

# Black Horse Pike Regional School District Curriculum

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21<sup>ST</sup> CENTURY GLOBAL SKILLS

**Course Name: MATH FOUNDATIONS 1 – Math 180**

**Course Number: 113130**

## PART I: UNIT RATIONALE

### WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

<b>Course/Unit Title:</b> Math Foundations I – Math 180	<b>Unit Summary:</b> In this unit students develop an understanding of fraction equivalence.
<b>Grade Level(s):</b> 9	
<b>Essential Question(s):</b> How do you understand the meaning of fraction equivalence?  How do you represent equal parts of a whole as fractions.  How do you represent numbers greater than 1?	<b>Enduring Understanding(s):</b> Students will be able to: <ul style="list-style-type: none"> <li>• Represent equal parts of a whole as fractions.</li> <li>• Compose non-unit fractions and wholes from unit fractions.</li> <li>• Compare fractions using visual models and represent with equations and inequalities.</li> <li>• Communicate reasoning about the relative sizes of fractions.</li> <li>• Solve problems by writing and evaluating equations with fractions.</li> <li>• Extend understanding of unit fractions.</li> <li>• Add with fraction models.</li> <li>• Represent numbers greater than 1 as fractions or mixed numbers.</li> <li>• Represent and solve additive problems with fractions using models.</li> </ul>

## PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

### DESCRIBE THE LEARNING TARGETS.

After each target, identify the NJSLS or Common Core Standards that are applicable

Learning Target	NJSLS or CCS
<p>Make a line plot to display a data set of measurements in fractions of a unit (<math>1/2</math>, <math>1/4</math>, <math>1/8</math>). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i></p>	<p>CCSS:</p> <p><b>5.MD.B.2</b></p>
<p>Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression <math>3(2 + x)</math> to produce the equivalent expression <math>6 + 3x</math>; apply the distributive property to the expression <math>24x + 18y</math> to produce the equivalent expression <math>6(4x + 3y)</math>; apply properties of operations to <math>y + y + y</math> to produce the equivalent expression <math>3y</math>.</i></p>	<p><b>6.EE.A.3</b></p>
<p>Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p>	<p><b>6.G.A.1</b></p>
<p>Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>	<p><b>6.G.A.2</b></p>
<p>Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, create a story context for <math>(2/3) \div (3/4)</math> and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that <math>(2/3) \div (3/4) = 8/9</math> because <math>3/4</math> of <math>8/9</math> is <math>2/3</math>. (In general, <math>(a/b) \div (c/d) = ad/bc</math>.) How much chocolate will each person get if 3 people share <math>1/2</math> lb of chocolate equally? How many <math>3/4</math>-cup servings are in <math>2/3</math> of a cup of yogurt? How wide is a rectangular strip of land with length <math>3/4</math> mi and area <math>1/2</math> square mi?.</i></p>	<p><b>6.NS.A.1</b></p>
<p>Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret <math>-3 &gt; -7</math> as a statement that <math>-3</math> is located to the right of <math>-7</math> on a number line oriented from left to right.</i></p>	<p><b>6.NS.C.7a</b></p>
<p>Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."</i></p>	<p><b>6.RP.A.1</b></p>
<p>Understand the concept of a unit rate <math>a/b</math> associated with a ratio <math>a:b</math> with <math>b \neq 0</math>, and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is <math>3/4</math> cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."<sup>1</sup></i></p>	<p><b>6.RP.A.2</b></p>
<p>Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	<p><b>6.RP.A.3</b></p>
<p>Solve unit rate problems including those involving unit pricing and constant speed. <i>For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i></p>	<p><b>6.RP.A.3b</b></p>
<p>Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means <math>30/100</math> times the quantity); solve problems involving finding the whole, given a part and the percent.</p>	<p><b>6.RP.A.3c</b></p>

<p>Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>	<p><b>6.RP.A.3d</b></p>
<p>Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. <i>For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</i></p>	<p><b>7.EE.B.3</b></p>
<p>Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. <i>For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction <math>^{1/2}/_{1/4}</math> miles per hour, equivalently 2 miles per hour.</i></p>	<p><b>7.RP.A.1</b></p>
<p>Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p>	<p><b>7.RP.A.2a</b></p>
<p>Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p>	<p><b>7.RP.A.2b</b></p>
<p>Represent proportional relationships by equations. <i>For example, if total cost <math>t</math> is proportional to the number <math>n</math> of items purchased at a constant price <math>p</math>, the relationship between the total cost and the number of items can be expressed as <math>t = pn</math>.</i></p>	<p><b>7.RP.A.2c</b></p>
<p>Explain what a point <math>(x, y)</math> on the graph of a proportional relationship means in terms of the situation, with special attention to the points <math>(0, 0)</math> and <math>(1, r)</math> where <math>r</math> is the unit rate.</p>	<p><b>7.RP.A.2d</b></p>
<p>Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p>	<p><b>7.SP.C.5</b></p>
<p>Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p>	<p><b>7.SP.C.8a</b></p>

**Inter-Disciplinary Connections:**

**Real-World problem solving examples:**

To solve problems related to artists, inventors and entrepreneurs. To solve problems in the field of culinary arts, science, space and medical.

Suggested culminating activity: Hands-on culinary activity.

**Students will engage with the following text:**

**Math 180, Scholastic, Inc. 2014**

**Students will write:**

**Writing/Open Ended questions:** Students analyze function tables to identify and express multiplication patterns with whole numbers. Students use bar models to represent and solve problems by multiplying 1-digit and 2 – digit factors.

**PART III: TRANSFER OF KNOWLEDGE AND SKILLS**

**DESCRIBE THE LEARNING EXPERIENCE.**

**How will students uncover content and build skills.**

Students will uncover and build skills through various classroom activities. Investigating number sense activities, modeling examples, using real-life application, using note-taking strategies, and using SMARTBoard technologies will all be explored. Other learning experiences could include alternative lesson openers, math and history applications, problem solving workshops, interdisciplinary applications and extra examples of problem solving.

**Suggested warm-up activities, instructional strategies/activities, and assignments:**

<b>Block 4: Fractions Concepts:</b>	Essential Question: How do students use visual models to identify, compare and add fractions, and to represent division problems as fractions?
<b>Topic 1 (Lesson 1):</b>	
<b>FOCUS AND MOTIVATE</b>	Do Now! Play the Anchor Video, "Making the Cut." <i>The video shows high school students developing their cooking skills while learning about fractions.</i> Read the preview questions aloud: How could you change a recipe from 8 servings to 4? Ask students to share their responses to class.
<b>Teach Teaching Options</b>	Lesson Objective: To represent equal parts of a whole as fractions?  Language Goals: Use the terms: Denominator, fraction, numerator, and whole when describing fractions.  Teach: Play the Instructional Video: Model Fractions as Parts of a Whole. Model Dividing One Whole: Teach the steps to divide one whole into equal parts. Step 1: Divide one whole into 2 equal parts. Step 2: Divide one whole into 4 equal parts. Step 3: Divide one whole into 8 equal parts. Step 4: Divide one whole into 16 equal parts. Play instructional Video: Identify Equal Groups <i>mSpace</i> p. 148-149 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Students construct an argument to explain how they know that two fractions are equivalent. Review Building Equivalent Fractions Rows Mathematical Practice: Construct Viable Arguments Lesson 1: Review Building equivalent fractions rows Exit Ticket: <i>mSpace</i> p. 149
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 148-149. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software:

	<p>Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Compose non unit fractions and wholes from unit fractions.</p> <p>Language Goals: Use the term unit fraction when explaining or justifying a solution. Explain how to compose a fraction from two or more unit fractions.</p> <p>Do Now: Reason about Numbers <i>Mspace</i> p. 146</p> <p>Teach: Play the Instructional Video: Use Fraction Models. Model Adding Fractions to Make 1: Teach the steps to add fractions to make 1 using fraction pieces. Step 1: Write an equation with fractions. Use the Vocabulary Routine to teach unit fractions. Step 2: Reorder the fraction pieces. Step 3: Rewrite the equation. Step 4: Combine fractions. Mathematical Practice: Make Use of Structure <i>Mspace</i> p. 150-151 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Students construct an argument to explain how they know that two fractions are equivalent. Review adding unit fractions Mathematical Practice: Construct Viable Arguments Lesson 2: Review adding unit fractions Exit Ticket: <i>mSpace</i> p. 151</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 150-151. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>

	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
	<b>Topic 1 (Lesson 3):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Use visual models, equations, and inequalities to compare and represent fractions. Communicate reasoning about the relative sizes of fractions.</p> <p>Language Goals: Use the term equivalent when describing fractions. Use language to compare fractions and equations involving fractions.</p> <p>Do Now: Create Structure Build It Students create fractions using the given properties. Ask students to share their solutions and what they notice about the fractions they created. Mathematical Practice: Make Use of Structure</p> <p>Teach: Play the Instructional Video: Use Models to Compare Fractions. Model comparing fractions with pieces: Teach the steps to compare fractions using fraction pieces. Mspace p. 152-153 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 153</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 152-153. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
	<b>Topic 1 (Lesson 4):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Compare fractions using visual models and represent with equations.</p> <p>Language Goals: Use the terms denominator, equivalent, numerator, and unit fraction to describe actions in Fraction Action (Level 1). Describe ideal scenarios in the game Fraction Action (Level 1).</p> <p>Do Now: Develop Reasoning Skills Which Does Not Belong? Students analyze the relative size and structure of fraction pieces to arrange them mentally or physically to solve this problem. Ask students to share solutions and explain their reasoning.</p>

		<p>Mathematical Practice: Make Use of Structure</p> <p>Teach: Purpose: To practice building fraction models and writing matching expressions. Teach: Fraction Action (Level 1) Step 1: Roll the fraction cube. Step 2: Write the fraction rolled on the recording sheet. Step 3: Place the fraction piece that matches the fraction rolled on top of the one-whole piece. Step 4: When the one-whole piece is completely covered, write an equation to match. Goal: To cover the one-whole fraction piece. Play: Fraction Action (Level 1) in pairs on <i>mSpace</i> pages 154–157. Materials: Red fraction cubes and fraction pieces.</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review game strategy. Students communicate precisely about the ideal number of rolls to win a game of Fraction Action. Exit Ticket: <i>mSpace</i> p. 157</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Play game in pairs on <i>mSpace</i> pages 154-157. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Topic 1 (Lesson 5):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Solve problems by writing and evaluating equations with fractions.</p> <p>Language Goals: Use the terms equivalent, greater than, and less than to discuss pan balance problems.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser Students use specific criteria and fraction pieces to make one whole. Ask students to share solutions and verify with fraction pieces. Mathematical Practice: Use Tools Strategically</p> <p>Teach: Model a Pan Balance Problem: Teach the steps to identify an unknown quantity using a pan balance. Step 1: Analyze the problem. Step 2: Write an equation for the problem. Step 3: Solve the problem. Step 4: Check your work. Grade-Level Content Connections: Expressions &amp; Equations <i>Mspace</i> p. 158-159 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Students review solving fraction problems with equivalence. Exit Ticket: <i>mSpace</i> p. 159</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 158-159. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone</p>

	Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 1):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: Extend understanding of unit fractions.  Language Goals: Use the terms denominator and numerator when describing fractions. Use mathematical vocabulary to explain the relationship among thirds, sixths, twelfths, and one whole.  Do Now: Evaluate Solutions: Who's Right? Students review the work of Amir and Lola and decide who recorded the fraction equivalence correctly. Ask students to share their responses and ask why they think Lola answered incorrectly. Mathematical Practice: Model With Mathematics  Teach: Play the Instructional Video: Model Fraction Equivalence. Model Dividing One Whole: Teach the steps to divide a whole into thirds, sixths, and twelfths. Step 1: Divide one whole into 3 equal parts. Step 2: Divide one whole into 6 equal parts. Step 3: Divide one whole into 12 equal parts. Mspace p. 160-163 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 163
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 160-163. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.



	<b>Topic 2 (Lesson 2):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Add fractions with unlike denominators using models.</p> <p>Language Goals: Use the terms denominator, equal, numerator, and simplest form to explain fraction equivalence. Explain how to show that <math>\frac{5}{6}</math> is equivalent to <math>\frac{1}{3} + \frac{2}{4}</math>.</p> <p>Do Now: Develop Number Sense Tell Me All That You Can Students evaluate the fraction <math>\frac{1}{2}</math> and demonstrate an understanding of the quantity with their responses. Ask students to share their solutions and explain how they know a fraction is equivalent to <math>\frac{1}{2}</math>. Mathematical Practice: Reason Abstractly</p> <p>Teach: Play the Instructional Video: Use Models to Add Fractions. Model Adding Fractions: Teach the steps to add <math>\frac{1}{3} + \frac{2}{4}</math> by using fraction shapes. Step 1: Model the addition expression. Mathematical Practice: Model With Mathematics Step 2: Use fraction pieces to find the sum. Step 3: Use different fraction pieces to find the sum. Grade-Level Content Connections: Expressions &amp; Equations Mspace p. 164-165 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 165</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 164-165. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<b>Topic 2 (Lesson 3):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Add fractions with unlike denominators using models.</p> <p>Language Goals: Explain how to identify equivalence using fraction pieces while playing Fraction Action. Identify Numerical Patterns Find the Pattern</p> <p>Do Now: Students use their knowledge of adding fractions to identify the pattern.</p>

	<p>Ask students to share solutions and explain how they began solving the problem. Mathematical Practice: Make Use of Structure</p> <p>Teach: Set Up Purpose: To practice adding with fraction models and identifying equivalent fractions. Teach Fraction Action (Level 2) Step 1: Roll the fraction cube. Step 2: Choose one of three actions: Remove fraction pieces equivalent to the fraction rolled. Exchange a fraction piece for equivalent pieces. If no actions are possible, skip a turn. Goal: To uncover the one-whole piece. Mspace p. 166-169 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 169</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 166-169. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
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<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Represent fractions greater than 1 as fractions or mixed numbers.</p> <p>Language Goals: Use the term mixed number in complete sentences. Explain how to create a mixed number using fraction pieces.</p> <p>Do Now: Develop Reasoning Skills Which Does Not Belong? Students analyze a group of fractions to determine which one does not belong. Ask a student to share and explain why that fraction does not belong. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Play the Instructional Video: Model Fractions Greater Than 1. Model Adding Fractions With Sum Greater Than 1: Teach the steps to add <math>\frac{1}{3}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{6}</math> and <math>\frac{1}{6}</math>. Step 1: Model the addition expression. Step 2: Use fraction pieces to find the sum. Step 3: Name the sum. Step 4: Rename the sum as a mixed number.</p>

	Mspace p. 170-171 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 171
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 170-171. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
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<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: Represent and solve additive problems with fractions using models.  Language Goals: Explain how to use fraction pieces to solve contextualized fraction problems.  Do Now: Develop Flexible Thinking Brain Teaser Students analyze the given characteristics of an unknown fraction and solve the riddle by identifying the fraction. Ask students to share their responses and ask what the new fraction would be if the numerator changed. Mathematical Practice: Attend to Precision  Teach: Model How to Solve a Problem: Teach the steps to solve a part-part-whole problem and find out how much banana is used in a smoothie recipe. Read It!: Read and identify the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. Mspace p. 172-173 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 173
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 172-173. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.

	<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
	<b>Topic 3 (Lesson 1):</b>	
	<b>Teach Teaching Options</b>	Lesson Objective: Represent sharing situations with fractions. Use patterns to connect fractions to division.  Language Goals: Explain how to use fraction shapes to solve sharing problems.  Do Now: Develop Flexible Thinking Brain Teaser - Students solve this problem by recognizing the dividend and divisor of a division problem. Ask students to share their solutions and explain their reasoning. Mathematical Practice: Make Use of Structure  Teach: Play the Instructional Video: Model Fractions as Division. Model Representing Division as Fractions: Teach the steps to represent $2 \div 3$ as a fraction using fraction shapes. Step 1: Write the division expression. Step 2: Divide the wholes into equal parts. Step 3: Share the parts equally. Mathematical Practice: Model With Mathematics Step 4: Write the equations. Mspace p. 176-177 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
	<b>Checking for Understanding</b>	Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 177
	<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 176-177. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
	<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.

