divide Three-Digit Numbers **Session 1:** Explore - Dividing Three-Digit Numbers **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place-value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** ● Student Worktext pages 291-292 ● Teacher's Guide Volume	**Day 16** **Lesson 14:** Divide Three-Digit Numbers **Session 2:** Develop - Dividing with Arrays and Area Models **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place-value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** ● Student Worktext pages 295-298 ● Teacher's Guide Volume

• Discourse Cards • Digital Math Tool: Multiplication Models • Additional Practice: Student Worktext pages 283-284 • Fluency Extra Practice: Converting Units of Liquid Volume (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 283-284 **Fluency Extra Practice:** Converting Units of Liquid Volume	• Discourse Cards • Hands-On Activity (for each student: 10 same-size paper clips, 7 same-size pencils) • Digital Math Tool: Multiplication Models • Lesson 13 Quiz or Digital Comprehension Check (need to be printed or copied) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 13 Quiz or Digital Comprehension Check		• 1 pages 291-292 • Discourse Cards • Hands-On Activity (for each pair: base-ten blocks - 6 tens rods, 10 ones units) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Additional Practice: Student Worktext pages 293-294 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It 910 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 293-294	• 1 pages 295-298 • Discourse Cards • Visual Model (for each pair: Activity Sheet 1-Centimeter Grid Paper) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Additional Practice: Student Worktext pages 299-300 • Fluency Extra Practice: Dividing with Arrays and Area Models (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 299-300 **Fluency Extra Practice:** Dividing with Arrays and Area Models
Day 17 **Lesson 14:** Divide Three-Digit Numbers **Session 3:** Develop - Dividing with Estimation and Area Models **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place-value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** • Student Worktext pages 301-304 • Teacher's Guide Volume 1 pages 301-304 • Discourse Cards • Hands-On Activity (for each pair: 50 counters, number cube, 6 paper plates, 7 index cards labeled 17, 24, 30, 39, 41, 48 and 50) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Additional Practice: Student Worktext pages 305-306 • Fluency Extra Practice: Dividing with Estimation and Area Models (can be printed or filled in online) **Activities:**	**Day 18** **Lesson 14:** Divide Three-Digit Numbers **Session 4:** Refine - Dividing Three-Digit Numbers **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place-value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** • Student Worktext pages 307-310 • Teacher's Guide Volume 1 pages 307-310b • Discourse Cards • Hands-On Activity (for each pair: 115 counters) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Lesson 14 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min)	**Day 19** **Lesson 15:** Divide Four-Digit Numbers **Session 1:** Explore - Dividing Four-Digit Numbers **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** • Student Worktext pages 313-314 • Teacher's Guide Volume 1 pages 313-314 • Discourse Cards • Hands-On Activity (for each pair: base-ten blocks - 15 hundreds flats and 30 tens rods, 6 index cards) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Additional Practice: Student Worktext pages 315-316 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min)	**Day 20** **Lesson 15:** Divide Four-Digit Numbers **Session 2:** Develop - Dividing Four-Digit Numbers **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** • Student Worktext pages 317-320 • Teacher's Guide Volume 1 pages 317-320 • Discourse Cards • Visual Model (for each student: 3 different colored pencils or markers) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Additional Practice: Student Worktext pages 321-322 • Fluency Extra Practice: Dividing Four-Digit Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min)	**Day 21** **Lesson 15:** Divide Four-Digit Numbers **Session 3:** Refine - Dividing Four-Digit Numbers **Objective:** Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **Materials:** • Student Worktext pages 323-326 • Teacher's Guide Volume 1 pages 323-326b • Discourse Cards • Hands-On Activity (for each pair: number cube) • Digital Math Tools: Base-Ten Blocks • Digital Math Tool: Multiplication Models • Lesson 15 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min)

As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 305-306 **Fluency Extra Practice:** Dividing with Estimation and Area Models	**Assessment**: Lesson 14 Quiz or Digital Comprehension Check	**Additional Practice**: Student Worktext pages 315-316	3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 321-322 **Fluency Extra Practice:** Dividing Four-Digit Numbers	**Assessment**: Lesson 15 Quiz or Digital Comprehension Check
Day 22 **Lesson 16:** Find Perimeter and Area **Session 1:**Explore **-** Finding Perimeter **Objective:** Students will be able to apply the perimeter and area formulas for rectangles in real world and mathematical problems. **Materials:** ● Student Worktext pages 329-330 ● Teacher's Guide Volume 1 pages 329-330 ● Discourse Cards ● Visual Model (for each student: Activity Sheet: *1-Centimeter Grid Paper*) ● Digital Math Tools: Perimeter and Area Tool ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 331-332 **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 331-332	**Day 23** **Lesson 16:** Find Perimeter and Area **Session 2:** Develop - Finding Perimeter **Objective:** Students will be able to apply the perimeter and area formulas for rectangles in real world and mathematical problems. **Materials:** ● Student Worktext pages 333-336 ● Teacher's Guide Volume 1 pages 333-336 ● Discourse Cards ● Hands-On (for each student: a ruler) ● Digital Math Tools: Perimeter and Area Tool ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 337-338 ● Fluency Extra Practice: Solving Perimeter Problems (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 337-338 **Fluency Extra Practice:** Solving Perimeter Problems	**Day 24** **Lesson 16:** Find Perimeter and Area **Session 3:** Develop - Finding Area **Objective:** Students will be able to apply the perimeter and area formulas for rectangles in real world and mathematical problems. **Materials:** ● Student Worktext pages 339-342 ● Teacher's Guide Volume 1 pages 339-342 ● Discourse Cards ● Hands-On (for each pair: 2 copies of Activity Sheet: *Digit Cards* and Activity Sheet: *1-Centimeter Grid Paper*) ● Digital Math Tools: Perimeter and Area Tool ● Digital Math Tool: Multiplication Models ● Additional Practice: Student Worktext pages 343-344 ● Fluency Extra Practice: Solving Area Problems (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 343-344 **Fluency Extra Practice:** Solving Area Problems	**Day 25** **Lesson 16:** Find Perimeter and Area **Session 4:** Refine - Finding Perimeter and Area **Objective:** Students will be able to apply the perimeter and area formulas for rectangles in real world and mathematical problems. **Materials:** ● Student Worktext pages 345-348 ● Teacher's Guide Volume 1 pages 345-348b ● Discourse Cards ● Hands-On (for each pair: geoboard, rubber bands) ● Digital Math Tools: Perimeter and Area Tool ● Digital Math Tool: Multiplication Models ● Lesson 16 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 1: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiations (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 16 Quiz or Digital Comprehension Check After the quiz, have students complete the **Self-Reflection** (page 349 in their Worktext).	**Day 26** **Lesson:** Math in Action **Session 1:** Multiply and Divide Multi-Digit Numbers **Objective:** Students will be able to solve problems involving measurement and conversions of measurements from a larger unit to a smaller unit. Students will be able to use place value understanding and properties of operations to perform multi-digit arithmetic. Students will be able to use the four operations with whole numbers to solve problems. **Materials:** ● Student Worktext pages 350-355 ● Teacher's Guide Volume 1 pages 350a-355 ● Discourse Cards ● For *Bird Cages*: each students needs a copy of Solution Sheet 1, grid paper, scissor ● For *Recycle It*: each students needs a copy of Solution Sheet 1 ● Digital Math Tools: Perimeter and Area Tool ● Digital Math Tool: Multiplication Models **Activities:** As outlined in the Teacher Guide Volume 1: 1) Study an Example Problem and Solution: *Birdcages* - Example Problem and Solution (15 minutes) 2) Try Another Approach: *Birdcages* - Plan It (5 minutes) - Solve It (10 minutes) - Reflect (5 minutes) 3) Discuss Models and Strategies: *Recycle It* - Plan It and Solve It (10 minutes) - Reflect (5 minutes)
Day 25 **Lesson:** Math in Action **Session 2:** Multiply and Divide Multi-Digit Numbers **Objective:** Students will be able to solve problems involving measurement and conversions of measurements from a larger unit to a smaller	**Day 26** **Lesson:** Unit Review **Materials:** ● Student Worktext pages 358-360 ● Teacher's Guide Volume 1 pages 358-360 ● Discourse Cards ● Unit Game: Multiplication Products	**Day 27** **Lesson:** Unit 3 Assessment **Materials:** ● Teacher's Guide Volume 1 pages 360b-360e ● Unit 3 Assessment **Activities:** As outlined in the Teacher Guide Volume 1:		

unit. Students will be able to use place value understanding and properties of operations to perform multi-digit arithmetic. Students will be able to use the four operations with whole numbers to solve problems. **Materials:** ● Student Worktext pages 356-357 ● Teacher's Guide Volume 1 pages 356-357 ● Discourse Cards ● Digital Math Tool: Multiplication Models **Activities:** As outlined in the Teacher Guide Volume 1: 1) Persevere On Your Own: *Rainwater Recycling* - Solve It (20 minutes) - Reflect (5 minutes) 2) Persevere On Your Own: *Recycled Robots* - Solve It (20 minutes) - Reflect (5 minutes)	(for each pair: recording sheet, Digit Cards 0-9) ● Literacy Connections: *The Bicycle's First Century* and Literacy Connection "The Bicycle's First Century" Probems: *Finding the Perimeter* (answer key online) ● Vocabulary Cards to Review Unit Vocabulary (Student Worktext & Teacher's Guide pages 361-362) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Review. 2) Have students work in pairs or small groups on the Performance Task. 3) Explain the Factor Finder game and give students time to play. Optional: Literacy Connections: *The Bicycle's First Century* and Literacy Connection "The Bicycle's First Century" Probems: *Finding the Perimeter* Optional: Vocabulary Cards to Review Unit Vocabulary	1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.

Differentiate Instruction, depending on individual student needs (students with an IEP, 504, or Intervention Plan; ELL Students; Students At Risk; Gifted Students) **by:**

Presentation Accommodations
- Use alternate texts at lower readability level
- Work with fewer items per page or line and/or materials in a larger print size
- Use magnification device, screen reader, or Braille / Nemeth Code
- Use audio amplification device (e.g., hearing aid(s), auditory trainer, sound-field system (which may require teacher use of microphone)
- Be given a written list of instructions
- Record a lesson, instead of taking notes
- Have another student share class notes with him
- Be given an outline of a lesson
- Be given a copy of teacher's lecture notes
- Be given a study guide to assist in preparing for assessments
- Use visual presentations of verbal material, such as word webs and visual organizers
- Use manipulatives to teach or demonstrate concepts

Response Accommodations
- Use sign language, a communication device, Braille, other technology, or native language other than English
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to type notes or give responses in class

Setting Accommodations
- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he learns best (for example, near the teacher & away from distractions)
- Use special lighting or acoustics
- Take a test in small group setting
- Use sensory tools such as an exercise band that can be looped around a chair's legs (so fidgety kids can kick it and quietly get their energy out)
- Use noise buffers such as headphones, earphones, or earplugs

Timing Accommodations

- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Scheduling Accommodations
- Take more time to complete a project
- Take a test in several timed sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization Skills Accommodations
- Use an alarm to help with time management
- Mark texts with a highlighter

Assignment Modifications
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum Modifications
- Learn different material (such as continuing to work on multiplication while classmates move on to fractions, or moving ahead to an extension concept/skill while classmates continue to work on a core skill)
- Get graded or assessed using a different standard than the one for classmate

Subject Area: Mathematics Grade Level: 4	Bedminster Township School
Unit #: 4 **Fractions, Decimals, and Measurement: Addition, Subtraction and Multiplication**	
Dates: March - May	**Time Frame:** 57 days

Overview

In the "Understanding Equivalent Fractions" lessons of this unit, students will visually explore equivalent fractions through the use of linear area models. Some representations include number lines, bar models, fraction tiles, and area models. Students will be encouraged to use a variety of models to build flexibility in thinking about fractions. Students may come to realize that in different contexts or with particular fractions, one model may turn out to be more useful than another.

In the "Comparing Fractions" lesson of this unit, students will begin comparing fractions by using benchmarks fractions and by identifying the distance to one or to a particular benchmark.

In the "Fractions Addition and Subtraction" lessons of this unit, students will add and subtract fractions with like denominators only. Students will understand that sums and differences can be less than or greater than 1 whole. Students will decompose fractions to add and subtract. Additionally, students will decompose mixed numbers into whole numbers and fractions to add the mixed numbers. Students will be provided with a variety of visual models for mixed numbers.

In the "Understanding Fraction Multiplication" lessons of this unit, students will connect their initial understanding of multiplying fractions back to repeated addition with like denominators. Students will be

provided with visual models to allow them to transpose and move the parts of a whole around.

In the "Relate Decimals and Fractions" lessons of this unit, students will use decimal notation for fractions with denominators of 10 or 100. They will also be provided with visual models and representations to help them make the connection between fractions and decimals. When comparing decimals, students will be given visual representations or manipulatives to help them begin to understand decimal comparison. These representations model the fact that comparisons are only valid when the two decimals refer to the same whole.

