

<b>Unit: 1.1</b>	<b>Algebraic Reasoning</b>	<b>Days : 10</b>
<b>Essential Questions</b>		
How can you use the order of operations to solve problems? How do you write equivalent expressions using properties? How do you evaluate algebraic expressions? How can you write an expression from a given situation? How do you add, subtract, and multiply algebraic expression?		
<b>Content to be Learned</b>		<b>Skills</b>
Use order of operations Write equivalent expression Evaluate algebraic expression Write expression from given situation Operate with algebraic expressions		
<b>Assessments</b>		<b>Standards</b>
To be determined		cc.7.ee.3 cc.7.ns.1d cc.7.ee2 cc.7.ee.4 cc.7.ee1
<b>Sample Instructional Activities</b>		<b>Resources</b>
QR Video tutor		ECM Chapter 1 Lessons 1-5 Problem solving connections

Unit	Unit Title	Lesson	Day(s)
<b>1.1</b>	<b>Algebraic Reasoning</b>	<b>1 of 5</b>	<b>1</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>7.NS.3 A</b> Solve real-world and mathematical problems involving the four operations with rational numbers. <sup>1</sup>	<b>PExMDAS</b> <b>Why we order certain operations</b> <b>How to order and solve</b>	<b>CCSS.Math.Practice.MP8</b> Look for and express regularity in repeated reasoning. <b>CCSS.Math.Practice.MP7</b> Look for and make use of structure.	<b>How can you use the order of operations to solve problems?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Operations with whole numbers</b>	<b>Order of Operations</b>	<b>In the third step of the order of operations, students are instructed to multiply and divide from left to right. This does not mean that all multiplication should be performed before all division. Left to right using logic.</b>	<b>Explorations in Core Math (ECM)1-1 Pages 5-6 in class work, homework pg 7-8</b>
<b>Suggested Learning Practices</b>			
9. Instruction Practices (What are the teachers doing)		10. Learning Practices (What are the students doing)	
The teacher will be: Demonstrating the order of operations for students to view. Ask student volunteers to come to iPad to show how to solve a problem. Then Students will work on problems at the top of page 6 in groups. And continue to work together through #10. Teacher will circulate through room to monitor and answer questions.		The students will be: Listening and taking notes as the teacher demonstrates the order of operations. Students will be then working together with teammates to decide what to do first in each operation on page 6. Work together through # 10. Students will share out on white boards. Students will then write in planners homework pg 7-8.	

Unit	Unit Title	Lesson	Day(s)
<b>1.1</b>	<b>Algebraic Reasoning</b>	<b>2 of 5</b>	<b>2</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>7.EE.1d</b><b>7.NS.A.1d</b> Apply properties of operations as strategies to add and subtract rational numbers.</p> <p><b>7.EE.3</b>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</p>	<p><b>Properties you can use to make evaluating expression easier</b></p> <p><b>How properties work with each operation</b></p>	<p><b>CCSS.Math.Practice.MP8</b> Look for and express regularity in repeated reasoning.</p> <p><b>CCSS.Math.Practice.MP7</b> Look for and make use of structure.</p>	<p><b>How do you write equivalent expressions using properties?</b></p>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<p><b>Order of operations</b></p>	<p><b>Commutative property</b></p> <p><b>Associative property</b></p> <p><b>Identity property</b></p> <p><b>Distributive property</b></p> <p><b>Distributive property</b></p> <p><b>Adjacent factor (factors that are next to each other in the expression)</b></p>	<p><b>Commutative and Associative apply only to the operations of addition and multiplication.</b></p>	<p><b>Explorations in Core Math (ECM) 1-2 pg 9,10</b></p>

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Directing students through the order of operation using a pre recorded lesson for students to view. Students will then work in groups to work on pages 9, 10, and 11 in groups. Teacher will circulate between groups and students to check for understanding and answer questions.</p> <p><b><u>DAY TWO</u></b></p> <p>The teacher will review the homework with the students to check for understanding. All students should have completed the homework. Once any misunderstandings have been cleared up students will again work in groups to complete pages 13, and 14. While students present answers to pages 13 and 14 teacher will check for understanding and correct any misconceptions.</p>	<p>The students will be:</p> <p>Listening and taking notes during the pre recorded teacher presentation. Students will work in groups to solve the various math questions they are presented with. They will be called upon in their groups to answer certain items during this time. Students will complete 9-11. Students will also receive pg 12 for homework.</p> <p><b><u>DAY TWO</u></b></p> <p>Students will have their homework ready to go over and will ask questions to have their misunderstandings cleared up. They will then work in groups on pages 13 and 14. At the end of the period students will present answers to the problems on these two pages to the rest of the class using white boards.</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.1</b>	<b>Algebraic Reasoning</b>	<b>3 of 5</b>	<b>2</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>7.EE.3</b> 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	<b>Evaluating expressions</b>	<b>CCSS.Math.Practice.MP1</b> Make sense of problems and persevere in solving them. <b>CCSS.Math.Practice.MP3</b> Construct viable arguments and critique the reasoning of others.	<b>How do you evaluate algebraic expressions?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Operations with whole numbers</b> <b>Order of operations</b>	<b>Constant</b> <b>Variable</b> <b>Algebraic expression</b> <b>evaluate</b>	<b>The order of operations applies to algebraic expressions – <math>5 + 3x</math> where <math>x=2</math>; the multiplication would be done first and the addition second.</b>	<b>ECM 1-3 pg15-16, 17-18</b>

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Ask students how much one quarter is worth? Two quarters, three? Now how about a handful of quarters? Could we write an algebraic expression? How would we do that? We will be dealing with algebraic expressions.</p> <p>There are constants and variables. The number that comes beside a variable is the numerical coefficient and that number multiplies the variable. Teacher will guide students through page 15. Students will be directed to work in pairs on page 16. Teacher will have students come back together to display answers and go over questions or concerns. Teacher will give homework pg 17.</p> <p>Day Two</p> <p>Teacher will go over answers to page 17 homework. Answer any questions and clear up misconceptions. In class direct students to work in groups on problem solving on page 18. By the end of class students will present their solutions on a white board. Teacher will then have an opportunity to address answers students have created and have students discuss with each other why or why not answers are reasonable.</p>	<p>The students will be:</p> <p>Participating in listening and following directions given by teacher and taking notes. Students will work on page 15 by following along with teacher. Then students will work on page 16 in their groups. They will be responsible for displaying their answers and must be ready to defend their work. Homework will be page 17.</p> <p>Day Two</p> <p>Students will go over all the problems on page 17 and must be ready to defend their answers. Working in groups students will complete page 18 (problem solving) in class. About halfway through class students will be asked to present their answers to the problems and they must defend their answers to the other students in class.</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.1</b>	<b>Algebraic Reasoning</b>	<b>4 of 5</b>	<b>2</b>
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><u><a href="#">7.EE.A.2</a></u> Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related</p> <p><u><a href="#">7.EE.B.4</a></u> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities</p>	<b>Translate words into algebraic expressions (translating words into math)</b>	<u><a href="#">CCSS.Math.Practice.MP2</a></u> Reason abstractly and quantitatively.	<b>How can you write an expression for a given situation?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Simplifying expressions</b>			<b>ECM 1-4 pg 19-24</b>

<b><i>Suggested Learning Practices</i></b>					
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>				
<p>The teacher will be:                      Introducing the topic of translating words into math.                      Page 19 S+3 for stamps plus 3 added today.                      Teacher directed instruction for page 19 and 20.                      Teacher will then assign page 23 for homework.</p> <p>Day Two                      Go over homework and identify misconceptions and misunderstandings.                      Proceed with pages 21 and 22. Students will work with a partner and complete page 24 together. During the remaining 20 minutes of class students will present their answers and will ask for input from other students in class.</p>	<p>The students will be:                      Following along taking notes while teacher directs instruction for pages 19 and 20.                      Make a graphic organizer with key words for operations:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><u>Addition</u> – sum, plus, added to, total; more; increased by</td> <td style="padding: 5px;"><u>Subtraction</u> – difference; minus; subtracted; from; less; fewer; decreased by</td> </tr> <tr> <td style="padding: 5px;"><u>Multiplication</u> – product; times; multiplied by; equal; groups of</td> <td style="padding: 5px;"><u>Division</u> – quotient; divided by; shared equally</td> </tr> </table> <p>Students will do page 23 for homework.</p> <p>Day Two                      Students will follow along and do pages 21 and 22 with teacher direction. They will then work on page 24 with a partner and be ready to present their answers to the rest of the class.</p>	<u>Addition</u> – sum, plus, added to, total; more; increased by	<u>Subtraction</u> – difference; minus; subtracted; from; less; fewer; decreased by	<u>Multiplication</u> – product; times; multiplied by; equal; groups of	<u>Division</u> – quotient; divided by; shared equally
<u>Addition</u> – sum, plus, added to, total; more; increased by	<u>Subtraction</u> – difference; minus; subtracted; from; less; fewer; decreased by				
<u>Multiplication</u> – product; times; multiplied by; equal; groups of	<u>Division</u> – quotient; divided by; shared equally				

Unit	Unit Title	Lesson	Day(s)
<b>1.1</b>	<b>Algebraic Reasoning</b>	<b>5 of 5</b>	<b>3</b>
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<a href="#">.7.EE.A.1</a> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	<b>Simplifying algebraic expressions</b>	<b><a href="#">CCSS.Math.Practice.MP4</a> Model with mathematics.</b>	<b>How do you add, subtract, factor, and multiply algebraic expressions?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Writing expressions</b> <b>Parts of an expression</b> <b>Evaluating expressions</b> <b>Equivalent expressions</b>	<b>factor</b>	<b>When multiplying a constant by a sum or difference, students may only multiply the first term by the constant. If students make this mistake, have them first draw arrows from the constant to each term inside the parentheses. The arrows remind students to also distribute the multiplication to the other terms.</b>	<b>ECM 1-5 pg 25-30</b> <b>TI 30XS Multiview Calculators for each student</b> <b>Algebra Tiles</b>

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Teacher will providing direct instruction to the whole class using page 25 and will walk through the page asking for student input. (Would be great to use a picture of the page and fill in the page as students provide input).</p> <p>Teacher will assign page 26 for students to work with a partner. At the end of class have whole groups report out to show how they arrived at the answer.</p> <p><b>Day Two</b> Teacher will distribute Algebra Tiles to each group of students. Teacher will demonstrate the use of Algebra tiles in order to help students understand how to use them. Once teacher is fairly comfortable that students understand how to use the algebra tiles then students can be assigned page 27.</p> <p>Once students complete page 27 they will work in groups to complete page 28 as a group. All students will have all items complete before the group may move on.</p> <p><b>Day Three</b> Go over homework and clarify answers to clear up any misconceptions</p>	<p>The students will be:</p> <p>Working on page 25 with the teacher and then the students will work with a partner to do Reflect Questions on page 26 1C and D. Students will continue to work with a partner to finish page 26. Have whole groups work together to compare answers to make sure everyone has the same answer. Then have groups use white boards to show HOW they arrived at the answer.</p> <p><b>Day Two</b> Students will receive a set of algebra tiles for their group. Students will work on page 27 to learn how to factor expressions. Once students complete page 27 they will work in groups to complete page 28 as a group. All students will have all items complete before the group may move on.</p> <p><b>Homework</b> pg 29-30 evens only.</p> <p><b>Day Three</b> Go over homework and ask questions to clear up misconceptions</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.1</b>	<b>Algebraic Reasoning</b>	<b>Final</b>	<b>2</b>
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
7.NS.1d, 7.EE.1, 7.EE.2, 7.EE.3, 7.EE.4	Previously learned	Make sense of problems and persevere in solving them Look for and make use of structure Look for and express regularity in repeated reasoning	
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
			ECM pg 31-34 Students will select at least one of 4 tasks (Pre Alg will select 3)

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Teacher will walk around the room to answer questions and to provide redirection. Students will be expected to answer at least ONE of the tasks hopefully more. Present the tasks and announce to the students that they are to do the best they can to complete as much as they can in the time allotted. Keep expectations high. In FUTURE units students will be expected to complete ALL activities and then hand in an example of their best work.</p> <p>Day TWO Students will complete pages 37 and 38 for test Prep.</p> <p>Next day TEST chapter one</p>	<p>The students will be:</p> <p>Working independently. They can use their notes, book, and calculators to complete their work. They may NOT work with a partner or group. This is independent work.</p> <p><b><u>At homework or independent work:</u></b> <b><u>Pages 35-36 return in one day for a grade.</u></b></p> <p>Day TWO Students will complete pages 37 and 38 for test Prep Next day TEST chapter one</p>

<b>Unit: 1.2</b>	<b>Integers and Rational Numbers</b>	<b>Days : 20</b>
<b>Essential Questions</b>		
How do you describe situations using opposites? How do you add, subtract, multiply, and divide rational numbers? How do solve equations containing integers? How can you convert a rational number to a decimal How can you compare and order rational numbers?		
<b>Content to be Learned</b>		<b>Skills</b>
Operation with rational numbers Solve equations with integers and rational numbers Convert rational numbers to decimals Compare and order rational numbers		
<b>Assessments</b>		<b>Standards</b>
		cc.7.ns.1a cc.7.ns.1b cc.7.ns.1c cc.7.ns.2 cc.7.ns.2a cc.7.ns.2b cc.7.ns.2d cc.7.ee.3 cc.7.ee.4
<b>Sample Instructional Activities</b>		<b>Resources</b>
QR video tutor		ECM Chapter 2 Lessons 1-7 problem solving connections

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>1</b>	<b>2</b>
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>7.NS.1a</b> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. <b>a.</b> Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.	<b>Adding and subtracting integers to arrive at zero. Opposite quantities combine to make 0.</b>	<b>Look for and express regularity in repeated reasoning.</b>	<b>How do you describe situations using opposites?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Number line skills</b>	<b>Opposites Integers</b>		<b>ECM pg 43-46 Graph paper, ruler</b>