	<p><b>Topic 3 (Lesson 2):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Use patterns to connect fractions to division.</p> <p>Language Goals: Explain how to identify equivalence using fraction pieces while playing Fraction Action.</p> <p>Do Now: Identify Numerical Patterns Find the Pattern Students make sense of quantities as they reason about the fractions within and outside the circle. Ask students to share the rule and the fraction they added to the circle. Mathematical Practice: Reason Abstractly</p> <p>Teach: (Set-up) Purpose: To practice creating equivalent fractions. Teach Fraction Action (Level 3) Step 1: Roll the fraction cube. Step 2: Choose one of three actions: Remove fraction pieces equivalent to the fraction rolled. Exchange a fraction piece for equivalent pieces. If no actions are possible, skip a turn. Goal: To uncover the one-whole piece. Mspace p. 178-179 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 179</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on <i>mSpace</i> pages 178-179. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<p><b>Topic 3 (Lesson 3):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Represent whole numbers as fractions with given denominators.</p> <p>Language Goals: Explain how fraction shapes help to identify a pattern connecting fractions to division.</p> <p>Do Now: Create Structure Build It - Students apply their understanding about fractions and mixed numbers to fractions greater than 1. Ask students to share solutions and explain their reasoning. Mathematical Practice: Reason Abstractly</p>

	<p>Teach: (Set-up)          Play the Instructional Video:          Express Whole Numbers as Fractions.          Model Expressing Whole Numbers as Fractions:          Teach the steps to represent 4 wholes as fractions by using fraction shapes.          Step 1: Use fraction shapes to show whole numbers.          Step 2: Create a list.          Step 3: Look for a pattern and define a rule.          Step 4: Apply the rule.          Mspace p. 178-181 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:          Students use fraction pieces to compare two fractions that have unlike denominators.          Exit Ticket: <i>mSpace</i> p. 181</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 178-179.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #3:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson related to software data.          Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Represent sharing situations with fractions and mixed numbers.</p> <p>Language Goals:          Explain the connection between the remainder of a division problem and fractions.</p> <p>Do Now:          Evaluate Solutions - Who's Right?          Students evaluate other students' work and their approaches to division.          Ask students to identify the correct solutions and explain the error in the incorrect solution.          Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: (Set-up)          Play the Instructional Video:          Represent Remainders as Fractions.          Model Dividing With Fractional Remainders:          Teach the steps to write <math>97/3</math> as a mixed number by dividing.          Step 1: Write the fraction as a division problem.          Step 2: Use the partial quotient method to divide.          Step 3: Rename the remainder as a fraction.          Grade-Level Content Connections: The Number System          Mspace p. 184-185 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:          Students use fraction pieces to compare two fractions that have unlike denominators.          Exit Ticket: <i>mSpace</i> p. 185</p>
<b>Practice and Apply</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 184-185.          Computer Software:</p>

	<b>Assigning Homework</b>	On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
	<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
	<b>Topic 3 (Lesson 5):</b>	
	<b>Teach Teaching Options</b>	Lesson Objective: Analyze and solve problem situations with fractions using models and equations. Describe and explain solution strategies for problems with fractions.  Language Goals: Explain solution strategies for fraction problems.  Do Now: Develop Flexible Thinking Brain Teaser Students analyze the given characteristics of an unknown fraction and solve the riddle by identifying the fraction. Ask students to share their responses and explain how they know they found all possible solutions. Mathematical Practice: Use Tools Strategically  Teach: Model Solving a Compare Problem: Teach the steps to solve a compare problem using fraction pieces. Read It!: Read and identify the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. Mspace p. 186-187 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
	<b>Checking for Understanding</b>	Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 187
	<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 186-187. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
	<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.

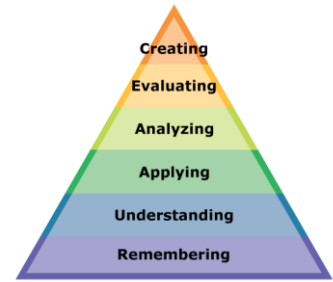
	<b>Block 4 Performance Task</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Take the Chef's Challenge-Students use models to represent the addition of fractions.</p> <p>Teach:  Replay Anchor Video – "Making the Cut."  Introduce Performance Task.  Complete the Performance task Mspace p. 188-189  Evaluate:  Students will be evaluated based on Performance Task Rubric  Explore, Apply, and Analyze</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
	<b>mSkills Curriculum Based Assessment 4</b>	<p>Review:  To prepare students for mSkills:  Download the Block 4 mSkills Strategy Lesson, Student Pages, and Annotated Student Pages to give students targeted practice with assessment item types based on current Block content.  You may also teach the mSkills Demo Lesson to give students a general overview of assessment item types based on prerequisite content.</p> <p>Evaluate:  To administer mSkills:  Go to Class Settings and assign the mSkills assessment to students.  Have students log in to the student software.  Allow students to review the Problem-Solving Routine in the</p> <p>Administer:  Reference Guide.  The first 20 items will be digitally graded and available in Class Analytics Zone Progress.  Enter scores to the constructed-response items in the SDP using the Scoring Rubric.  Have students complete the Mindset Strategy in their mSpaces to reflect on their performance in the Block.</p>



## **PART IV: EVIDENCE OF LEARNING**

**IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS.**

**IDENTIFY BLOOM'S LEVELS.**



### **Formative Assessments:**

The effectiveness of the instructional program will be based on teacher observations, students doing quality of work together, questioning strategies, self and peer assessment, student record-keeping, quizzes, tests, homework, class discussion, individual conferences, performance tasks, diagnostic tests, homework, and projects

### **Accommodations/Modifications:**

Use manipulatives to build patterns or represent symbols. Provide Graphic organizers to use in solving problems. Provide guided notes/handouts. Break problems into smaller pieces. Have students keep and turn in a notebook. Review needed skills prior to the lesson. Provide checklists for solving problems.

### **Summative Assessments:**

Periodic chapter tests, state assessments, PSATs, End of Course tests, and SATs

### **Accommodations/Modifications:**

Provide checklists for solving problems. Provide students with a resource page that has multiplication charts, fractions pieces. Break problems and test sections into smaller pieces

### **Performance Assessments:**

Projects, display of student work, and google classroom

### **Accommodations/Modifications:**

Allow students extra time to complete projects. Provide students with an example of project for reference. Make a clear rubric for students to understand exactly what is expected.

## PART I: UNIT RATIONALE

### WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

<p><b>Course/Unit Title:</b> Math Foundations I – Math 180</p> <p><b>Grade Level(s):</b> 9</p>	<p><b>Unit Summary:</b> In this unit students develop an understanding of fraction relationships.</p>
<p><b>Essential Question(s):</b> How do you compare fractions?</p>	<p><b>Enduring Understanding(s):</b> Students will be able to: Compare Fractions with common features. Identify fractions equivalent to <math>\frac{1}{2}</math>. Use benchmarks to compare fractions. Use reasoning to compare fractions. Order fractions to solve problems. Name equivalent fractions Use equivalence to compare fractions. Locate Fractions on a number line. Use strategies to compare fractions. To subtract fractions with a number line. To use equivalence to add fractions. To use an open number line to subtract. To use strategies to compare sums.</p>

## PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

### DESCRIBE THE LEARNING TARGETS.

After each target, identify the NJSL or Common Core Standards that are applicable

<b>Learning Target</b>	<b>NJSLS or CCS</b>
<p><b>Learning Target</b></p> <p>Make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i></p> <p>Compare two decimals to thousandths based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons.</p> <p>Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret <math>-3 &gt; -7</math> as a statement that <math>-3</math> is located to the right of <math>-7</math> on a number line oriented from left to right.</i></p> <p>Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write <math>-3^{\circ}\text{C} &gt; -7^{\circ}\text{C}</math> to express the fact that <math>-3^{\circ}\text{C}</math> is warmer than <math>-7^{\circ}\text{C}</math>.</i></p> <p>Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of <math>-30</math> dollars, write <math> -30  = 30</math> to describe the size of the debt in dollars.</i></p>	<p><b>CCSS:</b></p> <p>5.MD.B.2-</p> <p>5.NBT.A.3b</p> <p>-</p> <p>6.NS.C.7a</p> <p>6.NS.C.7b</p> <p>6.NS.C.7c</p> <p>6.NS.C.7d</p>

Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than  $-30$  dollars represents a debt greater than 30 dollars.*

**7.NS.A.1d**

Apply properties of operations as strategies to add and subtract rational numbers.

**8.NS.A.2**

Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g.,  $\pi^2$ ). *For example, by truncating the decimal expansion of  $\sqrt{2}$ , show that  $\sqrt{2}$  is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

### **Inter-Disciplinary Connections:**

#### **Real-World problem solving examples:**

To solve problems related to artists, inventors and entrepreneurs. To solve problems in the field of culinary arts, science, space and medical.

### **Students will engage with the following text:**

**Math 180, Scholastic, Inc. 2014**

### **Students will write:**

**Writing/Open Ended questions:** Students analyze function tables to identify and express multiplication patterns with whole numbers. Students use bar models to represent and solve problems by multiplying 1-digit and 2 – digit factors.

## **PART III: TRANSFER OF KNOWLEDGE AND SKILLS**

### **DESCRIBE THE LEARNING EXPERIENCE.**

#### **How will students uncover content and build skills.**

Students will uncover and build skills through various classroom activities. Investigating number sense activities, modeling examples, using real-life application, using note-taking strategies, and using SMARTBoard technologies will all be explored. Other learning experiences could include alternative lesson openers, math and history applications, problem solving workshops, interdisciplinary applications and extra examples of problem solving.

**Suggested warm-up activities, instructional strategies/activities, and assignments:**

<b>Block 5: Comparing Fractions with common features:</b>	Essential Question: How do students develop strategies to compare fractions, identify equivalent fractions, and add and subtract fractions.
<b>Topic 1 (Lesson 1):</b>	
<b>FOCUS AND MOTIVATE</b>	Do Now! Play the Anchor Video, "Have a Heart." Read the preview question aloud: If you were part of a transplant team, which job would you want? Ask students to share their responses with the class.
<b>Teach Teaching Options</b>	Lesson Objective: Use reasoning to compare fractions with common features  Language Goals: Use the phrases greater than and less than to compare fractions.  Teach: Play the Instructional Video: Compare Fractions With Common Features. Model Comparing Fractions With Common Features: Teach the steps to compare fractions using comparison strategies. Step 1: Compare unit fractions. Step 2: Compare with common numerators. Step 3: Compare with common denominators. <i>mSpace</i> p. 6-7 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Comparing Fractions With Common Features Exit Ticket: <i>mSpace</i> p. 7
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 6-7. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 1 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: Identify fractions equivalent to $\frac{1}{2}$ . Analyze patterns in numerators and denominators in fractions equivalent to $\frac{1}{2}$ .  Language Goals: Describe the relationship between the numerator and denominator in a fraction equal to $\frac{1}{2}$ .  Do Now: Develop Reasoning Skills Which Does Not Belong? Students analyze the set of fractions and identify the one that does not fit the pattern. Ask students to share solutions and explain the strategy they used. Mathematical Practice: Use Repeated Reasoning

	<p>Teach:  Play the Instructional Video:  Identify Fractions Equivalent to <math>\frac{1}{2}</math>.  Model Identifying Fractions Equivalent to <math>\frac{1}{2}</math>:  Teach the steps of writing fractions equivalent to <math>\frac{1}{2}</math>.  Step 1: Build fraction rows equivalent to <math>\frac{1}{2}</math>.  Step 2: Find the rule.  Step 3: Write fractions equivalent to <math>\frac{1}{2}</math> with a given denominator.  Step 4: Write fractions equivalent to <math>\frac{1}{2}</math> with a given numerator.  <i>mSpace</i> p. 8-9 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Identifying Fractions Equivalent to <math>\frac{1}{2}</math>  Exit Ticket: <i>mSpace</i> p. 9</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 8-9.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #1:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson based on software data.  Stretch Lesson based on software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Use <math>\frac{1}{2}</math> and 1 as benchmarks to compare fractions.</p> <p>Language Goals: Use multiplication and division terms to describe generating fractions equivalent to <math>\frac{1}{2}</math>.  Use the term benchmark when comparing fractions.</p> <p>Do Now:  Develop Flexible Thinking: Brain Teaser  Students evaluate possible solutions to a riddle until they find the correct fraction. Ask students to share solutions and explain their reasoning.  Mathematical Practice: Persevere and Solve Problems</p> <p>Teach:  Play the Instructional Video:  Use Benchmarks to Compare Fractions.  Model Using Benchmarks to Compare Fractions:  Teach the steps of comparing fractions by using <math>\frac{1}{2}</math> and 1 as benchmarks.  Step 1: Compare fractions to 1.  Step 2: Verify with fraction pieces.  Step 3: Compare fractions to <math>\frac{1}{2}</math>.  Step 4: Verify with fraction pieces.  Grade-Level Content Connections:  The Number System  <i>mSpace</i> p. 10-11 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Comparing Fractions With Benchmarks  Exit Ticket: <i>mSpace</i> p. 11</p>

<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on <i>mSpace</i> pages 10-11.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #1:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<p><b>Accommodations/Modifications:</b></p>	<p>Students can work on additional software as a supplement to class instruction.</p>
<p><b>Topic 1 (Lesson 4):</b></p>	
<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Use <math>\frac{1}{2}</math> and 1 as benchmarks to compare fractions.  Language Goals: Use the terms benchmark, common denominator, common numerator, greater than, and less than to discuss comparing fractions.  Do Now: Identify Numerical Patterns  Find the Pattern  Students analyze the group of fractions in the circle to identify and use a rule to write a fraction that belongs in the circle. Ask students to share solutions and explain their reasoning.  Mathematical Practice:  Make Use of Structure  Teach:  Purpose:  To practice comparing fractions to a benchmark of <math>\frac{1}{2}</math>.  Teach  Fraction Grab (Level 1)  Step 1: Each player turns over one card.  Step 2: Both players record the fraction.  Step 3: Players compare their fraction to <math>\frac{1}{2}</math>.  Step 4: The player with the fraction greater than <math>\frac{1}{2}</math> captures both cards.  Goal:  To capture the most cards by the end of 10 rounds.</p>
<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess:  Review Game Strategy  Mathematical Practice: Attend to Precision  Answer this question: Player A's card is <math>\frac{3}{4}</math> and Player B's card is <math>\frac{5}{12}</math>.  How do you know who wins the round?  Player wins the round because _____.  Exit Ticket: <i>mSpace</i> p. 12-15</p>
<p><b>Practice and Apply Assigning Homework</b></p>	<p>Play game in pairs on <i>mSpace</i> pages 12-15.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<p><b>Topic 1 (Lesson 5):</b></p>	

	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Use equivalence and comparison to classify fractions and solve problems. Justify solutions to fraction problems.</p> <p>Language Goals: Use the terms greater than and less than when comparing and arranging numbers sequentially from least to greatest.</p> <p>Do Now: Evaluate Solutions Who's Right? Students compare the effectiveness of two plausible arguments and determine which student's reasoning is correct. Ask students to share responses and explain their reasoning. Mathematical Practice: Construct Viable Arguments</p> <p>Teach: Model Comparing a Set of Fractions: Teach the steps to compare multiple fractions. Step 1: Analyze the problem. Step 2: Compare with common features. Step 3: Compare with benchmarks. Step 4: Check your work. Mspace p. 16-17 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Students review solving fraction problems with equivalence. Exit Ticket: <i>mSpace</i> p. 17</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on <i>mSpace</i> pages 16-17. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
	<p><b>Accommodations/Modifications:</b></p>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<p><b>Topic 2 (Lesson 1):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Generate equivalent fractions. Describe relationships among fractions.</p> <p>Language Goals: Explain how to determine whether a fractions is in simplest form.</p> <p>Do Now: Analyze Problems Missing Numbers Students use a set of numbers to fill in boxes and build fractions equivalent to <math>\frac{1}{2}</math>. Ask several students to share their solutions and their reasoning. Mathematical Practice: Use Repeated Reasoning</p> <p>Teach: Play the Instructional Video: Name Equivalent Fractions. Model Naming an Equivalent Fraction: Teach the steps of writing equivalent fractions by multiplying and dividing.</p>