In the "Connections Fractions Addition and Subtraction to Time, Money, Length, Liquid Volume, Mass and Weight" lessons of this unit, students will be given word problems involving different types of measure to reinforce understanding of fractions and decimal addition, subtraction and multiplication. Also, students may represent fractional quantities of distance, intervals of time, money, liquid volume, mass, and weight using linear models. The understanding of each problem and real-world implications of what is being calculated with fractions will be emphasized.

Enduring Understandings

- Understanding that fractions are numbers that work like whole numbers.
- Use what you know about whole numbers to show, build, and take apart fractions to solve problems.
- Use what you know about fractions to write and compare decimals.

SKILL AND KNOWLEDGE OBJECTIVES

Routine Objectives:
- Use the Try-Discuss-Connect routine to establish best practices during an *i-Ready Classroom Mathematics* lesson. (Lesson 0)
- Have students learn how to make sense of problems, explain their thinking, and discuss strategies used to solve problems. (Lesson 0)
- Help students understand how to appropriately critique and compare the solution strategies. (Lesson 0)
- Establish hand signals such as thumbs-up or thumbs-down for students to signal agreement or disagreement with strategies and student responses, as well as provide the teacher with formative feedback. (Lesson 0)
- Help students develop good use of mathematical language and support sense-making as they learn to ask good questions, clearly describe their thinking to others, and reword and refine mathematical ideas. (Lesson 0)
- Apply math knowledge and modeling techniques to new, similar problems. (Lesson 0)
- Students will be introduced to the Math Practice Standards to use throughout the year. (Lesson 0)

Content Objectives:
- Understand the value of a fraction. (Lesson 17)
- Understand how a fraction model represents a fraction. (Lesson 17)
- Use models to demonstrate that two fractions are equivalent. (Lesson 17)
- Represent equivalent fractions using models. (Lesson 17)
- Multiply and divide to find equivalent fractions. (Lesson 17)
- Use symbols (>,<, =) to compare fractions with different numerators and different denominators. (Lesson 18)
- Recognize that fractions with different denominators and the same numerators represent different values. (Lesson 18)
- Use common denominators and benchmark fractions to compare fractions with different denominators. (Lesson 18)
- Recognize that to compare two fractions both must refer to the same whole. (Lesson 18)
- Understand fraction addition as joining parts. (Lesson 19)

- Understand fraction subtraction as separating parts. (Lesson 19)
- Extend understanding of addition and subtraction of whole numbers to addition and subtraction of fractions. (Lesson 19)
- Use fraction models to add and subtract fractions with like denominators. (Lesson 19)
- Add fractions with like denominators. (Lesson 20)
- Subtract fractions with like denominators. (Lesson 20)
- Decompose fractions as a sum of fractions with the same denominators in more than one way. (Lesson 20)
- Use fraction models, number lines, and equations to represent word problems. (Lesson 20)
- Decompose fractions greater than 1 into a fraction equivalent to a whole number and a fraction less than 1. (Lesson 21)
- Write a mixed number as a fraction and write a fraction greater than 1 as a mixed number. (Lesson 21)
- Add and subtract mixed numbers with like denominators. (Lesson 21)
- Write and solve an equation with mixed numbers with like denominators in order to solve a word problem. (Lesson 21)
- Make a line plot that displays data in fractional units. (Lesson 22)
- Solve addition word problems by using a line plot. (Lesson 22)
- Solve subtraction word problems by using a line plot. (Lesson 22)
- Multiply a unit fraction (numerator of 1) by a whole number. (Lesson 23)
- Multiply a fraction with a numerator greater than 1 by a whole number. (Lesson 23)
- Solve word problems that involve multiplying a fraction by a whole number. (Lesson 24)
- Write a fraction that has a denominator of 10 as an equivalent fraction with a denominator of 100. (Lesson 25)
- Explain the relationship between tenths and hundredths. (Lesson 25)
- Add two fractions with denominators of 10 and 100. (Lesson 25)
- Write fractions with denominators of 10 or 100 as decimals. (Lesson 26)
- Write decimals as fractions with denominators of 10 or 100. (Lesson 26)
- Compare two decimals to hundredths, using the <, >, and = symbols. (Lesson 27)
- Solve word problems involving comparisons of decimals in tenths and in hundredths. (Lesson 27)
- Solve word problems involving money and time. (Lesson 28)
- Convert larger units of measure to smaller units in order to solve word problems about times. (Lesson 28)
- Convert amounts of money in bills and coins to solve word problems about money. (Lesson 28)
- Write and solve equations in order to solve word problems involving time and money. (Lesson 28)
- Solve word problems involving length, liquid volume, mass and weight. (Lesson 29)
- Convert larger units of measure to small units in order to solve measurement word problems. (Lesson 29)
- Write and solve equations in order to solve measurement word problems. (Lesson 29)

Language Routine Objectives:
- three read
- turn and talk
- co-craft questions and problems (optional)
- collect and display
- say it another way
- compare and connect

Language Routine Procedure:
1. Assess prior knowledge of academic vocabulary words.
2. Pronounce the academic vocabulary words.
3. Define the academic vocabulary words.
4. Use the academic vocabulary words.

Language Objectives:
- Draw different fraction models to represent the value of the fraction. (Lesson 17)
- Demonstrate that two fractions are equivalent using visual models. (Lesson 17)
- Communicate effectively with a partner about equivalent fractions. (Lesson 17)
- Orally define and use the mathematical terms denominator, equivalent fractions, fraction, and numerator when reasoning and arguing about equivalent fractions. (Lesson 17)

- Write fractions comparison statements using the symbols <,>, and =. (Lesson 18)
- Draw area models to compare two fractions. (Lesson 18)
- Orally explain how comparing both a fraction greater than ½ and a fraction less than ½ to ½ can be used to determine which fraction is greater. (Lesson 18)
- Make number line and area models to represent adding or subtracting fractions with like denominators. (Lesson 19)
- Demonstrate fraction addition and subtraction using visual models. (Lesson 19)
- Communicate effectively with a partner about fraction addition and subtraction. (Lesson 19)
- Draw pictures or diagrams to represent word problems involving fraction addition and subtraction. (Lesson 20)
- Use fraction vocabulary, including numerators and denominators, to explain how to add and subtract fractions with like denominators. (Lesson 20)
- Orally define and use the key mathematical terms *add, subtract, equal parts, fraction, unit fraction, numerator, and denominator* when reasoning and constructing arguments about fraction addition, fraction subtraction, and fraction decomposition. (Lesson 20)
- Draw models and write equations to represent ways to decompose a fraction. (Lesson 20)
- Write and solve equations to represent word problems involving fraction addition or subtraction. (Lesson 20 & 21)
- Rewrite mixed numbers as fractions greater than 1 and rewrite fractions greater than 1 as mixed numbers. (Lesson 21)
- Orally define the mathematical term mixed numbers and use it in context in discussions with a partner. (Lesson 21)
- Draw pictures or diagrams to represent word problems involving fraction addition or subtraction. (Lesson 21)
- Draw a line plot to represent listed data. (Lesson 22)
- Analyze data shown on line plots. (Lesson 22)
- Draw diagrams to model multiplying a fraction by a whole number. (Lesson 23)
- Multiply fraction by a whole number using the strategy of repeated addition. (Lesson 23)
- Listen to the artuments of others about the meaning of multiplying a whole number and a fraction and ask questions to clarify. (Lesson 23)
- Restate word problems involving multiplication of a whole number and a fraction. (Lesson 24)
- Draw a diagram and write an equation to represent and solve a word problem involving multiplication of a whole number and a fraction. (Lesson 24)
- State the relationship between tenths and hundredths. (Lesson 25)
- Write a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100. (Lesson 25)
- Draw hundredths grids to represent word problems that involve adding fractions with denominators of 10 and 100. (Lesson 25)
- Record fractions with denominators of 10 or 100 as decimals. (Lesson 26)
- Record decimals as fractions with denominators of 10 or 100. (Lesson 26)
- Orally define the mathematical terms *decimal* and *decimal point* and use them in context in discussions with a partner. (Lesson 26)
- Draw a hundredths grid to represent a decimal. (Lesson 26)
- Write a decimal in a place-value chart. (Lesson 26)
- Read decimals as fractions or mixed numbers, using *and* to read the decimal point. (Lesson 26)
- Locate decimals on a number line. (Lesson 26)
- Compare two decimals to hundredths, using <, >, and = symbols. (Lesson 27)
- Solve word problems involving comparisons of decimals in tenths and in hundredths. (Lesson 27)
- Describe the multiplicative relationship between different-sized units of time and money. (Lesson 28)
- Summarize word problems about time and money and determine which operation(s) to use. (Lesson 28)
- Draw a diagram or write an equation to represent and solve a word problem about time and money. (Lesson 28)
- Describe the multiplicative relationship between different-sized units of length, liquid volume, mass, or weight. (Lesson 29)
- Make a model and write an equation to represent and solve a word problem about length, liquid volume, mass

or weight. (Lesson 29)

ASSESSMENTS

Pre-Assessment:
- Prerequisites Report (in *Teacher Digital Experience*)
- Starts (in *Teacher Guide*)
- Renaissance benchmark

Formative Assessment:
- Whole-class and partner discussion
- Whiteboard work
- Close: Exit Ticket (in *Student Worktext*)
- Lesson Quizzes (attached in unit breakdown and also in *Teacher Toolbox*)

Self-Reflection/Self-Assessment:
- Unit Skills Self-Check (in *Student Worktext*)
- Apply It (in *Student Worktext)*
- Reflect Questions (in *Student Worktext)*
- Self Reflection (in *Student Worktext)*
- Math Journal Questions (in *Student Worktext)*
- Unit Review (in *Student Worktext)*

Summative Assessment:
- Performance Task (in *Student Worktext)*
- Mid-Unit Assessment - Form A & Form B (also in*Teacher Toolbox)*
- Unit Assessment - Form A & Form B (also in *Teacher Toolbox)*

RESOURCES

i-Ready Classroom Mathematics **Grade 4:**
→ PRINT RESOURCES:
- **In-Class Instruction and Practice:**
  - *Teacher's Guide*
    - Lesson Progression
    - ELL Language Expectations
    - Connect to Culture
    - Discussion Prompts and Instructional Support
  - *Student Worktext* (Use the blue pages for in-class instruction and practice)
- **Independent Practice for School or Home**
  - *Teacher's Guide*
    - Additional Practice
    - Cumulative Practice
  - *Student Worktext* (Use the green pages for independent practice)
    - Additional Practice
    - Cumulative Practice
  - *Teacher Toolbox*
    - Fluency and Skills Practice
    - Unit Game
    - Cumulative Practice
- **Assessments and Reports**
  - *Teacher's Guide*
    - Starts
    - Support Whole Group/Partner Discussion
    - Ask/Listen Fors
    - Common Misconceptions
    - Error Alerts
    - Close: Exit Ticket
  - *Student Worktext*
    - Self Checks
    - Apply It
    - Reflect Questions

- - - ■ Self Reflection
      - ■ Math Journal Questions
      - ■ Unit Review
    - ○ *Teacher Toolbox*
      - ■ Editable Lesson Quizzes
      - ■ Editable Mid-Unit and Unit Assessments
  - ● **Differentiation**
    - ○ *Before the Unit/Lesson: Prerequisites Report*
      - ■ Prerequisites Report: Resources
    - ○ *During the Lesson: Teacher's Guide*
      - ■ Hands-On Activities or Visual Models
      - ■ Deepen Understanding
      - ■ ELL Differentiated Instruction
      - ■ Refine Sessions
    - ○ *After the Lesson: Teacher Toolbox*
      - ■ Reteach: Tools for Instruction
      - ■ Reinforce: Math Center Activities
      - ■ Extend: Enrichment Activities
- → **DIGITAL RESOURCES**
  - ● **In-Class Instruction and Practice:**
    - ○ Interactive Tutorials
    - ○ Digital Math Tools
    - ○ PowerPoint Slides
  - ● **Independent Practice for School or Home**
    - ○ Digital Math Tools
    - ○ Learning Games
    - ○ Interactive Practice
  - ● **Assessments and Reports**
    - ○ Diagnostic
    - ○ Lesson, Mid-Unit, and Unit Comprehension Checks
    - ○ Prerequisites Report
    - ○ Comprehension Check Reports
  - ● **Differentiation**
    - ○ *Interactive Tutorials*
    - ○ *Digital Math Tools*
    - ○ *Learning Games*

STANDARDS

NJ Student Learning Standards (NJSLS) for Mathematics:

- ● 4.NF.A. Extend understanding of fraction equivalence and ordering.
  - ○ 4.NF.A.1. Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions
  - ○ 4.NF.A.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- ● 4.NF.B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
  - ○ 4.NF.B.3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b
    - ■ 4.NF.B.3.a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
    - ■ 4.NF.B.3.b. . Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
    - ■ 4.NF.B.3.c. Add and subtract mixed numbers with like denominators, e.g., by replacing each

mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- 4.NF.B.3.d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
  - 4.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
    - 4.NF.B.4.a. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).
    - 4.NF.B.4.b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)
    - 4.NF.B.4.c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- 4.NF.C. Understand decimal notation for fractions, and compare decimal fractions.
  - 4.NF.C.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.4 For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
  - 4.NF.C.6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
  - 4.NF.C.7. Know relative sizes of measurement units within one system of units including km, m, cm. mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...
- 4.MD.A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
  - 4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm. mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...
  - 4.MD.A.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
- 4.MD.B. Represent and interpret data.
  - 4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Standards for Mathematical Practice (SMP):
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NJ Student Learning Standards (NJSLS) for English Language Arts:

- **RI.4.4.** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- **RI.4.7**. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- **RL.4.7.** Make connections between specific descriptions and directions in a text and a visual or oral representation of the text.
- **SL.4.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.4.1.A.**Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.4.1.B.**Follow agreed-upon rules for discussions and carry out assigned roles.
- **SL.4.1.C.**Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
- **SL.4.1.D.**Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **SL.4.2.** Paraphrase portions of a text read aloud or information presented in diverse media and formats (e.g.,visually, quantitatively, and orally).
- **SL.4.3.** Identify the reasons and evidence a speaker provides to support particular points.