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p><a href="http://www.coolmath.com/prealgebra/08-signed-numbers-integers/05-signed-numbers-integers-opposite-01.htm">http://www.coolmath.com/prealgebra/08-signed-numbers-integers/05-signed-numbers-integers-opposite-01.htm</a></p> <p>Guiding students through page 43. Have students make a number line with 21 tick points and list the numbers -10 to 10 on the number line. Then follow directions on page 43. Teacher will then assign page 44 for group work.</p> <p>Day Two Go over homework to check for understanding and then proceed to next unit.</p>	<p>The students will be:</p> <p>Students can work together to complete page 43. Students will then work together in groups to complete page 44. All students must work together and all parts of page 44 must be complete before advancing. Homework: pages 45 and 46 1-6 on both pages.</p> <p>Day Two Go over homework to check for understanding then proceed to the next section.</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>2</b>	<b>3</b>
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>7.NS.1a.</b> Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</p> <p><b>7.NS.1b.</b> 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.1d</b> Apply properties of operations as strategies to add and subtract rational numbers</p>	<p><b>Adding Integers</b> <b>Rational numbers</b></p>	<p><b>Model with Mathematics</b></p>	<p><b>How can you add rational numbers?</b></p>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<p><b>Positive and negative numbers</b></p>	<p><b>Additive inverse</b></p>	<p><b>Students may be confused with the different signs on the two numbers. Have them follow a series of steps for these problems:</b></p> <ul style="list-style-type: none"> <li>• Start on the number line with the first addend</li> <li>• Take the absolute</li> </ul>	<p><b>ECM pages 47-52</b> <b>Integer counters</b></p>

		<p>value of the second addend to find the distance to move;</p> <ul style="list-style-type: none"> <li>• look at the sign of the second addend for the direction to move on the number line.</li> </ul>	
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>The teacher will be:</p> <p>Explain the absolute value sign  and how it is used. Teacher directed instruction for page 47. Teacher will also pass out two color counters to students to use. Teacher will assign page 48 for students to work on in groups.</p> <p>Day Two Teacher will assign page 49 then, Teacher will then ask students to come up with some rules for adding integers with the same signs and different signs. Groups will work together to come up with the rules. Groups will share information together to come up with a classroom set of rules.</p> <p>Day Three Teacher will go over page 50 to check for understanding Could use page 51&amp; 52 for a quiz?</p>		<p>The students will be:</p> <p>Listening and taking notes on teacher discussion of page 47. Students will be working with manipulatives (two color counters) to complete page 48 working in a group.</p> <p>Day Two After completing pg 49, Students will work together to come up a set of rules for adding integers with the same signs and different signs. Groups will work together to come up with the rules. Groups will share information together to come up with a classroom set of rules. Homework pg 50</p> <p>Day Three Students will ask questions if there are any on the homework.</p>	

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>3</b>	<b>3</b>
<b><i>Lesson Focus</i></b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>7.NS.1c</b> Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$ . 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	<b>Subtracting Integers</b>	<b>Reason abstractly and quantitatively</b>	<b>How do you subtract rational numbers?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Adding integers</b> <b>Rational number operations</b> <b>Order of operations</b>			

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Directing instruction for page 53.            Teacher assigns students to work on page 54 with a partner. Teacher assigns whole class to work on page 55 in groups. Groups will then present out their findings on white boards.*** Students are encouraged to talk about other students solutions with positive feedback and constructive criticism as modeled by the teacher.(*** This is new to students – YOU MUST MODEL what you want them to do! And it must be practiced consistently)</p> <p>Day Two            Students will work with a partner on page 56 . When they are done they will then share their results with the rest of their group.            Teacher assigns Groups to work on page 57 and walks around the room to answer questions or clear up any misunderstandings. Teacher will go over answers with the students before the end of the class. Assign page 58 for Homework</p> <p>Day Three            Teacher assigns pg 59 and 60 as a quiz. Students work independently.</p>	<p>The students will be:</p> <p>Taking notes and following teacher direction on page 53. Students will work on page 54 with a partner. Groups will work on page 55 and will present their findings to the whole class on white boards.</p> <p>Day Two            Students will work in pairs on page 56. Once they have arrived at answers they will share what they have learned with their group members.            Students will work in groups to complete page 57 before the end of the period.            Page 58 for homework. Show all work and give a clear explanation.</p> <p>Day Three            Students work independently on pages 59 and 60 and turn in work for a quiz grade.</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>4</b>	<b>3</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>7.NS.2a</b> 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.2b</b> 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 <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>. Interpret quotients of rational numbers by describing realworld contexts.</p> <p><b>7.NS.2c</b> Apply properties of operations as strategies to multiply and divide rational numbers.</p>	<p><b>Multiplying and Dividing Integers</b>  <b>(Connect to prior learning by reviewing multiplication of two fractions ex.(2/5)(3/8). They will work on similar problems but with numbers that could have negative signs.</b></p>	<p><b>Construct viable arguments and critique the reasoning of others</b>  <b>Reason abstractly and quantitatively</b></p>	<p><b>How do you multiply and divide rational numbers?</b></p>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<p><b>Multiplying and dividing fractions</b></p>			<p><b>ECM 2-4 pg 61-68</b></p>

***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Teacher will provide direct instruction for page 61. Teacher will assign students to work with a partner on page 62. Teacher will again direct instruction for page 63 (products of rational numbers and properties of zero).</p> <p>Day Two Students will be assigned to work on page 64-66 in groups. At the end of the period students will be asked to present the information they learned on white boards.</p> <p>Day Three Students will work together in groups to solve pages 67-68. Each group will turn in ONE paper with answers for both pages. All group members will turn in their OWN work but ONE paper will represent the efforts of the group! The group work will be worth a quiz grade.</p>	<p>The students will be:</p> <p>Taking notes and following along with teacher on page 61. Students will then work with a partner on page 62. Students will take notes and follow along with teacher on page 63.</p> <p>Day Two Students will work in groups to complete pages 64 – 66. Students in each group will work together to present the information they have learned on white boards to present to the class.</p> <p>Day Three Students will work together in groups to solve pages 67-68. Each group will turn in ONE paper with answers for both pages. All group members will turn in their OWN work but ONE paper will represent the efforts of the group! The group work will be worth a quiz grade.</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>5</b>	<b>2</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>7.NS1b</b> 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.EE.4</b> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	<p><b>Solving Equations containing Integers (Two girls with curls)**</b></p>	<p><b>Model with mathematics</b></p>	<p><b>How do you solve equations containing integers</b></p>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<p><b>Order of operations</b> <b>Properties of numbers</b></p>	<p><b>Inverse property of addition</b></p>	<p><b>Briefly review the properties of equality with students. Remind them that the Multiplication Property of Equality states that you can multiply both sides of an equation by the same number and the equation will still be true. Repeat with the Addition, Subtraction, and Division Properties of Equality.</b></p>	<p><b>ECM 2-5 pg 69 - 74</b></p>

		<a href="http://www.basic-mathematics.com/properties-of-equality.html">http://www.basic-mathematics.com/properties-of-equality.html</a>	
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>The teacher will be:</p> <p>Teacher will be direct teaching page 69. Teacher will continue to direct teacher pages 70 and 71. Homework page 73 #1-23 odd</p> <p>Day Two Teacher will review homework. Class will then proceed with page 72 working with a partner. Students will complete page 73 evens and will do page 74.</p>		<p>The students will be:</p> <p>Taking notes and following along on page 69. Students will continue to take notes for pages 70 and 71. Homework page 73 #1-23 odd</p> <p>Day Two Teacher will review homework. Class will then proceed with page 72 working with a partner. Students will complete page 73 evens and will do page 74.</p>	

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>6</b>	<b>2</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>7.NS.2d</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	<b>Equivalent Fractions and Decimals</b>	<b>Use appropriate tools strategically.</b>	<b>How can you convert a rational number to a decimal?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<b>Dividing multi digit numbers</b>	<b>Rational number</b>	<b>Be sure that students do not stop dividing too soon. Remind them to keep adding zeros after the decimal point in the dividend until they find the correct decimal form of the rational number. (Repeating or terminating decimal)</b>	<b>ECM 2-6 pg 75 -80 calculator</b>

***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>The teacher will be:</p> <p>Direct instruction on page 75. Direct instruction on pages 76 and 77. Long division may require some students to use larger graph paper in order to keep the space. Be prepared to supply this for some students.</p> <p>Homework: pg 78 # 2-22 even...show all work in notebook</p> <p>Day Two Go over homework and check for accuracy. Do 1-23 odd in class. Homework do page 79 and 80 for homework Collect tomorrow and count for a quiz grade</p>	<p>The students will be:</p> <p>Taking notes and following along on page 75. Students will continue to work on pages 76 and 77 with the teacher and taking notes and working on the ECM book.</p> <p>Homework: pg 78 # 1-22 even...show all work in notebook</p> <p>Day Two Go over homework and check for accuracy. Do 1-23 odd in class. Homework do page 79 and 80 for homework</p>

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Integers and Rational Numbers</b>	<b>7</b>	<b>3</b>
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>7.EE.4</b> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	<b>Comparing and Ordering Rational numbers</b>	<b>Reason abstractly and quantitatively. Look for and express regularity in repeated reasoning</b>	<b>How can you compare and order rational numbers?</b>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
	<b>Rational number</b>		<b>ECM 2-7 pg 81-84 Calculator Strips of paper for making a numberline</b>
<b>Suggested Learning Practices</b>			
9. Instruction Practices (What are the teachers doing)		10. Learning Practices (What are the students doing)	
<p>The teacher will be: Ask the students: Day One (What are the forms of rational numbers? Integers such as -7, 0, and 10. Positive and negative fractions and mixed numbers such as <math>-2\frac{1}{2}</math>, <math>\frac{3}{4}</math>, <math>5\frac{1}{3}</math>. Positive and negative terminating or repeating decimals such as -0.4, 0.33..., 0.35.) (Using <math>&lt;</math> and <math>&gt;</math> and <math>\geq</math> and <math>\leq</math> and how they are used)Teacher will give many examples of how these</p>		<p>The students will be: Taking notes and listening to the presentation of the teacher. Students will be learning about the forms of rational numbers and how to compare and order rational numbers. Students will participate in listing all forms of rational numbers. Students will make three numbers lines listing positive and negative integers, positive and negative fractions, as well as positive and negative decimals. Students will</p>	

symbols are used and will allow students plenty of time to display their confidence in showing mastery.

**Day Two**

(\*\*Teacher could set up multiple number lines showing integers, fractions, and decimals and have students take a number and show where that number would be on the number line\*\*)

Students will work on page 81 and 82 with teacher direction.

**Day Three**

Students will work with a partner on page 83 and 84 to complete both pages. If necessary students may work independently using their number lines.

find various numbers on the number lines.

**Day Two**

Students will work on pages 81-82 with teacher direction. They will take notes and follow along in the book.

**Day Three**

Students will work with a partner on page 83 and 84 to complete both pages. If necessary students may work independently using their number lines.

Unit	Unit Title	Lesson	Day(s)
<b>1.2</b>	<b>Chapter 2 Problem Solving Connections</b>	<b>8</b>	<b>2</b>
<b><i>Lesson Focus</i></b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
7.NS1b, 7.NS.1c, 7.NS.2, 7.NS.2d, 7.EE.3, 7.EE.4		Reason abstractly and quantitatively	
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
			ECM Chapt 2 pg 85-88 Pg 91-92 CH 2 Assessment Readiness
<b><i>Suggested Learning Practices</i></b>			
9. Instruction Practices (What are the teachers doing)		10. Learning Practices (What are the students doing)	
<p>The teacher will be:</p> <p>Teacher will direct students to complete the tasks on pages 85 – 88. Students may select the task that represents their best work to hand in for evaluation.</p> <p>Give pg 89-90 for homework and take for a quiz grade. Day Two Pg 91-92 Assessment Readiness TEST prep</p>		<p>The students will be:</p> <p>Working on the tasks on pages 85-88. Students will complete ALL tasks and then will select which task represents their best work to hand in for evaluation.</p> <p>Homework: Pg 89-90 Due tomorrow</p>	

<b>Unit: 2.1</b>	<b>Applying Rational Numbers</b>	<b>Days :20</b>
<b>Essential Questions</b>		
How do you add, subtract, multiply, and divide decimals? How do you add, subtract, multiply, and divide fractions? How do you solve equations containing decimals and fractions?		
<b>Content to be Learned</b>		<b>Skills</b>
Operate with decimals Operate with fractions Solve one-step equations containing decimals and fractions		
<b>Assessments</b>		<b>Standards</b>
To be determined		<p><a href="#">CCSS.Math.Content.7.NS.A.2</a> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p><a href="#">CCSS.Math.Content.7.NS.A.2a</a> 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><a href="#">CCSS.Math.Content.7.NS.A.3</a> Solve real-world and mathematical problems involving the four operations with rational numbers.<sup>1</sup></p> <p><a href="#">CCSS.Math.Content.7.EE.B.4a</a> 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>
<b>Sample Instructional Activities</b>		<b>Resources</b>
Show Video Tutor with QR reader for each lesson.		ECM Chapter 3 Lessons 1 – 8 and Problem Solving Connections and Performance Task

Unit 2-1	Adding and Subtracting Decimals	Lesson 1 of 9	Days 2
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<p><a href="#">CCSS.Math.Content.7.NS.A.1</a> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p><a href="#">CCSS.Math.Content.7.NS.A.1b</a> 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><a href="#">CCSS.Math.Content.7.NS.A.1c</a> 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><a href="#">CCSS.Math.Content.7.NS.A.3</a> Solve real-world and mathematical problems involving the four operations with rational numbers.</p>	<p>Adding and subtracting decimals</p>	<ul style="list-style-type: none"> <li>• <a href="#">CCSS.Math.Practice.MP1</a> Make sense of problems and persevere in solving them.</li> </ul>	<p>How do you add and subtract decimals?</p>