	<p>Step 1: Use multiplication to generate equivalent fractions.  Step 2: Verify with fraction pieces.  Step 3: Use division to generate equivalent fractions.  Step 4: Verify with fraction pieces.  <i>mSpace</i> p. 20-21 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Students use fraction pieces to compare two fractions that have unlike denominators.  Exit Ticket: <i>mSpace</i> p. 21</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 20-21.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Compare fractions by generating equivalents. Describe relationships among fractions.</p> <p>Language Goals:  Use the term rename when generating equivalent fractions.  Explain reasoning for choosing a strategy to compare fractions.</p> <p>Do Now:  Identify Numerical Patterns  Find the Pattern  Students analyze the set of numbers in the circle and outside the circle to identify a rule. Ask students to name the rule and examples of numbers that also belong in the circle.  Mathematical Practice: Make Use of Structure</p> <p>Teach:  Play the Instructional Video:  Use Equivalence to Compare Fractions.  Model Using Equivalence to Compare Fractions:  Teach the steps to compare <math>\frac{5}{6}</math> and <math>\frac{7}{10}</math> by renaming with common denominators.  Step 1: Identify a compare strategy.  Step 2: Find a common denominator.  Step 3: Rename the fractions.  Step 4: Compare the fractions.  Grade-Level Content Connections:  The Number System  <i>mSpace</i> p. 24-25 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Students use fraction pieces to compare two fractions that have unlike denominators.  Exit Ticket: <i>mSpace</i> p. 25</p>



<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 24-25. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: Locate fractions on a number line. Describe relationships among fractions.  Language Goals: Use the terms interval, label, and tick mark when constructing number lines.  Do Now: Evaluate Solutions Who's Right? Students review the work of Max and Lola and decide who renamed $\frac{7}{6}$ correctly. Ask students to share their solution and explain what mistake Lola made. Mathematical Practice: Construct Viable Arguments  Teach: Play the Instructional Video: Locating Fractions on a Number Line. Model Building a Number Line: Teach the steps to plot halves, fourths, and eighths on a number line using fraction pieces. Step 1: Locate halves on a number line. Step 2: Locate fourths on a number line. Step 3: Locate eighths on a number line. Grade-Level Content Connections: The Number System Mspace p. 26-29 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 29
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 26-29. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking

	<b>Differentiating Instruction</b>	<p>Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
	<b>Topic 2 (Lesson 4):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Describe relationships among fractions.</p> <p>Language Goals:  Use the terms greater than and less than when comparing fractions.</p> <p>Do Now:  Develop Flexible Thinking  Brain Teaser  Students analyze the given characteristic of an unknown number and solve the riddle by identifying the fraction. Ask students to share their responses and explain their reasoning.  Mathematical Practice: Persevere and Solve Problems</p> <p>Teach:  Purpose:  To practice comparing fractions by renaming them with a common denominator.  Teach Fraction Grab (Level 2)  Step 1: Each player turns over one card.  Step 2: Players record their fractions and rename them with a common denominator.  Step 3: Players compare the fractions.  Step 4: The player with the greater fraction captures both cards.  Goal: To capture the most cards by the end of 10 rounds.  Mspace p. 26-29 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess:  Students use fraction pieces to compare two fractions that have unlike denominators.  Exit Ticket: <i>mSpace</i> p.29</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 26-29.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.

	<p><b>Topic 2 (Lesson 5):</b></p> <p><b>Teach Teaching Options</b></p> <p><b>Checking for Understanding</b></p> <p><b>Practice and Apply Assigning Homework</b></p> <p><b>Assess and Reteach Differentiating Instruction</b></p> <p><b>Accommodations/Modifications:</b></p> <p><b>Topic 3 (Lesson 1):</b></p> <p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Analyze and solve problems with exactly one, more than one or no solutions.</p> <p>Language Goals: Explain how a problem can have multiple solutions.</p> <p>Do Now: Develop Reasoning Skills Which Does Not Belong? Students analyze a group of fractions to determine which one does not belong. Ask a student to share and ask why that fraction doesn't belong. Mathematical Practice: Reason Abstractly</p> <p>Teach: Model Solving a Problem With Multiple Solutions: Teach the steps to solve a problem that has more than one solution. Step 1: Analyze the problem. Step 2: Find common denominators. Step 3: Label the fractions on the number line. Step 4: Solve the problem. Mspace p. 30-31 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p> <p>Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p.31</p> <p>Solve problems in pairs on <i>mSpace</i> pages 30-31. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p> <p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p> <p>Students can work on additional software as a supplement to class instruction.</p> <p>Lesson Objective: Subtract fractions with the same denominators.</p> <p>Language Goals: Use the term difference when subtracting fractions. Explain how to use a number line to subtract fractions.</p> <p>Do Now: Develop Reasoning Skills- Which Does Not Belong? Students analyze a group of fractions to determine which does not belong. Ask students to share and ask for examples of other numbers that don't belong. Mathematical Practice: Construct Viable Arguments</p> <p>Teach: Play the Instructional Video: Subtract Fractions with a Number Line.</p>
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	<p>Model Subtracting Fractions with a Number Line:  Teach the steps of subtracting numbers on a number line.  Step 1: Use a number line to subtract.  Step 2: Use a number line to subtract.  Step 3: Use a benchmark to subtract.  Step 4: Add the distances.  Mspace p. 34-35 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Students use fraction pieces to compare two fractions that have unlike denominators.  Exit Ticket: <i>mSpace</i> p. 35</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 34-35.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Add fractions and mixed numbers with different denominators. Estimate sums and differences relative to whole numbers.</p> <p>Language Goals:  Explain how to use an estimate to determine whether an answer is reasonable.</p> <p>Do Now:  Reason About Numbers  Number Strings -Students calculate the sums of fractions mentally by grouping numbers. Ask students to share solutions and explain their strategies.  Mathematical Practice: Use Repeated Reasoning</p> <p>Teach:  Play the Instructional Video:  Use Equivalence to Add Fractions.  Model Using Equivalence to Add Fractions:  Teach the steps of adding <math>1\frac{1}{2} + \frac{2}{3}</math> by renaming fractions.  Step 1: Make an estimate.  Step 2: Rename the addends.  Step 3: Add the fractions.  Mathematical Practice: Reason Abstractly  Step 4: Rename fractions greater than 1.  Mspace p. 36-37 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Students use fraction pieces to compare two fractions that have unlike denominators.  Exit Ticket: <i>mSpace</i> p. 37</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 36-37.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole</p>

	<p>group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Subtract fractions and mixed numbers with different denominators. Estimate sums and differences relative to whole numbers.</p> <p>Language Goals:  Use the terms distance and difference to describe fraction subtraction.</p> <p>Do Now:  Analyze Problems  Missing Numbers  Students look for entry points to a solution and find the missing numbers in the equation. Ask students to share their solutions and explain their strategy used.  Mathematical Practice: Persevere and Solve Problems</p> <p>Teach:  Play the Instructional Video:  Use an Open Number Line to Subtract.  Model Using an Open Number Line to Subtract:  Teach the steps to subtract on an open number line.  Step 1: Introduce the open number line.  Step 2: Rename fractions.  Step 3: Use an open number line to subtract.  Step 4: Find the distance.  Grade-Level Content Connections: The Number System  Mspace p. 38-39 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Students use fraction pieces to compare two fractions that have unlike denominators.  Exit Ticket: <i>mSpace</i> p. 39</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 38-39.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>

	<p><b>Topic 3 (Lesson 4):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Add fractions and mixed numbers with unlike denominators. To use benchmarks to add fractions. Use benchmarks to estimate fraction sums and differences.</p> <p>Language Goals: Use the terms addend and sum when describing addition. Use the terms greater than and less than when comparing fractions.</p> <p>Do Now: Develop Estimation Skills Make an Estimate Students estimate a sum to determine if an argument is correct. Ask students to share solutions and explain how they can solve the problem without calculating. Mathematical Practice: Construct Viable Arguments</p> <p>Teach: (Set up) Purpose: To practice adding and comparing the sums of fractions. Teach Fraction Grab (Level 3) Step 1: Each player turns over two cards. Step 2: Players record their fractions and rename them with a common denominator. Step 3: Players add their fractions and record their sum and their partner's sum. Step 4: The player with the greater sum captures all four cards. Goal: To capture the most cards in 10 rounds. <i>mSpace</i> pages 40-43.</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Review Game Strategy Mathematical Practice: Attend to Precision Circle the player who wins the round. Can you tell which sum is greater without adding the fractions? Explain. sum is greater than sum because ____ . Exit Ticket: <i>mSpace</i> p. 43</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on <i>mSpace</i> pages 40-43. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<p><b>Topic 3 (Lesson 5):</b></p>	
<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Represent and solve additive problem situations with fractions using models and equations. Estimate sums and differences relative to benchmark numbers.</p> <p>Language Goals: Use the terms bar model and benchmark to discuss solving contextualized problems.</p> <p>Do Now:</p>	

	<p>Develop Flexible Thinking Brain Teaser -Students analyze the given characteristics of an unknown fraction and solve the riddle by identifying the fraction. Ask students to share their responses and explain how they began working on the riddle. Mathematical Practice: Make Use of Structure</p> <p>Teach: Model Solving a Problem: Teach the steps to solve a part-part-whole problem. Read It!: Read and identify the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. Mspace p. 44-45 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Students use fraction pieces to compare two fractions that have unlike denominators. Exit Ticket: <i>mSpace</i> p. 45</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 44-45. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Block 5 Performance Task</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Match Organs for Transplants-Students add fractions to calculate total travel times.</p> <p>Teach: Replay Anchor Video – “Have a Heart.” Introduce Performance Task. Complete the Performance task Mspace p. 46-47 Evaluate: Students will be evaluated based on Performance Task Rubric Explore, Apply, and Analyze</p>
<b>Practice and Apply Assigning Homework</b>	<p>Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>

	<b>mSkills Curriculum Based Assessment 5</b>	<p><b>Review:</b> To prepare students for mSkills: Download the Block 5 mSkills Strategy Lesson, Student Pages, and Annotated Student Pages to give students targeted practice with assessment item types based on current Block content. You may also teach the mSkills Demo Lesson to give students a general overview of assessment item types based on prerequisite content.</p> <p><b>Evaluate:</b> To administer mSkills: Go to Class Settings and assign the mSkills assessment to students. Have students log in to the student software.</p> <p><b>Administer:</b> Reference Guide. The first 20 items will be digitally graded and available in Class Analytics Zone Progress. Enter scores to the constructed-response items in the SDP using the Scoring Rubric. Have students complete the Mindset Strategy in their mSpaces to reflect on their performance in the Block.</p>

**PART IV: EVIDENCE OF LEARNING**

**IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS.  
IDENTIFY BLOOM’S LEVELS.**



**Formative Assessments:**

The effectiveness of the instructional program will be based on teacher observations, students doing quality of work together, questioning strategies, self and peer assessment, student record-keeping, quizzes, tests, homework, class discussion, individual conferences, performance tasks, diagnostic tests, homework, and projects



**Accommodations/Modifications:**

Use manipulatives to build patterns or represent symbols. Provide Graphic organizers to use in solving problems. Provide guided notes/handouts. Break problems into smaller pieces. Have students keep and turn in a notebook. Review needed skills prior to the lesson. Provide checklists for solving problems.

**Summative Assessments:**

Periodic chapter tests, state assessments, PSATs, End of Course tests, and SATs

**Accommodations/Modifications:**

Provide checklists for solving problems. Provide students with a resource page that has multiplication charts, fractions pieces. Break problems and test sections into smaller pieces

**Performance Assessments:**

Projects, display of student work, and electronic portfolios

**Accommodations/Modifications:**

Allow students extra time to complete projects. Provide students with an example of project for reference. Make a clear rubric for students to understand exactly what is expected.

## PART I: UNIT RATIONALE

### WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

<b>Course/Unit Title:</b> Math Foundations I – Math 180	<b>Unit Summary:</b> In this unit students develop an understanding of multiplying and dividing fractions.
<b>Grade Level(s):</b> 9	
<b>Essential Question(s):</b> <b>How do you multiply and divide fractions and mixed numbers.</b>	<b>Enduring Understanding(s):</b> Students will be able to: <ul style="list-style-type: none"> <li>• Model parts of a set as fractions.</li> <li>• Relate parts of a set to multiplication.</li> <li>• Multiply unit fractions.</li> <li>• Multiply fractions and whole numbers.</li> <li>• Use properties to multiply fractions.</li> <li>• Reason with fraction multiplication.</li> <li>• Multiply fractions greater than 1.</li> <li>• Solve multi-step problems with fractions.</li> <li>• Use models to divide.</li> <li>• Divide by unit fractions.</li> <li>• Divide any fractions.</li> <li>• Use strategies to divide fractions.</li> <li>• Identify patterns with fractions.</li> </ul>

## PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

### DESCRIBE THE LEARNING TARGETS.

After each target, identify the NJSLS or Common Core Standards that are applicable

<b>Learning Target</b>	<b>NJSLS or CCS</b>
Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	<b>CCSS:</b> <b>5.NF.B.6</b>
Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	<b>5.MD.A.1</b>
Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>	<b>5.MD.B.2</b>
Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	<b>5.NF.B.5a</b>
Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $\frac{a}{b} = \frac{(n \times a)}{(n \times b)}$ to the effect of multiplying $\frac{a}{b}$ by 1.	<b>5.NF.B.5b</b>
Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	<b>5.NF.B.6</b>

<p>Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p>	<p><b>6.G.A.1</b></p>
<p>Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>	<p><b>6.G.A.2</b></p>
<p>Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	<p><b>7.G.B.6</b></p>
<p>Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as <math>(-1)(-1) = 1</math> and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p>	<p><b>7.NS.A.2a</b></p>
<p>Apply properties of operations as strategies to multiply and divide rational numbers.</p>	<p><b>7.NS.A.2c</b></p>

**Inter-Disciplinary Connections:**

**Real-World problem solving examples:**  
 To solve problems related to artists, inventors and entrepreneurs. To solve problems in the field of culinary arts, science, space and medical.

**Students will engage with the following text:**

**[ Math 180, Scholastic, Inc. 2014 ]**

**Students will write:**

**Writing/Open Ended questions:** Students analyze function tables to identify and express multiplication patterns with whole numbers. Students use bar models to represent and solve problems by multiplying 1-digit and 2 – digit factors.

**PART III: TRANSFER OF KNOWLEDGE AND SKILLS**

**DESCRIBE THE LEARNING EXPERIENCE.**

**How will students uncover content and build skills.**

Students will uncover and build skills through various classroom activities. Investigating number sense activities, modeling examples, using real-life application, using note-taking strategies, and using SMARTBoard technologies will all be explored. Other learning experiences could include alternative lesson openers, math and history applications, problem solving workshops, interdisciplinary applications and extra examples of problem solving.