2020 NJ Student Learning Standards (NJSLS) for Social Studies:
- **6.1.2.HistoryCC.1:** Use multiple sources to create a chronological sequence of events that describes how and why your community has changed over time.
- **6.1.2.HistoryCC.2:** Use a timeline of important events to make inferences about the "big picture" of history.

2020 NJ Student Learning Standards (NJSLS) - Standard 9: 21st Century Life and Careers:
Career Ready Practices:
- **CRP2** Apply appropriate academic and technical skills
- **CRP4** Communicate clearly and effectively and with reason
- **CRP8** Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP11** Use technology to enhance productivity.
- **CRP12.** Work productively in teams while using cultural global competence

2020 NJ Core Curriculum Content Standards - Computer Science and Design Thinking
- **8.1.5.DA.1:** Collect, organize, and display data in order to highlight relationships or support a claim.
- **8.1.5.AP.1**: Compare and refine multiple algorithms for the same tasks and determine which is appropriate.
- **8.2.5.ED.2**: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
- **8.2.5.ED.3**: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- **8.2.5.ITH.2:** Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.

SOCIAL AND EMOTIONAL COMPETENCIES - activities/topics [optional]
Self-Awareness and Self-Management:
- Students begin the school year or instructional unit by drawing what being a mathematician "looks and feels like" to them. Students are encouraged to add more affirmative language as they learn more math skills. Similar to a feeling chart with "Today, I feel like…," students would be encouraged to write or say, "As a mathematician, I feel… [satisfied that I solved this problem, curious or confused about that solution, etc.]."
- Lead discussions that encourage students to reflect on barriers they may encounter when completing an assignment (e.g., finding a computer) and that also help them think about ways they can overcome them, including how to approach others for help (e.g., how to politely ask the teacher for help).
- Routinely give students the opportunity to reflect on when they have had success in math or what kinds of problems/puzzles they prefer. Also ask students why they like the types of materials they identified, e.g., "Why do you think you liked this problem, especially?," "Why do you think you like solving those kinds of problems/puzzles?," "Will you share with me the strategy that helped you solve this problem?".
- At the end of each session (daily) or lesson (weekly), have students complete the *How Does This Math Make*

Me Feel? **Sheet** to learn to become more self-aware about how they feel about the topics they are learning.
- At the end of the unit, have students self-assess progress toward their learning goals and help support a Growth Mindset by reviewing the skills on the **Student Worktext Self Reflection** page. Encourage students to revisit the work they did in each lesson.

Social Awareness:
- During the *DIscuss It* portion of the daily lessons, build respect for diversity in the classroom by having students share their different perspectives on situations or solution strategies for the same problem.
- Lead discussions about taking different approaches to problem solutions, identifying feelings and thoughts of others who adopt these strategies.

Relationship Skills:
- Teach lessons on nonverbal classroom signals to encourage listening. For example, the class might use common hand signals to show agreement, to request clarification, or to recognize a different strategy.
- Have students work in pairs during daily lessons. For example, students can play partner games during the Fluency Practice portion of daily lessons to build fluency

Responsible Decision-Making:
- Encourage students to reflect on how they approached mathematics "today," including in journals or pair shares. Ask them to include how their choices could be repeated if successful or improved in order to be more successful.

Interdisciplinary Connections
- Read just right books in the content areas
- Use mentor texts to deliver Social Studies content
- Compare content area ideas and issues to what our characters deal with in out read alouds and mentor texts
- Apply reading skills and strategies to the reading we do in the content areas
- Apply spelling strategies
- Apply grammar skills
- Analyze illustrations in books for details
- Illustrate a passage that was just read to show detail ideas and lessons

21st Century Skills Intergration
- Use venn diagrams and T chart to compare and contrast events
- Use highlighters, notecards, post-its and other tools to keep track of sory events details and ideas.

Unit 4: Fractions, Decimals, and Measurement: Addition, Subtraction and Multiplication

"Add and Build Your Vocabulary" lessons are at the beginning of each unit.

- Lesson 17 Vocabulary: denominator, equivalent fractions, fraction, numerator, unit fractions
- Lesson 18 Vocabulary: benchmark fraction, common denominator, compare, denominator, fraction, greater than symbol (>), less than symbol (<), numerator, unit fraction
- Lesson 19 Vocabulary: denominator, fraction, numerator, unit fraction
- Lesson 20 Vocabulary: denominator, fraction, numerator, unit fraction
- Lesson 21 Vocabulary: mixed number
- Lesson 22 Vocabulary: data, fraction, line plot, mixed number
- Lesson 23 Vocabulary: denominator, fraction, multiplication, multiply, numerator, product
- Lesson 24 Vocabulary: denominator, fraction, multiply, numerator, product
- Lesson 25 Vocabulary: hundredths, tenths, denominator, equivalent fractions, fraction, numerator
- Lesson 26 Vocabulary: decimal, decimal point, denominator, equivalent fractions, fraction, numerator
- Lesson 27 Vocabulary: compare, decimal, equal, equal sign (=), greater than symbol (>), less than symbol (<)
- Lesson 28 Vocabulary: convert, equation, expression
- Lesson 29 Vocabulary: weight, convert, equation, expression, length, liquid volume, mass

DAYS 1 & 2 Pre-Assessment / Active Prior Knowledge	Day 3 Lesson 17: Understand Equivalent Fractions	Day 4 Lesson 17: Understand Equivalent Fractions	Day 5 Lesson 17: Understand Equivalent Fractions	Day 6 Lesson 18: Compare Fractions
Materials: ● Unit and Lesson Support PDF ● Yearly Pacing for Prerequisites PDF **Activities:** Students take the Diagnostic Assessment. It takes two days to administer. See i-Ready Classroom Central for information.	**Session 1:** Explore - Equivalent Fractions **Objective:** Students will be able to explain why a fraction a/b is equivalent to fraction nxa/nxb by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Students will then use this principle to recognize and generate equivalent fractions. **Materials:** ● Student Worktext pages 367-368 ● Teacher's Guide Volume 1 pages 367-368 ● Discourse Cards ● Hands-On (for each pair: 1 set of fraction tiles) ● Digital Math Tool: Fraction Models ● Additional Practice: Student Worktext pages 371-372 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Model It (10 min) 3) Discuss It (5 min) 4) Model It (10 min) 5) Discuss It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 371-372	**Session 2:** Develop - Understanding of Equivalent Fractions **Objective:** Students will be able to explain why a fraction a/b is equivalent to fraction nxa/nxb by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Students will then use this principle to recognize and generate equivalent fractions. **Materials:** ● Student Worktext pages 371-371 ● Teacher's Guide Volume 1 pages 371-372 ● Discourse Cards ● Hands-On (for each pair: 1 set of fraction circles) ● Digital Math Tool: Fraction Models ● Additional Practice: Student Worktext pages 375-376 ● Fluency Extra Practice: Showing Equivalent Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Model It: Area Models (5 min) 3) Discuss It (5 min) 4) Model It: Equations (5 min) 5) Discuss It (5 min) 6) Connect It (15 min) 7) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 375-376 **Fluency Extra Practice:** Showing Equivalent Fractions	**Session 3:** Refine - Ideas about Equivalent Fractions **Objective:** Students will be able to explain why a fraction a/b is equivalent to fraction nxa/nxb by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Students will then use this principle to recognize and generate equivalent fractions. **Materials:** ● Student Worktext pages 375-376 ● Teacher's Guide Volume 1 pages 375-376 ● Discourse Cards ● Digital Math Tool: Fraction Models ● Lesson 17 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Apply It (35 min) 3) Close: Exit Ticket (5 min) **Assessment**: Lesson 17 Quiz or Digital Comprehension Check	**Session 1:** Explore - Comparing Fractions **Objective:** Students will be able to compare two fractions with different numerators and different denominators, by creating common denominators or by comparing to a benchmark fraction. Students will be able to recognize the comparisons are valid only when the two fractions refer to the same whole. Students will be able to record their fraction comparisons using the symbols <, >, and =. **Materials:** ● Student Worktext pages 379-380 ● Teacher's Guide Volume 1 pages 379-380 ● Discourse Cards ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Hands-On (for each student: one set of fraction tiles) ● Additional Practice: Student Worktext pages 381-382 ● Interactive Tutorial - Prerequisite Review: Equivalent Fractions **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 381-382

Day 7 **Lesson 18:** Compare Fractions **Session 2:** Develop - Using Common Numerators and Denominators **Objective:** Students will be able to compare two fractions with different numerators and different denominators, by creating common denominators or by comparing to a benchmark fraction. Students will be able to recognize the comparisons are valid only when the two fractions refer to the same whole. Students will be able to record their fraction comparisons using the symbols <, >, and =. **Materials:** ● Student Worktext pages 383-386 ● Teacher's Guide Volume 1 pages 383-386 ● Discourse Cards ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 387-388 ● Fluency Extra Practice: Using Common Numerators and Denominators (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 387-388 **Fluency Extra Practice:** Using Common Numerators and Denominators	**Day 8** **Lesson 18:** Compare Fractions **Session 3:** Develop - Using a Benchmark to Compare Fractions **Objective:** Students will be able to compare two fractions with different numerators and different denominators, by creating common denominators or by comparing to a benchmark fraction. Students will be able to recognize the comparisons are valid only when the two fractions refer to the same whole. Students will be able to record their fraction comparisons using the symbols <, >, and =. **Materials:** ● Student Worktext pages 389-392 ● Teacher's Guide Volume 1 pages 389-392 ● Discourse Cards ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Hands-On (for each pair: 10 index cards labeled with the fractions $\frac{1}{3}$, $\frac{2}{3}$, 2/4, $\frac{2}{5}$, 4/6, $\frac{5}{6}$, 6/8, $\frac{7}{8}$, 4/10, 3/12 and Activity Sheet: *Number Lines)* ● Additional Practice: Student Worktext pages 393-394 ● Fluency Extra Practice: Using a Benchmark to Compare Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It & Solve It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 393-394 **Fluency Extra Practice:** Using a Benchmark to Compare Fractions	**Day 9** **Lesson 18:** Compare Fractions **Session 4:** Refine - Comparing Fractions **Objective:** Students will be able to compare two fractions with different numerators and different denominators, by creating common denominators or by comparing to a benchmark fraction. Students will be able to recognize the comparisons are valid only when the two fractions refer to the same whole. Students will be able to record their fraction comparisons using the symbols <, >, and =. **Materials:** ● Student Worktext pages 395-398 ● Teacher's Guide Volume 1 pages 395-398b ● Discourse Cards ● Hands-On (for each pair: scissors, colored pencils, Activity Sheet: *1-Centimeter Grid Paper)* ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Lesson 18 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 18 Quiz or Digital Comprehension Check	**Day 10** **Lesson 19:** Understand Fraction Addition and Subtraction **Session 1:** Explore - Fraction Addition and Subtraction **Objective:** Students will be able to build from unit fractions by applying and extending previous understandings or operations on whole numbers. Students will understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **Materials:** ● Student Worktext pages 401-402 ● Teacher's Guide Volume 1 pages 401-402 ● Discourse Cards ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 403-404 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Model It (10 min) 3) Discuss It (5 min) 4) Model It (10 min) 5) Discuss It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 403-404	**Day 11** **Lesson 19:** Understand Fraction Addition and Subtraction **Session 2:** Develop - Understanding of Fraction Addition and Subtraction **Objective:** Students will be able to build from unit fractions by applying and extending previous understandings or operations on whole numbers. Students will understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **Materials:** ● Student Worktext pages 405-406 ● Teacher's Guide Volume 1 pages 405-406 ● Discourse Cards ● Hands-On (per student: markers, scissors, Activity Sheet: Fraction Bars - eighths, tenths) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 407-408 ● Fluency Extra Practice: Understanding of Fraction Addition and Subtraction (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Model It: Number Lines (5 min) 3) Discuss It (5 min) 4) Model It: Area Models (5 min) 5) Discuss It (5 min) 6) Connect It (15 min) 7) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 407-408 **Fluency Extra Practice:** Understanding of Fraction Addition and Subtraction
Day 12 **Lesson 19:** Understand Fraction Addition and Subtraction **Session 3:** Refine - Ideas about Fraction Addition and Subtraction **Objective:** Students will be able to build from unit fractions by applying and extending previous understandings or operations on whole numbers. Students will understand addition and	**Day 13** **Lesson 20:** Add and Subtraction Fractions **Session 1:** Explore - Adding and Subtracting Fractions **Objective:** Students will be able to decompose a fraction into a sum of fractions with the same denominator in more than one way (recording each decomposition as an equation and justifying with visual representations). Students will be able to solve word	**Day 14** **Lesson 20:** Add and Subtraction Fractions **Session 2:** Develop - Adding Fractions **Objective:** Students will be able to decompose a fraction into a sum of fractions with the same denominator in more than one way (recording each decomposition as an equation and justifying with visual representations). Students will be able to solve word	**Day 15** **Lesson 20:** Add and Subtraction Fractions **Session 3:** Develop - Subtracting Fractions **Objective:** Students will be able to decompose a fraction into a sum of fractions with the same denominator in more than one way (recording each decomposition as an equation and justifying with visual representations). Students will be able to solve	**Day 16** **Lesson 20:** Add and Subtraction Fractions **Session 4:** Develop - Decomposing Fractions **Objective:** Students will be able to decompose a fraction into a sum of fractions with the same denominator in more than one way (recording each decomposition as an equation and justifying with visual representations). Students will be able to solve word