<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Add & subtract integers Add & subtract decimals			ECM Lesson 3-1 pg 97-102
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 97-98 in class. Students may work in groups; page 100 #1-3, page 101 #1-9, 22, page 102 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section.</p> <p>Day 2 Teacher will direct students to complete page 99 3 Example, 4 Example. Students can complete page 100 #4-7, page 101 #10-21,23 Problem solving page 100 #7-12, page 102 #1-4</p>		<p>Day 1 Students are listening and writing notes while teacher gives direction. They are completing page 97-98. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 100 #1-3, page 101 #1-9, 22, page 102 #5-7.</p> <p>Day 2 Working in small groups students complete page 99 3 Example, 4 Example. Students can complete page 100 #4-7, page 101 #10-21,23 Problem solving page 100 #7-12, page 102 #1-4</p>	

<b>Unit 2.1</b>	<b>Multiplying decimals</b>	<b>Lesson 2 of 9</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
<a href="#">CCSS.Math.Content.7.NS.A.2</a> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. <a href="#">CCSS.Math.Content.7.NS.A.3</a> Solve real-world and mathematical problems involving the four operations with rational numbers.	Multiply Decimals	<a href="#">CCSS.Math.Practice.MP5</a> Use appropriate tools strategically.	How do you multiply decimals?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Multiply whole numbers		Misplacement of the decimal point	ECM Lesson 3-2 page 103-108 Base-ten blocks Decimal grids
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1</p> <p>Show Video Tutor with QR Reader</p> <p>Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 103-104 in class. Students may work in groups; page 106 #1-3, page 107 #1-12, 25, page 108 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section.</p> <p>Day 2</p> <p>Teacher will direct students to complete page 105 3 Example. Students can complete page 106 #4-6, page 107 #13-24 Problem solving page 106 #7-11, page 108 #1-4</p>		<p>Day 1</p> <p>Students are listening and writing notes while teacher gives direction. They are completing page 103-104. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 106 #1-3, page 107 #1-12, 25, page 108 #5-7</p> <p>Day 2</p> <p>Working in small direct students to complete page 105 3 Example. Students can complete page 106 #4-6, page 107 #13-24 Problem solving page 106 #7-11, page 108 #1-4</p>	

Unit 2.1	Dividing Decimals	Lesson 3 of 9	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
<a href="#">CCSS.Math.Content.7.NS.A.2</a> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers <a href="#">CCSS.Math.Content.7.NS.A.2c</a> Apply properties of operations as strategies to multiply and divide rational numbers <a href="#">CCSS.Math.Content.7.NS.A.3</a> Solve real-world and mathematical problems involving the four operations with rational numbers	Divide Decimals	<a href="#">CCSS.Math.Practice.MP3</a> Construct viable arguments and critique the reasoning of others.	How do you divide decimals?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Whole number division	Dividend Divisor Quotient	Misplacement of the decimal point	ECM Lesson 3-3 page 109-114 Base-ten blocks Decimal grids scissors

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 109-110 in class. Students may work in groups; page 112 #1-3, page 113 #1-6, 13, page 114 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section.</p> <p>Day 2 Teacher will direct students to complete page 111 3 Example. Students can complete page 112 #4-6, page 113 #7-12,14 Problem solving page 112 #7-12, page 114 #1-4</p>	<p>Day 1 Students are listening and writing notes while teacher gives direction. They are completing page 109-110. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 112 #1-3, page 113 #1-6, 13, page 114 #5-7</p> <p>Day 2 Working in small direct students to complete 3 Example. Students can complete page 112 #4-6, page 113 #7-12,14 Problem solving page 112 #7-12, page 114 #1-4</p>

Unit 2.1	Solve one-step equations containing decimals	Lesson 4 of 9	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
<a href="#">CCSS.Math.Content.7.NS.A.2</a> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers <a href="#">CCSS.Math.Content.7.EE.B.4</a> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	Solve one-step equations containing decimals		How do you solve equations containing decimals?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Solving one-step integer equations	Addition Property of Equality Subtraction Property of Equality Multiplication Property of Equality Division Property of Equality		ECM Lesson 3-4 page 115-120

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 115-116 1 Example in class. Students may work in groups; page 118 #1-3, page 119 #1-12, page 120 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section.</p> <p>Day 2 Teacher will direct students to complete page 116-117 2 Example, 3 Example. Students can complete page 118 #4-6, page 119 #13-25 Problem solving page 118 #7-11, page 120 #1-4</p>	<p>Day 1 Students are listening and writing notes while teacher gives direction. They are completing page 115-116 1 Example. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 118 #1-3, page 119 #1-12, page 120 #5-7.</p> <p>Day 2 Working in small direct students to complete page 116-117 2 Example, 3 Example. Students can complete page 118 #4-6, page 119 #13-25 Problem solving page 118 #7-11, page 120 #1-4</p>

Unit 2.1	Adding and Subtracting Fractions	Lesson 5 of 9	Days 2
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<p><a href="#">CCSS.Math.Content.7.NS.A.1</a> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram</p> <p><a href="#">CCSS.Math.Content.7.NS.A.1b</a> 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><a href="#">CCSS.Math.Content.7.NS.A.1c</a> 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><a href="#">CCSS.Math.Content.7.NS.A.1c</a> 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,</p>	<p>Add and subtract rational numbers</p>	<p><a href="#">CCSS.Math.Practice.MP6</a> Attend to precision.</p>	<p>How do you add rational numbers?</p>

and apply this principle in real-world contexts.			
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Finding LCD Writing equivalent fractions Converting mixed numbers to improper fractions Simplify fractions			ECM Lesson 3-5 Page 121-126
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 121 1 Example in class. Students may work in groups; page 124 #1,2, page 125 #1,2,6,7,9,11,13,15,17,20, page 126 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section.</p> <p>Day 2 Teacher will direct students to complete page 122 2 Example. Students can complete page 124 #3-6, page 125 #3-5,8,10,12,,14,16,18,19 Problem solving page 124 #7-11, page 126 #1-4</p>		<p>Day 1 Students are listening and writing notes while teacher gives direction. They are completing page 121 1 Example. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 124 #1,2, page 125 #1,2,6,7,9,11,13,15,17,20, page 126 #5-7.</p> <p>Day 2 Working in small direct students to complete page 122 2 Example. Students can complete page 124 #3-6, page 125 #3-5,8,10,12,,14,16,18,19 Problem solving page 124 #7-11, page 126 #1-4</p>	

Unit 2.1	Multiplying Fractions and Mixed Numbers	Lesson 6 of 9	Days 2
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<p><a href="#">CCSS.Math.Content.7.NS.A.2</a> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers</p> <p><a href="#">CCSS.Math.Content.7.NS.A.2a</a> 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><a href="#">CCSS.Math.Content.7.NS.A.2c</a> Apply properties of operations as strategies to multiply and divide rational numbers</p> <p><a href="#">CCSS.Math.Content.7.NS.A.3</a> Solve real-world and mathematical problems involving the four operations with rational numbers</p>	<p>Multiply fractions and mixed numbers</p>	<p><a href="#">CCSS.Math.Practice.MP4</a> Model with mathematics</p>	<p>How do you multiply fractions and mixed numbers?</p>

5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Writing equivalent fractions Converting mixed numbers to improper fractions Simplify fractions		When students simplify expressions, some students perform the operations from left to right, without regard to the order of operations. Have them circle each product in the expression before simplifying it to remind themselves to multiply first before subtracting.	ECM Lesson3-6 page 127-134
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1            Show Video Tutor with QR Reader            Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 127-128 1 Example, 2 Example in class. Students may work in groups; page 131 #1-6, page 133 #1-20 even, page 134 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups.            Before the end of class go over answers to this section.</p> <p>Day 2            Teacher will direct students to complete page 129-130 3 Example, 4 Example.            Students can complete page 131 #7-12, page 132 #1-20 odd            Problem solving page 132 #13-18, page 134 #1-4</p>		<p>Day 1            Students are listening and writing notes while teacher gives direction. They are completing page 127-128 1 Example, 2 Example. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups page 131 #1-6, page 133 #1-20 even, page 134 #5-7.</p> <p>Day 2            Working in small direct students to complete page 129-130 3 Example, 4 Example.            Students can complete page 131 #7-12, page 132 #1-20 odd            Problem solving page 132 #13-18, page 134 #1-4</p>	

Unit 2.1	Dividing Fractions and Mixed Numbers	Lesson 7 of 9	Days 2
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<p>CCSS.Math.Content.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers</p> <p>CCSS.Math.Content.7.NS.A.2b 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 <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>. Interpret quotients of rational numbers by describing real-world contexts.</p> <p><a href="#">CCSS.Math.Content.7.NS.A.2c</a> Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p><a href="#">CCSS.Math.Content.7.NS.A.3</a> Solve real-world and mathematical problems involving the four operations with rational numbers</p> <p><a href="#">CCSS.Math.Content.7.RP.A.1</a> 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 <math>1/2</math> mile in each <math>1/4</math> 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>Dividing fractions and mixed numbers.</p>		<p>How do divide fractions and mixed numbers?</p>

<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
<p>Just as subtraction of a number can be rewritten as addition of its opposite, so division by a number can be rewritten as a multiplication by its reciprocal.</p> <p>Writing equivalent fractions          Converting mixed numbers to improper fractions          Simplify fractions</p>	<p>Reciprocal          Multiplicative inverse</p>	<p>When students rewrite complex fractions as multiplication problems, they may forget to use the <i>reciprocal</i> of the fraction in the denominator. To avoid this, have students first rewrite complex fractions by using a division symbol. Doing so puts the problem in a form students are more familiar with, so they may be less likely to make a mistake when rewriting the division as multiplication</p>	<p>ECM Lesson 3-7 Page 135-140</p>
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1          Show Video Tutor with QR Reader          Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 135-136 1 Example, 2 Example in class. Students may work in groups; page 138 #1-3,7-9, page 139 #1-20 even , page 140 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups.          Before the end of class go over answers to this section.</p> <p>Day 2          Teacher will direct students to complete page 136-137 3 Example, 4 Example.          Students can complete page 138 #3-6, page 139 #1-20 odd,          Problem solving page 138 #10-14, page 140 #1-4</p>		<p>Day 1          Students are listening and writing notes while teacher gives direction. They are completing page 135-136 1 Example, 2 Example. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 138 #1-3,7-9, page 139 #1-20 even , page 140 #5-7.</p> <p>Day 2          Working in small direct students to complete page 136-137 3 Example, 4 Example.          Students can complete page 138 #3-6, page 139 #1-20 odd,          Problem solving page 138 #10-14, page 140 #1-4</p>	

Unit 2.1	Solving one-step equations containing Fractions and Mixed numbers		Lesson 8 of 9	Days 2
<i>Lesson Focus</i>				
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions	
<p><a href="#">CCSS.Math.Content.7.EE.B.3</a> 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.</p> <p><a href="#">CCSS.Math.Content.7.EE.B.4</a> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	Solving equations containing fractions and mixed numbers	<a href="#">CCSS.Math.Practice.MP4</a> Model with mathematics.	How do you solve equations containing fractions?	

5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Solving one-step equations Multiplicative inverses Writing equivalent fractions Converting mixed numbers to improper fractions Simplify fractions	Multiplicative inverse property	Remind students that when solving equations, they should always check their solutions by using substitution. Substitute the value of the solution into the original equation and check that it makes the equation true. If it doesn't, student have likely made an error, and they need to look over their work carefully to determine where they made a mistake.	ECM Lesson 3-8 pg 141-146
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1            Show Video Tutor with QR Reader            Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 141-142 1 Example in class. Students may work in groups; page 144 #1-3, page 145 #1-6,10-15,19 , page 146 #5-7. Teacher walks around to redirect student thinking or to reteach smaller groups.            Before the end of class go over answers to this section.</p> <p>Day 2            Teacher will direct students to complete page 142-143 2 Example, 3 Example.            Students can complete page 144 #3-6, page 145 #7-9,16-18,20, Problem solving page 144 #7-11, page 146 #1-4</p>		<p>Day 1            Students are listening and writing notes while teacher gives direction. They are completing page 141-142 1 Example. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; page 144 #1-3, page 145 #1-6,10-15,19 , page 146 #5-7.</p> <p>Day 2            Working in small direct students to complete page 142-143 2 Example, 3 Example.            Students can complete page 144 #3-6, page 145 #7-9,16-18,20, Problem solving page 144 #7-11, page 146 #1-4</p>	

Unit 2.1	Problem solving connections	Lesson 9 of 9	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
<a href="#">CCSS.Math.Content.7.NS.A.1a.</a> <a href="#">CCSS.Math.Content.7.NS.A.1b.</a> <a href="#">CCSS.Math.Content.7.NS.A.1c</a> <a href="#">CCSS.Math.Content.7.NS.A.1d</a> <a href="#">CCSS.Math.Content.7.NS.A.2a</a> <a href="#">CCSS.Math.Content.7.NS.A.2b.</a> <a href="#">CCSS.Math.Content.7.NS.A.2c</a> <a href="#">CCSS.Math.Content.7.NS.A.2d.</a> <a href="#">CCSS.Math.Content.7.NS.A.3</a>	Student will learn how the use of rational numbers and rational number operations to solve problems about life a summer camp.		How to use rational numbers and rational number operations to solve problems about life a summer camp?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
		Students might just multiply the whole-number part of each mixed number measurement when converting to servings for 66 people. Remind them to convert each mixed number to an improper fraction.	ECM pg147-154