Suggested warm-up activities, instructional strategies/activities, and assignments:

<b>Block 6: Model Parts of a Set as Fractions</b>	Essential Question: How can students multiply and divide fractions and mixed numbers?
<b>Topic 1 (Lesson 1):</b>	
<b>FOCUS AND MOTIVATE</b>	Do Now! Play the Anchor Video, "Out of This World." Read the preview question aloud: Which part of a mission to Mars would you want to work on?? Ask students to share their responses with the class.
<b>Teach Teaching Options</b>	Lesson Objective: To represent parts of sets as fractions.  Language Goals: Use the term set to describe a group of objects. Explain how to find fractional parts of a set using the array model.  Teach: Play the Instructional Video: Model Parts of a Set as Fractions. Teach the steps to find $\frac{3}{4}$ of 16 using an array. Step 1: Divide the set into equal parts. Step 2: Name one part of the set. Step 3: Name another part of the set. Step 4: Name the chosen part of the set. <i>mSpace</i> p. 52-53 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Modeling Parts of a Set as Fractions Exit Ticket: <i>mSpace</i> p. 53
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 52-53. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 1 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To multiply whole numbers and unit fractions. To explain the relationship between multiplying by unit fractions and dividing by whole numbers.  Language Goals:

	<p>Use of to indicate multiplication. Describe a fraction of a number as the product of the fraction and the number.</p> <p>Do Now: Create Structure Build It -Students create fractions with values between 1 and 3 using a set of a numbers. Ask students to share fractions they created and the method they used. Mathematical Practice: Make Use of Structure</p> <p>Teach: Play the Instructional Video: Relate Parts of a Set to Multiplication. Model Multiplying a Fraction by a Whole Number: Teach the steps to find <math>\frac{1}{3} \times 5</math> by multiplying. Step 1: Multiply a whole number by a unit fraction. Step 2: Multiply a unit fraction by a whole number. Step 3: Find a fraction of a whole number. Step 4: Connect fractions of a set to multiplication. <i>mSpace</i> p. 54-55 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Multiplying a Fraction by a Whole Number Exit Ticket: <i>mSpace</i> p. 55</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 54-55. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To multiply unit fractions by unit fractions.</p> <p>Language Goals: Explain a numerical pattern and use the pattern to describe a mathematical rule.</p> <p>Do Now: Analyze Problems Missing Numbers -Students find the missing numbers in a set of equations. Ask students to share their solutions and explain their reasoning. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Play the Instructional Video: Multiply Unit Fractions. Model Multiplying Unit Fractions: Teach the steps to identify a rule for multiplying unit fractions. Step 1: Multiply <math>\frac{1}{2} \times \frac{1}{4}</math> using fraction pieces. Step 2: Multiply <math>\frac{1}{3} \times \frac{1}{4}</math> using fraction pieces. Step 3: Multiply <math>\frac{1}{4} \times \frac{1}{4}</math> using fraction pieces. Step 4: Write a rule for multiplying unit fractions.</p>

	Mspace p. 56-57 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Multiplying Unit Fractions Exit Ticket: <i>mSpace</i> p. 57
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 56-57. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 1 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To multiply unit fractions by unit fractions.  Language Goals: Use the terms denominator, factors, numerator, and product when comparing products with partners.  Do Now: Develop Flexible Thinking Brain Teaser Students analyze the puzzle by identifying the structure of the equations and multiplying unit fractions to complete the puzzle. Ask students to share solutions and how they began solving the puzzle. Mathematical Practice: Make Use of Structure  Teach: Purpose: To practice multiplying unit fractions. Teach Less Is More (Level 1) Step 1: Roll the number cube three times. Step 2: Create two fractions by choosing two numbers. Step 3: Multiply your fractions and record the product. Step 4: Compare your product with your partner's. Goal: To create the lesser product and have the most points after five rounds.
<b>Checking for Understanding</b>	Summarize and Assess: Review Game Strategy Exit Ticket: <i>mSpace</i> p. 61
<b>Practice and Apply Assigning Homework</b>	Play game in pairs on <i>mSpace</i> pages 58-61. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.

	<b>Topic 1 (Lesson 5):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To represents and solve multiplicative comparison problems with fractions using models and equations.</p> <p>Language Goals: Use the terms compare problem, fraction, and product to discuss problems.</p> <p>Do Now: Develop Number Sense Tell Me All That You Can Students make sense of quantities and their relationships in order to write some understandings they have about the mathematical expression <math>1/5</math> of 30. Ask students to share their solutions. Mathematical Practice: Reason Abstractly</p> <p>Teach: Model Solving a Compare Problem: Teach the steps to identify and solve a compare problem with fractions. Read It!:Read and identify the problem. Show It!:Represent the problem. Solve It!:Solve the problem. Check It!:Check your work. Mspace p. 61-63 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Solving Compare Problems Exit Ticket: <i>mSpace</i> p. 63</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 62-63. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
	<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<b>Topic 2 (Lesson 1):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To multiply fractions and whole numbers.</p> <p>Language Goals: Explain the steps for multiplying fractions and whole numbers. Explain how to know when a fraction is in simplest form.</p> <p>Do Now: Reason About Numbers Number Strings Students use properties of operations and number sense to order the factors so they are easy to multiply mentally. Ask students to share solutions and strategies for mental multiplication. Mathematical Practice: Reason Abstractly</p> <p>Teach: Play the Instructional Video:</p>

	<p>Multiply Fractions and Whole Numbers.  Model Multiplying Fractions and Whole Numbers:  Teach the steps to multiply <math>27 \times 5/6</math>.  Step 1: Rename the fraction.  Step 2: Multiply the whole numbers.  Step 3: Multiply the whole number by the unit fraction.  Step 4: Rename and simplify the fraction.  Mspace p. 66-67 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Multiplying Fractions and Whole Numbers  Exit Ticket: <i>mSpace</i> p. 67</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 66-67.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To multiply fractions.</p> <p>Language Goals:  Describe an effective and efficient way to multiply fractions.  Use the terms denominator, numerator, and product when multiplying fractions.</p> <p>Do Now:  Develop Flexible Thinking - Brain Teaser  Students analyze given characteristics and solve the riddle by identifying the children's ages. Ask students to share solutions and explain how they began solving the riddle.  Mathematical Practice: Persevere and Solve Problems</p> <p>Teach:  Play the Instructional Video:  Use Properties to Multiply Fractions.  Model Using Properties to Multiply Fractions:  Teach the steps to identify a rule by multiplying <math>2/5 \times 3/4</math>.  Step 1: Estimate the product.  Step 2: Rename the fractions and multiply.  Step 3: Describe the rule.  Step 4: Simplify the product.  Grade-Level Content Connections: Geometry  Mspace p. 68-69 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Multiplying Fractions  Exit Ticket: <i>mSpace</i> p. 69</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 68-69.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole</p>



	<p>group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To multiply fractions.  Language Goals:  Use the terms multiply and product to describe game strategy.  Do Now:  Develop Estimation Skills  Make an Estimate  Students identify expressions that have a product less than both factors by estimating. Ask students to share solutions and explain their reasoning.  Mathematical Practice: Reason Abstractly  Teach: (Set-up)  Purpose:  To practice multiplying fractions.  Teach Less is More (Level 2)  Step 1: Roll the number cube four times.  Step 2: Create two fractions less than 1.  Step 3: Record the product of the two fractions.  Step 4: Write an inequality to compare your product with your partner's product.  Goal: To create the lesser product and have the most points after five rounds.  Mspace p. 70-73 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Game Strategy  Mathematical Practice:  Use Repeated Reasoning  Answer this question: If you rolled these numbers, what fraction would you create? 3, 2, 4, 6  Explain your reasoning.  I would create and because _____.  Exit Ticket: mSpace p. 73</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 70-73.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and</p>

	<p>differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To apply the distributive property to multiply mixed numbers.</p> <p>Language Goals:  Use the term Distributive Property when explaining how to find the product of a mixed number and a whole number.</p> <p>Do Now:  Identify Numerical Patterns  Find the Pattern  Students evaluate expressions in a circle to identify a rule and write an expression that fits the pattern. Ask students to name the rule and share the expressions they added to the circle.  Mathematical Practice: Make Use of Structure</p> <p>Teach:  Play the Instructional Video:  Multiply Fractions Greater Than 1.  Model Multiplying Mixed Numbers:  Teach the steps to multiply <math>3 \times 2 \frac{4}{5}</math>.  Step 1: Rename the mixed number as a sum.  Step 2: Apply the Distributive Property.  Step 3: Rename the mixed numbers as fractions.  Step 4: Multiply the fractions.  Mspace p. 74-75 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Two Strategies to Multiply Mixed Numbers  Exit Ticket: mSpace p.75</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 74-75.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To analyze and solve multi-step problems with fractions using models and equations. To explain and compare solution strategies for problems and fractions.

	<p>Language Goals: Use the terms mixed number and rename to discuss contextualized fraction problems.</p> <p>Do Now: Develop Number Sense Which Does Not Belong? Students analyze a set of numbers to determine which one doesn't belong. Ask students to share and explain their reasoning. Mathematical Practice: Attend to Precision</p> <p>Teach: Model Solving a Problem: Teach the steps to identify and solve a part-part-whole problem with fractions. Read It!: Read and identify the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. Mspace p. 76-77 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Solving Multi-Step Problems with Fractions Exit Ticket: mSpace p.77</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 76-77. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 3 (Lesson 1):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To model division with fractions as taking out equal groups.</p> <p>Language Goals: Accurately describe taking out equal groups as solutions to division problems.</p> <p>Do Now: Create Structure Build It - Students create division equations using a set of numbers. Ask students to share equations and explain their reasoning. Mathematical Practice: Make Use of Structure</p> <p>Teach: Play the Instructional Video: Use Models to Divide. Model Dividing With Fraction Shapes: Teach the steps to divide <math>1 \frac{3}{4} \div \frac{1}{4}</math></p>

	<p>using fraction shapes.  Step 1: Represent the problem with fraction shapes.  Step 2: Take out equal groups.  Step 3: Write the division equation.  Grade-Level Content Connections: Expressions &amp; Equations  Mspace p. 80-81 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Using Models to Divide  Exit Ticket: <i>mSpace</i> p. 81</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 80-81.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To divide by unit fractions using the common denominator method.</p> <p>Language Goals:  Use the terms common denominator, mixed number, quotient, and simplest form to explain the steps for dividing by unit fractions.  Do Now:  Develop Flexible Thinking  Brain Teaser  Students analyze the given characteristics of an unknown number and solve the riddle by identifying the dividend. Ask students to share their responses and share their first step in solving the riddle.  Mathematical Practice: Persevere and Solve Problems</p> <p>Teach:  Play the Instructional Video:  Divide by Unit Fractions.  Model Dividing Fractions With Common Denominators:  Teach the steps to identifying the common denominator rule by modeling division with fraction shapes.  Step 1: Divide <math>9/4 \div 3/4</math> with fraction shapes.  Step 2: Divide <math>6/5 \div 3/5</math> with fraction shapes.  Step 3: Divide <math>10/8 \div 2/8</math> with fraction shapes.  Step 4: Identify the rule.  Grade-Level Content Connections: Expressions &amp; Equations  Mspace p. 82-83 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Dividing Fractions With Common Denominators  Exit Ticket: <i>mSpace</i> p. 83</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 82-83.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.</p>

	<p>Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To divide any fractions using the common denominator method.</p> <p>Language Goals: Use the terms denominator, numerator, and quotient to explain the steps in dividing fractions.</p> <p>Do Now: Analyze Problems Missing Numbers Students analyze the given numbers in an equation and find the missing numbers. Ask students to share the missing numbers and explain their first step. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Play the Instructional Video: Divide Any Fractions. Model Dividing With Common Denominators: Teach the steps to divide <math>2\frac{5}{6} \div \frac{3}{8}</math> using the common denominator method. Step 1: Rename mixed numbers as fractions. Step 2: Rename fractions with a common denominator. Step 3: Divide the fractions. Step 4: Simplify the quotient. Mspace p. 84-85 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Dividing Fractions Exit Ticket: <i>mSpace</i> p. 85</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 84-85. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>

	<p><b>Topic 3 (Lesson 4):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To divide any fractions using the common denominator methods.</p> <p>Language Goals: Use the terms dividend, divisor, and quotient to explain a winning game strategy.</p> <p>Do Now: Develop Estimation Skills Make an Estimate Students estimate to choose the lesser quotient in each pair of expressions. Ask students to share their solutions and explain their reasoning. Mathematical Practice: Reason Abstractly</p> <p>Teach: (Set up) Purpose: To practice dividing fractions. Teach Less Is More (Level 3) Step 1: Roll the number cube three times. Step 2: Create two fractions less than 1. Step 3: Divide the fractions. Record your quotient and your partner's quotient. Step 4: Write an inequality to compare your quotient with your partner's quotient. Goal: To create the lesser quotient and have the most points after five rounds. mSpace pages 86-89.</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Review Game Strategy Mathematical Practice: Use Repeated Reasoning Answer this question: If you rolled these numbers, what fractions would you create? 2, 4, 5 Can you arrange the numbers another way and still get the same quotient? If so, how? I would arrange the number like this ____ and get the same quotient. Exit Ticket: mSpace p. 89</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on <i>mSpace</i> pages 86-89. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<p><b>Topic 3 (Lesson 5):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To identify patterns with whole numbers and fractions and describe with more than one rule.</p> <p>Language Goals: Use the terms dividend, divisor, quotient, and reciprocal</p>

		<p>to discuss fractions. Use patterns to explain the relationship between multiplying and dividing.</p> <p>Do Now: Evaluate Solutions Who's Right? Students analyze a pattern and find the missing number to decide which student has the correct solution. Ask students to share their solutions and explain their reasoning. Mathematical Practice: Construct Viable Arguments</p> <p>Teach: Model Identifying Patterns: Teach the steps to identify and apply multiplication and division rules to complete a function table. Step 1: Find the rule using multiplication. Step 2: Represent the rule with division. Step 3: Apply the rule to complete the table. Mspace p. 90-91 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Identifying Patterns With Fractions Exit Ticket: <i>mSpace</i> p. 91</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 90-91. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Block 6 Performance Task</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: Organize Space Experiments-Students multiply fractions to calculate areas.</p> <p>Teach: Replay Anchor Video – "Destination: Mars." Introduce Performance Task. Complete the Performance task Mspace p. 92-93 Evaluate: Students will be evaluated based on Performance Task Rubric Explore, Apply, and Analyze</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and</p>

		<p>differentiated instruction lessons for each rotation.</p> <p>Review Data: Review the performance data and groupings.</p> <p>Plan Instruction: Based on Rotations, access digital lessons.</p> <p>Boost Lesson related to software data.</p> <p>Stretch Lesson related to software data.</p>
	<p><b>mSkills Curriculum Based Assessment 6</b></p>	<p>Review:</p> <p>To prepare students for mSkills:  Download the Block 6 mSkills Strategy Lesson, Student Pages, and Annotated Student Pages to give students targeted practice with assessment item types based on current Block content.  You may also teach the mSkills Demo Lesson to give students a general overview of assessment item types based on prerequisite content.</p> <p>Evaluate:</p> <p>To administer mSkills:  Go to Class Settings and assign the mSkills assessment to students.  Have students log in to the student software.</p> <p>Administer:</p> <p>Reference Guide.  The first 20 items will be digitally graded and available in Class Analytics Zone Progress.  Enter scores to the constructed-response items in the SDP using the Scoring Rubric.  Have students complete the Mindset Strategy in their mSpaces to reflect on their performance in the Block.</p>

**PART IV: EVIDENCE OF LEARNING**

**IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS.  
IDENTIFY BLOOM’S LEVELS.**



**Formative Assessments:**

The effectiveness of the instructional program will be based on teacher observations, students doing quality of work together, questioning strategies, self and peer assessment, student record-keeping, quizzes, tests, homework, class discussion, individual conferences, performance tasks, diagnostic tests, homework, and projects



**Accommodations/Modifications:**

Use manipulatives to build patterns or represent symbols. Provide Graphic organizers to use in solving problems. Provide guided notes/handouts. Break problems into smaller pieces. Have students keep and turn in a notebook. Review needed skills prior to the lesson. Provide checklists for solving problems.

**Summative Assessments:**

Periodic chapter tests, state assessments, PSATs, End of Course tests, and SATs

**Accommodations/Modifications:**

Provide checklists for solving problems. Provide students with a resource page that has multiplication charts, fractions pieces. Break problems and test sections into smaller pieces

**Performance Assessments:**

Projects, display of student work, and electronic portfolios

**Accommodations/Modifications:**

Allow students extra time to complete projects. Provide students with an example of project for reference. Make a clear rubric for students to understand exactly what is expected.