subtraction of fractions as joining and separating parts referring to the same whole. **Materials:** ● Student Worktext pages 409-410 ● Teacher's Guide Volume 1 pages 409-410b ● Discourse Cards ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Lesson 19 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Apply It (35 min) 3) Close: Exit Ticket (5 min) **Assessment**: Lesson 19 Quiz or Digital Comprehension Check	problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem. **Materials:** ● Student Worktext pages 413-414 ● Teacher's Guide Volume 1 pages 413-414 ● Discourse Cards ● Hands-On (for each student: scissors, ruler, heavy paper or card stock) ● Additional Practice: Student Worktext pages 415-416 ● Interactive Tutorial - Prerequisite Review: Understand Adding and Subtracting Fractions **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 415-416	problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem. **Materials:** ● Student Worktext pages 417-420 ● Teacher's Guide Volume 1 pages 417-420 ● Discourse Cards ● Hands-On (for each student: Activity Sheet: Fraction Bars - 3 bars for fourths, 3 bars for tenths) ● Additional Practice: Student Worktext pages 421-422 ● Fluency Extra Practice: Adding Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It & Model It (5 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 421-422 **Fluency Extra Practice:** Adding Fractions	word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem. **Materials:** ● Student Worktext pages 423-426 ● Teacher's Guide Volume 1 pages 423-426 ● Discourse Cards ● Hands-On (for each student: paper plates, markers, scissors) ● Additional Practice: Student Worktext pages 427-428 ● Fluency Extra Practice: Subtracting Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It & Model It (5 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 427-428 **Fluency Extra Practice:** Subtracting Fractions	problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem. **Materials:** ● Student Worktext pages 429-432 ● Teacher's Guide Volume 1 pages 429-432 ● Discourse Cards ● Hands-On (for each pair: 1 set of fraction tiles or fraction circles) ● Additional Practice: Student Worktext pages 433-434 ● Fluency Extra Practice: Decomposing Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (10 min) 3) Model It (5 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 433-434 **Fluency Extra Practice:** Decomposing Fractions
Day 17 **Lesson 20:** Add and Subtraction Fractions **Session 5:** Refine - Adding and Subtracting Fractions **Objective:** Students will be able to decompose a fraction into a sum of fractions with the same denominator in more than one way (recording each decomposition as an equation and justifying with visual representations). Students will be able to solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem. **Materials:** ● Student Worktext pages 435-438 ● Teacher's Guide Volume 1 pages 435-438b ● Discourse Cards ● Hands-On (for each student: markers, Activity Sheet: Fraction Bars - 2 bars for fourths, 2 bars for third, 2 bars for sixths, 2 bars for eighths) ● Lesson 20 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher	**Day 18** **Lesson:** 1st Mid-Unit 4 Assessment **Materials:** ● Teacher's Guide Volume 1 pages 438c-438f ● Fraction manipulatives (available for students who need them) ● Unit 4 Mid-Unit Assessment **Activities:** As outlined in the Teacher Guide Volume 2: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.	**Day 19** **Lesson 21:** Add and Subtract Mixed Numbers **Session 1:** Adding and Subtracting Mixed Numbers **Objective:** Students will be able to add and subtract mixed numbers with like denominators, by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction. **Materials:** ● Student Worktext pages 441-442 ● Teacher's Guide Volume 1 pages 441-442 ● Discourse Cards ● Hands-On (for each pair: ½ cup measuring cup, water (or rice), bowl with 4-cup or greater capacity) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 443-444 ● Interactive Tutorial - Prerequisite Skills: Add and Subtract Fractions **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min)	**Day 20** **Lesson 21:** Add and Subtract Mixed Numbers **Session 2:** Adding Mixed Numbers **Objective:** Students will be able to add mixed numbers with like denominators, by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction. **Materials:** ● Student Worktext pages 445-448 ● Teacher's Guide Volume 1 pages 445-448 ● Discourse Cards ● Hands-On (for each pair: 3 sets of fraction circles) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 449-450 ● Fluency Extra Practice: Adding Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It & Model It (5 min)	**Day 21** **Lesson 21:** Add and Subtract Mixed Numbers **Session 3:** Subtracting Mixed Numbers **Objective:** Students will be able to subtract mixed numbers with like denominators, by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction. **Materials:** ● Student Worktext pages 451-454 ● Teacher's Guide Volume 1 pages 451-454 ● Discourse Cards ● Hands-On (for each pair: 2 sets of fraction circles) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 455-456 ● Fluency Extra Practice: Subtracting Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It & Model It (5 min) 4) Connect It (15 min)

Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 20 Quiz or Digital Comprehension Check		3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 443-444	4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages **Fluency Extra Practice:** Adding Fractions	5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages **Fluency Extra Practice:** Subtracting Fractions
Day 22 **Lesson 21:** Add and Subtract Mixed Numbers **Session 4:** Adding and Subtracting Mixed Numbers **Objective:** Students will be able to add and subtract mixed numbers with like denominators, by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction. **Materials:** ● Student Worktext pages 457-460 ● Teacher's Guide Volume 1 pages 457-460b ● Discourse Cards ● Hands-On (for each student: paper plates, markers, scissors) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Lesson 21 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 21 Quiz or Digital Comprehension Check	**Day 23** **Lesson 22:** Add and Subtract Fractions in Line Plots **Session 1:** Adding and Subtracting Fractions in Line Plots **Objective:** Students will make line plots to display a data set of measurements in fractions of a unit (1/2 , ¼, ⅛). Students will solve problems involving addition and subtraction of fractions by using information presented in line plots. **Materials:** ● Student Worktext pages ● Teacher's Guide Volume 1 pages ● Discourse Cards ● Hands-On (Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 456-466 ● Interactive Tutorial - Prerequisite Review: Understand Mixed Numbers **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 456-466	**Day 24** **Lesson 22:** Add and Subtract Fractions in Line Plots **Session 2:** Representing Data on a Line Plot **Objective:** Students will make line plots to display a data set of measurements in fractions of a unit (1/2 , ¼, ⅛). Students will solve problems involving addition and subtraction of fractions by using information presented in line plots. **Materials:** ● Student Worktext pages 463-464 ● Teacher's Guide Volume 1 pages 463-464 ● Discourse Cards ● Hands-On (for each group: 10 index cards, masking tape) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 471-472 ● Fluency Extra Practice: Representing Data on a Line Plot (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 471-472 **Fluency Extra Practice:** Representing Data on a Line Plot	**Day 25** **Lesson 22:** Add and Subtract Fractions in Line Plots **Session 3:** Adding Fractions in Line Plots **Objective:** Students will make line plots to display a data set of measurements in fractions of a unit (1/2 , ¼, ⅛). Students will solve problems involving addition and subtraction of fractions by using information presented in line plots. **Materials:** ● Student Worktext pages 467-470 ● Teacher's Guide Volume 1 pages 467-470 ● Discourse Cards ● Hands-On (for each pair: 1 set of fraction tiles or circles) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 477-478 ● Fluency Extra Practice: Adding Fractions in Line Plots (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Picture It & Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 477-478 **Fluency Extra Practice:** Adding Fractions in Line Plots	**Day 26** **Lesson 22:** Add and Subtract Fractions in Line Plots **Session 4:** Subtracting Fractions in Line Plots **Objective:** Students will make line plots to display a data set of measurements in fractions of a unit (1/2 , ¼, ⅛). Students will solve problems involving addition and subtraction of fractions by using information presented in line plots. **Materials:** ● Student Worktext pages 473-476 ● Teacher's Guide Volume 1 pages 473-476 ● Discourse Cards ● Hands-On (for each pair: 7 sets of fraction tiles) ● Digital Math Tool: Fraction Models ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 483-484 ● Fluency Extra Practice: Subtracting Fractions in Line Plots (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Picture It & Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 483-484 **Fluency Extra Practice:** Subtracting Fractions in Line Plots
Day 27 **Lesson 22:** Add and Subtract Fractions in Line Plots **Session 5:** Adding and Subtracting Fractions in Line Plots **Objective:** Students will make line plots to display a data set of measurements in fractions of a unit (1/2 , ¼, ⅛). Students will solve problems involving addition and subtraction of fractions by using information presented in line plots. **Materials:** ● Student Worktext pages 485-488	**Day 28** **Lesson 23:** Understand Fraction Multiplication **Session 1:** Fraction Multiplication **Objective:** Students will apply and extend previous understanding of multiplication to multiply a fraction by a whole number. Students will understand that fraction a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. **Materials:** ● Student Worktext pages 491-492	**Day 29** **Lesson 23:** Understand Fraction Multiplication **Session 2:** Understanding of Fraction Multiplication **Objective:** Students will apply and extend previous understanding of multiplication to multiply a fraction by a whole number. Students will understand that fraction a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. **Materials:** ● Student Worktext pages 495-496	**Day 30** **Lesson 23:** Understand Fraction Multiplication **Session 3:** Ideas About Fraction Multiplication **Objective:** Students will apply and extend previous understanding of multiplication to multiply a fraction by a whole number. Students will understand that fraction a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. **Materials:** ● Student Worktext pages	**Day 31** **Lesson 24:** Multiply Fractions by Whole Numbers **Session 1:** Multiplying Fractions by Whole Numbers **Objective:** Students will apply and extend previous understanding of multiplication to multiply a fraction by a whole number. Students will be able to solve word problems involving multiplication of a fraction by a whole number by using visual fraction models and equations to represent the problem. **Materials:**

• Teacher's Guide Volume 1 pages 485-488b • Discourse Cards • Hands-On (for each pair: sheet of paper, masking tape, yardstick) • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Lesson 22 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment:** Lesson 22 Quiz or Digital Comprehension Check	• Teacher's Guide Volume 1 pages 491-492 • Discourse Cards • Hands-On (for each pair: two sets of fraction circles) • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Additional Practice: Student Worktext pages 493-494 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Model It (10 min) 3) Discuss It (5 min) 4) Model It (10 min) 5) Discuss It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 493-494	• Teacher's Guide Volume 1 pages 495-496 • Discourse Cards • Hands-On (for each pair: 2 sets of fraction tiles) • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Additional Practice: Student Worktext pages 497-498 • Fluency Extra Practice: Understanding Fraction Multiplication (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Model It: Area Models (5 min) 3) Discuss It (5 min) 4) Model It: Number Lines (5 min) 5) Discuss It (5 min) 6) Connect It (15 min) 7) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 497-498 **Fluency Extra Practice:** Understanding Fraction Multiplication	499-500 • Teacher's Guide Volume 1 pages 499-500b • Discourse Cards • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Lesson 23 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Apply It (35 min) 3) Close: Exit Ticket (5 min) **Assessment:** Lesson 23 Quiz or Digital Comprehension Check	• Student Worktext pages 503-504 • Teacher's Guide Volume 1 pages 503-504 • Discourse Cards • Hands-On (for each pair: base-ten blocks - 12 tens rods) • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Additional Practice: Student Worktext pages 505-506 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 505-506
Day 32 **Lesson 24:** Multiply Fractions by Whole Numbers **Session 2:** Multiplying Fractions by Whole Numbers **Objective:** Students will apply and extend previous understanding of multiplication to multiply a fraction by a whole number. Students will be able to solve word problems involving multiplication of a fraction by a whole number by using visual fraction models and equations to represent the problem. **Materials:** • Student Worktext pages 507-510 • Teacher's Guide Volume 1 pages 507-510 • Discourse Cards • Hands-On (for each pair: 3 sets of fraction circles) • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Additional Practice: Student Worktext pages 511-512 • Fluency Extra Practice: Multiplying Fractions by Whole Numbers (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min)	**Day 33** **Lesson 24:** Multiply Fractions by Whole Numbers **Session 3:** Multiplying Fractions by Whole Numbers **Objective:** Students will apply and extend previous understanding of multiplication to multiply a fraction by a whole number. Students will be able to solve word problems involving multiplication of a fraction by a whole number by using visual fraction models and equations to represent the problem. **Materials:** • Student Worktext pages 513-516 • Teacher's Guide Volume 1 pages 513-516b • Discourse Cards • Hands-On (for each pair: 5 sticky notes, 1-month calendar) • Digital Math Tool: Fraction Models • Digital Math Tool: Number Line • Lesson 24 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Examples & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 24 Quiz	**Day 34** **Lesson:** 2nd Mid-Unit 4 Assessment **Materials:** • Teacher's Guide Volume 1 pages 516c-516f • Fraction manipulatives (available for students who need them) • Unit 4 2nd Mid-Unit Assessment **Activities:** As outlined in the Teacher Guide Volume 2: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.	**Day 35** **Lesson 25:** Fractions as Tenths and Hundredths **Session 1:** Fractions as Tenths and Hundredths **Objective:** Students will express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. **Materials:** • Student Worktext pages 519-520 • Teacher's Guide Volume 1 pages 519-520 • Discourse Cards • Visual Model (for each student: ruler, Activity Sheet: Tenths Grid) • Digital Math Tool: Number Line • Digital Math Too: Base-Ten Blocks • Additional Practice: Student Worktext pages 521-522 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 521-522	**Day 36** **Lesson 25:** Fractions as Tenths and Hundredths **Session 2:** Adding Tenths and Hundredths **Objective:** Students will express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. **Materials:** • Student Worktext pages 523-526 • Teacher's Guide Volume 1 pages 523-526 • Discourse Cards • Hands-On (for each pair: base-ten blocks - 1 hundred flat, 3 tens rods, 70 ones units) • Digital Math Tool: Number Line • Digital Math Too: Base-Ten Blocks • Additional Practice: Student Worktext pages 527-528 • Fluency Extra Practice: Adding Tenths and Hundredths Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min)