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1 Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 147-148 1 Cooking, 2 Weather in class. Students may work in groups; pages 153 #1-9,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section.</p> <p>Day 2 Teacher will direct students to complete page 149-150 3 Golf, 4 Hiking. Students can complete page 154 #10-16, Performance Task pages 151-152</p>	<p>Day 1 Students are listening and writing notes while teacher gives direction. They are completing pages 147-148 1 Cooking, 2 Weather. Then they will work in groups on the remainder of the assignment. They will ask peers and then the teacher if they have questions or concerns. Students may work in groups; pages 153 #1-9</p> <p>Day 2 Working in small direct students to 149-150 3 Golf, 4 Hiking. Students can complete page 154 #10-16, Performance Task pages 151-152</p>

<b>Unit:2.2</b>	<b>Grade 7 Multi Step Equations and Inequalities (Ch 11)</b>	<b>Days : 18</b>
<b>Essential Questions</b>		
How do you solve two step and multi step equations as well as equations with variables on both sides? How do you read, write, and graph inequalities? How do you solve inequalities including multi-step inequalities using the properties of inequalities?		
<b>Content to be Learned</b>		<b>Skills</b>
Solving two step equations. Solving Multi-step equations. Solving equations with variables on both sides. Inequalities. Solving inequalities by Adding or Subtracting. Solving inequalities by multiplying or dividing. Solving multi-step inequalities.		
<b>Assessments</b>	<b>Standards</b>	
To be determined	<p><a href="#">CCSS.Math.Content.7.EE.A.1</a> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p><a href="#">CCSS.Math.Content.7.EE.B.4a</a> 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. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p><a href="#">CCSS.Math.Content.7.EE.B.3</a> 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.</p>	
<b>Sample Instructional Activities</b>		<b>Resources</b>
Show Video Tutor with QR Reader for each lesson.		<b>ECM Chapter 11 Lessons 1-7 and Problem Solving Connections and Performance Task</b>

Unit 2.2	Grade 7 Solving Two Step Equations	Lesson 1 of 8	Days 2
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<p><a href="#">CCSS.Math.Content.7.EE.B.4a</a> 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.</p>	Solving two step equations	Reason abstractly and quantitatively	How do you solve equations that contain two operations?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Solving equations		Connect to prior learning by having students solve some one step equations. Then introduce a two step equation. Have students identify the two operations on the variable in the correct order of operations. Explain that solving two step equations requires students to undo these operations in reverse order.	ECM 11-1 pg 459 -464

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving direct instruction to students (See possible misconceptions) to connect to prior learning. Complete pages 459-461 in class. Complete page 459-top of 460 with teacher direction. Students may then work in groups on the remainder of page 460 through page 461 working in groups while the teacher walks around to redirect student thinking or to re teach to smaller groups. Before the end of class go over answers to this section.</p> <p>Day Two Teacher will direct student pairs to complete page 462 in class. Students can use white boards to show how they solved equations. Teacher is moving around the classroom to evaluate the understanding of the class. Assign pgs 463&amp; 464 for homework.</p>	<p>Day 1 Students are listening and writing notes while teacher gives direction on day one. They are completing page 459 to the top of 460. Then they will work in groups on the remainder of page 460 to 461. They will ask peers and then the teacher if they have questions/concerns.</p> <p>Day 2 Students will work in pairs on page 462 and may use white boards to clarify their thinking/share their understanding with the rest of the class. They will do pg 463 and 464 for homework.</p>

Unit 2.2	Grade 7 Solving Multi Step Equations	Lesson 2 of 8	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
<u>CCSS.Math.Content.7.EE.B.4a</u> Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$ , where $p$ , $q$ , and $r$ 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.	Solving multi step equations	Make sense of problems and persevere in solving them.	How do you solve equations that contain multiple operations?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Solving Equations		Some students may not know how to combine the like terms $X$ and $X$ because these terms do not have a numerical coefficient. Point out that $X$ can be written as $1X$ because 1 times $X$ is equal to $X$ . So, students can write $X + X$ as $1X + 1X$ . Now they can add the coefficients to combine the like terms. $1X + 1X = 2X$ .	ECM 11-2 pg 465-470 Algebra Tiles

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1            Show Video Tutor with QR Reader            The Teacher needs to tell students that some of the equations they will solve in this lesson involve using the Distributive property. Review the Distributive property with students, and show how it can be used to rewrite the product of a number and a sum as the sum of two products, as shown below:  <math>4(x+3) = 4(x) + 4(3) = 4x + 12</math> Have students try these: <math>5(n+6)</math>, <math>4(a-8)</math>, <math>\frac{1}{4}(p+12)</math> The teacher needs to give direct instruction on day 1. Do page 465 through the top of 466 with students. Direct students to work in groups to complete pg 466-467 in groups.</p> <p>Day 2            Direct students to work in pairs on pg 468 and use white boards to explain their thinking. Teacher is moving around the classroom to evaluate the understanding of the class. Give pages 469-470 for homework.</p>	<p>Day 1            Students are taking notes and following directions from the teacher on day one of instruction.</p> <p>Day 2            Students are working in pairs to complete work that they were introduced to the day before. Students will use white boards to show their thinking to the teacher and to their peers. Students will do pages 469-470 for homework.</p>

Unit 2.2	Grade 7 Solving Equations with Variables on Both Sides	Lesson 3 of 8	Days 2
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<a href="#">CCSS.Math.Content.7.EE.B.4a</a> Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$ , where $p$ , $q$ , and $r$ 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.	Solving equations with variables on both sides	<b>Reason abstractly and quantitatively.</b>	How do you solve equations that contain variables on both sides?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Solving equations		When solving an equation with variables on both sides, it is usually easier for students to subtract the variable term with the smaller coefficient from both sides of the equation. This results in an equation with a single variable term with a positive coefficient and students are generally more comfortable working with positive numbers than with negative numbers.	ECM 11-3 pg 471-474 Algebra Tiles

### *Suggested Learning Practices*

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Day 1</p> <p>Show Video Tutor with QR Reader</p> <p>Write the equations <math>2x + 4 = 10</math> and <math>2x + 4 = 10x</math> on the board. Then discuss with students how they would solve the first equation. Next, ask students to compare and contrast the second equation with the first equation. Elicit that the equations are exactly alike except that the second equation has a variable term, <math>10x</math>, on the right side and the first equation has a number, 10, on the right side. Explain that in this lesson students will learn to solve equations that have variable terms on both sides.</p> <p><a href="http://www.youtube.com/watch?v=9teKXGoWIQM">http://www.youtube.com/watch?v=9teKXGoWIQM</a> a you tube video on solving equations with variables on both sides</p> <p><a href="http://www.shmoop.com/basic-algebra/equations-variables-both-sides.html">http://www.shmoop.com/basic-algebra/equations-variables-both-sides.html</a></p> <p>Teacher will assign students to take notes and follow along outline on page 471 with practice. Teacher will then have students work in groups on page 472. (Show video tutor with QR reader from book then click on links here for more resources.</p> <p>Day 2</p> <p>In Class have students work in pairs to complete pages 473-474. Students may use white boards to display their thinking to their peers and their teacher. Teacher is moving around the classroom to evaluate the understanding of the class.</p>	<p>Day 1</p> <p>Students will be taking notes and will follow teacher directions in class during initial presentation. Students will practice work on pages 471-472. Students should also view Video Tutor using QR reader. Other resources on Web available.</p> <p>Day 2</p> <p>Students will work together in pairs to complete pages 473-474. Students will use white boards to display their thinking to their peers and to their teacher. Students will complete work in class. Any work not completed in class will become homework.</p>

<b>Unit 2.2</b>	<b>Grade 7 Inequalities</b>		<b>Lesson 4 of 8</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>				
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>	
<a href="#"><u>CCSS.Math.Content.7.EE.B.4</u></a> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	How to solve an inequality. What numbers are in a solution set of an inequality?	Reason abstractly and quantitatively	How do you read and write inequalities?	
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>	
	Inequality Solution set		ECM 11-4 pg 475-480	
<b><i>Suggested Learning Practices</i></b>				
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>		
<p>Day 1</p> <p>Show Video Tutor with QR Reader</p> <p>Write the statement <math>3 &lt; 5</math> and <math>6 &lt; 5</math> on the board. Discuss with students why <math>3 &lt; 5</math> is a true statement and <math>6 &lt; 5</math> is a false statement. Next, write the inequality <math>t &lt; 5</math>. Point out that this inequality includes a variable. Whether or not the inequality is true or false depends on the value of <math>t</math>. The teacher will give direction on page 475 and 476 while students follow along and fill in the sections in their book. Teacher will then direct students to work in a group to complete page 477.</p> <p>Day 2</p> <p>Teacher will have students work in pairs and use white boards to display their thinking to each other and to the teacher. Teacher is moving around the classroom to evaluate the understanding of the class. Students will work on page 478 in class. They will also begin page 479. Assign the rest of page 479 and page 480 for homework.</p>		<p>Day 1</p> <p>Students will take notes and fill in sections of their ECM books while listening and answering questions from teacher directed discussion. Complete pages 475-477.</p> <p>Day 2</p> <p>Students will work in pairs and use white boards to display their thinking to each other and to their teacher while working on pages 478 and beginning page 479. Students will complete pages 479 and 480 for homework.</p>		

Unit 2.2	Grade 7 Solving Inequalities by Adding or Subtracting		Lesson 5 of 8	Days 2
<b>Lesson Focus</b>				
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions	
<p><a href="#">CCSS.Math.Content.7.EE.B.4</a> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	<p>Solving inequalities that involve one operation</p>	<p>Construct viable arguments and critique the reasoning of others</p>	<p>How do you solve inequalities that involve one operation?</p>	
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials	
<p>Solving equations</p>	<p>Addition property of Inequality Subtraction property of Inequality</p>	<p>Some students may graph the inequality <math>a &lt; 12</math> without restricting <math>a</math> to the set of positive numbers. Discuss with students how they can show both that <math>a</math> must be less than 12 and that <math>a</math> cannot be less than 0. Eliit that students can draw an empty circle at 12 and a solid circle at 0 and then shade between the circles.</p>	<p>ECM 11-5 pgs 481-486</p>	

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1            Show Video Tutor with QR Reader            Addition Property of Inequality            If <math>a &lt; b</math>, then <math>a + c &lt; b + c</math>            If <math>a &gt; b</math>, then <math>a + c &gt; b + c</math></p> <p>Subtraction Property of Inequality            If <math>a &lt; b</math>, then <math>a - c &lt; b - c</math>            If <math>a &gt; b</math>, then <math>a - c &gt; b - c</math>            These properties also apply to inequalities that include <math>\leq</math> or <math>\geq</math></p> <p>When you go shopping you want to make sure that the cost of your purchases is less than or equal to the amount of money you have. If you purchase a bed you want the length of the bed to be greater than your height.            Teacher will give direct instruction on page 481 with student input. On page 482 Teacher will direct students to work in groups to complete Explore 2 in groups and to continue to work on page 483 to complete together in groups.  <a href="http://www.virtualnerd.com/pre-algebra/inequalities-multi-step-equations/inequalities-solve-by-addition-subtraction/inequalities-solve-by-addition/addition-property-definition">http://www.virtualnerd.com/pre-algebra/inequalities-multi-step-equations/inequalities-solve-by-addition-subtraction/inequalities-solve-by-addition/addition-property-definition</a></p> <p>Day 2            Students will work on page 484 in pairs and with white board so they can show their understanding of the content to each other and to the teacher. Teacher is moving around the classroom to evaluate the understanding of the class. Teacher will assign page 485-486 for homework.</p>	<p>Day 1            Students are taking notes and following along in their books with teacher instructions. Students will work on pg 481 and 482 with teacher instructions. Students will work on pg 482 Explore 2 and page 483 in a group.</p> <p>Day 2            Students will work in pairs on page 484 and will use a white board to show their understanding to each other and to the teacher. Students will do pages 485-486 for homework.</p>

Unit 2.2	Grade 7 Solving Inequalities by Multiplying or Dividing		Lesson 6 of 8	Days 2
<b>Lesson Focus</b>				
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions	
<p><u>CCSS.Math.Content.7.EE.B.4</u> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	<p>Solving inequalities by multiplying or dividing</p>	<p>Attend to precision</p>	<p>How do you solve inequalities that involve multiplying or dividing?</p>	
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials	
<p>Solving equations</p>	<p>Multiplication Property of Inequality Division Property of Inequality</p>	<p>Students sometimes reverse the inequality symbol when solving any inequality that includes a negative number. Be sure to EMPHASIZE that the inequality symbol is affected ONLY when the number you MULTIPLY or DIVIDE BOTH SIDES of the inequality BY IS NEGATIVE. To reinforce students' understanding, have them identify which of these inequalities would require reversing the inequality symbol when solving the inequality  <math>-2x \geq 14</math> YES  <math>4x \leq -20</math> NO  <math>x/5 &lt; -25</math> NO  <math>x/-5 &gt; -3</math> YES</p>	<p>ECM 11-6 pg 487-492</p>	

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day 1 Show Video Tutor with QR Reader Teacher will direct students to complete pg 487. Teacher will start chart and students will complete the table within their groups. Teacher will ask students to come back as a whole group to fill in values for page 487. Teacher will direct students to work in groups on page 488 and to continue on to page 489 working in their groups.</p> <p>Day 2 Students will work in pairs on page 490 using white boards to display their understanding to each other and to their teacher. Teacher is moving around the classroom to evaluate the understanding of the class. They may begin page 491 in class and Teacher will assign page 491 – 492 for homework.</p>	<p>Day 1 Students will take notes and follow along with teacher direction on page 487. Students will work on chart and fill in values while they work in groups and with peers. Students will then come back together as a whole class to come up with a conjecture about reversing the inequality sign and when it is done.</p> <p>Day 2 Students will work in pairs on page 490 and use white boards. Students will have pages 491 – 492 for homework.</p>