## PART I: UNIT RATIONALE

### WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

<b>Course/Unit Title:</b> Math Foundations I – Math 180	<b>Unit Summary:</b> In this unit students develop an understanding of place value.
<b>Grade Level(s):</b> 9	
<b>Essential Question(s):</b> <b>How do you use fractions and place value to represent decimals?</b>	<b>Enduring Understanding(s):</b> Students will be able to: <ul style="list-style-type: none"> <li>• Name fractions using decimal notation.</li> <li>• Name fractions as decimals.</li> <li>• Develop reasoning with decimals.</li> <li>• Express decimals in more than one way.</li> <li>• Sort fractions and decimals.</li> <li>• Use place value to rename decimals.</li> <li>• Identify patterns in place value.</li> <li>• Divide to name fractions as decimals.</li> <li>• Develop strategies with decimals.</li> <li>• Solve problems with decimals.</li> <li>• Locate decimals on a number line.</li> <li>• Compare decimals.</li> <li>• Name decimals between decimals.</li> <li>• Use reasoning with decimals.</li> </ul>

## PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

### DESCRIBE THE LEARNING TARGETS.

After each target, identify the NJSLs or Common Core Standards that are applicable

<b>Learning Target</b>	<b>NJSLS or CCS</b>
Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	CCSS: 7.NS.A.2d
Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If $p$ and $q$ are integers, then $-(p/q) = (-p)/q = p/(-q)$ . Interpret quotients of rational numbers by describing real-world contexts.	7.NS.A.2b
Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	8.NS.A.1
Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	6.NS.C.5
Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $\pi^2$ ). <i>For example, by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i>	8.NS.A.2
Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	5.NBT.A.1

Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g.,  $\pi^2$ ). *For example, by truncating the decimal expansion of  $\sqrt{2}$ , show that  $\sqrt{2}$  is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

8.NS.A.2

### Inter-Disciplinary Connections:

#### **Real-World problem solving examples:**

To solve problems related to artists, inventors and entrepreneurs. To solve problems in the field of culinary arts, science, space and medical.

### Students will engage with the following text:

Math 180, Scholastic, Inc. 2014

### Students will write:

**Writing/Open Ended questions:** Students analyze function tables to identify and express multiplication patterns with whole numbers. Students use bar models to represent and solve problems by multiplying 1-digit and 2 – digit factors.

## **PART III: TRANSFER OF KNOWLEDGE AND SKILLS**

### **DESCRIBE THE LEARNING EXPERIENCE.**

#### **How will students uncover content and build skills.**

Students will uncover and build skills through various classroom activities. Investigating number sense activities, modeling examples, using real-life application, using note-taking strategies, and using SMARTBoard technologies will all be explored. Other learning experiences could include alternative lesson openers, math and history applications, problem solving workshops, interdisciplinary applications and extra examples of problem solving.

**Suggested warm-up activities, instructional strategies/activities, and assignments:**

	<b>Block 7: Name Fractions Using Decimal Notation.</b>	Essential Question: How can students use fractions and place value to represent decimals, and locate decimals on a number line?
	<b>Topic 1 (Lesson 1):</b>	
	<b>FOCUS AND MOTIVATE</b>	Do Now! Play the Anchor Video, "Against the Clock." Read the preview question aloud: If you wanted to become an Olympic athlete, how would you prepare? Ask students to share their responses with the class.
	<b>Teach Teaching Options</b>	Lesson Objective: To express fractions with a denominator of 10 or 100 as decimals.  Language Goals: Use the terms decimals, hundredths, and tenths in complete sentences. Express decimals verbally using and to separate the whole-number part from the decimal part.  Teach: Play the Instructional Video: Name Fractions Using Decimal Notation. Model Naming Tenths and Hundredths: Teach the steps to name numbers as a fraction, a decimal, and in word form. Step 1: Identify tenths. Step 2: Identify hundredths. Step 3: Name tenths and hundredths. Step 4: Write decimal numbers. Grade-Level Content Connections: The Number System Mspace p. 98-99 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
	<b>Checking for Understanding</b>	Summarize and Assess: Review Naming Tenths and Hundredths as Decimals Exit Ticket: <i>mSpace</i> p. 99
	<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 98-99. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
	<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
	<b>Topic 1 (Lesson 2):</b>	
	<b>Teach Teaching Options</b>	Lesson Objective: To use equivalence to express fractions less than 1 as decimals.  Language Goals: Use the terms hundredths and tenths

		<p>to name fractions and decimal numbers. Identify and describe the importance of the decimal point in a decimal number.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser Students analyze the given characteristics of an unknown number and solve the riddle by identifying the decimal. Ask students to share their responses and ask about the first step they took to solve the problem. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Play the Instructional Video: Name Fractions as Decimals. Model Naming Fractions as Decimals: Teach the steps to rename <math>\frac{6}{25}</math> as a decimal. Step 1: Choose a denominator. Step 2: Rename the fraction. Step 3: Rename the fraction as a decimal. Grade-Level Content Connections: The Number System <i>mSpace</i> p. 100-101 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Naming Fractions as Decimals Exit Ticket: <i>mSpace</i> p. 101</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 100-101. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
	<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<b>Topic 1 (Lesson 3):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To use equivalence to express fractions less than 1 as decimals.</p> <p>Language Goals: Use the terms hundredths and tenths to name fractions and decimals.</p> <p>Do Now: Develop Number Sense Tell Me All You Can –Students reason quantitatively to provide various information about the decimal number 0.43. Ask students to share their solutions. Mathematical Practice: Reason Abstractly</p> <p>Teach: (Set-Up) Purpose: To practice representing numbers on a decimal grid.</p>

	<p>Teach Over &amp; Out (Level 1)</p> <p>Step 1: Roll the decahedron and record that number.</p> <p>Step 2: Decide whether the number rolled should be a decimal in the tenths or the hundredths place.</p> <p>Step 3: Shade the decimal in the grid.</p> <p>Step 4: Take turns with your partner.</p> <p>Goal: To fill the decimal grid in 10 turns.</p> <p>Mspace p. 102-105 Guided Practice: Demonstrate, Solve Together</p> <p>Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:</p> <p>Review Expressing Decimals in More Than One Way</p> <p>Exit Ticket: mSpace p. 105</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 102-105.</p> <p>Computer Software:</p> <p>On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.</p> <p>Group 2: Student Software:</p> <p>Explore Zone</p> <p>Learn Zone/Fast Track: Think, Try, Practice, Master</p> <p>Success Zone</p> <p>Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.</p> <p>Elicit Student Thinking</p> <p>Modify Tasks</p> <p>Using Data to Differentiate Checkpoint #1:</p> <p>Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.</p> <p>Review Data: Review the performance data and groupings.</p> <p>Plan Instruction: Based on Rotations, access digital lessons.</p> <p>Boost Lesson related to software data.</p> <p>Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To identify and express decimals in equivalent forms.</p> <p>Language Goals: Use the decimal and fractional terms hundredths, mixed number, and tenths to explain why different forms of a decimal are equivalent.</p> <p>Do Now:</p> <p>Develop Reasoning Skills</p> <p>Which Does Not Belong?</p> <p>Students analyze a group of numbers to determine which does not belong. Ask students to identify the number and explain their reasoning.</p> <p>Mathematical Practice: Make Use of Structure</p> <p>Teach:</p> <p>Play the Instructional Video:</p> <p>Express Decimals in More Than One Way</p> <p>Model Naming Amounts Greater Than One:</p> <p>Teach the steps to name one and nine tenths as a mixed number, decimal, and fraction.</p> <p>Step 1: Name the mixed number.</p> <p>Step 2: Name the decimal.</p> <p>Step 3: Name the fraction.</p> <p>Mathematical Practice:</p> <p>Model With Mathematics</p> <p>Grade-Level Content Connections:</p> <p>The Number System</p> <p>Mspace p. 106-107 Guided Practice: Demonstrate, Solve Together</p> <p>Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:</p> <p>Review Game Strategy</p>

	<p>Mathematical Practice: Use Repeated Reasoning          Answer this question: You rolled a 2, 4, and 6. Which numbers would you keep? Explain your reasoning.          I would keep the numbers and because _____.          Exit Ticket: <i>mSpace</i> p. 107</p>
<b>Practice and Apply Assigning Homework</b>	<p>Play game in pairs on <i>mSpace</i> pages 106-107          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Topic 1 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To use equivalence and comparison to classify fractions and decimals and solve problems.</p> <p>Language Goals:          Understand and use the terms decimal, equivalent, and fraction to discuss sorting fractions and decimals.</p> <p>Do Now: Analyze Problems          Missing Numbers          Students analyze a list of numbers and make sense of the structure of an equation to solve a problem. Ask students to share their solutions and explain their reasoning.          Mathematical Practice: Persevere and Solve Problems</p> <p>Teach:          Model Sorting Fractions and Decimals:          Teach the steps to sort 0.13, 3/10, 0.75, 0.9, 1/10, 1/5, 0.4, and 3/4 with a Venn diagram.          Step 1: Analyze the problem.          Step 2: Rename the numbers as hundredths.          Step 3: Place the numbers in the intersection.          Step 4: Complete the Venn diagram.          Mspace p. 108-109 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Classifying Fractions and Decimals          Exit Ticket: <i>mSpace</i> p. 109</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 108-109.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #1:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson based on software data.          Stretch Lesson based on software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 1):</b>	

	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To identify place value in decimals.</p> <p>Language Goals: Use ten-thousandth and thousandth to read and write decimal numbers. Explain how to write and name the expanded form of a decimal.</p> <p>Do Now: Create Structure Build It -Students apply understanding of place value to find the unknown number that meets the stated conditions. Mathematical Practice: Make Use of Structure</p> <p>Teach: Play the Instructional Video: Use Place Value to Rename Decimals. Model Renaming Decimals With Place Value: Teach the steps to rename 765.4321 in expanded form and in word form by identifying place value. Step 1: Identify place values. Step 2: Identify place value patterns. Step 3: Identify places to ten-thousandths. Step 4: Write the number in expanded form and word form. mSpace p. 112-113 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Review Decimal Place Value Exit Ticket: mSpace p. 113</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on <i>mSpace</i> pages 112-113. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<p><b>Accommodations/Modifications:</b></p>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<p><b>Topic 2 (Lesson 2):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To multiply and divide decimals by 10, 100, and 1000.</p> <p>Language Goals: Describe and explain the pattern in the multiplication and division of decimals by 10 and 100.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser - Students analyze the given characteristics of an unknown number and solve the riddle by identifying the greatest possible decimal. Ask students to share their responses and explain their strategy for solving the riddle. Mathematical Practice: Make Use of Structure</p>



	<p>Teach:  Play the Instructional Video:  Identify Patterns in Place Value.  Model Rules for Multiplying and Dividing by 10:  Teach the steps to identify the rule for multiplying and dividing numbers by 10.  Step 1: Multiply by 10.  Step 2: Divide by 10.  Step 3: Find the rule.  Grade-Level Content Connections:  The Number System  Mspace p. 114-115 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review the Patterns and Rules  Exit Ticket: mSpace p. 115</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 114-115.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To express fractions as decimals using division.</p> <p>Language Goals:  Explain how to convert a fraction to a decimal number.</p> <p>Do Now:  Who's Right?  Students review the answers of Aiden, Paula, and Maxwell and decide which named the correct decimal for <math>\frac{1}{4}</math>. Ask students to share their responses and explain why it is correct.  Mathematical Practice: Construct Viable Arguments</p> <p>Teach: (Play the Instructional Video:  Divide to Name Fractions as Decimals.  Model Naming Fractions as Decimals:  Teach the steps to rename <math>\frac{3}{8}</math> as a decimal.  Step 1: Rename the fraction.  Step 2: Multiply the dividend.  Step 3: Divide with partial quotients.  Step 4: Divide the quotient.  Mspace p. 116-117 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Dividing to Name Fractions as Decimals  Exit Ticket: mSpace p. 117</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 116-117.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole</p>

	<p>group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To express fractions as decimals using division.</p> <p>Language Goals:  Use the terms hundredths and tenths when explaining game moves and strategies.</p> <p>Do Now:  Develop Reasoning Skills  Which Does Not Belong?  Students analyze a group of numbers to determine which does not belong. Ask students to share their solution and strategy they used.  Mathematical Practice: Reason Abstractly</p> <p>Teach: (Set-Up)  Purpose:  To practice representing numbers on a decimal grid.  Teach Over &amp; Out (Level 2)  Step 1: Roll the decahedron and record that number.  Step 2: Decide whether the number rolled should be a decimal the tenths or the hundredths place.  Step 3: Shade the decimal in the grid.  Step 4: Take turns with your partner.  Goal: To fill in the decimal grid in five turns.  Mspace p. 118-121 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Game Strategy  Exit Ticket: <i>mSpace</i> p.118</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 118-121.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #2:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.</p>

	Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To compare decimal place value to solve problems. To justify solutions to decimal comparison problems using models and reasoning.</p> <p>Language Goals: Use the terms greater than, inequality, and less than to discuss contextualized problems.</p> <p>Do Now: Develop Number Sense Tell Me All That You Can Students apply their knowledge of decimals and ways to represent decimals to describe qualities of the number 0.29. Ask students to share their responses. Mathematical Practice: Reason Abstractly</p> <p>Teach: Model Comparing Decimals Teach the steps to order 8.4, 7.04, 7.46, 8.41, and 7.3 by renaming. Step 1: Analyze the problem. Step 2: Rename the decimals. Step 3: Use place value to order the decimals. Step 4: Check your work. Mathematical Practice: Use Repeated Reasoning Mspace p. 122-123 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Solving Problems With Decimals Exit Ticket: mSpace p.123</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 122-123. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 3 (Lesson 1):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To locate decimals on a number line.</p> <p>Language Goals: Use the terms hundredths and tenths to name decimals. Explain how to locate a decimal on a number line.</p>

	<p>Do Now:          Develop Number Sense          Tell Me All That You Can          Students apply their knowledge of decimals, fractions, and mixed numbers to express a quantity. Ask students to share what they know about 1.65 and why it's useful to express numbers in multiple ways.          Mathematical Practice: Attend to Precision</p> <p>Teach:          Play the Instructional Video:          Locate Decimals on a Number Line          Model Locating Decimals on a Number Line:          Teach the steps to locate decimals on a number line.          Step 1: Label the tenths between 0 and 1.          Step 2: Name the tenths as hundredths.          Step 3: Locate hundredths on a number line          Grade-Level Content Connections: The Number System          Mspace p. 126-127 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Locating Decimals on a Number Line          Exit Ticket: mSpace p. 127</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 126-127.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #3:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson related to software data.          Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To compare and order decimals.</p> <p>Language Goals:          Compare decimals using the words greater than and less than.</p> <p>Do Now:          Develop Flexible Thinking          Brain Teaser          Students analyze the given characteristics of an unknown number and solve the riddle by identifying the decimal. Ask students to share their responses and ask what part of the riddle was most helpful.          Mathematical Practice: Make Use of Structure</p> <p>Teach:          Play the Instructional Video:          Compare Decimals - Model Comparing Decimals:          Teach the steps to compare the decimals 0.107 and 0.17.          Step 1: Rename decimals as fractions.          Step 2: Compare using common denominators.          Step 3: Compare by writing digits to the same place value.          Grade-Level Content Connections: The Number System          Mspace p. 128-129 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>

<b>Checking for Understanding</b>	Summarize and Assess: Review Comparing Decimals Exit Ticket: mSpace p. 129
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 128-129. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Topic 3 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To apply understanding of place value and equivalence to name decimals between decimals.  Language Goals: Use appropriate language to name and compare decimals. Explain why decimals exist between any pair of decimals.  Do Now: Analyze Problems Missing Numbers - Students analyze the structure of two number sequences in order to determine the missing numbers. Ask students to share solutions and explain how the two patterns are like. Mathematical Practice: Make Use of Structure  Teach: Play the Instructional Video: Name Decimals Between Decimals. Model Naming Decimals: Teach the steps to locate 21.116 on a number line. Step 1: Name decimals between whole numbers. Step 2: Name decimals between tenths. Step 3: Name decimals between hundredths. Step 4: Locate the decimal. Grade-Level Content Connections: The Number System Mspace p. 130-131 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Naming Decimals Between Decimals Exit Ticket: mSpace p. 131
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on <i>mSpace</i> pages 130-131. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and