6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 511-512 **Fluency Extra Practice**: Multiplying Fractions by Whole Numbers	or Digital Comprehension Check			**Additional Practice**: Student Worktext pages 527-528 **Fluency Extra Practice**: Adding Tenths and Hundredths Fractions
Day 37 **Lesson 25:** Fractions as Tenths and Hundredths **Session 3:** Fractions as Tenths and Hundredths **Objective:** Students will express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. **Materials:** ● Student Worktext pages 529-532 ● Teacher's Guide Volume 1 pages 529-532b ● Discourse Cards ● Hands-On (for each student: base-ten blocks - 2 hundreds flats, 4 tens rods, 55 ones units) ● Digital Math Tool: Number Line ● Digital Math Too: Base-Ten Blocks ● Lesson 25 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 25 Quiz or Digital Comprehension Check	**Day 38** **Lesson 26:** Relate Decimals and Fractions **Session 1:** Relating Decimals and Fractions **Objective:** Students will use decimal notation for fractions with denominators 10 or 100. **Materials:** ● Student Worktext pages 535-536 ● Teacher's Guide Volume 1 pages 535-536 ● Discourse Cards ● Hands-On (for each pair: base-ten blocks - 2 hundred flats, 3 tens rods, 31 ones units) ● Additional Practice: Student Worktext pages 537-538 ● Interactive Tutorial - Prerequisite Review: Fractions as Tenths and Hundredths **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 537-538	**Day 39** **Lesson 26:** Relate Decimals and Fractions **Session 2:** Decimals and Fractions **Objective:** Students will use decimal notation for fractions with denominators 10 or 100. **Materials:** ● Student Worktext pages 539-542 ● Teacher's Guide Volume 1 pages 539-542 ● Discourse Cards ● Visual Model (for each student: colored pencils, Activity Sheet: Hundredths Grids) ● Additional Practice: Student Worktext pages 543-544 ● Fluency Extra Practice: Decimals and Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 543-544 **Fluency Extra Practice:** Decimals and Fractions	**Day 40** **Lesson 26:** Relate Decimals and Fractions **Session 3:** Writing Decimals as Equivalent Fractions **Objective:** Students will use decimal notation for fractions with denominators 10 or 100. **Materials:** ● Student Worktext pages 545-548 ● Teacher's Guide Volume 1 pages 545-548 ● Discourse Cards ● Hands-On (for each pair: 12 index cards, markers) ● Additional Practice: Student Worktext pages 549-550 ● Fluency Extra Practice: Writing Decimals as Equivalent Fractions (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 549-550 **Fluency Extra Practice:** Writing Decimals as Equivalent Fractions	**Day 41** **Lesson 26:** Relate Decimals and Fractions **Session 4:** Relating Decimals and Fractions **Objective:** Students will use decimal notation for fractions with denominators 10 or 100. **Materials:** ● Student Worktext pages 551-554 ● Teacher's Guide Volume 1 pages 551-554b ● Discourse Cards ● Hands-On (for each pair: poster board, markers, 2 copies of Activity Sheet: Digital Cards) ● Lesson 26 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 26 Quiz or Digital Comprehension Check
Day 42 **Lesson 27:** Compare Decimals **Session 1:** Comparing Decimals **Objective:** Students will compare two decimals to hundredths by reasoning about their size. Students will be able to recognize that comparisons are valid only when the two decimals refer to the same whole. Students will record the results of comparisons with the symbols <, >, and =, and justify the conclusions by using visual models. **Materials:** ● Student Worktext pages 557-558 ● Teacher's Guide Volume 1 pages 557-558	**Day 43** **Lesson 27:** Compare Decimals **Session 2:** Comparing Decimals in Hundredths **Objective:** Students will compare two decimals to hundredths by reasoning about their size. Students will be able to recognize that comparisons are valid only when the two decimals refer to the same whole. Students will record the results of comparisons with the symbols <, >, and =, and justify the conclusions by using visual models. **Materials:** ● Student Worktext pages 561-564 ● Teacher's Guide Volume 1 pages 561-564	**Day 44** **Lesson 27:** Compare Decimals **Session 3:** Comparing Decimals in Tenths and in Hundredths **Objective:** Students will compare two decimals to hundredths by reasoning about their size. Students will be able to recognize that comparisons are valid only when the two decimals refer to the same whole. Students will record the results of comparisons with the symbols <, >, and =, and justify the conclusions by using visual models. **Materials:** ● Student Worktext pages 567-570 ● Teacher's Guide Volume	**Day 45** **Lesson 27:** Compare Decimals **Session 4:** Comparing Decimals **Objective:** Students will compare two decimals to hundredths by reasoning about their size. Students will be able to recognize that comparisons are valid only when the two decimals refer to the same whole. Students will record the results of comparisons with the symbols <, >, and =, and justify the conclusions by using visual models. **Materials:** ● Student Worktext pages 573-576 ● Teacher's Guide Volume 1 pages 573-576b	**Day 46** **Lesson 28:** Problems About Time and Money **Session 1:** Problems About Time and Money **Objective:** Students will use the four operations to solve word problems involving intervals of time and money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 579-580

● Discourse Cards ● Hands-On (for each pair: two 5-inch cardboard tubes, 2 inch rulers, markers or crayons) ● Digital Math Tool: Number Line ● Digital Math Too: Base-Ten Blocks ● Additional Practice: Student Worktext pages 559-560 ● Interactive Tutorial - Prerequisite Review: Compare Fractions **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 559-560	● Discourse Cards ● Hands-On (for each pair: base-ten blocks - 6 tens rods, 12 ones units and for display: base-ten blocks - 1 hundred flat, 1 tens rod, 1 ones unit) ● Digital Math Tool: Number Line ● Digital Math Too: Base-Ten Blocks ● Additional Practice: Student Worktext pages 565-566 ● Fluency Extra Practice: Comparing Decimals in Hundredths (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 565-566 **Fluency Extra Practice:** Comparing Decimals in Hundredths	1 pages 567-570 ● Discourse Cards ● Hands-On (for each pair: base-ten blocks - 5 tens rods, 40 ones units) ● Digital Math Tool: Number Line ● Digital Math Too: Base-Ten Blocks ● Additional Practice: Student Worktext pages 571-572 ● Fluency Extra Practice: Comparing Decimals in Tenths and Hundredths (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 571-572 **Fluency Extra Practice:** Comparing Decimals in Tenths and Hundredths	● Discourse Cards ● Hands-On (for each student: Activity Sheet Hundredths Grids) ● Digital Math Tool: Number Line ● Digital Math Too: Base-Ten Blocks ● Lesson 27 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 27 Quiz or Digital Comprehension Check	● Teacher's Guide Volume 1 pages 579-580 ● Discourse Cards ● Hands-On (for each pair: analog clock) ● Activity Sheet: Math Reference Sheet ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 581-582 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Connect It (15 min) 4) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 581-582
Day 47 **Lesson 28:** Problems About Time and Money **Session 2:** Solving Problems About Time **Objective:** Students will use the four operations to solve word problems involving intervals of time and money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 583-586 ● Teacher's Guide Volume 1 pages 583-586 ● Discourse Cards ● Hands-On (for each pair: base-ten blocks - 9 tens rods, 10 ones units) ● Activity Sheet: Math Reference Sheet ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 587-588 ● Fluency Extra Practice: Solving Problems About Time (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min)	**Day 48** **Lesson 28:** Problems About Time and Money **Session 3:** Solving Problems About Money **Objective:** Students will use the four operations to solve word problems involving intervals of time and money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 589-592 ● Teacher's Guide Volume 1 pages 589-592 ● Discourse Cards ● Hands-On (for each pair: play money - 1 $5 bill, 5 $1 bills, 20 quarters) ● Activity Sheet: Math Reference Sheet ● Digital Math Tool: Number Line ● Additional Practice: Student Worktext pages 593-594https://docs.google.com/document/d/1tH8Edj4o9vOfOkf7SAPwWJUtK28_3SoB/edit?usp=sharing&ouid=100456431072021609484&rtpof=true&sd=true ● Fluency Extra Practice: Solving Problems About Money (can be printed or filled in online) **Activities:** As outlined in the Teacher	**Day 49** **Lesson 28:** Problems About Time and Money **Session 4:** Problems About Time and Money **Objective:** Students will use the four operations to solve word problems involving intervals of time and money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 595-598 ● Teacher's Guide Volume 1 pages 595-598b ● Discourse Cards ● Hands-On (for each student: 4 copies of Activity Sheet: Clock Face) ● Activity Sheet: Math Reference Sheet ● Digital Math Tool: Number Line ● Lesson 28 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Examples & Problems 1-3 (15 min) 3) Practice & Small Group	**Day 50** **Lesson 29:** Problems About Length, Liquid Volume, Mass, and Weight **Session 1:** Problems About Length, Liquid Volume, Mass and Weight **Objective:** Students will use the four operations to solve word problems involving distances, liquid volumes, masses of objects, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 601-602 ● Teacher's Guide Volume 1 pages 601-602 ● Discourse Cards ● Hands-On (for each pair: 2 yardsticks) ● Activity Sheet: Math Reference Sheet ● An inch ruler for each student ● Additional Practice: Student Worktext pages 603-604 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Connect It (15 min) 4) Close: Exit Ticket (5 min)	**Day 51** **Lesson 29:** Problems About Length, Liquid Volume, Mass, and Weight **Session 2:** Solving Problems About Length **Objective:** Students will use the four operations to solve word problems involving distances, liquid volumes, masses of objects, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 605-608 ● Teacher's Guide Volume 1 pages 605-608 ● Discourse Cards ● Hands-On (for each pair: piece of string 1 foot 5 inches long, inch ruler, scissor) ● Activity Sheet: Math Reference Sheet ● An inch ruler for each student ● Additional Practice: Student Worktext pages 609-610 ● Fluency Extra Practice: Solving Problems About Length (can be printed or filled in online) **Activities:** As outlined in the Teacher