Unit 2.2	Grade 7 Solving Multi-Step Inequalities		Lesson 7 of 8	Days 3
<b>Lesson Focus</b>				
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions	
<p><u><a href="#">CCSS.Math.Content.7.EE.B.4b</a></u> 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. Graph the solution set of the inequality and interpret it in the context of the problem.</p>	<p>Solving multi step inequalities. Which step comes first, what is next?</p>	<p>Reason abstractly and quantitatively</p>	<p>How do you solve multi step inequalities?</p>	
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions		8. Teaching Materials
<p>Solving equations</p>		<p>Students sometimes substitute an equals sign(=) for the inequality symbol when solving inequalities. Remind them to <b>WATCH THEIR SYMBOLS</b> carefully. This includes remembering which operations reverse the inequality symbol.</p> <p>Students may sometimes forget to perform the same operation on both sides of an inequality. For example, they may add 20 to one side of an inequality and then subtract 20 from the other side, mistakenly thinking that this will keep the inequality balanced. Suggest that students highlight the operation that they perform on each side of the inequality and emphasize that the part that is highlighted on the left side of the inequality must exactly match the part that is highlighted on the right side. If not, the resulting inequality will not be equivalent to the original inequality.</p>		<p>ECM 11-7 pg 493-500</p>

### *Suggested Learning Practices*

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Math Background Solving two step and multi step inequalities is similar to solving two step and multi step equations.</p> <ul style="list-style-type: none"> <li>• Check whether the inequality has variable terms on both sides. If so, subtract the variable term with the smaller coefficient from both sides of the inequality.</li> <li>• Check whether the inequality has parentheses. If so, you may be able to simplify it by applying the Distributive Property.</li> <li>• Then check whether one side of the inequality includes like terms. If so, combine them.</li> <li>• Next, undo addition or subtraction to get the variable term on one side of the inequality by itself.</li> <li>• Finally, undo multiplication or division to isolate the variable. Remember to reverse the inequality symbol if you multiply or divide by a negative number.</li> </ul> <p>Day 1 Show Video Tutor with QR Reader The teacher will direct instruction on page 493 and 494. Students may then work in groups on page 495.</p> <p>Day 2 Teacher will have the students work AGAIN in groups on page 496 and 497. Students will use white boards in GROUPS and will share out how they solved inequalities on page 497 in the Practice section.</p> <p>Day 3 Teacher will direct students to work in pairs on page 498. Students will use white boards to display their understanding to each other and to the teacher. Teacher is moving around the classroom to evaluate the understanding of the class. Teacher will assign homework pgs 499-500.</p>	<p>Day 1 Students will take notes from teacher directed instruction Students will watch video tutor. Students will follow along and fill in values on pages 493 and 494 with teacher direction. Students will then work in groups on page 495</p> <p>Day 2 Students will work with teacher direction AGAIN on pages 496 and 497. Students will be working in their groups and will share out their way to solve inequalities on page 497 in the Practice section.</p> <p>Day 3 Students will work in pairs on page 498 with whiteboards to show their understanding to teacher and peers. They will do pages 499 – 500 for homework.</p>

Unit 2.2	Grade 7 Chapter 11	Lesson 8 of 8	Days 2
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
<p><b>CCSS.Math.Content.7.EE.A.1</b> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p><b>CCSS.Math.Content.7.EE.B.4a</b> 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.</p> <p><b>CCSS.Math.Content.7.EE.B.4b</b> 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.</p>	<p><b>Solving two step equations.</b></p> <p><b>Solving Multi-step equations.</b></p> <p><b>Solving equations with variables on both sides.</b></p> <p><b>Inequalities. Solving inequalities by Adding or Subtracting. Solving inequalities by multiplying or dividing. Solving multi-step inequalities</b></p>	<p>Attend to precision</p> <p><b>Make sense of problems and persevere in solving them.</b></p> <p><b>Reason abstractly and quantitatively</b></p> <p><b>Construct viable arguments and critique the reasoning of others</b></p>	<p><b>How do you solve two step and multi step equations as well as equations with variables on both sides?</b></p> <p><b>How do you read, write, and graph inequalities? How do you solve inequalities including multi-step inequalities using the properties of inequalities?</b></p>

<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
			ECM pages 501-508
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Teacher will allow students to select two of the four problem solving connections to complete in one class period.</p> <p>Day 2 Teacher will direct the students to complete the Performance Task on page 505 in one class period. Teacher will direct students to take particular care to completely fill in the sections provided and to check their work. They must give a full answer and show all work in order to get full credit.</p>		<p>Day 1 Students will complete 2 of 4 problem solving connections in one class period.</p> <p>Day 2 Students will complete the Performance Task on pg 505 and page 506. Students will complete the Chapter 11 Assessment readiness on page 507-508 when they complete the Performance Task.</p>	

<b>Unit: 3.1</b>	<b>Chapter 5 Graphs</b>	<b>Days : 10</b>
<b>Essential Questions</b>		
How do you use graphs to: interpret a situation, identify rate of change, slope, use graph to analyze proportional relations, write equations to represent proportional relationships		
<b>Content to be Learned</b>		<b>Skills</b>
Graphing ordered pairs on the coordinate plane Interpret graphs Slopes and rates of change Direct variation		
<b>Assessments</b>		<b>Standards</b>
To be determined		Prep for CC.7.RP.2d Preview CC.8.F.5 CC.7.RP.1 CC.7.RP.2 CC.7.RP.2a CC.7.RP.2b CC.7.RP.2c CC.7.RP.2d CC.7.RP.3
<b>Sample Instructional Activities</b>		<b>Resources</b>
Show Video Tutoe with QR reader for each lesson		ECM Chapter 5 Lesson 1 – 4, Problem Solving Connection, and Performance Task

Unit 3.1	The Coordinate Plane	Lesson 1 of 5	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
Prep for CC.7.RP.2a Prep for CC.7.RP.2d	Local and name points on the coordinate plane		How do you locate and name points on the coordinate plane?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Locating points on a horizontal number line and on a vertical number line	Coordinate plane x-axis y-axis origin quadrant ordered pair	Students may switch the x, and y values in the ordered pair Differentiate between horizontal and vertical	Graph paper ECM Lesson 5-1 pg 207-210
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 207 in class. Students may work in groups; page pg 208 # 1-8, page 209 #1-10,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section  Day 2 Teacher will direct students to complete page 208, 9-13, Students can complete page 209 #11-18 Problem solving page 210 #1-8		Day 1 Show Video Tutor with QR Reader Students will complete pages 207 in class. Students may work in groups; page pg 208 # 1-8, page 209 #1-10,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section  Day 2 Student will complete page 208, 9-13, Students can complete page 209 #11-18 Problem solving page 210 #1-8	

Unit 3.1	Interpreting Graphs	Lesson 2 of 5	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
Preview of CC.8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing the graph	Construct viable arguments and critique the reasoning of others. Model with mathematics	How can you interpret a situation from a graph?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Positive relation Negative relation		Positive relation Negative relation	ECM Lesson 5-2, pages 211- 214
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 211 1 explore in class. Students may work in groups; page 213 #1,2, page 214 #1-4,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete page 212 2 explore, , Students can complete page 213 #3,4 Problem solving page 214 #5-7</p>		<p>Day 1 Students . Complete pages 211 1 explore in class. Students may work in groups; page 213 #1,2, page 214 #1-4,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Students to complete page 212 2 explore, , Students can complete page 213 #3,4 Problem solving page 214 #5-7</p>	

<b>Unit 3.1</b>	<b>Slopes and Rates of Change</b>	<b>Lesson 3 of 5</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.1 CC.7.RP.2b CC.7.RP.2d	Calculate slope using graphs	Model with mathematics Reason abstractly and quantitatively	How do you find the slope of a line?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Equivalent Ratios	Rate of change Slope constant of proportionality	Students may accidentally switch the rise and run when calculating slope.	ECM Lesson 5-3 pages 215 - 220
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 215 1 explore in class. Students may work in groups; page 218 #1-5 , page 219 #1-2,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete page 216 2 explore, pg 217 3 example , Students can complete page 218 #6-11, pg 219 #3-8 Problem solving page 220 # 1-6</p>		<p>Day 1 Students Complete pages 215 1 explore in class. Students may work in groups; page 218 #1-5 , page 219 #1-2,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 students to complete page 216 2 explore, pg 217 3 example , Students can complete page 218 #6-11, pg 219 #3-8 Problem solving page 220 # 1-6</p>	

<b>Unit 3.1</b>	<b>Direct Variation</b>	<b>Lesson 4 of 5</b>	<b>Days 3</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.2 CC.7.RP.2A CC.7.RP.2B CC.7.RP.2D CC.7.RP.3	Recognize and represent proportional relationships between quantities	Model with mathematics	How can you use graphs to represent and analyze proportional relationships and write an equation to represent a proportional relationship?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Patterns in tables Proportions Graphing in the coordinate plane		Students may forget that the graph of a proportional relationship must go through the origin. They may think that any straight line represents a proportional relationship.	ECM Lesson 5-4 page 221-228
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show Video Tutor with QR Reader Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 221 1 explore, pg 222 2 example in class. Students may work in groups; page 224 # 1-4 page 227 #1-4,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete page 223 3example , Students can complete page 225 #5-12, pg 227 7-10, pg 219 #3-8</p> <p>Day 3 Teacher will direct students to complete page 224 4example , Students can complete page 226 #13-20, Problem solving page 228 # 1-4</p>		<p>Day 1 Students Complete pages 221 1 explore, pg 222 2 example in class. Students may work in groups; page 224 # 1-4 page 227 #1-4,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 direct students to complete page 223 3example , Students can complete page 225 #5-12, pg 227 7-10, pg 219 #3-8</p> <p>Day 3 students to complete page 224 4example , Students can complete page 226 #13-20,</p>	

Unit 3.1	Problem Solving Connection		Lesson 5 of 5	Days
<b><i>Lesson Focus</i></b>				
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>		<b>4. Essential Questions</b>
CC.7.NS.1 CC.7.RP.1 CC.7.RP.2 CC.7.RP.2a CC.7.RP.2b CC.7.RP.2c CC.7.RP.2d CC.7.RP.3		Construct viable arguments and critique the reasoning of others		Car or Motorcycle?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>		<b>8. Teaching Materials</b>
		Students might find the speed of vehicles incorrectly. Remind them that speed is a rate of distance divide by time.		ECM Chapter 5 Problem solving connections pg 229- 232
<b><i>Suggested Learning Practices</i></b>				
<b>9. Instruction Practices (What are the teachers doing)</b>			<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 229 1 Find unit rates in class. Students may work in groups; page 230 Make tables and write equations,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher is giving instructions to students (see possible misconceptions) to connect to prior learning. Complete pages 231 3 make graphs in class. Students may work in groups; page 232 4Anser the question,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p>			<p>Day 1 students. Complete pages 229 1 Find unit rates in class. Students may work in groups; page 230 Make tables and write equations,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Students Complete pages 231 3 make graphs in class. Students may work in groups; page 232 4Anser the question,. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p>	

<b>Unit: 3.2</b>	<b>Proportional Relationships</b>	<b>Days : 15</b>
<b>Essential Questions</b>		
How do you find and compare unit rates? How do you identify and write proportions? How do you solve proportions? How you model similar figures? How do use similar figures and models to find unknown lengths? How can you use scaled drawings to solve problems?		
<b>Content to be Learned</b>		<b>Skills</b>
Find and compare unit rates Identify, write and solve proportions Apply proportions to similar figures and scaled drawings		
<b>Assessments</b>		<b>Standards</b>
		cc.7.ns.3 cc.7.rp.1 cc.7.rp.2 cc.7.rp.2a cc.7.rp.2c cc.7.g.1
<b>Sample Instructional Activities</b>		<b>Resources</b>
Qr video tutor		ECM Chapter 4 Lesson 1- 6, Problem solving connections

Unit 3.2	4-1 Rates	Lesson 1 of 3	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.1 CC.7.NS.3	Students will use unit rates to solve problems, including problems involving complex fractions.	Reason abstractly and quantitatively.	How do you find and compare unit rates?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Ratios Calculating Unit Rates	Complex Fraction Unit Rates	When simplifying complex fractions students may forget to multiply the numerator by the reciprocal of the denominator. Have students first express the complex fraction as division of fractions then second express division as multiplication of the reciprocal.	ECM 4-1 pg 159- 164

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day One</p> <p>Show Video Tutor</p> <p>Ask the Essential Question.</p> <p><u>Sample Questions to ask:</u></p> <p>1 EX-How do you know how many parts to use in the bar diagram?</p> <p>For Jeff's hike, how can you calculate the distance from one-half hour to one hour without the other fraction (<math>\frac{3}{4}</math>) between them?</p> <p>2 EX-How do you simplify the rate?</p> <p>How do you write 30 as a fraction?</p> <p>Teacher will direct teach students page 159 1 EX through 2 EX on page 160. Then students will work in pairs to complete page 160 "try this" and "reflect." Choose two groups to share their answers with class.</p> <p>Day Two</p> <p>Students work in pairs/groups to complete 3 EX on page 161.</p> <p><u>Sample questions to ask:</u></p> <p>3 EX-Which container seems to be leaking faster?</p> <p>How can you determine for sure which container is leaking faster?</p> <p>Check for misconceptions/work with individual student groups.</p> <p>Share out answers with class.</p> <p>Students will continue with group work to complete page 16 "try this" and "reflect." Choose two groups to share their answers with class.</p> <p>Teacher will make notes during share out at end of class to see how students have understood information and if they need to re-teach or move on depending on the level of understanding.</p>	<p>Day One</p> <p>Watch video tutor</p> <p>Answer Essential Question</p> <p>Answer teacher questions as a group/in pairs.</p> <p>Work on page 160 in class and share out. Continue to work on page 162 #1-11 if time allows.</p> <p>Day two</p> <p>Work with group members to complete page 161. Students will share out answers on white boards to confirm their answers are correct and to talk about strategies used to solve problems. Continue to work on page 161 #12 and 13 and page 163 #8 and 9 if time allows.</p>