	<p>differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To apply understanding of place value and equivalence to name decimals between decimals.</p> <p>Language Goals:  Use the terms hundredths and tenths to explain game strategies.</p> <p>Do Now:  Evaluate Solutions  Who's Right?  Students apply their understanding of place value and equivalence to name decimals between decimals. Ask students to share the solution and explain why it's useful to rename the decimals as hundredths.  Mathematical Practice: Make Use of Structure</p> <p>Teach: (Set up)  Purpose:  To practice adding decimals using a decimal grid.  Teach Over &amp; Out (Level 3)  Step 1: Roll the decahedron and record that number.  Step 2: Decide whether the number rolled should be a digit in the ones, tenths, or hundredths place.  Step 3: Shade the decimal in the grid.  Step 4: Record an addition equation to find the sum of your last turn and the decimal you shaded.  Goal: To shade two decimal grids in five turns.  mSpace pages 132-135.</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Game Strategy  Mathematical Practice: Use Repeated Reasoning  Answer this question: When is it a good idea to put the number you rolled in the ones place?  It is a good idea to put the number you rolled in the ones place if _____.  Exit Ticket: mSpace p. 135</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 132-135.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To solve problems by writing and evaluating equations with decimals.</p> <p>Language Goals:</p>

	<p>Use the terms decimal, equivalent, tenths, and hundredths to discuss and explain decimal problems with equivalence.</p> <p>Do Now: Identify Numerical Patterns Find the Pattern - Students view a diagram and analyze the relationships among numbers to identify patterns. Ask students to share solutions and explain how to figure out the rule. Mathematical Practice: Model With Mathematics</p> <p>Teach: Model a Pan Balance Problem: Teach the steps to find the value of k on a pan balance. Step 1: Analyze the problem. Step 2: Write an equation for the problem. Step 3: Solve the problem. Step 4: Check your work. Mathematical Practice: Reason Abstractly Mspace p. 136-137 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Solving Decimal Problems With Equivalence Exit Ticket: <i>mSpace</i> p. 137</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on <i>mSpace</i> pages 136-137. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Block 7 Performance Task</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: Train Olympic Athletes-Students compare decimals to hundredths, and then create and evaluate a double line graph.</p> <p>Teach: Replay Anchor Video – “Against the Clock.” Introduce Performance Task. Complete the Performance task Mspace p. 138-139 Evaluate: Students will be evaluated based on Performance Task Rubric Explore, Apply, and Analyze</p>
<b>Practice and Apply Assigning Homework</b>	<p>Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.</p>

		<p>Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
	<b>mSkills Curriculum Based Assessment 7</b>	<p>Review:  To prepare students for mSkills:  Download the Block 7 mSkills Strategy Lesson, Student Pages, and Annotated Student Pages to give students targeted practice with assessment item types based on current Block content.  You may also teach the mSkills Demo Lesson to give students a general overview of assessment item types based on prerequisite content.</p> <p>Evaluate:  To administer mSkills:  Go to Class Settings and assign the mSkills assessment to students.  Have students log in to the student software.  Allow students to review the Problem-Solving Routine.</p> <p>Administer:  Reference Guide.  The first 20 items will be digitally graded and available in Class Analytics Zone Progress.  Enter scores to the constructed-response items in the SDP using the Scoring Rubric.  Have students complete the Mindset Strategy in their mSpaces to reflect on their performance in the Block.</p>

**PART IV: EVIDENCE OF LEARNING**

**IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS.**

**IDENTIFY BLOOM’S LEVELS.**



**Formative Assessments:**

The effectiveness of the instructional program will be based on teacher observations, students doing quality of work together, questioning strategies, self and peer assessment, student record-keeping, quizzes, tests, homework, class discussion, individual conferences, performance tasks, diagnostic tests, homework, and projects



**Accommodations/Modifications:**

Use manipulatives to build patterns or represent symbols. Provide Graphic organizers to use in solving problems. Provide guided notes/handouts. Break problems into smaller pieces. Have students keep and turn in a notebook. Review needed skills prior to the lesson. Provide checklists for solving problems.

**Summative Assessments:**

Periodic chapter tests, state assessments, PSATs, End of Course tests, and SATs

**Accommodations/Modifications:**

Provide checklists for solving problems. Provide students with a resource page that has multiplication charts, fractions pieces. Break problems and test sections into smaller pieces

**Performance Assessments:**

Projects, display of student work, and electronic portfolios

**Accommodations/Modifications:**

Allow students extra time to complete projects. Provide students with an example of project for reference. Make a clear rubric for students to understand exactly what is expected.

## PART I: UNIT RATIONALE

### WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

<b>Course/Unit Title:</b> Math Foundations I – Math 180	<b>Unit Summary:</b> In this unit students develop an understanding of decimal operations.
<b>Grade Level(s):</b> 9	
<b>Essential Question(s):</b> How do calculate with decimals?	<b>Enduring Understanding(s):</b> Students will be able to: <ul style="list-style-type: none"> <li>• Apply place value to add decimals.</li> <li>• Add decimals.</li> <li>• Use models to subtract decimals.</li> <li>• Develop number sense with decimals.</li> <li>• Solve multi-step problems with decimals.</li> <li>• Multiply decimals by whole numbers.</li> <li>• Develop decimal estimation strategies.</li> <li>• Multiply decimals less than 1.</li> <li>• Multiply decimals greater than 1.</li> <li>• Identify a rule with decimals.</li> <li>• Use models to divide decimals.</li> <li>• Use patterns to divide decimal.</li> <li>• Divide decimals.</li> <li>• Solve equal groups problems with decimals.</li> </ul>

## PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

### DESCRIBE THE LEARNING TARGETS.

After each target, identify the NJSLs or Common Core Standards that are applicable

<u>Learning Target</u>	<u>NJSLS or CCS</u>
Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	CCSS: 7.NS.A.2d
Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If $p$ and $q$ are integers, then $-(p/q) = (-p)/q = p/(-q)$ . Interpret quotients of rational numbers by describing real-world contexts.	7.NS.A.2b
Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	8.NS.A.1
Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	6.NS.C.5
Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $\pi^2$ ). <i>For example, by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i>	8.NS.A.2
Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	5.NBT.A.1

Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g.,  $\pi^2$ ). *For example, by truncating the decimal expansion of  $\sqrt{2}$ , show that  $\sqrt{2}$  is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

8.NS.A.2

**Inter-Disciplinary Connections:**

**Real-World problem solving examples:**

They solve problems related to careers in business and management.

**Students will engage with the following text:**

Math 180, Scholastic, Inc. 2014

**Students will write:**

**Writing/Open Ended questions:** Students analyze function tables to identify and express multiplication patterns with whole numbers. Students use bar models to represent and solve problems by multiplying 1-digit and 2 – digit factors.

**PART III: TRANSFER OF KNOWLEDGE AND SKILLS**

**DESCRIBE THE LEARNING EXPERIENCE.**

**How will students uncover content and build skills.**

Students will uncover and build skills through various classroom activities. Investigating number sense activities, modeling examples, using real-life application, using note-taking strategies, and using SMARTBoard technologies will all be explored. Other learning experiences could include alternative lesson openers, math and history applications, problem solving workshops, interdisciplinary applications and extra examples of problem solving.

Suggested warm-up activities, instructional strategies/activities, and assignments:

**Block 8: Fraction and Decimal Relationships**

Essential Question: How can students apply their knowledge of place value and fractions to calculate with decimals.

**Topic 1 (Lesson 1):**

	<b>FOCUS AND MOTIVATE</b>	<p>Do Now!          Introduce "You're the Boss"          Play the Anchor Video, "Dollars and Sense."          Read the preview question aloud: What business would you like to start in your community? Ask students to share their responses with the class.          Mathematical Practice: Make Use of Structure</p>
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To apply meaning of place value and addition and subtraction to decimals. To estimate sums of decimals.</p> <p>Language Goals: Name decimals in tenths and hundredths. Use the term expanded form to explain the use of place value to add decimals.</p> <p>Teach:          Play the Instructional Video:          Apply Place Value to Add Decimals.          Model Using Place Value to Add Decimals:          Teach the steps to add <math>5.76 + 7.23</math> using place value.          Step 1: Make an estimate.          Step 2: Write addends in expanded form.          Step 3: Add using place value.          Step 4: Add the partial sums.          Grade-Level Content Connections: Expressions &amp; Equations.          Mspace p. 145-146 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Using Place Value to Add Decimals          Exit Ticket: mSpace p. 145</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 144-145.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #1:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson based on software data.          Stretch Lesson based on software data.</p>
	<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<b>Topic 1 (Lesson 2):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To add decimals. To estimate sums and differences of decimals.</p> <p>Language Goals:          Understand and use the terms addend, partial sum, and sum to describe adding decimals.</p> <p>Do Now:          Develop Estimation Skills          Make an Estimate          Students use place-value structure to estimate sums and then order them.          Ask students to share solutions and explain why estimating is useful in</p>

	<p>solving this problem. Mathematical Practice: Make Use of Structure</p> <p>Teach: Play the Instructional Video: Add Decimals. Model Adding Decimals Vertically: Teach the steps to add <math>10.12 + 9.22</math>. Step 1: Make an estimate. Step 2: Add using place value. Step 3: Add the partial sums. Step 4: Compare the sum and estimate. High-Leverage Practice: Lead a Discussion Grade-Level Content Connections: The Number System Mspace p. 146-147 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Adding Decimals Exit Ticket: mSpace p. 147</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 146-147 Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To use models to subtract decimals. To estimate differences of decimals.</p> <p>Language Goals: Use the terms difference and distance to solve subtraction problems using an open number line.</p> <p>Do Now: Evaluate Solutions Who's Right? Students review the work of Kerry and Jing and decide who used the open number line correctly to solve a subtraction problem. Ask students to share the solution and explain their reasoning. Mathematical Practice: Use Tools Strategically</p> <p>Teach: Play the Instructional Video: Use Models to Subtract Decimals. Model Subtracting Decimals: Teach the steps to subtract <math>3.84 - 1.22</math> using an open number line. Step 1: Make an estimate. High-Leverage Practice: Respond to Common Patterns of Thinking Step 2: Subtract with an open number line. Step 3: Add the jumps. Step 4: Compare the difference to the estimate. Grade-Level Content Connections: The Number System</p>

	Mspace p. 148-149 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Game Strategy Exit Ticket: mSpace p. 149
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 148-149. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 1 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To use models to subtract decimals. To estimate sums and differences of decimals relative to benchmarks.  Language Goals: Use the terms hundredths and tenths to name decimal numbers. Use the terms difference and place value to discuss strategies.  Do Now: Analyze Problems Missing Numbers Students use place-value structure to estimate the missing numbers, and then order them from least to greatest. Ask students to share solutions and explain the strategy they used. Mathematical Practice: Make Use of Structure  Teach: (Set-Up) Purpose: To practice subtracting decimals. Teach Decimal Dare (Level 1) Step 1: Roll the decahedron two times. Step 2: Use the two numbers to make a whole number or decimal. Step 3: Subtract the number from 50 or from the difference from your last round. Step 4: Record the difference and take turns. Goal: To have a difference closest to zero after six rounds. Mspace p. 150-153 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Game Strategy Exit Ticket: mSpace p. 153
<b>Practice and Apply Assigning Homework</b>	Play game in pairs on mSpace pages 150-153 Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.

	<p><b>Topic 1 (Lesson 5):</b></p>	
<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To analyze and solve additive problems with decimals using models and equations.</p> <p>Language Goals: Use the terms decimal, equation, estimate, hundredths, part-part-whole problem, and tenths to discuss contextualized problems that involve adding decimals.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser -Students analyze the given characteristics of an unknown number and solve the riddle by identifying the decimal. Ask students to share solutions and explain their reasoning.</p> <p>Mathematical Practice: Reason Abstractly Teach: Model a Part-Part-Whole Problem: Teach the steps to solve a part-part-whole problem with decimals. Read It!: Read and identify the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. Mspace p. 154-155 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>	
<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Review Solving Problems With Decimals Exit Ticket: mSpace p. 155</p>	
<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on mSpace pages 154-155. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>	
<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>	
<p><b>Accommodations/Modifications:</b></p>	<p>Students can work on additional software as a supplement to class instruction.</p>	
<p><b>Topic 2 (Lesson 1):</b></p>		
<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To multiply whole numbers by decimals less than 1. To estimate the product of decimals.</p> <p>Language Goals: Use the terms factors and products when explaining how to find the product of a whole number and decimal.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser Students analyze patterns in the multiplication of fractions and whole numbers to identify factors pairs that yield a common product. Ask students to share solutions and explain their reasoning. Mathematical Practice: Make Use of Structure</p>	

	<p>Teach:          Play the Instructional Video:          Multiply Decimals by Whole Numbers.          Model Multiplying Decimals by Whole Numbers:          Teach the steps to multiply <math>3 \times 0.24</math>.          Step 1: Make an estimate.          Step 2: Rename the decimal as a fraction.          Step 3: Find the product.          Step 4: Compare the product to the estimate.          Mspace p. 158-159 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Multiplying Decimals by Whole Numbers          Exit Ticket: mSpace p. 159</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 158-159.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #2:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson related to software data.          Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To multiply whole numbers by decimals less than 1. To estimate the product of decimals.</p> <p>Language Goals:          Use the terms hundredths and tenths to name decimal numbers.          Explain strategies for estimating products of decimals.</p> <p>Do Now:          Create Structure          Build It -Students build a multiplication equation with a product of 1 using four numbers. Ask students to share solutions and explain their reasoning.          Mathematical Practice: Make Use of Structure</p> <p>Teach: (Set-up)          Purpose:          To practice multiplying whole numbers by decimals.          Teach          Decimal Dare (Level 2)          Step 1: Roll the decahedron two times.          Step 2: Use the two numbers to make a whole number.          Step 3: Multiply the whole number by any decimal.          Step 4: Multiply the whole number by another decimal until you get a product in the target range.          Goal: To get a product between 10 and 12 in the least amount of tries.          Mspace p. 160-163 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Game Strategy</p>



	Exit Ticket: mSpace p. 163
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 160-163. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To multiply decimals less than 1 by decimals less than 1. To estimate the product of decimals.  Language Goals: Explain how to rename a decimal less than 1 as a fraction. Describe how to multiply two decimals that are each less than 1.  Do Now: Develop Reasoning Skills Which Does Not Belong? Students identify an expression that doesn't belong by estimating the product of each expression. Ask students to share solutions and explain their reasoning. Mathematical Practice: Make Use of Structure  Teach: Play the Instructional Video: Multiply Decimals Less Than 1. Model Multiplying Decimals Less Than 1: Teach the steps to multiply $0.6 \times 0.35$ . Step 1: Make an estimate. Step 2: Rename the decimal factors as fractions. Step 3: Find the product. Step 4: Rename the product. Mspace p. 164-165 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Multiplying Decimals Less Than 1 Exit Ticket: mSpace p. 165
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 164-165. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking

	<b>Differentiating Instruction</b>	<p>Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
	<b>Topic 2 (Lesson 4):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To apply the Distributive Property to multiply decimals. To estimate the product of decimals.</p> <p>Language Goals: Use the terms factor and product to describe the multiplication of decimals.</p> <p>Do Now: Evaluate Solutions Who's Right? Students apply the Distributive Property to identify the correct solution to a multiplication problem. Ask students to identify the correct solution and explain the error in the incorrect solution. Mathematical Practice: Attend to Precision</p> <p>Teach: Play the Instructional Video: Multiply Decimals Greater Than 1. Model Multiplying Decimals Greater Than 1: Teach the steps to multiply <math>3.7 \times 1.9</math>. Step 1: Make an estimate Step 2: Rename the decimal factors as fractions. Mathematical Practice: Make Use of Structure Step 3: Find the product. Step 4: Rename the product. Grade-Level Content Connections: The Number System Mspace p. 166-167 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Multiplying Decimals Greater Than 1 Exit Ticket: mSpace p.167</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 166-167. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.