2) Try It & Discuss It (20 min) 3) Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 587-588 **Fluency Extra Practice:** Solving Problems About Time	**Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Picture It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 593-594 **Fluency Extra Practice:** Solving Problems About Money	Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 28 Quiz or Digital Comprehension Check	**Additional Practice**: Student Worktext pages 603-604	Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 609-610 **Fluency Extra Practice:** Solving Problems About Length
Day 52 **Lesson 29:** Problems About Length, Liquid Volume, Mass, and Weight **Session 3:** Solving Problems About Liquid Volume **Objective:** Students will use the four operations to solve word problems involving distances, liquid volumes, masses of objects, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 611-614 ● Teacher's Guide Volume 1 pages 611-614 ● Discourse Cards ● Hands-On (for each pair: 500-milliliter measuring cup, water, bowl with a capacity of at least 2-liters) ● Activity Sheet: Math Reference Sheet ● An inch ruler for each student ● Additional Practice: Student Worktext pages 615-616 ● Fluency Extra Practice: Solving Problems About Liquid Volume (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Picture It & Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 615-616 **Fluency Extra Practice:** Solving Problems About Liquid Volume	**Day 53** **Lesson 29:** Problems About Length, Liquid Volume, Mass, and Weight **Session 4:** Solving Problems About Mass and Weight **Objective:** Students will use the four operations to solve word problems involving distances, liquid volumes, masses of objects, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 617-620 ● Teacher's Guide Volume 1 pages 617-620 ● Discourse Cards ● Hands-On (for each pair: 50 pennies, kitchen scale that measures in grams, bowl) ● Activity Sheet: Math Reference Sheet ● An inch ruler for each student ● Additional Practice: Student Worktext pages 621-622 ● Fluency Extra Practice: Solving Problems About Mass and Weight (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (20 min) 3) Picture It & Model It (5 min) 4) Connect It (10 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 621-622 **Fluency Extra Practice:** Solving Problems About Mass and Weight	**Day 54** **Lesson 29:** Problems About Length, Liquid Volume, Mass, and Weight **Session 5:** Problems About Length, Liquid Volume, Mass and Weight **Objective:** Students will use the four operations to solve word problems involving distances, liquid volumes, masses of objects, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **Materials:** ● Student Worktext pages 623-626 ● Teacher's Guide Volume 1 pages 623-626b ● Discourse Cards ● Hands-On (for each student: inch ruler, scissors, construction paper) ● Activity Sheet: Math Reference Sheet ● An inch ruler for each student ● Lesson 29 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiation (20 min) 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 29 Quiz or Digital Comprehension Check After the quiz, have students complete the **Self-Reflection** (page 627 in their Worktext).	**Day 55** **Lesson:** Math in Action **Session 1:** Use Fractions and Decimals **Objective:** Students will represent and interpret data. Students will extend understanding of fraction equivalence and ordering. Students will build fractions from unit fractions. Students will understand decimal notation for fractions, and compare decimal fractions. **Materials:** ● Student Worktext pages 628-633 ● Teacher's Guide Volume 2 pages 628a-633 ● Discourse Cards ● For *Sand Jars*: each students needs a copy of Solution Sheet 2, Activity Sheet: Tenths Grid ● Digital Math Tool: Fraction Models ● For *Coin Purses*: each students needs a copy of Solution Sheet 1 ● Visual Model (per student: Activity Sheet: Tenths Grid) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Study an Example Problem and Solution: *Sand Jars* - Example Problem and Solution (15 minutes) 2) Try Another Approach: *Sand Jars* - Plan It (5 minutes) - Solve It (10 minutes) - Reflect (5 minutes) 3) Discuss Models and Strategies: *Coin Purses* - Plan It and Solve It (10 minutes) - Reflect (5 minutes)	**Day 55** **Lesson:** Math in Action **Session 2:** Use Fractions and Decimals **Objective:** Students will represent and interpret data. Students will extend understanding of fraction equivalence and ordering. Students will build fractions from unit fractions. Students will understand decimal notation for fractions, and compare decimal fractions. **Materials:** ● Student Worktext pages 634-635 ● Teacher's Guide Volume 2 pages 628a, 634-635 ● Discourse Cards ● Digital Math Tool: Fraction Models **Activities:** As outlined in the Teacher Guide Volume 2: 1) Persevere On Your Own: *Hair Ribbons* - Solve It (20 minutes) - Reflect (5 minutes) 2) Persevere On Your Own: *Picture Frame* - Solve It (20 minutes) - Reflect (5 minutes)
Day 56 **Lesson:** Unit Review **Materials:**	**Day 57** **Lesson:** Unit 4 Assessment **Materials:**			

• Student Worktext pages 636-638 • Teacher's Guide Volume 1 pages 636-638a • Discourse Cards • Unit Game: Fraction Sums (for each pair: 2 number cubes, Recording Sheet) • Literacy Connections: *Gold* and Literacy Connection "Gold" Problems: Fractions (answer key online) • Vocabulary Cards to Review Unit Vocabulary (Student Worktext & Teacher's Guide pages 639-640) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Review. 2) Have students work in pairs or small groups on the Performance Task. 3) Explain the Fraction Sums game and give students time to play. Optional: Literacy Connections: *Gold* and Literacy Connection "Gold" Problems: Fractions Optional: Vocabulary Cards to Review Unit Vocabulary	• Teacher's Guide Volume 1 pages 638b-638e • Unit 4 Assessment **Activities:** As outlined in the Teacher Guide Volume 2: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.			

Differentiate Instruction, depending on individual student needs (students with an IEP, 504, or Intervention Plan; ELL Students; Students At Risk; Gifted Students) **by:**

Presentation Accommodations

- Use alternate texts at lower readability level
- Work with fewer items per page or line and/or materials in a larger print size
- Use magnification device, screen reader, or Braille / Nemeth Code
- Use audio amplification device (e.g., hearing aid(s), auditory trainer, sound-field system (which may require teacher use of microphone)
- Be given a written list of instructions
- Record a lesson, instead of taking notes
- Have another student share class notes with him
- Be given an outline of a lesson
- Be given a copy of teacher's lecture notes
- Be given a study guide to assist in preparing for assessments
- Use visual presentations of verbal material, such as word webs and visual organizers
- Use manipulatives to teach or demonstrate concepts

Response Accommodations

- Use sign language, a communication device, Braille, other technology, or native language other than English
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to type notes or give responses in class

Setting Accommodations

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he learns best (for example, near the teacher & away from distractions)
- Use special lighting or acoustics
- Take a test in small group setting
- Use sensory tools such as an exercise band that can be looped around a chair's legs (so fidgety kids can kick it and quietly get their energy out)

Timing Accommodations
- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Scheduling Accommodations
- Take more time to complete a project
- Take a test in several timed sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization Skills Accommodations
- Use an alarm to help with time management
- Mark texts with a highlighter

Assignment Modifications
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum Modifications
- Learn different material (such as continuing to work on multiplication while classmates move on to fractions, or moving ahead to an extension concept/skill while classmates continue to work on a core skill)
- Get graded or assessed using a different standard than the one for classmate

Subject Area: Mathematics Grade Level: 4	Bedminster Township School
Unit #: 5 **Geometry and Measurement: Figures, Classification and Symmetry**	
Dates: May-June	**Time Frame:** 27 days

Overview

In the "Points, Lines, Rays" lessons of this unit, students are introduced to many new terms such as "point", "line", "line segment", "ray" and "perpendicular". Recognizing these geometric figures helps students categorize and draw shapes according to their attributes.

In the "Identify, Measure, and Combine Angles" lessons of this unit, students begin to measure and name angles based on their relation to a right angle. They will use a known right angle, such as a square edge of a paper to determine if an angle is less than (acute) or greater than (obtuse) 90 degrees. Students will learn to reason whether an angle is acute or obtuse by looking at it. This skill is necessary in order to successfully use a protractor. Students will choose which scale to use on the protractor by reasoning whether the angle is acute or obtuse. Students will also learn using pattern blocks to help them reason with angle measurements. Additionally, when measuring with a protractor students will learn to line the vertex of the angle with the

center point of the protractor. The line at the bottom of the protractor must align with one of the rays.

In the "Classifying Figures" lessons of this unit, students will now use angle measure and side relationship to sort and classify shapes. Also, students will learn to sort triangles by both angles (acute, obtuse, right) and length of sides. They will be introduced to the terms "isosceles" (2 equal sides), "equilateral" (3 equal sides) and "scalene" (no equal sides).

In the "Symmetry" lessons of this unit, students will be given many opportunities to prove symmetry by folding paper before being asked to simply visualize lines of symmetry. Students will also understand that many shapes have more than one line of symmetry and will be encouraged to explore this idea. Additionally, students' understanding of geometric concepts will be extended as students word to solve problems using a coordinate plane.

Enduring Understandings

- Learn that points, lines, line segments, rays, and angles are geometric figures.
- Use what you know about geometric figures to help classify shapes based on their attributes.
- Use what you know about benchmark angles to estimate the size of an angle.
- Measure angles accurately with a protractor.
- Use what you know about angles and parallel and perpendicular lines to classify figures.

SKILL AND KNOWLEDGE OBJECTIVES

Routine Objectives:
- Use the Try-Discuss-Connect routine to establish best practices during an *i-Ready Classroom Mathematics* lesson. (Lesson 0)
- Have students learn how to make sense of problems, explain their thinking, and discuss strategies used to solve problems. (Lesson 0)
- Help students understand how to appropriately critique and compare the solution strategies. (Lesson 0)
- Establish hand signals such as thumbs-up or thumbs-down for students to signal agreement or disagreement with strategies and student responses, as well as provide the teacher with formative feedback. (Lesson 0)
- Help students develop good use of mathematical language and support sense-making as they learn to ask good questions, clearly describe their thinking to others, and reword and refine mathematical ideas. (Lesson 0)
- Apply math knowledge and modeling techniques to new, similar problems. (Lesson 0)
- Students will be introduced to the Math Practice Standards to use throughout the year. (Lesson 0)

Content Objectives:
- Identify and draw points, lines, line segments, rays and angles and identify them in two-dimensional figures. (Lesson 30)
- Recognize an angle as a geometric shape. (Lesson 30)
- Identify acute, right and obtuse angles in two-dimensional figures. (Lesson 30)
- Identify and draw parallel and perpendicular lines, distinguish between the two, and identify them in two-dimensional figures. (Lesson 30)
- Recognize the relationship between the measure of angle and the part of a circle that the angle turns through. (Lesson 31)
- Use a protractor to measure an angle. (Lesson 31)
- Use benchmark angle measures to estimate the measure of an angle. (Lesson 31)
- Draw an angle of a specific degree. (Lesson 31)
- Recognize that an angle can be decomposed into several smaller angles. (Lesson 32)
- Recognize that several smaller angles can be combined to form a larger angle. (Lesson 32)
- Add and subtract to find angle measures. (Lesson 32)

- Use addition and subtraction to solve word problems about angle measures. (Lesson 32)
- Sort two-dimensional figures based on parallel or perpendicular sides and one acute, obtuse or right angles. (Lesson 33)
- Recognize that triangles can be classified based on the lengths of their sides (isosceles, equilateral, scalene). (Lesson 33)
- Name a triangle based on the kind of angles it has (acute, obtuse, right). (Lesson 33)
- Recognize lines of symmetry in two-dimensional figures. (Lesson 34)
- Draw lines of symmetry in two-dimensional figures. (Lesson 34)

Language Routine Objectives:
- three read
- turn and talk
- co-craft questions and problems (optional)
- collect and display
- say it another way
- compare and connect

Language Routine Procedure:
1. Assess prior knowledge of academic vocabulary words.
2. Pronounce the academic vocabulary words.
3. Define the academic vocabulary words.
4. Use the academic vocabulary words.

Language Objectives:
- Identify points, lines, line segments, rays, and angles in two-dimensional figures. (Lesson 30)
- Draw points, lines, line segments, rays and angles. (Lesson 30)
- Identify parallel and perpendicular lines in two-dimensional figures. (Lesson 30)
- Use the terms *point, line segment, line, ray, angle, right angle, acute angle, obtuse angle, parallel, perpendicular,* and *vertex* to communicate effectively. (Lesson 30)
- Describe a 360 degree turn as a full circle. (Lesson 31)
- Record measures of angles. (Lesson 31)
- Compare an angle to a right angle and a straight line. (Lesson 31)
- Define the terms *degree* and *protractor* and use the terms in discussions. (Lesson 31)
- List the smaller angles that compose a larger angle. (Lesson 32)
- List angle information given in diagrams and use addition and subtraction to find unknown angle measures. (Lesson 32)
- Write and solve equations to represent problems involving angle addition and subtraction. (Lesson 32)
- Describe two-dimensional figures by using terms such as *parallel*, or *perpendicular sides; acute, obtuse, or right angles*; and *equal length*. (Lesson 33)
- Use the key vocabulary terms equilateral, isosceles, and scalene in discussions. (Lesson 33)
- Tell how to sort two-dimensional figures into groups based on their properties. (Lesson 33)
- Draw a line of symmetry. (Lesson 34)
- Listen to arguments of others about lines of symmetry and offer reasons for agreeing or disagreeing. (Lesson 34)

ASSESSMENTS

Pre-Assessment:
- Prerequisites Report (in *Teacher Digital Experience*)
- Starts (in *Teacher Guide*)
- Renaissance benchmark

Formative Assessment:
- Whole-class and partner discussion

- Whiteboard work
- Close: Exit Ticket (in *Student Worktext)*
- Lesson Quizzes (attached in unit breakdown and also in *Teacher Toolbox)*

Self-Reflection/Self-Assessment:
- Unit Skills Self-Check (in *Student Worktext)*
- Apply It (in *Student Worktext)*
- Reflect Questions (in *Student Worktext)*
- Self Reflection (in *Student Worktext)*
- Math Journal Questions (in *Student Worktext)*
- Unit Review (in *Student Worktext)*

Summative Assessment:
- Performance Task (in *Student Worktext)*
- Mid-Unit Assessment - Form A & Form B (also in *Teacher Toolbox)*
- Unit Assessment - Form A & Form B (also in *Teacher Toolbox)*