Unit 3.2	4-2 Identifying and Writing Proportions	Lesson 2 of 3	Days 1
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
CC.7.RP.2 CC.7.RP.2a	Students will recognize and represent proportional relationships between quantities and decide whether two quantities are in a proportional relationship.	Model with mathematics.  Look for and make use of structure. Students will use a table to draw conclusions about a proportional relationship. Two quantities form a proportional relationship if the ratio between the two quantities remains constant.	How do you identify and write proportions?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Ratios	Equivalent Ratios Proportion Proportional Relationship	In the table in part A (pg. 167), “the number of words” is listed second, but the ratios in part B, “the number of words is listed first.” Before students complete part B, suggest that they highlight both the second row of the table and the numerators of the ratios. This may help them from accidentally writing the quantities in the ratios in the wrong order.	ECM 6-2 pg 165-170 Two-color counters

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day One            Show video tutor            Direct teaching of pages 165-167 for 1 EX, 2 EX and 3 EX.            Teacher will walk around room and check in with each pair to make sure there is no confusion when students work on the “try this” and “reflect” portions on pages 165-167.            Teacher will have students share out their answers.  <u>Some questions to ask:</u>            1 EX-MODEL EQUIVALENT RATIOS AND PROPORTIONS using counters.            In part A, how many dark counters are there for each light counter?            In part C, what does the number in the numerator of the ratio represent?            Make a group of 2 light counters and 4 dark counters. What is the ratio of light counters to dark counters in this group? How do you know that this ratio is not equivalent to <math>\frac{2}{6}</math>?            2 EX-Why did you choose division?            Why are all of the ratios equal in simplest terms?            3 EX-How did you find the missing values in the table?            How is the common ratio related to the unit rate?            How do you know that this relationship is proportional?            *3 EX could cause confusion---see possible misconception an address it with students!</p>	<p>Day one            Watch video tutor            Answer questions from teacher.            Work on pages the Examples on pages 165-167 with direct teaching.            Work in pairs/groups on the “try this” and “reflect” and share out answers as a whole class. Discussions will occur and clarification if necessary.             All students will do page 168 at the end of class/homework.</p>

Unit 3.2	4-3 Solving Proportions	Lesson 3 of 3	Days 1
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.2	Solve proportions by multiplying or dividing the numerator and denominator of the given ratios by the same whole number.	Look for and make use of structure.	How do you solve proportions?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Proportions Equivalent Ratios		Students sometimes try to solve proportions by using addition or subtraction. Emphasize that solving a proportion involves finding an equivalent ratio. To find an equivalent ratio, you must multiply or divide the numerator and denominator by the same number. If you add or subtract the same number, the new ratio will not be equivalent to the original ratio.	ECM 4-3 pg 171-176.

### Suggested Learning Practices

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Day one - Show video tutor.  <b>NOTE TYPO on page 171 in 1 EX: The opening sentence should read “The ratio of GIRLS to BOYS on a soccer team is 3 to 5.”</b>            Teacher will have students work in pairs/groups to explore pages 171-172 1 EX and 2 EX and discuss/share out answers and conclusions with the class.  <u>Some questions to ask:</u>            1 EX-What does it mean to solve a proportion?            In part C, why do you need to change the numerator of your model the same way that you changed the denominator of the model?            In part D, you found that the ratio <math>\frac{3}{5}</math> is equivalent of <math>\frac{6}{10}</math>. How does this information help you solve the proportion?            2 EX-In part A, why do you model the ratio <math>\frac{6}{8}</math> instead of the ratio <math>\frac{3}{b}</math>?            In part C, why do you circle 2 equal groups in the denominator of your model?            How does your model show the solution of the proportion?            Why did you use division to solve this proportion instead of multiplication?</p> <p>Teacher will use direct teaching for 3 EX on page 173.            Use caution when setting up proportions, sometimes writing the ratio in words off to the side (LABELING) helps with consistency of set-up. (\$/songs or grams/calories)  <u>Some questions to ask:</u>            3 EX-In part A, why do you use multiplication to solve the proportion instead of division?            In part A, once you determine what number to multiply by 5, how do you determine what number to multiply \$6 by ?            In part B, what if you had written the proportion <math>\frac{180}{120} = \frac{n}{60}</math>? Does this proportion correctly represent the situation given in the problem? Why or why not?            Teacher will have students work in pairs/groups on page 173 “try this” and “reflect.”            Teacher will walk around room and check in with each pair/group to make sure there is no confusion and re-teach if necessary .</p>	<p>Day one            Watch video tutor            Answer teacher questions.            Work on pages 171-172.            Students will work in pairs/groups then share out their answers with group to check work. They will consult with the teacher on discrepancies within their groups.            Students will work on page 173 following teacher led instruction then solve the “try this” and “reflect” in pairs/groups.</p> <p>All students will do page 175 at the end of class/homework.</p>

<b>Unit: 3.3</b>	<b>Percents</b>	<b>Days : 10</b>
<b>Essential Questions</b>		
How can you solve problems involving decimals, percent, and fractions? How do you estimate percents? How can you rewrite expressions to help you solve problems? How do you find percent of change? How do you use percents to solve problems? How do you solve problems involving simple interest?		
<b>Content to be Learned</b>		<b>Skills</b>
Solve problems involving fractions, decimals, and percents Rewrite expressions to solve problems Find percent of change Use percents to solve problems Solve simple interest problems		
<b>Assessments</b>		<b>Standards</b>
		cc.7.ee.2 cc.7.ee.3 cc.7.rp.3
<b>Sample Instructional Activities</b>		<b>Resources</b>
QR video tutor		ECM Chapter 6 Lesson 1-6 problem solving connection

<b>Unit 3.3</b>	<b>6-1 Fractions Decimals Percent</b>		<b>Lesson 1 of 7</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>				
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>	
CC.7.EE.3	To be able to write a percent as a decimal, as a fraction, and use the forms interchangeably.	<b>Look for and express regularity in repeated reasoning</b>	How can you solve problems involving fractions, decimals and percents?	
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>	
Operations with Fractions and Decimals Finding Percents		Make sure students when asked to give their answer as a fraction rather than as a percent or vice versa that they make sure they are giving their answer in the correct form.	ECM 6-1 pg 241- 244	
<b><i>Suggested Learning Practices</i></b>				
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>		
<p>Day One</p> <p>Show Video Tutor</p> <p>Ask the Essential Question.</p> <p>(Sample Questions to ask:</p> <p>What steps do you use to write <math>\frac{1}{4}</math> as a percent?</p> <p>How would you write 5% as a fraction?</p> <p>How do you multiply <math>\frac{1}{100}</math> and 8?</p> <p>How do you write <math>\frac{40}{100}</math> as a decimal?</p> <p>Teacher will direct teach students through page 241. Then students will work in pairs to complete page 242.</p> <p>Day Two</p> <p>Students work independently on pages 243 and 244 in class groups.</p> <p>Teacher will walk through class (can carry checklist if looking for formative assessment data) to address any misunderstandings or confusion or to work with individual students. (Teacher will make notes during share out at end of class to see how students have understood information and if they need to reteach or move on depending on the level of understanding.</p>		<p>Day One</p> <p>Watch video tutor</p> <p>Answer Essential Question</p> <p>Answer teacher questions as a group and in pairs</p> <p>Work on pages 241-242 in class</p> <p>Day two</p> <p>Work with group members to complete pages 243 and 244. Students will share out answers on white boards to confirm their answers are correct and to talk about strategies used to solve problems.</p>		

Unit 3.3	6-2 Estimating with Percents	Lesson 2 of 7	Days 2
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
CC.7.EE.3	Students can estimate what percent one number is of another number by writing the ratio of the part to the whole. They can then compare the ratio to the benchmarks $\frac{1}{2}$ and 1.	Model with mathematics. (Students use bar models to estimate the answer to a problem involving percents. Be sure that students are able to explain what each part of the models represents in the context of the problem. In the first model, the entire bar models the beginning price of the stock, \$40. It is divided into 5 equal parts that each represent $\frac{1}{5}$ or 20% of the price. Each part has a value of \$8. Remind students that the answers obtained from these bar models are estimates because students rounded the original numbers in the problem.	How do you estimate percents?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Estimating Percents			ECM 6-2 pg 245-250 Sheets of paper (rectangular strips of paper work best) Tape Sticky notes

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day One</p> <p>Show video tutor</p> <p>Some questions to ask</p> <p>(If you need to find what percent 11 is of 80 should you use the ratio 11/80 or 80/11? 11/80 How do you know? 11 is the part and 80 is the whole. I need to write the ratio of the part to the whole to find the percent.</p> <p>How can you tell whether a ratio is less than or greater than 100%? If it is greater than 1 it is greater than 100% or if less than 1 then it is less than 100%.</p> <p>How can you tell whether a ratio is less than or greater than 50%?</p> <p>How do you know whether to round 18.9 to 19 or 20? You round to 20 because it is a whole number that is easy to compute.</p> <p>Why do you change 20% to 1/5? They are equivalent but the fraction will be easier for computing.</p> <p>Ask students how they would estimate 26% of 318?)</p> <p>Day one</p> <p>Direct teaching of pages 245-246 (You will need sticky notes for this part of the lesson). Students can work in pairs to complete page 247 in class</p> <p>Day two</p> <p>Have students work in groups on page 248. They must ESTIMATE percents. Give them time to complete then do a share out from each group in class to check for understanding. Students will then do pages 249-250 for homework tonight (unless you prefer to modify and do more work in class)</p>	<p>Day one</p> <p>Watch video tutor</p> <p>Answer questions from teacher</p> <p>Work on pages 245-246 with direct teaching. Use sticky notes and rectangular sheets of paper to see parts of the whole to visualize percent parts.</p> <p>Day Two</p> <p>Students will work in groups with peers to complete page 248. They will then share out the work they have completed with the rest of the class. Discussions will occur and clarification if necessary.</p> <p>All students will do pages 249-250 for homework.</p>

<b>Unit 3.3</b>	<b>6-3 Using Properties with Rational Numbers</b>	<b>Lesson 3 of 7</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.3 CC.7.EE.2	To calculate markups and markdowns, students must first understand that 1 equals a whole, or 100%. Then, markup and markdown can be described as a percentage. This percentage of the price will be added or subtracted from the original price respectively. This increase usually allows a seller to make a profit on a sale. A markdown will result in a price decrease. Sales are examples of markdowns.	<b>Look for and make use of structure</b>	How can you rewrite expression to help you solve problems?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Writing percents as fractions and decimals		Students may struggle to subtract $1b - 0.24b$ . Remind them to rite $1b$ as $1.00b$ . Another way is to rewrite the expression in percents as $100\%b - 24\% b$ . After students find the difference $76\%b$ they can write it as a decimal, if necessary.	ECM 6-3 pg 251-254.

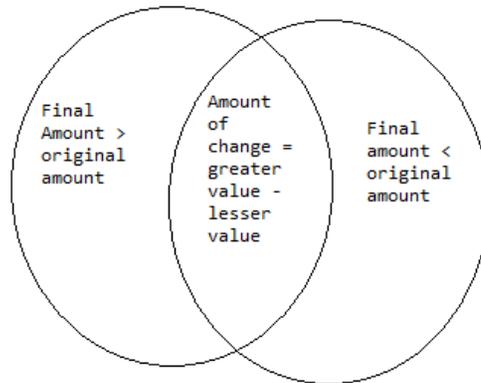
<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day one Show video tutor (Some questions to ask What does <math>1.42x</math> represent? The original cost with a 42% markup included; it is the retail price for the consumer. What does <math>0.76x</math> represent? The original cost with a 24% markdown included; it is the retail price for the customer. When you multiply by a number greater than one is the product more or less than the original number? More When you multiply by a number less than one is the product more or less than the original number? Less Teacher will direct instruction on pages 251-252 with students. Teacher will give examples of mark ups and mark downs for students.</p> <p>Day Two Teacher will direct students to work on pages 253 and 254 in pairs. Students are to share their answers with their group. Teacher will walk around room and check in with each pair to make sure there is no confusion or if there is then to stop the lesson and do a re teach of the lesson.</p>	<p>Day one Watch video tutor Answer teacher questions and take notes Work on pages 251-252. Day Two Work with a partner on pages 253-254. Students will then share out their answers with group to check work. They will consult with the teacher on discrepancies in answers in their groups. Teacher will re teach if necessary.</p>

Unit 3.3	6-4 Percent of Change	Lesson 4 of 7	Days 3
<i>Lesson Focus</i>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
CC.7.RP.3	<p>Students find the percent of change by using the ratio Amount of change/original amount. To calculate the amount of change, they subtract the lesser amount from the greater amount, regardless of which amount is final and which amount is original. When you use this method, the amount of change is always positive. However, in a more formal definition of percent of change, the amount of change is calculated by always subtracting the original amount from the final amount. When you use this method, the amount of change may be positive or negative. A negative amount of change indicates a percent decrease and a positive amount of change indicates a percent increase.</p>	Use appropriate tools strategically.	How do you find percent of change?

