Grade Level	Content Area	Course Title *(For 9-12 Samples Only)*	Unit Title
4th	Mathematics		Comparisons

Length of Unit	Time of Year Taught	Expected Prior Knowledge
5 days-60 minutes each	1st quarter	Gain familiarity with factors and multiples: 4.OA.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Unit Description: Students will learn operations and algebraic thinking by interpreting multiplication questions as comparisons. Students will using drawings and verbal statements to represent equations. The unit begins with direct instruction and moves to a cooperative activity where students write their own statements and equations. Students are assessed on the last day with a 13 question quiz**.**

Standards: See instructions on page 15.	Operations and algebraic thinking: use the 4 operations with whole numbers to solve problems. Standard 1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
Summative Assessment *In addition to the description, include a copy of the summative assessment in the application package.*	Students will complete a 13 question quiz with three parts to each question to demonstrate mastery of interpreting multiplication equations as a comparison and representing verbal statements of multiplicative comparisons as multiplication equations.
Scoring for Summative Assessment *In addition to the description, include a copy of the answer key and scoring rubric (if applicable) for the summative assessment in the application package.*	Each question is worth 3 points. Students will score a 28 (70%) out of 39 to demonstrate mastery of this standard.
Materials/Resources Needed *Include all items for the entire unit.*	Personal white boards and markers, Math journals, worksheet, assessment

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5

Instruction and Timeline	Objective: Students will represent multiplication facts as comparisons with drawings. Anticipatory Set: Have students draw a representation of 5 x 7 on their white boards. Instruction/Modeling: Teacher will tell students: when you multiply, you are often making a comparison between two numbers. In the equation 7 x 5 = 35, the answer 35 is 5 times as many as 7. It is also 7 times as many as 5. Let's use drawings to help us see this relationship a little more clearly. Display pictures of shapes on overhead. Active Participation: Students will follow along with white boards. When you compare the picture of 7 shapes to the picture of 35 shapes, you can see that there are 5 times as many shapes in the picture of 35. Therefore, you can think of 35 as 5 times as many as 7. Similarly, when you compare	Objective: Students will represent multiplication facts as comparisons with drawings. Anticipatory Set: Give them a multiplication fact and have them draw it out on the white board. Review. Instruction/Modeling: Teacher will discuss: Although we are used to seeing equations that look like a "problem" followed by an "answer", for example: 4 x 5 = 20 it is just as correct to say that 20 = 4 x 5 or 20 = 5 x 4. 20= 4x5 is the same as 4 sets of 5. 20= 5x4 is the same as 5 sets of 4. When we start from this basic understanding, it is much easier to compare the relationship between the numbers.20 is 4 times as many as 5.20 is 5 times as many as 4. Guided Practice: Fill in the missing information about the relationship between the numbers in this equation: 3 x 9 =	Objective: Students will represent verbal statements of multiplicative comparisons as multiplication equations. Anticipatory Set: Represent 20 as a comparison using drawings on your white board. Instruction/Modeling: Teacher will review two previous lessons. Teacher will explain that 21 is 3 times as many as 7 is 3x7=21 and 21 is 7 times as many as 3 is 7x3=21. Active Participation: Have students show equation on white boards: 12 is 2 times as many as 6. Guided Practice: Two more statements 56 is 8 times as many as 7 and 56 is 7 times as many as 8. Have students practice on whiteboards. Check for understanding: Hold up white boards to check	Objective: Students will represent statements of multiplicative comparisons as multiplication equations and multiplication facts as comparisons. Anticipatory Set: Write an equation for 30 is 6 times as many as 5. Instruction/Modeling: Teacher will review previous lessons giving new examples. Active Participation: Students use white boards. Guided Practice: Give students an equation and a statement and check answers on the white board. Independent Practice: Give students time to create 3 of each: statements of multiplicative comparisons and equations. Have students work with a partner and exchange statements and equations. Solve. For each equation write a statement and	Objective: Students will demonstrate mastery of statements of multiplicative comparisons as multiplication equations and multiplication facts as comparisons. Anticipatory Set: Write an equation for 30 is 6 times as many as 5. Instruction/Modeling: Teacher will go over instructions for test. Independent Practice: Students complete assessment. Closure: Collect assessment.