RESOURCES

i-Ready Classroom Mathematics **Grade 4:**
→ PRINT RESOURCES:
- **In-Class Instruction and Practice:**
  - *Teacher's Guide*
    - Lesson Progression
    - ELL Language Expectations
    - Connect to Culture
    - Discussion Prompts and Instructional Support
  - *Student Worktext* (Use the blue pages for in-class instruction and practice)
- **Independent Practice for School or Home**
  - *Teacher's Guide*
    - Additional Practice
    - Cumulative Practice
  - *Student Worktext* (Use the green pages for independent practice)
    - Additional Practice
    - Cumulative Practice
  - *Teacher Toolbox*
    - Fluency and Skills Practice
    - Unit Game
    - Cumulative Practice
- **Assessments and Reports**
  - *Teacher's Guide*
    - Starts
    - Support Whole Group/Partner Discussion
    - Ask/Listen Fors
    - Common Misconceptions
    - Error Alerts
    - Close: Exit Ticket
  - *Student Worktext*
    - Self Checks
    - Apply It
    - Reflect Questions
    - Self Reflection
    - Math Journal Questions
    - Unit Review
  - *Teacher Toolbox*
    - Editable Lesson Quizzes
    - Editable Mid-Unit and Unit Assessments
- **Differentiation**
  - *Before the Unit/Lesson: Prerequisites Report*
    - Prerequisites Report: Resources
  - *During the Lesson: Teacher's Guide*

- - - Hands-On Activities or Visual Models
    - Deepen Understanding
    - ELL Differentiated Instruction
    - Refine Sessions
  - *After the Lesson: Teacher Toolbox*
    - Reteach: Tools for Instruction
    - Reinforce: Math Center Activities
    - Extend: Enrichment Activities
- → **DIGITAL RESOURCES**
  - **In-Class Instruction and Practice:**
    - Interactive Tutorials
    - Digital Math Tools
    - PowerPoint Slides
  - **Independent Practice for School or Home**
    - Digital Math Tools
    - Learning Games
    - Interactive Practice
  - **Assessments and Reports**
    - Diagnostic
    - Lesson, Mid-Unit, and Unit Comprehension Checks
    - Prerequisites Report
    - Comprehension Check Reports
  - **Differentiation**
    - *Interactive Tutorials*
    - *Digital Math Tools*
    - *Learning Games*

STANDARDS

NJ Student Learning Standards (NJSLS) for Mathematics:

- 4.G.A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
  - 4.G.A.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
  - 4.G.A.2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
  - 4.G.A.3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
- 4.MD.C. Geometric measurement: understand concepts of angle and measure angles.
  - 4.MD.C.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
    - 4.MD.C.5a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one degree angle," and can be used to measure angles.
    - 4.MD.C.5b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.
  - 4.MD.C.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
  - 4.MD.C.7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

Standards for Mathematical Practice (SMP):

1. Make sense of problems and persevere in solving them.

2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NJ Student Learning Standards (NJSLS) for English Language Arts:

- **RI.4.4.** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- **RI.4.7**. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- **RL.4.7.** Make connections between specific descriptions and directions in a text and a visual or oral representation of the text.
- **SL.4.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.4.1.A.**Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.4.1.B.**Follow agreed-upon rules for discussions and carry out assigned roles.
- **SL.4.1.C.**Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
- **SL.4.1.D.**Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **SL.4.2.** Paraphrase portions of a text read aloud or information presented in diverse media and formats (e.g.,visually, quantitatively, and orally).
- **SL.4.3.** Identify the reasons and evidence a speaker provides to support particular points.

2020 NJ Student Learning Standards (NJSLS) for Social Studies:

- **6.1.2.HistoryCC.1:** Use multiple sources to create a chronological sequence of events that describes how and why your community has changed over time.
- **6.1.2.HistoryCC.2:** Use a timeline of important events to make inferences about the "big picture" of history.

2020 NJ Student Learning Standards (NJSLS) - Standard 9: 21st Century Life and Careers:

Career Ready Practices:

- **CRP2** Apply appropriate academic and technical skills
- **CRP4** Communicate clearly and effectively and with reason
- **CRP8** Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP11** Use technology to enhance productivity.
- **CRP12.** Work productively in teams while using cultural global competence

2020 NJ Core Curriculum Content Standards - Computer Science and Design Thinking

- **8.1.5.DA.1:** Collect, organize, and display data in order to highlight relationships or support a claim.
- **8.1.5.AP.1**: Compare and refine multiple algorithms for the same tasks and determine which is appropriate.
- **8.2.5.ED.2**: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
- **8.2.5.ED.3**: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- **8.2.5.ITH.2:** Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.

SOCIAL AND EMOTIONAL COMPETENCIES - activities/topics [optional]

Self-Awareness and Self-Management:

- Students begin the school year or instructional unit by drawing what being a mathematician "looks and feels like" to them. Students are encouraged to add more affirmative language as they learn more math skills. Similar to a feeling chart with "Today, I feel like…," students would be encouraged to write or say, "As a mathematician, I feel… [satisfied that I solved this problem, curious or confused about that solution, etc.]."

- Lead discussions that encourage students to reflect on barriers they may encounter when completing an assignment (e.g., finding a computer) and that also help them think about ways they can overcome them, including how to approach others for help (e.g., how to politely ask the teacher for help).
- Routinely give students the opportunity to reflect on when they have had success in math or what kinds of problems/puzzles they prefer. Also ask students why they like the types of materials they identified, e.g., "Why do you think you liked this problem, especially?," "Why do you think you like solving those kinds of problems/puzzles?," "Will you share with me the strategy that helped you solve this problem?".
- At the end of each session (daily) or lesson (weekly), have students complete the *How Does This Math Make Me Feel?* **Sheet** to learn to become more self-aware about how they feel about the topics they are learning.
- At the end of the unit, have students self-assess progress toward their learning goals and help support a Growth Mindset by reviewing the skills on the **Student Worktext Self Reflection** page. Encourage students to revisit the work they did in each lesson.

Social Awareness:
- During the *Discuss It* portion of the daily lessons, build respect for diversity in the classroom by having students share their different perspectives on situations or solution strategies for the same problem.
- Lead discussions about taking different approaches to problem solutions, identifying feelings and thoughts of others who adopt these strategies.

Relationship Skills:
- Teach lessons on nonverbal classroom signals to encourage listening. For example, the class might use common hand signals to show agreement, to request clarification, or to recognize a different strategy.
- Have students work in pairs during daily lessons. For example, students can play partner games during the Fluency Practice portion of daily lessons to build fluency

Responsible Decision-Making:
- Encourage students to reflect on how they approached mathematics "today," including in journals or pair shares. Ask them to include how their choices could be repeated if successful or improved in order to be more successful.

Interdisciplinary Connections
- Read just right books in the content areas
- Use mentor texts to deliver Social Studies content
- Compare content area ideas and issues to what our characters deal with in out read alouds and mentor texts
- Apply reading skills and strategies to the reading we do in the content areas
- Apply spelling strategies
- Apply grammar skills
- Analyze illustrations in books for details
- Illustrate a passage that was just read to show detail ideas and lessons

21st Century Skills Intergration
- Use venn diagrams and T chart to compare and contrast events
- Use highlighters, notecards, post-its and other tools to keep track of sory events details and ideas.

Unit 5: Geometry and Measurement: Figures, Classification and Symmetry

"Add and Build Your Vocabulary" lessons are at the beginning of each unit.

- Lesson 30 Vocabulary: acute angle, angle, line, line segment, obtuse angle, parallel lines, perpendicular lines, point, ray, right angle, vertex
- Lesson 31 Vocabulary: degree, protractor, acute angle, angle, obtuse angle, ray, right angle, vertex
- Lesson 32 Vocabulary: angle, degree, protractor
- Lesson 33 Vocabulary: acute triangle, equilateral triangle, hexagon, isosceles triangle, obtuse triangle, polygon, right triangle, scalene triangle, trapezoid (exclusive), trapezoid (inclusive), triangle, parallel lines, parallelogram, perpendicular lines, rhombus
- Lesson 34 Vocabulary: line of symmetry

DAYS 1 & 2 **Pre-Assessment / Active Prior Knowledge**	**Day 3** **Lesson 30:** Points, Lines, Rays, and Angles	**Day 4** **Lesson 30:** Points, Lines, Rays, and Angles	**Day 5** **Lesson 30:** Points, Lines, Rays, and Angles	**Day 6** **Lesson 30:** Points, Lines, Rays, and Angles
Materials: ● Unit and Lesson Support PDF ● Yearly Pacing for Prerequisites PDF **Activities:** Students take the Diagnostic Assessment. It takes two days to administer. See i-Ready Classroom Central for information.	**Session 1:** Points, Lines, Rays and Angles **Objective:** Students will be able to draw and identify points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Students will be able to recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. **Materials:** ● Student Worktext pages 645-646 ● Teacher's Guide Volume 1 pages 645-646 ● Discourse Cards ● Hands-On (for each student: geoboard) ● Additional Practice: Student Worktext pages 647-648 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 647-648	**Session 2:** Points, Lines, Line Segments, and Rays **Objective:** Students will be able to draw and identify points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Students will be able to recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. **Materials:** ● Student Worktext pages 649-652 ● Teacher's Guide Volume 1 pages 649-652 ● Discourse Cards ● Additional Practice: Student Worktext pages 653-564 ● Fluency Extra Practice: Points, Lines, Line Segments and Rays (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 653-564 **Fluency Extra Practice:** Points, Lines, Line Segments and Rays	**Session 3:** Identifying Angles **Objective:** Students will be able to draw and identify points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Students will be able to recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. **Materials:** ● Student Worktext pages 655-658 ● Teacher's Guide Volume 1 pages 655-658 ● Discourse Cards ● Hands-On (for each student: 6 pipe cleaners, 6 sheets of paper, tape) ● Additional Practice: Student Worktext pages 659-660 ● Fluency Extra Practice: Identifying Angles (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 659-660 **Fluency Extra Practice:** Identifying Angles	**Session 4:** Parallel and Perpendicular Lines **Objective:** Students will be able to draw and identify points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Students will be able to recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. **Materials:** ● Student Worktext pages 661-664 ● Teacher's Guide Volume 1 pages 661-664 ● Discourse Cards ● Hands-On (for each student: 3 straws) ● Additional Practice: Student Worktext pages 665-666 ● Fluency Extra Practice: Parallel and Perpendicular Lines (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 665-666 **Fluency Extra Practice:** Parallel and Perpendicular Lines
Day 7 **Lesson 30:** Points, Lines, Rays, and Angles **Session 5:** Points, LInes, Rays and Angles **Objective:** Students will be able to draw and identify points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Students will be able to recognize angles as geometric shapes	**Day 8** **Lesson 31:** Angles **Session 1:** Angles **Objective:** Students will understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Students will understand that an angle	**Day 9** **Lesson 31:** Angles **Session 2:** Using a Protractor **Objective:** Students will understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Students will understand that an angle	**Day 10** **Lesson 31:** Angles **Session 3:** Drawing Angles **Objective:** Students will understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Students will understand that an angle	**Day 11** **Lesson 31:** Angles **Session 4:** Angles **Objective:** Students will understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Students will understand that an angle