5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
	Percent of change Percent increase Percent decrease	When writing a ratio to find percent of change, students may use the final amount in the denominator instead of the original amount. Emphasize that a percent of change is a comparison to the original amount, which is why the original amount is used in the denominator.	ECM 6-4 pg 255 – 260 Square tiles
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p><u>Day One</u>            Show video tutor            Questions you can use:            (What are two ways you could determine the area of the original quilt? Pg 255            How do you find the change in the area of the quilt? How can you write a ratio as a percent?            What are the length and the width of the original quilt? What is the area of the original quilt? What are the length and width of the new quilt? What is the area of the new quilt?</p> <p>Teacher will use questions (above) and give direct instructions for pages 255 and 256 as you guide students through the pages.            (what must you determine first in a percent change problem? The amount and direction of change. How do you know if it is a percent increase or a decrease? Percent increase makes the value greater, while percent decrease makes the value smaller.</p>		<p><b>Day One</b>            Watch video tutor            Work on pages 255-256 as directed by teacher. Copy Venn diagram on (see page 257 in Teacher Edition or on this planning guide)            Answer questions posed by teacher.</p> <p><b>Day Two</b>            Students will work in pairs on pages 257 and 258. They will be required to use the formula for calculating percent of change. Teacher will circulate within the room checking for understanding.</p> <p><b>Day Three</b>            Students will work together on pages 259 – 260. Students are aware that at the end of the period they may have a quiz on this topic.</p>	

Percent Increase

Percent Decrease



Percent of Change =

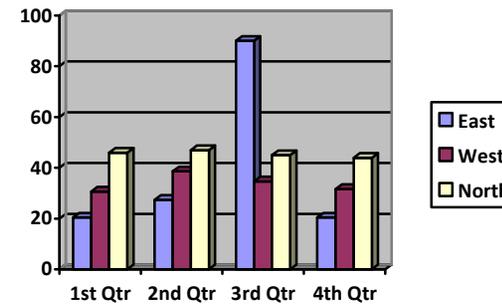
Amount of Change / Original Amount

Day Two

Teacher will assign students to work in pairs in groups on pages 257-258. Particularly on page 258 make sure students are using the formula to work out their answers. The teacher will circulate through the class checking in with pairs. Check for understanding and if necessary stop and do a whole class reteach.

Day Three

Students will work on pages 259 and 260 in class and will share out their answers from groups. This may be a good time to give a quiz.



Unit 3.3	6-5 Applications of Percent	Lesson 5 of 7	Days 2
<b>Lesson Focus</b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
CC.7.RP.3	Tip or gratuity Sales tax Commission Wholesale price Retail price Markup Markdown		How do you use percents to solve problems?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
See the content to be learned which is essentially general information as opposed to “math” content knowledge		Percent error is a measure of how close a measured value is to the actual or accepted value of the measurement. Scientists frequently use percent error to compare the result of two different measurements. To calculate percent error, find the ratio amount of change/actual change, where the amount of change is the greater value minus the lesser value. Then write the ratio as a percent. TIP Students may forget to add the tip to the original bill to find the total cost. Remind students to review their answer in the context of the situation. The total amount including the tip should be greater than the original bill. If not, students should check their work.	ECM 6-5 pg 261-264

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day One Show video tutor Teacher will guide students through pages 261-262 with direct instruction. Answering questions students may have. (Questions to ask: Is a tip added to or subtracted from a bill? What are two ways you can calculate the total bill?</p> <p>Day Two Students will work in pairs while sitting in groups to complete page 263. They will share out their answers and the teacher will observe for any confusion or re teaching needed. Students will be assigned page 264 for homework.</p>	<p>Day one Watch video tutor Complete pages 261-262 with teacher direction Answer teacher questions</p> <p>Day two Work on page 263 with a partner to find answers. Ask teacher for assistance if needed. Share out answers. Do page 264 for homework.</p>

<b>Unit 3.3</b>	<b>6-6 Simple Interest</b>	<b>Lesson 6 of 7</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.3		Make sense of problems and persevere in solving them.	How do you solve problems involving simple interest?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
	Simple interest principal		
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p><u>Day one</u> Show video tutor To Discuss: Situations in which they may have heard the words interest or interest rate used in reference to money. Some situations with which students may be familiar include savings accounts, credit cards, homes and car loans and the national debt. When calculating simple interest, it is assumed that only the principal earns interest.(In the real world, the interest earned is added to the principal and then forward earns compounded interest but we will not address that until Algebra) Questions to Ask (To find simple interest on an original amount, what two pieces of information do you need? The interest rate and the number of years How do you find the simple interest earned after 1 year? Write the interest rate as a decimal. Then multiply the principal by the interest rate. In this case, a large interest rate would be good because it is money earned. In what situation would a large interest rate be considered bad? When you repay a loan, you have to pay the original amount borrowed plus interest. In that case a large interest rate may be considered bad because it is money to be paid, not earned.</p>		<p>Day One Watch video tutor Do pages 265-266 Answer teacher questions, participate in discussion</p> <p>Day Two Do pages 26-268 while working in a group. Share out answers. Confirm with teacher that answers are correct</p>	

<p>Students will do pages 265 and 266 with teacher direction working in pairs</p> <p>Day Two Teacher will assign pages 267 and 268 while students work in groups. Teacher will walk around and assess individual or pairs of students to check for understanding. Teacher will decide if re teaching is needed or if students just need to share out their answers.</p>	
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<b>Unit 3.3</b>	<b>Chapter 6 Problem Solving Connections</b>	<b>Lesson 7 of 7</b>	<b>Days 1</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.RP.3 CC.7.EE.2 CC.7.EE.3		Make sense of problems and persevere in solving them. Look for and make use of structure.	
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
			ECM Performance Task 6 Pg 269-272
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
Teacher will direct students to work on problem solving either in pairs or in a group. Students will work independent of teacher assistance and then submit all four pages with work to teacher.		Students will work in pairs or as a group to solve the problems on pages 269-272. Students will make sure they have answered questions and explained their answers before submitting to the teacher.	

<b>Unit: 4.1</b>	<b>Collecting, Displaying and Analyzing Data</b>	<b>Days : 10</b>
<b>Essential Questions</b>		
How can you determine the measures of center of a data set? How can you use measures of center and variability to compare two populations? How can you use a sample to gain information about a population and compare predictions about a population?		
<b>Content to be Learned</b>		<b>Skills</b>
Find the measures of center Find the measure of variability Use measure of center and variability to compare populations and make predictions		
<b>Assessments</b>		<b>Standards</b>
		cc.7.sp.1 cc.7.sp.2 cc.7.sp.3 cc.7.sp.4
<b>Sample Instructional Activities</b>		<b>Resources</b>
QR Video Tutor		ECM Chapter 7 Lesson 1 – 3 Problem solving Connection

Unit 4.1	<b>Mean, Median, Mode, and Range</b>	<b>Lesson 1 of 4</b>	<b>Days 1 of 6</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.4	Students explore the mean, median, and mode, which are measures of the center of a set of data. They also calculate the range, which is not a measure of center. The range is a measure of variation that describes how spread out the values in a set of data are.	Use appropriate tools strategically. Attend to precision.	How can you determine the measures of center of a data set?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
	Measure of center Mean Median Mode Range		ECM 7-1 pg 281-284 Counters for page 281 Calculators for each student
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
Show video tutor Teacher will provide students with counters so they can complete activities on page 281. Calculators should also be available for each student. Students will work on page 282 with a partner and will complete page 283 and 284 for homework.		Students will watch the video tutor. Students will use counters to complete activity on page 281. Students will then work with a partner to complete page 282. Students will do pages 283-284 for homework.	

Unit 4.1	<b>Box and Whisker Plots (Mean Absolute Deviation MAD)</b>	Lesson 2 of 4	Days 2 & 3 of 6
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.3 CC.7.SP.4	Measures of variability express the spread of a data set. Two common measures of variability are range and mean absolute deviation. (MAD) The MAD is found by dividing the sum of each data value's difference from the mean by the number of data values. It describes the average number of units that the data values stray from the mean. A larger MAD value indicates a great spread in the data.	Attend to precision	How can you use measure of center and variability to compare two populations?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Displaying numerical data Measures of center and variability			

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day one Show Video tutor Teacher directed instruction on page 285, 286, and halfway down 287. Homework pg 288 1 – 6</p> <p>Day Two Go over homework. Pg 287 3 Explore – Students will work with a partner and complete through page 288 In class students will complete pages 289- 290 and review together.</p>	<p>watch Video tutor work on page 285, 286, and halfway down 287. Homework pg 288 1 – 6</p> <p>Day Two Go over homework. Pg 287 3 Explore – Students will work with a partner and complete through page 288 In class students will complete pages 289- 290 and review together.</p>

CONCERN: This section SAYS Box and Whisker plots but does not actually show one or how to make one! Perhaps it is a good idea to actually teach students HOW to make a Box and Whisker plot and when to use one.

Unit 4.1	Populations and Samples		Lesson 3 of 4	Days 4 & 5 of 6
<b><i>Lesson Focus</i></b>				
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>	
CC.7.SP.1 CC.7.SP.2	A sample must be representative of the population in order for predictions based on the sample to be valid. One way to select a representative sample is to select it randomly. A sample is random if each member of the population has an equally likely chance of being selected to be in the sample. You can use the findings from a random sample to make predictions about the population using proportional reasoning.	Reason abstractly and quantitatively .	How can you use a sample to gain information about a population and compare predictions about a population?	
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>	
Solving proportions	Population Sample Random sample Biased sample		Scientific calculator (do NOT need a graphing calculator to generate random integers) Pennies to use for activity on page 291	

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day one Show video tutor Page 291 Provide pennies for each student to conduct a trial using page 291. Direct students to record data about which 10 plants the penny lands on and the number of tomatoes on that plant. Find the average (mean) number of tomatoes that were randomly selected. Students will continue to work on pages 292-293.</p> <p><b><u>Day Two</u></b> All students need a scientific calculator. Press PRB key, then arrow over to RAND then down to RAND INT press enter You should now see rand int( Enter 1 then press the second key (green) and then the decimal key (to make a comma) then enter the specific number of items in the random set you are evaluating (for example there were 100 tomato plants) so now it should look like this Randint(1, 100) make sure you close the parentheses (see the keys on the calculator and then press enter as many times as you need to in order to generate the number of random integers that you need. Students will work on page 294-296 in class. Homework is pages 297-298.</p>	<p>Day One Students watch video tutor. Students do activity on page 291. They complete pages 292-293. Day Two Students will learn how to generate random integers by following teacher directions. Work on pages 294-296 in class. Homework is pages 297-298.</p>

Unit 4.1	Problem Solving Connections	Lesson 4 of 4	Days 5 of 5
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.1, 2, 3, 4	Using a sample to make a prediction. Using a random sample to make a prediction.	Construct viable arguments and critique the reasoning of others.	
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
			ECM chapter 7 problem solving Scientific calculator to use to generate random integers
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
Teacher will direct students to work independently then compare their work with their group to evaluate their work against the work of others.		Students will work independently. When complete, they will work in their groups to compare their work with group members to “construct viable arguments and critique the reasoning of others”.	

<b>Unit: 4.2</b>	<b>Probability</b>	<b>Days : 10</b>
<b>Essential Questions</b>		
How can you describe the likelihood of an event? How do you find the experimental probability of an event? How can you find the theoretical probability of an event? How do you make decisions on predictions? How do you find probability with and without replacement?		
<b>Content to be Learned</b>		<b>Skills</b>
Describe the likely hood of an event Calculate experimental and theoretical probability Make decisions using probability Independent and dependent events		
<b>Assessments</b>		<b>Standards</b>
		cc.7.sp.5 cc.7.sp.6 cc.7.sp.7a cc.7.sp.7b cc.7.sp.8 cc.7.sp.8.c
<b>Sample Instructional Activities</b>		<b>Resources</b>
QR Video tutor		ECM Chapter 10 Lesson 1 – 6 Problem solving Connection

Unit 4.2	Probability 10-1 – 10-4	Lesson 1	Days 1
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.5	Probability is a number between 0 and 1. A probability near 0 is unlikely to happen, a probability near $\frac{1}{2}$ has a 50% chance of happening, and a probability of 1 will certainly happen.	Reason abstractly and quantitatively	How can you describe the likelihood of an event?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Percent, fractions, decimals	Experiment Trial Outcome Event Probability complement		Coins Number cubes (dice) ECM pg 395-400
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
View Video Tutor Teacher is Questioning students using page 395. Students are directed to work together to answer the spaces (work with a partner). Teacher encourages groups/partners to share why they selected their particular answer. Page 396 Students are directed to work in groups to complete this page working with a partner. On Pg 397 It is important to point out the Complement of the event as being all of the events other not including that particular event. For example If you have 10 red, 10 blue, and 10 yellow marbles in a bag, the probability for getting a red marble would be $\frac{10}{30}$ or $\frac{1}{3}$ while the complement would be $\frac{20}{30}$ or $\frac{2}{3}$ . Students will work in partners to complete page 397 to the top of 398 Homework. Do page 398 1-10 and page 399 1-9		Students are listening to the teacher and taking notes. They are working in partner pairs to complete pages 395-397. They will do page 398 1-10 and pg 399 1-9 for homework.	