	<b>Topic 2 (Lesson 5):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To identify patterns with decimals and describe with a rule.</p> <p>Language Goals: Use the terms decimal, input, output, pattern, and variable to discuss identifying rules for decimals in function tables and expressing the rules with variables.</p> <p>Do Now: Analyze Problems Missing Numbers Students make use of the structure of fractions and decimals to complete a problem with missing digits. Ask students to share solutions and explaining their reasoning. Mathematical Practice: Make Use of Structure</p> <p>Teach: Model a Function Table Problem: Teach the steps to identify and apply two-step rules with decimals in a function table. Step 1: Find the rule. Step 2: Express the rule with a variable. Step 3: Complete the missing outputs. Step 4: Apply the rule using a different input. Mathematical Practice: Make Use of Structure Mspace p. 168-169 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Identifying a Rule With Decimals Exit Ticket: mSpace p.169</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 168-169. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<b>Topic 3 (Lesson 1):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To divide decimals using equal groups.</p> <p>Language Goals: Define dividend, divisor, and quotient, and use them to describe a division problem. Explain how to use a decimal grid to find <math>2 \div 0.2</math>.</p> <p>Do Now: Create Structure-Build It Students rename 0.23 in words, as a fraction, and as a sum. Ask students to share solutions that are equivalent to 0.23.</p>

		<p>Mathematical Practice: Make Use of Structure</p> <p>Teach:          Play the Instructional Video:          Use Models to Divide Decimals.          Model Dividing Decimals:          Teach the steps to divide <math>2 \div 0.2</math> by taking out equal groups.          Step 1: Use decimal grids to divide.          Step 2: Rename the dividend and divisor as fractions.          Step 3: Divide the equal parts.          Step 4: Write the quotient.          Grade-Level Content Connections:          Expressions &amp; Equations          mSpace p. 172-173 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Dividing Decimals          Exit Ticket: mSpace p. 173</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 172-173.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #3:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson related to software data.          Stretch Lesson related to software data.</p>
	<b>Topic 3 (Lesson 2):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To analyze patterns in decimal division.          To apply patterns to derive a rule for dividing by decimals.</p> <p>Language Goals:          Describe patterns in division by factors of 10 using the terms denominator, numerator, and place value.</p> <p>Do Now:          Analyze Problems Missing Numbers          Students solve equations involving the multiplication and division of fractions by filling in the missing numbers. Ask students to share solutions and explain their reasoning.          Mathematical Practice: Make Use of Structure</p> <p>Teach:          Play the Instructional Video:          Use Patterns to Divide Decimals.          Model Dividing Decimals Using Patterns:          Teach the steps to identify a pattern in division and apply it to divide <math>0.8 \div 0.2</math>.          Step 1: Find a pattern in division.          Step 2: Use the pattern to find a rule.          Step 3: Use the rule to divide decimals.          Step 4: Find the quotient.          Grade-Level Content Connections:          Expressions &amp; Equations          mSpace p. 174-175 Guided Practice: Demonstrate, Solve Together</p>

	Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Dividing Decimals Exit Ticket: mSpace p. 175
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 174-175. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Topic 3 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To divide decimals. To estimate decimal quotients relative to benchmarks.  Language Goals: Describe and explain the steps for dividing one decimal by another. Explain strategies for estimation.  Do Now: Identify Numerical Patterns Find the Pattern Students identify a pattern by applying reasoning skills and knowledge of multiplying and dividing decimals. Ask students to identify the pattern and name expressions that belong inside the circle. Mathematical Practice: Reason Abstractly  Teach: Play the Instructional Video: Divide Decimals. Model Dividing Decimals: Teach the steps to divide $0.3 \div 1.5$ . Step 1: Estimate the quotient. Step 2: Write the quotient as a fraction. Step 3: Rename the fraction as a decimal. Step 4: Compare the quotient to the estimate. Grade-Level Content Connections: Expressions & Equations Mspace p. 176-177 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Dividing Decimals Exit Ticket: mSpace p. 177
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 176-177. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3:

	Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Topic 3 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To divide decimals. To estimate decimal quotients.  Language Goals: Use the term quotient to describe the solution to a division problem.  Do Now: Create Structure -Build It Students arrange four numbers to create a division equation with a quotient of 7. Ask students to share solutions and explain their reasoning. Mathematical Practice: Reason Abstractly  Teach: (Set up) Purpose: To practice dividing decimals. Teach Decimal Dare (Level 3) Step 1: Spin the spinner two times. Step 2: Use one number as tenths and the other as hundredths. Step 3: Divide tenths by hundredths and record the quotient. Step 4: Add the quotient to the previous quotient. Goal: To score closest to 50 without going over in six turns. mSpace pages 178-181
<b>Checking for Understanding</b>	Summarize and Assess: Review Game Strategy Exit Ticket: mSpace p. 181
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 178-181. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Topic 3 (Lesson 5):</b>	

	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To analyze and solve problems with decimals using models and equations. To describe and explain solution strategies for problems with decimals.</p> <p>Language Goals: Use the terms divide, equal groups, equation, and variable to discuss problems with decimals.</p> <p>Do Now: Evaluate Solutions Who's Right? Students analyze two solutions to a problem and identify the correct solution. Ask students to share solutions and justify their reasoning. Mathematical Practice: Construct Viable Arguments</p> <p>Teach: Model an Equal Groups Problem: Teach the steps to identify and solve an equal groups problem with decimals. Read It!: Read and identify the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. Mspace p. 182-183 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Review Solving Equal Groups Problems With Decimals Exit Ticket: mSpace p. 183</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on mSpace pages 182-183. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<p><b>Block 8 Performance Task</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: To Manage a Tutoring Business. Students use decimal operations to create a schedule and calculate wages.</p> <p>Teach: Replay Anchor Video – “Dollars and Sense.” Introduce Performance Task. Complete the Performance task Mspace p. 184-185 Evaluate: Students will be evaluated based on Performance Task Rubric Explore, Apply, and Analyze</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the</p>

		Brain Arcade per week for homework.
	<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
	<b>mSkills Curriculum Based Assessment 8</b>	Review: To prepare students for mSkills: Download the Block 8 mSkills Strategy Lesson, Student Pages, and Annotated Student Pages to give students targeted practice with assessment item types based on current Block content. You may also teach the mSkills Demo Lesson to give students a general overview of assessment item types based on prerequisite content.  Evaluate: To administer mSkills: Go to Class Settings and assign the mSkills assessment to students. Have students log in to the student software. Allow students to review the Problem-Solving Routine.  Administer: Reference Guide. The first 20 items will be digitally graded and available in Class Analytics Zone Progress. Enter scores to the constructed-response items in the SDP using the Scoring Rubric. Have students complete the Mindset Strategy in their mSpaces to reflect on their performance in the Block.

**PART IV: EVIDENCE OF LEARNING**

**IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS.  
IDENTIFY BLOOM’S LEVELS.**



**Formative Assessments:**

**The effectiveness of the instructional program will be based on teacher observations, students doing quality of work together, questioning strategies, self and peer assessment, student record-keeping, quizzes, tests,**



homework, class discussion, individual conferences, performance tasks, diagnostic tests, homework, and projects

**Accommodations/Modifications:**

Use manipulatives to build patterns or represent symbols. Provide Graphic organizers to use in solving problems. Provide guided notes/handouts. Break problems into smaller pieces. Have students keep and turn in a notebook. Review needed skills prior to the lesson. Provide checklists for solving problems.

**Summative Assessments:**

Periodic chapter tests, state assessments, PSATs, End of Course tests, and SATs

**Accommodations/Modifications:**

Provide checklists for solving problems. Provide students with a resource page that has multiplication charts, fractions pieces. Break problems and test sections into smaller pieces

**Performance Assessments:**

Projects, display of student work, and electronic portfolios

**Accommodations/Modifications:**

Allow students extra time to complete projects. Provide students with an example of project for reference. Make a clear rubric for students to understand exactly what is expected.

## PART I: UNIT RATIONALE

### WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

<b>Course/Unit Title:</b> Math Foundations I – Math 180	<b>Unit Summary:</b> In this unit students use number sense and visual models to add and subtract positive and negative numbers.
<b>Grade Level(s):</b> 9	
<b>Essential Question(s):</b> How do you compare and order positive and negative numbers?	<b>Enduring Understanding(s):</b> Students will be able to: <ul style="list-style-type: none"> <li>• Describe situations with integers.</li> <li>• Locate numbers on a number line.</li> <li>• Develop number sense with integers.</li> <li>• Compare positive and negative numbers.</li> <li>• Sort positive and negative numbers.</li> <li>• Add integers with the same sign.</li> <li>• Develop strategies with integers.</li> <li>• Add integers with different signs.</li> <li>• Add numbers with different signs.</li> <li>• Solve problems with positive and negative numbers.</li> <li>• Find distance to subtract.</li> <li>• Subtract positive and negative integers.</li> <li>• Subtract positive and negative numbers.</li> <li>• Use distance strategies with integers.</li> <li>• Solve integer problems with equivalence.</li> </ul>

## PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

### DESCRIBE THE LEARNING TARGETS.

After each target, identify the NJSLs or Common Core Standards that are applicable

<u>Learning Target</u>	<u>NJSLS or CCS</u>
<p>Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p>	CCSS:  <b>7.NS.A.1b</b>
<p>Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write <math>-3^{\circ}\text{C} &gt; -7^{\circ}\text{C}</math> to express the fact that <math>-3^{\circ}\text{C}</math> is warmer than <math>-7^{\circ}\text{C}</math>.</i></p>	<b>6.NS.C.7b</b>
<p>Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of <math>-30</math> dollars, write <math> -30  = 30</math> to describe the size of the debt in dollars.</i></p>	<b>6.NS.C.7c</b>
<p>Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than <math>-30</math> dollars represents a debt greater than 30 dollars.</i></p>	<b>6.NS.C.7d</b>

<p>Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p>	<p><b>7.EE.A.1</b></p>
<p>Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. <i>For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar <math>9\frac{3}{4}</math> inches long in the center of a door that is <math>27\frac{1}{2}</math> inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</i></p>	<p><b>7.EE.B.3</b></p>
<p>Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i></p>	<p><b>7.EE.B.4a</b></p>
<p>Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i></p>	<p><b>7.EE.B.4a-</b></p>
<p>Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i></p>	<p><b>7.EE.B.4b-</b></p>
<p>Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i></p>	<p><b>7.NS.A.1a</b></p>
<p>Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p>	<p><b>7.NS.A.1b</b></p>
<p>Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p>	<p><b>7.NS.A.1c</b></p>
<p>Apply properties of operations as strategies to add and subtract rational numbers.</p>	<p><b>7.NS.A.1d</b></p>
<p>Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., <math>\pi^2</math>). <i>For example, by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i></p>	<p><b>8.NS.A.2</b></p>

**Inter-Disciplinary Connections:**

**Real-World problem solving examples:** To solve problems related to careers in environmental science.

**Students will engage with the following text:**

**Math 180, Scholastic, Inc. 2014**

**Students will write:**

**Writing/Open Ended questions:** Students analyze function tables to identify and express multiplication patterns with whole numbers. Students use bar models to represent and solve problems by multiplying 1-digit and 2 – digit factors.

**PART III: TRANSFER OF KNOWLEDGE AND SKILLS**

**DESCRIBE THE LEARNING EXPERIENCE.**

**How will students uncover content and build skills.**

Students will uncover and build skills through various classroom activities. Investigating number sense activities, modeling examples, using real-life application, using note-taking strategies, and using SMARTBoard technologies will all be explored. Other learning experiences could include alternative lesson openers, math and history applications, problem solving workshops, interdisciplinary applications and extra examples of problem solving.

Suggested warm-up activities, instructional strategies/activities, and assignments:

<b>Block 9:</b>	Essential Question: How can students represent situations represented by integers?
<b>Topic 1 (Lesson 1):</b>	

	<b>FOCUS AND MOTIVATE</b>	<p>Do Now!          Introduce "Final Frontier"          Play the          Anchor Video, "Living Below Zero."          Read the preview question aloud: If you were a scientist living and working in Antarctica, what would you want to research? Ask students to share their responses with the class.          Mathematical Practice: Reason Abstractly</p>
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To generate situations that can be represented by integers.</p> <p>Language Goals: Understand and use the terms integers, negative, and positive in complete sentences. Explain what is meant by plotting on a number line.</p> <p>Teach:          Play the Instructional Video:          Describe Situations With Integers.          Model Plotting Integers on a Number Line:          Teach the steps to plot temperatures on a number line.          Step 1: Understand integers.          Use the Vocabulary Routine to teach integers.          Step 2: Plot positive integers on the number line.          Step 3: Plot negative integers on the number line.          Step 4: List cities in order of temperature.          Mspace p. 190-191 Guided Practice: Demonstrate, Solve Together          Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess:          Review Plotting Integers on a Number Line          Exit Ticket: mSpace p. 191</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 190-191.          Computer Software:          On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.          Group 2: Student Software:          Explore Zone          Learn Zone/Fast Track: Think, Try, Practice, Master          Success Zone          Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.          Elicit Student Thinking          Modify Tasks          Using Data to Differentiate Checkpoint #1:          Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.          Review Data: Review the performance data and groupings.          Plan Instruction: Based on Rotations, access digital lessons.          Boost Lesson based on software data.          Stretch Lesson based on software data.</p>
	<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<b>Topic 1 (Lesson 2):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To locate positive and negative numbers on the number line.</p> <p>Language Goals:          Use precise language to describe plotting positive and negative numbers on a number line.          Use the term integers to describe positive and negative whole numbers and zero.</p> <p>Do Now:</p>

	<p>Develop Reasoning Skills Which Does Not Belong? Students analyze a list of numbers, draw a conclusion, and justify their reasoning. Ask students to share their responses and explain their reasoning. Mathematical Practice: Construct Viable Arguments</p> <p>Teach: Play the Instructional Video: Locate Numbers on a Number Line. Model Plotting Numbers on a Number Line: Teach the steps to plot 4, -2, -5, - 1/2, 1/4, -1 3/4, and 2 1/2 on a number line. Step 1: Label a number line. Step 2: Plot integers. Step 3: Label a number line. Step 4: Plot fractions. Mspace p. 192-193 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Naming Fractions as Decimals Exit Ticket: mSpace p. 193</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 192-193. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To locate integers on the number line.</p> <p>Language Goals: Describe location using the terms integers, negative, and positive when playing the game.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser Students make sense of a riddle's meaning, look for entry points to a solution, and plan a solution pathway. Ask students to share their responses and how they solved the riddle. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: (Set-Up) Purpose: To practice locating positive and negative integers on a number line. Teach Number Jump! (Level 1) Step 1: Roll the number cube twice. The first roll is the target number</p>

	<p>and the second roll is the starting number. Mark the target number on the number line.</p> <p>Step 2: Roll the number cube again and record your number. Decide the direction of the jump.</p> <p>Step 3: Jump from the starting number or the last number landed on.</p> <p>Step 4: Record the landing number. Trade turns.</p> <p>Goal: To land on the target number.</p> <p>Mspace p. 194-197 Guided Practice: Demonstrate, Solve Together</p> <p>Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:</p> <p>Review Game Strategy</p> <p>Exit Ticket: mSpace p. 197</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 194-197.</p> <p>Computer Software:</p> <p>On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.</p> <p>Group 2: Student Software:</p> <p>Explore Zone</p> <p>Learn Zone/Fast Track: Think, Try, Practice, Master</p> <p>Success Zone</p> <p>Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.</p> <p>Elicit Student Thinking</p> <p>Modify Tasks</p> <p>Using Data to Differentiate Checkpoint #1:</p> <p>Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.</p> <p>Review Data: Review the performance data and groupings.</p> <p>Plan Instruction: Based on Rotations, access digital lessons.</p> <p>Boost Lesson related to software data.</p> <p>Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 1 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To compare and order positive and negative numbers.</p> <p>Language Goals: Use the terms greater than and less than to communicate comparisons accurately.</p> <p>Do Now:</p> <p>Analyze Problems</p> <p>Missing Numbers</p> <p>Students use the structure of the number line to determine how to identify the remaining numbers. Ask students to share solutions and explain how they know where the numbers belong.</p> <p>Mathematical Practice: Make Use of Structure</p> <p>Teach:</p> <p>Play the Instructional Video:</p> <p>Compare Positive and Negative Numbers.</p> <p>Model Comparing Numbers:</p> <p>Teach the steps to plot and compare 2, <math>-3 \frac{1}{2}</math>, <math>-6</math>, and <math>-1.25</math> on a number line.</p> <p>Step 1: Compare positive and negative numbers.</p> <p>Step 2: Compare two negative numbers.</p> <p>Step 3: Compare decimals to fractions.</p> <p>Step 4: Order numbers from least to greatest.</p> <p>High-Leverage Practice: Lead a Discussion</p> <p>Mspace p. 198-199 Guided Practice: Demonstrate, Solve Together</p> <p>Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:</p>