that are formed wherever two rays share a common endpoint. **Materials:** ● Student Worktext pages 667-670 ● Teacher's Guide Volume 1 pages 667-670b ● Discourse Cards ● Hands-On (for each student: geoboard, several copies of Activity Sheet 1-Centimeter Grid Paper) ● Lesson 30 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiations 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 30 Quiz or Digital Comprehension Check	that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angle lengths. Students will be able to measure angles in whole-number degrees using a protractor and sketch angles of specified measure. **Materials:** ● Student Worktext pages 673-674 ● Teacher's Guide Volume 1 pages 673-674 ● Discourse Cards ● Hands-On (for each student: brass fastener, heavy paper, scissors) ● Each student needs: a protractor and a ruler ● Additional Practice: Student Worktext pages 675-676 ● Interactive Tutorial - Prerequisite Review: Understand Categories of Shapes **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 675-676	that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angle lengths. Students will be able to measure angles in whole-number degrees using a protractor and sketch angles of specified measure. **Materials:** ● Student Worktext pages 677-680 ● Teacher's Guide Volume 1 pages 677-680 ● Discourse Cards ● Hands-On (for each student: protractor, ruler, Activity Sheet: *Regular Polygons*) ● Each student needs: a protractor and a ruler ● Additional Practice: Student Worktext pages 681-682 ● Fluency Extra Practice: Using a Protractor (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 681-682 **Fluency Extra Practice:** Using a Protractor	that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angle lengths. Students will be able to measure angles in whole-number degrees using a protractor and sketch angles of specified measure. **Materials:** ● Student Worktext pages 683-686 ● Teacher's Guide Volume 1 pages 683-686 ● Discourse Cards ● Hands-On (for each student: protractor, ruler, completed Activity Sheet: *Regular Polygons* with angle measures recorded) ● Each student needs: a protractor and a ruler ● Additional Practice: Student Worktext pages 687-688 ● Fluency Extra Practice: Drawing Angles (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 687-688 **Fluency Extra Practice:** Drawing Angles	that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angle lengths. Students will be able to measure angles in whole-number degrees using a protractor and sketch angles of specified measure. **Materials:** ● Student Worktext pages 689-692 ● Teacher's Guide Volume 1 pages 689-692b ● Discourse Cards ● Hands-On (for each student: protractor, compass, ruler, scissors) ● Each student needs: a protractor and a ruler ● Lesson 31 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiations 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 31 Quiz or Digital Comprehension Check
Day 12 **Lesson 32:** Add and Subtract with Angles **Session 1:** Adding and Subtracting with Angles **Objective:** Students will recognize angle measures as additive. Students will be able to solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems by using an equation with a symbol for the unknown angle measure. **Materials:** ● Student Worktext pages 695-696 ● Teacher's Guide Volume 1 pages 695-696 ● Discourse Cards ● Hands-On (for each pair: 2 index cards, protractor, ruler, scissors) ● Additional Practice: Student Worktext pages 697-698 ● Interactive Tutorial - Prerequisite Review: Measure Angles **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min)	**Day 13** **Lesson 32:** Add and Subtract with Angles **Session 2:** Combining Angles **Objective:** Students will recognize angle measures as additive. Students will be able to solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems by using an equation with a symbol for the unknown angle measure. **Materials:** ● Student Worktext pages 699-702 ● Teacher's Guide Volume 1 pages 699-702 ● Discourse Cards ● Hands-On (for each student: 10 toothpicks, protractor, modeling clay) ● Additional Practice: Student Worktext pages 703-704 ● Fluency Extra Practice: Combining Angles (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2:	**Day 14** **Lesson 32:** Add and Subtract with Angles **Session 3:** Finding Unknown Angle Measures **Objective:** Students will recognize angle measures as additive. Students will be able to solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems by using an equation with a symbol for the unknown angle measure. **Materials:** ● Student Worktext pages 705-708 ● Teacher's Guide Volume 1 pages 705-708 ● Discourse Cards ● Hands-On (for each student: protractor, straw - cut in half, 1 pipe cleaner) ● Additional Practice: Student Worktext pages 709-710 ● Fluency Extra Practice: Finding Unknown Angle Measures (can be printed or filled in online) **Activities:** As outlined in the Teacher	**Day 15** **Lesson 32:** Add and Subtract with Angles **Session 4:** Adding and Subtracting with Angles **Objective:** Students will recognize angle measures as additive. Students will be able to solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems by using an equation with a symbol for the unknown angle measure. **Materials:** ● Student Worktext pages 711-714 ● Teacher's Guide Volume 1 pages 711-714b ● Discourse Cards ● Hands-On (for each pair: clock, protractor) ● Lesson 32 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group	**Day 16** **Lesson 33:** Classify Two-Dimensional Figures **Session 1:** Classifying Two-Dimensional Figures **Objective:** Students will classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles specified size. Students will recognize right triangles as a category and identify right triangles. **Materials:** ● Student Worktext pages 717-718 ● Teacher's Guide Volume 1 pages 717-718 ● Discourse Cards ● Hands-On (for each pair: 1 set of pattern blocks - hexagon, triangle, square, trapezoid, parallelogram, rhombus) ● Additional Practice: Student Worktext pages 719-720 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min)

2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 697-698	1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 703-704 **Fluency Extra Practice:** Combining Angles	Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Picture It & Model It (5 min) 5) Connect It (10 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 709-710 **Fluency Extra Practice:** Finding Unknown Angle Measures	Differentiations 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 32 Quiz or Digital Comprehension Check	3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 719-720
Day 17 **Lesson 33:** Classify Two-Dimensional Figures **Session 2:** Sorting Shapes Based on Sides **Objective:** Students will classify two-dimensional figures based on the presence or absence of perpendicular lines, or the presence or absence of angles specified size. Students will recognize right triangles as a category and identify right triangles. **Materials:** ● Student Worktext pages 721-724 ● Teacher's Guide Volume 1 pages 721-724 ● Discourse Cards ● Hands-On (for each student: geoboard) ● Additional Practice: Student Worktext pages 725-726 ● Fluency Extra Practice: Sorting Shapes Based on Sides (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It & Model It (5 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 725-726 **Fluency Extra Practice:** Sorting Shapes Based on Sides	**Day 18** **Lesson 33:** Classify Two-Dimensional Figures **Session 3:** Sorting Shapes Based on Angles **Objective:** Students will classify two-dimensional figures based on the presence or absence of perpendicular lines, or the presence or absence of angles specified size. Students will recognize right triangles as a category and identify right triangles. **Materials:** ● Student Worktext pages 727-730 ● Teacher's Guide Volume 1 pages 727-730 ● Discourse Cards ● Hands-On (for each student: 1 set of pattern blocks OR Activity Sheet: *Pattern Blocks 2*) ● Additional Practice: Student Worktext pages 731-732 ● Fluency Extra Practice: Sorting Shapes Based on Angles (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It & Model It (5 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 731-732 **Fluency Extra Practice:** Sorting Shapes Based on Angles	**Day 19** **Lesson 33:** Classify Two-Dimensional Figures **Session 4:** Sorting Triangles **Objective:** Students will classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles specified size. Students will recognize right triangles as a category and identify right triangles. **Materials:** ● Student Worktext pages 733-736 ● Teacher's Guide Volume 1 pages 733-736 ● Discourse Cards ● Hands-On (for each pair: 20 straws, scissors) ● Additional Practice: Student Worktext pages 37-738 ● Fluency Extra Practice: Sorting Triangles (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It & Discuss It (15 min) 3) Picture It (5 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 737-738 **Fluency Extra Practice:** Sorting Triangles	**Day 20** **Lesson 33:** Classify Two-Dimensional Figures **Session 5:** Classifying Two-Dimensional Figures **Objective:** Students will classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles specified size. Students will recognize right triangles as a category and identify right triangles. **Materials:** ● Student Worktext pages 739-742 ● Teacher's Guide Volume 1 pages 739-742b ● Discourse Cards ● Reteach Hands-On (for each student: poster board, newspaper, magazines, scissors, markers, glue or tape) ● Lesson 33 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiations 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 33 Quiz or Digital Comprehension Check	**Day 21** **Lesson 34:** Symmetry **Session 1:** Symmetry **Objective:** Students will recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Students will identify line-symmetrical figures and draw lines of symmetry. **Materials:** ● Student Worktext pages 745-746 ● Teacher's Guide Volume 1 pages 745-746 ● Discourse Cards ● Hands-On (for each student: sheet of rectangular paper) ● Additional Practice: Student Worktext pages 747-748 **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (10 min) 3) Discuss It (10 min) 4) Connect It (15 min) 5) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 747-748
Day 22 **Lesson 34:** Symmetry **Session 2:** Finding and Drawing a Line of Symmetry **Objective:** Students will recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Students will identify line-symmetrical figures and draw lines of symmetry. **Materials:**	**Day 23** **Lesson 34:** Symmetry **Session 3:** Symmetry **Objective:** Students will recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Students will identify line-symmetrical figures and draw lines of symmetry. **Materials:** ● Student Worktext pages	**Day 24** **Lesson:** Math in Action **Session 1:** Classify Shapes and Angles **Objective:** Students will draw and identify lines and angles and classify shapes by properties of their lines and angles. Students will understand concepts of angles and measure angles with a protractor. **Materials:** ● Student Worktext pages 760-765	**Day 25** **Lesson:** Math in Action **Session 2:** Classify Shapes and Angles **Objective:** Students will draw and identify lines and angles and classify shapes by properties of their lines and angles. Students will understand concepts of angles and measure angles with a protractor. **Materials:** ● Student Worktext pages 766-767	**Day 26** **Lesson:** Unit Review **Materials:** ● Student Worktext pages 768-770 ● Teacher's Guide Volume 1 pages 768-770 ● Discourse Cards ● Unit Game: Angle Sums (for each pair: 2 copies of Game Cards, Recording Sheet and for each student: protractor) ● Literacy Connections: *New Ways With Words* and Literacy Connection "New Ways With Words"

• Student Worktext pages 749-752 • Teacher's Guide Volume 1 pages 749-752 • Discourse Cards • Hands-On (for each student: scissors, colored pencils, Activity Sheet: *Symmetrical Shapes*) • Additional Practice: Student Worktext pages 753-754 • Fluency Extra Practice: Finding and Drawing a Line of Symmetry (can be printed or filled in online) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Try It (5 min) 3) Discuss It (10 min) 4) Picture It (5 min) 5) Connect It (15 min) 6) Close: Exit Ticket (5 min) **Additional Practice**: Student Worktext pages 753-754 **Fluency Extra Practice:** Finding and Drawing a Line of Symmetry	755-758 • Teacher's Guide Volume 1 pages 755-758b • Discourse Cards • Reteach Hands-On (for each student: scissors, sheet of rectangular paper) • Lesson 34 Quiz (needs to be printed or copied) or Digital Comprehension Check **Activities:** As outlined in the Teacher Guide Volume 2: 1) Start (5 min) 2) Example & Problems 1-3 (15 min) 3) Practice & Small Group Differentiations 4) Close: Exit Ticket (5 min) **Assessment**: Lesson 34 Quiz or Digital Comprehension Check After the quiz, have students complete the **Self-Reflection** (page 759 in their Worktext).	• Teacher's Guide Volume 2 pages 760-765 • Discourse Cards • For *Wood Scraps*: each students needs a copy of Solution Sheet 2, each pair needs 3 string circles, 3 slips of paper) • For *Symmetric Mosaic*: each students needs a copy of Activity Sheet: *Symmetric Mosaic*) **Activities:** As outlined in the Teacher Guide Volume 2: 1) Study an Example Problem and Solution: *Sand Jars* - Example Problem and Solution (15 minutes) 2) Try Another Approach: *Sand Jars* - Plan It (5 minutes) - Solve It (10 minutes) - Reflect (5 minutes) 3) Discuss Models and Strategies: *Symmetric Mosaic* - Plan It and Solve It (10 minutes) - Reflect (5 minutes)	• Teacher's Guide Volume 2 pages 766-767 • Discourse Cards **Activities:** As outlined in the Teacher Guide Volume 2: 1) Persevere On Your Own: *Mosaic Art* - Solve It (20 minutes) - Reflect (5 minutes) 2) Persevere On Your Own: *Angle Cuts* - Solve It (20 minutes) - Reflect (5 minutes)	Problems: Lines, Rays and Angles (answer key online) • Vocabulary Cards to Review Unit Vocabulary (Student Worktext & Teacher's Guide pages 771-774) **Activities:** As outlined in the Teacher Guide Volume 1: 1) Walk students through the Unit Review. 2) Have students work in pairs or small groups on the Performance Task. 3) Explain the Angle Sums game and give students time to play. Optional: Literacy Connections: *New Ways With Words* and Literacy Connection "New Ways With Words" Problems: Lines, Rays and Angles Optional: Vocabulary Cards to Review Unit Vocabulary
Day 27 **Lesson:** Unit 5 Assessment **Materials:** • Teacher's Guide Volume 1 pages 770b-770e • Unit 5 Assessment **Activities:** As outlined in the Teacher Guide Volume 2: 1) Walk students through the Unit Assessment. 2) Monitor students as they work independently. 3) Collect all assessments.				

Differentiate Instruction, depending on individual student needs (students with an IEP, 504, or Intervention Plan; ELL Students; Students At Risk; Gifted Students) **by:**
Presentation Accommodations

- Use alternate texts at lower readability level
- Work with fewer items per page or line and/or materials in a larger print size
- Use magnification device, screen reader, or Braille / Nemeth Code
- Use audio amplification device (e.g., hearing aid(s), auditory trainer, sound-field system (which may require teacher use of microphone)
- Be given a written list of instructions
- Record a lesson, instead of taking notes
- Have another student share class notes with him
- Be given an outline of a lesson
- Be given a copy of teacher's lecture notes
- Be given a study guide to assist in preparing for assessments
- Use visual presentations of verbal material, such as word webs and visual organizers
- Use manipulatives to teach or demonstrate concepts

Response Accommodations

- Use sign language, a communication device, Braille, other technology, or native language other than English
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker

- Use a word processor to type notes or give responses in class

Setting Accommodations
- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he learns best (for example, near the teacher & away from distractions)
- Use special lighting or acoustics
- Take a test in small group setting
- Use sensory tools such as an exercise band that can be looped around a chair's legs (so fidgety kids can kick it and quietly get their energy out)
- Use noise buffers such as headphones, earphones, or earplugs

Timing Accommodations
- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Scheduling Accommodations
- Take more time to complete a project
- Take a test in several timed sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization Skills Accommodations
- Use an alarm to help with time management
- Mark texts with a highlighter

Assignment Modifications
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum Modifications
- Learn different material (such as continuing to work on multiplication while classmates move on to fractions, or moving ahead to an extension concept/skill while classmates continue to work on a core skill)
- Get graded or assessed using a different standard than the one for classmate