	the picture of 5 shapes to the picture of 35 shapes, you can see that there are 7 times as many shapes in the picture of 35. Therefore, you can also think of 35 as 7 times as many as 5.Any two factors and their product can be read as a comparison. Repeat the modeling with 4x3=12 Check for understanding: Ask students to show the comparison between 2x3 =6 on their white board using squares. Guided practice: Display several multiplication facts on overhead. Students will use drawings on their white boards to show the comparisons to solve the problem. Independent Practice: Give students 3 more facts to work on in their math journals. Teacher will conference with students as necessary. Closure: Review answers of the 3 facts that students completed in their math journal. Allow each student to share.	27. 27 is __ times as many as ___ and is ___ times as many as. Active Participation: Students will complete on whiteboards. Check for understanding: Review with one math fact 3x4=12. Have students complete on white board and check for understanding. Independent Practice: Teacher will give students 5 more facts: 4x6=24, 3x5= 15, 4x4= 16, 2x6=12, 7x3=21 to practice in their math journals. Closure: Review the facts with the class.	for understanding. Independent Practice: Teacher will give students a work sheet to practice comparisons. Closure: Review some questions on worksheet with class.	draw a picture. For each statement write a equation and draw a picture. Check for understanding: Conference with groups as they're working. Closure: Review some examples that students came up with.	

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Student Activities	Students draw a representation of 5 x 7 on their white boards. Students will follow along example with white boards. Students show the comparison between 2x3 =6 on their white board using squares. Students will use drawings on their white boards to show the comparisons to solve the problems. Give students work on 3 more facts in their math journals. Students will share answers.	Students draw a multiplication fact out on the white board. Students will complete on whiteboards this equation: 3 x 9 = 27. 27 is __ times as many as ___ and is ___ times as many as. Review with one math fact 3x4=12. Have students complete on white board and check for understanding. Students complete: 4x6=24, 3x5= 15, 4x4= 16, 2x6=12, 7x3=21 to practice in their math journals.	Students will represent 20 as a comparison using drawings on your white board. Have students show equation on white boards: 12 is 2 times as many as 6. Students practice on white board Two more statements: 56 is 8 times as many as 7 and 56 is 7 times as many as 8. Students hold up white boards to check for understanding. Students work on a worksheet to practice comparisons. Students review some questions on worksheet.	Students will write an equation for 30 is 6 times as many as 5. Active Participation: Students use white boards to practice comparisons. Students complete an equation and a statement and check answers on the white board. Students time to create 3 of each: statements of multiplicative comparisons and equations. Students work with a partner and exchange statements and equations. Solve. For each equation write a statement and draw a picture. For each statement write a equation and draw a picture.	Students will write an equation for 30 is 6 times as many as 5. Students complete assessment.

Name: _____ Date: _____

Quiz

1. 6 x 2 = 12

12 = 6 x 2

12 is 6 times as many as 2

12 is 2 times as many as 6

2. 8 x 5 = 40

3. 4 x 5 = 20

4. 6 x 7 = 42

5. 7 x 8 = 56

6. 9 x 4 = 36

4 x 7 = 28 can be read as a comparison between the numbers in the equation. It helps to remember that the equal sign really means "is the same as."

7. 4 x 7 is the same as ____.
8. 28 is the same as _____.
9. 28 is the same as 4 sets of ____.
10. 28 is 4 times as many as ____.

As the Commutative Property of Multiplication tells us, the order of the factors does not matter, so it is also true that:

11. 7 x 4 is the same as _____.
12. 28 is the same as _____.
13. 28 is the same as 7 sets of ____.
14. 28 is 7 times as many as _____.

Name: _____ Date: _____

Quiz
Answer Key

1. 6 x 2 = 12	2. 8 x 5 = 40	3. 4 x 5 = 20
12 = 6 x 2	40 = 8 x 5	20 = 4 x 5
12 is 6 times as many as 2	40 is 8 times as many as 5	20 is 4 times as many as 5
12 is 2 times as many as 6	40 is 5 times as many as 8	20 is 5 times as many as 4
4. 6 x 7 = 42	5. 7 x 8 = 56	6. 9 x 4 = 36
42 = 6 x 7	56 = 7 x 8	36 = 9 x 4
42 is 6 times as many as 7	56 is 7 times as many as 8	36 is 9 times as many as 4
42 is 7 times as many as 6	56 is 8 times as many as 7	36 is 4 times as many as 9

Fill in the blank:

7. 4 x 7 is the same as 28.
8. 28 is the same as 4 x 7.
9. 28 is the same as 4 sets of 7.
10. 28 is 4 times as many as 7.

Fill in the blank:

11. 7 x 4 is the same as 28.
12. 28 is the same as 7 x 4.
13. 28 is the same as 7 sets of 4.
14. 28 is 7 times as many as 4.

Score_____/39
Rubric:

Each correct answer is worth 3 points. 28 out of 39 is the minimum needed for mastery.

Number correct:	Percent:	
1-15	10% -49%	Falls Far Below
16-27	50%-69%	Approaches
28-39	70%-100%	Meets Mastery Level