	Review Comparing Positive and Negative Numbers Exit Ticket: mSpace p. 199
<b>Practice and Apply Assigning Homework</b>	Play game in pairs on mSpace pages 198-199 Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Topic 1 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To use direction on a number line and comparison to classify numbers and solve problems.  Language Goals: Use the terms greater than, integers, and less than to discuss classifying positive and negative numbers.  Do Now: Evaluate Solutions Who's Right? Students analyze two different inequalities and identify the one that is incorrect. Ask students to share their solutions and explain their reasoning. Mathematical Practice: Construct Viable Arguments  Teach: Model a Venn Diagram Problem: Teach the steps to sort numbers using a number line and Venn diagram. Step 1: Analyze the problem. Step 2: Create a number line. Step 3: Plot the numbers on the number line. Step 4: Complete the Venn diagram. Mspace p. 200-201 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Sorting Positive and Negative Numbers Exit Ticket: mSpace p. 201
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 200-201. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #1: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson based on software data. Stretch Lesson based on software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 1):</b>	



	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Use distance from 0 to add two positive or two negative numbers.</p> <p>Language Goals: Use the terms addend and sum to explain adding positive and negative integers.</p> <p>Do Now: Create Structure Build It Students create addition equations with three addends using a set of numbers. Ask students to share their equations and explain the strategy they used. Mathematical Practice: Make Use of Structure</p> <p>Teach: Play the Instructional Video: Add Integers With the Same Sign. Model Adding Integers: Teach the steps to add <math>2 + 5</math> and <math>(-5) + (-4)</math> using a number line. Step 1: Represent two positive integers. Step 2: Find the sum. Step 3: Represent two negative integers. Step 4: Find the sum. Mspace p. 204-205 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<p><b>Checking for Understanding</b></p>	<p>Summarize and Assess: Review Adding Integers With the Same Sign Exit Ticket: mSpace p. 205</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Solve problems in pairs on mSpace pages 204-205. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<p><b>Accommodations/Modifications:</b></p>	<p>Students can work on additional software as a supplement to class instruction.</p>
	<p><b>Topic 2 (Lesson 2):</b></p>	
	<p><b>Teach Teaching Options</b></p>	<p>Lesson Objective: Use distance from 0 to add two positive or two negative integers.</p> <p>Language Goals: Use the terms integers, negative, and positive to describe numbers on the number line and directions of jumps. Explain whether it is more strategic to add a negative or positive number.</p> <p>Do Now: Analyze Problems Missing Numbers</p>

	<p>Students analyze numerical situations to determine which positive and negative integers accurately complete the sentence frames. Ask students to share solutions.</p> <p>Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Purpose: To practice finding distances on the number line. Teach Number Jump (Level 2) Step 1: Player A rolls the number cube to get a starting number. Player B decides on the sign. Step 2: Player A rolls the number cube, determines the sign, and jumps from the first number to the second. Step 3: Find the distance using the number line. Step 4: Record the score. Trade turns. Goal: To jump to numbers that give you the greatest distance. The player with the most points wins. Mspace p. 206-209 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Game Strategy Exit Ticket: mSpace p. 209</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 206-209. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 3):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To add positive and negative numbers.</p> <p>Language Goals: Use the terms additive inverse and opposite of a number to explain adding numbers with different signs.</p> <p>Do Now: Develop Flexible Thinking Brain Teaser Students analyze the integers and operations given in this puzzle to plan a path to the solution. Ask students to share the puzzle solution and the equation they started with. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Play the Instructional Video: Add Integers With Different Signs. Model Adding Positive and Negative Integers: Teach the steps to add integers with different signs and identify a pattern.</p>

	<p>Step 1: Add opposites. Use the Vocabulary Routine to teach additive inverse and opposite of a number.</p> <p>Step 2: Find the sum.</p> <p>Step 3: Look for a pattern.</p> <p>Step 4: Verify the pattern.</p> <p>Mspace p. 210-211 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Adding Integers Exit Ticket: mSpace p. 211</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 210-211. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	<p>Students can work on additional software as a supplement to class instruction.</p>
<b>Topic 2 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To add positive and negative numbers.</p> <p>Language Goals: Use precise language and appropriate vocabulary to describe adding numbers with different signs.</p> <p>Do Now: Identify Numerical Patterns Find the Pattern Students identify a pattern in a set of equations to write the missing integers. Ask students to share solutions and explain their reasoning. Mathematical Practice: Use Repeated Reasoning</p> <p>Teach: Play the Instructional Video: Add Numbers With Different Signs. Model Adding Numbers With Different Signs: Teach the steps to add <math>(-4 \frac{3}{4}) + 2 \frac{5}{8}</math> using an open number line. Step 1: Identify the sign of the sum. Step 2: Find the difference. Step 3: Add the jumps. Step 4: Write an equation. High-Leverage Practice: Respond to Common Patterns of Thinking Mspace p. 212-213 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Adding Numbers With Different Signs Exit Ticket: mSpace p.213</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 212-213. Computer Software: On a daily basis, students are split into two groups: Group 1: whole</p>

	<p>group guided instruction, Pair Share.</p> <p>Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 2 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To analyze and solve problems with positive and negative numbers. To explain reasoning in problems with positive and negative numbers.</p> <p>Language Goals: Use the terms integers and number line to discuss contextualized problems.</p> <p>Do Now: Reason About Numbers Number Strings -Students rearrange five integers in an expression and find the sum. Ask students to share their solutions and explain reasoning. Mathematical Practice: Use Repeated Reasoning</p> <p>Teach: Mspace p. 213-21 Model How to Solve a Problem: Teach the steps to solve word problems with positive and negative numbers. Read It!: Read the problem. Show It!: Represent the problem. Solve It!: Solve the problem. Check It!: Check your work. 5 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Adding Positive and Negative Numbers Exit Ticket: mSpace p.215</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 213-215. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #2: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings.</p>

	Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Accommodations/Modifications:</b>	Students can work on additional software as a supplement to class instruction.
<b>Topic 3 (Lesson 1):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To subtract by finding the distance between two positive or two negative integers.  Language Goals: Explain why the difference in a subtraction equation can be greater than both numbers in the equation.  Do Now: Reason About Numbers Number Strings - Students notice that calculations are repeated as they mentally subtract the expressions. Ask students to share solutions and explain their reasoning. Mathematical Practice: Use Repeated Reasoning  Teach: Play the Instructional Video: Find Distance to Subtract. Model Subtracting Integers: Teach the steps to subtract integers using a number line. Step 1: Plot positive integers on a number line. Step 2: Compare two expressions. Step 3: Name the difference. Step 4: Subtract two integers. Mspace p. 218-219 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Subtracting Integers Exit Ticket: mSpace p. 219
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 218-219. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Topic 3 (Lesson 2):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To subtract by finding the difference between positive and negative integers.  Language Goals: Use the term additive inverse and the expression "add the opposite" when subtracting positive and negative integers.

		<p>Do Now: Develop Estimation Skills Make an Estimate Students estimate whether a difference will be positive or negative. Ask students to share solutions and explain their strategy. Mathematical Practice: Reason Abstractly</p> <p>Teach: Play the Instructional Video: Subtract Positive and Negative Integers. Model Subtracting Positive and Negative Integers: Teach the steps to identify and apply a rule for subtracting positive and negative integers. Step 1: Subtract a positive integer from a negative integer. Step 2: Subtract a negative integer from a positive integer. Step 3: Identify a pattern. Step 4: Subtract by adding the opposite. Mspace p. 220-221 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs</p>
	<b>Checking for Understanding</b>	<p>Summarize and Assess: Review Subtracting Integers Exit Ticket: mSpace p. 221</p>
	<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 220-221 Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.</p>
	<b>Topic 3 (Lesson 3):</b>	
	<b>Teach Teaching Options</b>	<p>Lesson Objective: To subtract positive and negative numbers.</p> <p>Language Goals: Articulate and defend whether using an open number line or adding the opposite is more effective for subtracting positive and negative numbers.</p> <p>Do Now: Analyze Problems Missing Numbers Students write the missing numbers to complete the equations in the puzzle. Ask students to share solutions and explain their methods for solving the puzzle. Mathematical Practice: Persevere and Solve Problems</p> <p>Teach: Play the Instructional Video: Subtract Positive and Negative Numbers. Model Subtracting Positive and Negative Numbers: Teach the steps to subtract <math>(-4 \frac{5}{8}) - 1 \frac{3}{4}</math> and <math>(-4.8) - 1.6</math>. Step 1: Subtract mixed numbers on an open number line. Step 2: Subtract by adding the opposite.</p>

	<p>Step 3: Subtract decimals on an open number line.  Step 4: Subtract by adding the opposite.  mSpace p. 223-224 Guided Practice: Demonstrate, Solve Together  Practice: Solve problems in pairs</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Subtracting Positive and Negative Numbers  Exit Ticket: mSpace p. 224</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 223-224.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
<b>Assess and Reteach Differentiating Instruction</b>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
<b>Topic 3 (Lesson 4):</b>	
<b>Teach Teaching Options</b>	<p>Lesson Objective: To subtract positive and negative numbers.</p> <p>Language Goals:  Use the terms benchmark numbers, difference, distance, open number line, and opposite of a number while playing the game.  Explain effective game strategy.</p> <p>Do Now:  Create Structure  Build It -Students build equations with a distance of 10 using numbers from -20 to 0. Ask students to share solutions and the strategy they used.  Mathematical Practice: Make Use of Structure</p> <p>Teach: (Set up)  Purpose:  To practice subtracting integers.  Teach Number Jump! (Level 3)  Step 1: Both players roll the number cube. Decide whether each number is positive or negative.  Step 2: Record the subtraction expression: Player A's number minus Player B's number.  Step 3: Use the number line to subtract and check.  Step 4: Record the difference. If the difference is negative, Player A scores a point. If it is positive, Player B scores a point.  Goal: To score the most points after 7 rounds.  mSpace pages 224-227.</p>
<b>Checking for Understanding</b>	<p>Summarize and Assess:  Review Game Strategy  Exit Ticket: mSpace p. 227.</p>
<b>Practice and Apply Assigning Homework</b>	<p>Solve problems in pairs on mSpace pages 224-227.  Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone</p>

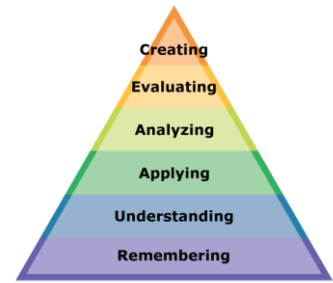
	Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Topic 3 (Lesson 5):</b>	
<b>Teach Teaching Options</b>	Lesson Objective: To solve problems by writing and evaluating equations with positive and negative numbers.  Language Goals: Understand and use the terms equivalent, negative, opposite of a number, and positive to discuss using pan balances to solve integer problems with equivalence.  Do Now: Develop Flexible Thinking Brain Teaser Students analyze the givens and try several possible integers in order to find the solution to the riddle. Ask students to share solutions and explain their reasoning. Mathematical Practice: Persevere and Solve Problems  Teach: Model a Pan Balance Problem: Teach the steps to solve pan balance problems with integers. Step 1: Analyze the problem. Step 2: Write an equation for the problem. Step 3: Solve the problem. Step 4: Check your work. Mathematical Practice: Reason Abstractly Mspace p. 228-229 Guided Practice: Demonstrate, Solve Together Practice: Solve problems in pairs
<b>Checking for Understanding</b>	Summarize and Assess: Review Solving Integer Problems With Equivalence Exit Ticket: mSpace p. 229.
<b>Practice and Apply Assigning Homework</b>	Solve problems in pairs on mSpace pages 228-229. Computer Software: On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share. Group 2: Student Software: Explore Zone Learn Zone/Fast Track: Think, Try, Practice, Master Success Zone Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.
<b>Assess and Reteach Differentiating Instruction</b>	Challenge: Respond to common patterns of Thinking. Elicit Student Thinking Modify Tasks Using Data to Differentiate Checkpoint #3: Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation. Review Data: Review the performance data and groupings. Plan Instruction: Based on Rotations, access digital lessons. Boost Lesson related to software data. Stretch Lesson related to software data.
<b>Block 9 Performance Task</b>	
<b>Teach</b>	Lesson Objective: To Analyze Weather and Pollution Data:



	<p><b>Teaching Options</b></p>	<p>Students subtract positive and negative numbers, and then construct and analyze a scatter plot.</p> <p>Teach:  Replay Anchor Video – “Living Below Zero.”  Introduce Performance Task.  Complete the Performance task Mspace p. 230-231.  Evaluate:  Students will be evaluated based on Performance Task Rubric Explore, Apply, and Analyze</p>
	<p><b>Practice and Apply Assigning Homework</b></p>	<p>Computer Software:  On a daily basis, students are split into two groups: Group 1: whole group guided instruction, Pair Share.  Group 2: Student Software:  Explore Zone  Learn Zone/Fast Track: Think, Try, Practice, Master  Success Zone  Brain Arcade: Students are responsible to complete 20 minutes in the Brain Arcade per week for homework.</p>
	<p><b>Assess and Reteach Differentiating Instruction</b></p>	<p>Challenge: Respond to common patterns of Thinking.  Elicit Student Thinking  Modify Tasks  Using Data to Differentiate Checkpoint #3:  Use Groupinator to analyze student data and recommend groups and differentiated instruction lessons for each rotation.  Review Data: Review the performance data and groupings.  Plan Instruction: Based on Rotations, access digital lessons.  Boost Lesson related to software data.  Stretch Lesson related to software data.</p>
	<p><b>mSkills Curriculum Based Assessment 9</b></p>	<p>Review:  To prepare students for mSkills:  Download the Block 5 mSkills Strategy Lesson, Student Pages, and Annotated Student Pages to give students targeted practice with assessment item types based on current Block content.  You may also teach the mSkills Demo Lesson to give students a general overview of assessment item types based on prerequisite content.</p> <p>Evaluate:  To administer mSkills:  Go to Class Settings and assign the mSkills assessment to students.  Have students log in to the student software.  Allow students to review the Problem-Solving Routine.</p> <p>Administer:  Reference Guide.  The first 20 items will be digitally graded and available in Class Analytics Zone Progress.  Enter scores to the constructed-response items in the SDP using the Scoring Rubric.  Have students complete the Mindset Strategy in their mSpaces to reflect on their performance in the Block.</p>

## **PART IV: EVIDENCE OF LEARNING**

**IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS.  
IDENTIFY BLOOM'S LEVELS.**



### **Formative Assessments:**

The effectiveness of the instructional program will be based on teacher observations, students doing quality of work together, questioning strategies, self and peer assessment, student record-keeping, quizzes, tests, homework, class discussion, individual conferences, performance tasks, diagnostic tests, homework, and projects

### **Accommodations/Modifications:**

Use manipulatives to build patterns or represent symbols. Provide Graphic organizers to use in solving problems. Provide guided notes/handouts. Break problems into smaller pieces. Have students keep and turn in a notebook. Review needed skills prior to the lesson. Provide checklists for solving problems.

### **Summative Assessments:**

Periodic chapter tests, state assessments, PSATs, End of Course tests, and SATs

### **Accommodations/Modifications:**

Provide checklists for solving problems. Provide students with a resource page that has multiplication charts, fractions pieces. Break problems and test sections into smaller pieces

### **Performance Assessments:**

Projects, display of student work, and electronic portfolios

### **Accommodations/Modifications:**

Allow students extra time to complete projects. Provide students with an example of project for reference. Make a clear rubric for students to understand exactly what is expected.