Unit 4.2	Experimental Probability	Lesson 2	Days 2,3
<b><i>Lesson Focus</i></b>			
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions
CC.7.SP.6 CC.7.SP.7a CC.7.SP.7b	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long run relative frequency, and predict the approximate relative frequency given the probability.	Model with mathematics	How do you find the experimental probability of an event?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials
Understanding probability Percents, fractions, decimals	Experimental probability Theoretical probability	Have students compare and contrast experimental and theoretical probabilities and using probabilities. Tell students to consider the methods of calculating probabilities and using probabilities. Have them also include the nature of experimental probabilities as the number of trials in the experiment increases.	Cups (small plastic or paper) Coins Dice (number cubes) ECM pg 401-406

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>View Video Tutor Teacher will provide the materials for students to conduct the experiment on page 401. Students will record the information they gather and will answer questions on page 401. Teacher will direct Students to work in groups on page 402 calculating experimental probability. Teacher will provide number cubes for groups and they will conduct experiments on page 403. Students will answer all questions.</p> <p>Day Two Teacher directs students to Complete all practice items on page 404 . Once this is complete, groups will share out answers. Teacher will have students work on page 405 to complete the additional practice and to also write their answers as a decimal, fraction, and percent. Assign page 406 as homework.</p>	<p>Students will view video tutor and take notes. Students will work in groups and complete activities on page 401 as directed by teacher. Teacher will provide various manipulatives to complete the activities on pages 402 and 403.</p> <p>Day Two Students will complete all activities on page 404 and share out answers. Students will complete page 405 and will do page 406 for homework.</p>

Unit 4.2	Sample Spaces	Lesson 3	Days 4
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.8.c	A simulation is a process used to model random events in an experiment. A simulation is designed so that its outcomes reflect the ways that outcomes can occur in the real world. You can use random number generators to simulate the outcomes in a simulation. (PRB- randint(1,X))	Use appropriate tools strategically	How do you find the experimental probability of an event?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
Theoretical probability Experimental probability			Pg 407-410 Scientific calculator
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Watch Video Tutor</p> <p>Teacher will show students how to use random number generator on scientific calculator ( Find the PRB key push it and select randint push ( then enter 1, x and close parentheses. X stands for the number of items of random numbers you will generate)</p> <p>Teacher will provide direct instruction on page 407. On page 408 the teacher directs the students to generate 20 random numbers for each trial (there are 10 trials and 20 random numbers for each trial so students are generating 200 random numbers!) For homework, teacher assigns page 409-410-.</p>		<p>Students watch the video tutor. Students follow the direction of the teacher as they learn about how to generate random numbers and why we generate random numbers. (pg 407) On page 408 students will generate 200 random numbers so there will be time for a great deal of practice. Students will do page 409-410 for homework.</p>	

Unit 4.2	Theoretical Probability		Lesson 4	Days 5
<b><i>Lesson Focus</i></b>				
1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Questions	
CC.7.SP.6 CC.7.SP.7a	Theoretical probability is the probability of an event when all of the outcomes of the experiment are equally likely. The probability of such an event is found by the ratio: $P(\text{event}) = \frac{\text{Number of ways the event can occur}}{\text{total number of equally likely outcomes}}$ You can use theoretical probability to predict the likelihood that a certain event will occur.	Look for and make use of structure.	How can you find the theoretical probability of an event?	
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Teaching Materials	
Understanding probability Percents, fractions and decimals	Theoretical probability	Students sometimes get confused while counting because they try to do counting and calculations all mentally. Encourage students to write out all the possible outcomes, count them, and record the number in the denominator. Then have them count the number of those possible outcomes that meet the conditions of the event described and record that number in the numerator. Then simplify.	ECM pg 411-416	

<b><i>Suggested Learning Practices</i></b>	
<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
Watch Video Tutor Teacher will have students work in groups. Groups will work on page 411 to find the theoretical probability of winning an MP3 player. Students will be directed to work on pages 412 and 413 in their groups. Teacher will circulate throughout the room to make sure students are understanding the task. Assign pg 414 and 415 for homework.	Students watch video tutor. Students will work in groups on pages 411-413. Students will do pages 414-415 for homework.

<b>Unit 4.1</b>	<b>Making Predictions</b>	<b>Lesson 5</b>	<b>Days 6,7</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.6 CC.7.SP.7a	Students will use probability to make predictions. Students will evaluate if a game is “fair” meaning each player has an equal chance of winning. (A 50% theoretical probability for both players to score a point in the game situation)	Look for and express regularity in repeated reasoning.	How do you make decision based on predictions?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
	prediction		ECM 10-5 pg 417-422
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day One Show Video Tutor Teacher directs students to work on page 417 and 418 with a group. Teacher will have students discuss work with group and then report out information on white boards. On page 418 Beginning with Example 2 Students will work with a partner on deciding if a game is fair. Complete through page 419. Homework page 420 # 1-7</p> <p>Day Two Go over homework Do pages 421 and 422 in class together in groups and review together.</p>		<p>Students will watch video tutor. Students will work on pages 417-418 and will report out information on white boards. On page 418 Beginning with Example 2 Students will work with a partner on deciding if a game is fair. Complete through page 419. Homework page 420 # 1-7</p> <p>Day Two Go over homework Do pages 421-422 in class together in groups and review together.</p>	

Unit 4.1	Probability of Independent and Dependent Events	Lesson 6	Days 8
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.SP.8	The problems in this lesson involve selecting two items at random from a group of items. In some cases, the first item is replaced before the second item is selected; in other cases, the first item is <i>not</i> replaced before the second item is selected. When two items are selected at random with replacement, the two events are independent of each other. When two items are selected at random without replacement, the two events are dependent.	Look for and express regularity in repeated reasoning.	How do you find probability with and without replacement?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>
			ECM 10-6 pg 423-428

### ***Suggested Learning Practices***

<b>9. Instruction Practices (What are the teachers doing)</b>	<b>10. Learning Practices (What are the students doing)</b>
<p>Day One            Show Video Tutor            Direct students to copy Graphic organizer into note book.            Teacher directed instruction for pages 423-425.            Homework page 426 #1-7 and page 427 # 1-7</p>	<p>Students will copy this graphic organizer</p> <p>Students will follow teacher directed instruction and will do homework as assigned.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">Finding probability of Two Events</p> </div> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>With Replacement</p> <ul style="list-style-type: none"> <li>• The events are independent</li> <li>• The sample space for the second event is the same for the first event.</li> <li>• Multiply the probability of the first event by the probability of the second event.</li> </ul> </div> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>Without Replacement</p> <ul style="list-style-type: none"> <li>• The events are dependent.</li> <li>• The sample space for the second event is different from the sample space for the first event.</li> <li>• Multiply the probability of the first event by the probability of the second event given that the first event has occurred.</li> </ul> </div>

<b>Unit: 4.3</b>	<b>Chapter 8 Geometric Figures</b>	<b>Days :10</b>
<b>Essential Questions</b>		
<p>How do you identify and describe basic geometric figures?  How do you use angle pairs to solve problems?  How do you use vertical angles to solve problems with figures?  How do you draw shapes that satisfy given conditions?  How do you produce congruent figures on the coordinate plane?</p>		
<b>Content to be Learned</b>		<b>Skills</b>
<p>Angles and angle relationships  Construct congruent triangles  Transformations on the coordinate plane</p>		
<b>Assessments</b>		<b>Standards</b>
To be determined		<p>Prep for CC.7.G.5  CC.7.G.5CC.7.G.2  preview CC.8.G.2</p>
<b>Sample Instructional Activities</b>		<b>Resources</b>
Show video tutor with QR reader for each lesson		<p>ECM Chapter 8 Lesson 1 – 5, problem solving connections,  and Performance Tasks  Geometry software  Protractors, straight edge, compass, scissors, tracing paper  Graph paper</p>

Unit 4.3	Building Blocks of Geometry	Lesson 1 of 6	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure		How do you identify and describe basic geometric figures?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
In geometry, points, lines, and planes, are said to be undefined terms, meaning they cannot be defined in other geometric figures. Undefined terms can be used to construct definitions of other geometric terms.	Point Line Plane Ray Line segment		ECM Lesson 8-1 pg 311-314 Ruler or straight edge Geometry software
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show video tutor with QR reader Teacher is giving instruction to students to connect to prior learning. In class review basic terms and examples Complete 1 Explore pg 311. Students may work in groups and complete pg 313 #1-16. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete 2 example pg 312, students can complete pg 314 # 1-7,</p>		<p>Day 1 Show video tutor with QR reader In class students review basic terms and examples Complete 1 Explore pg 311. Students may work in groups and complete pg 313 #1-16. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete 2 example pg 312, students can complete pg 314 # 1-7,</p>	

<b>Unit 4.3</b>	<b>Classifying Angles</b>	<b>Lesson 2 of 6</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure	Construct viable arguments and critique the reasoning of others.	How do you use angle pairs to solve problems?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Lines and angles Measuring angles Classify angles	Congruent angles Supplementary angles Complementary angles Adjacent angles		ECM Lesson 8-2 pg 315 -320
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show video tutor with QR reader Teacher is giving instruction to students to connect to prior learning. In class review basic terms and examples Complete 1 Explore 315. Students may work in groups and complete pg 318 #1-9. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete 2 example pg 316, 3 example pg 317 students can complete pg 319 #1-12, problem solving pg 320 # 1-8</p>		<p>Day 1 Show video tutor with QR reader In class students review basic terms and examples Complete 1 Explore 315. Students may work in groups and complete pg 318 #1-9. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete 2 example pg 316, 3 example pg 317 students can complete pg 319 #1-12, problem solving pg 320 # 1-8</p>	

<b>Unit 4.3</b>	<b>Line and Angle Relationships</b>	<b>Lesson 3 of 6</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.		How do you use vertical angles to solve problems with figures?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
	Adjacent angles Vertical angles		ECM Lesson 8-3 pg 321-324
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show video tutor with QR reader Teacher is giving instruction to students to connect to prior learning. In class review basic terms and examples Complete 1 Explore 321. Students may work in groups and complete pg 322#1-6. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete students can complete pg 323#1-6, problem solving pg 324 # 1-7</p>		<p>Day 1 Show video tutor with QR reader In class students review basic terms and examples Complete 1 Explore 321. Students may work in groups and complete pg 322#1-6. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete students can complete pg 323#1-6, problem solving pg 324 # 1-7</p>	

Unit 4.3	Angles in Polygons	Lesson 4 of 6	Days 2
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.G.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	Students use geometric tools and software in order to make conjectures about whether or not they create a unique triangle. Students must work precisely because the activities involve drawing angles with specific measures.	How can you draw shapes that satisfy given conditions?
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
Measuring line segments and angles Property of triangles			ECM Lesson 8-4 pg 325-330 Ruler, protractor, compass
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Show video tutor with QR reader Teacher is giving instruction to students to connect to prior learning. In class review basic terms and examples Complete 1 Explore 325. Students may work in groups and complete pg 328#1-4. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete students can complete 2 explore pg 326, optional(3 explore pg 327 with geometry software) pg 329#1-2, problem solving pg 330 # 1-2</p>		<p>Day 1 Show video tutor with QR reader In class students review basic terms and examples Complete 1 Explore 325. Students may work in groups and complete pg 328#1-4. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete students can complete 2 explore pg 326, optional(3 explore pg 327 with geometry software) pg 329#1-2, problem solving pg 330 # 1-2</p>	

Unit 4.3	Congruent Figures		Lesson 5 of 6	Days 2
<b><i>Lesson Focus</i></b>				
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>	
CC.8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.		How can you produce congruent figures on coordinate plane?	
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	<b>7. Possible Misconceptions</b>	<b>8. Teaching Materials</b>	
	Translation Reflection rotation	Be sure students understand the difference between a reflection and a rotation.	ECM Lesson 8-5 pg 331-336 Tracing paper, scissors	
<b><i>Suggested Learning Practices</i></b>				
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>		
<p>Day 1 Show video tutor with QR reader Teacher is giving instruction to students to connect to prior learning. In class review basic terms and examples Complete 1 Explore 331-332. Students may work in groups and complete pg 334 #1-9. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete students can complete 2 explore pg 332, 3 explore pg 333 pg 335 #1-4, problem solving pg 336 #1-4</p>		<p>Day 1 Show video tutor with QR reader in class students review basic terms and examples Complete 1 Explore 331-332. Students may work in groups and complete pg 334 #1-9. Teacher walks around to redirect student thinking or to reteach smaller groups. Before the end of class go over answers to this section</p> <p>Day 2 Teacher will direct students to complete students can complete 2 explore pg 332, 3 explore pg 333 pg 335 #1-4, problem solving pg 336 #1-4</p>		

<b>Unit 4.3</b>	<b>Problem Solving Connection</b>	<b>Lesson 6 of 6</b>	<b>Days 2</b>
<b><i>Lesson Focus</i></b>			
<b>1. Standards Addressed</b>	<b>2. Content to be Learned</b>	<b>3. Mathematical Practices</b>	<b>4. Essential Questions</b>
CC.7.G.2 CC.7.G.5		Use appropriate tools strategically	What’s the pattern
<b>5. Prerequisite Knowledge</b>	<b>6. Essential Vocabulary</b>	7. Possible Misconceptions	<b>8. Teaching Materials</b>
			ECM Problem Solving Connections pg 337-340
<b><i>Suggested Learning Practices</i></b>			
<b>9. Instruction Practices (What are the teachers doing)</b>		<b>10. Learning Practices (What are the students doing)</b>	
<p>Day 1 Have students look around the classroom for examples of repeating patterns that fill a plane. Ask the students to use mathematical language to describe the pattern as precisely as possible. Be sure students recognize that the repeating elements that make up the pattern are all congruent. Tell the students they will be using what they have learned about lines, angles, triangles, and transformations to recreate a pattern based on some given information. Students complete 1 Find angle measure pg 337, 2 Draw the Triangle pg 338</p> <p>Day 2 Students complete 3 begin the Pattern pg 339, 4 Answer the Question pg 340</p>		<p>Day 1 Students look around the classroom for examples of repeating patterns that fill a plane. Ask the students to use mathematical language to describe the pattern as precisely as possible. Be sure students recognize that the repeating elements that make up the pattern are all congruent. Tell the students they will be using what they have learned about lines, angles, triangles, and transformations to recreate a pattern based on some given information. Students complete 1 Find angle measure pg 337, 2 Draw the Triangle pg 338</p> <p>Day 2 Students complete 3 begin the Pattern pg 339, 4 Answer the Question pg 340</p>	