Grade Level	Content Area	Course Title *(9-12 Samples Only)*	Unit Title
Third	Math		Multiplication with Grouping
Length of Unit	**Time of Year Taught**	**Expected Prior Knowledge**	
1 week	First Quarter	- Addition and subtraction by grouping.	
Unit Description			
Students will build, draw and explain multiplication by grouping. Students will create their own story problem and solve by drawing and using mathematical terms. The instructor will provide modeling, guided practice, and independent practice time for the students as they work collaboratively during this unit.			

Strand(s), Concept(s), and PO(s) *List and define the required Strand(s), Concept(s), and PO(s) for each lesson included in this sample.*	Domain: Operations and Algebraic Thinking Cluster: Represent and solve problems involving multiplication and division. Standard #1: Interpret products of whole numbers e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*
Summative Assessment *Describe a cumulative and comprehensive activity that allows students to demonstrate mastery of stated POs. A copy of the summative assessment must be included in the application package.*	Assessment will be based on student's ability to solve problems in a written exam. Students will be given 6 problems in which they will use their knowledge of multiplication by grouping numbers. A copy of the summative assessment/answer key (scoring rubric) is attached.
Assessment Scoring *Explain how each assessment is scored, to include points per question, total points possible, criteria, and grading scale. Describe rubric, if applicable, to include components being evaluated and the scoring criteria for each. A copy of the answer key and/or scoring rubric must be included in the*	Mastery = 16/20 or higher. A copy of the answer key/scoring rubric is attached. Remediation students given more time.

application package.	
Materials/Resources Needed *(Include all items for the entire unit.)*	- Construction Paper - Markers - Base ten blocks - marbles

	Lesson 1	**Lesson 2**	**Lesson 3**	**Lesson 4**	**Lesson 5**
Lesson Instruction	Teacher will ask students to pull out their interactive student notebook (ISN). The teacher will write the word multiplication on the board. Then ask students to break down the word multiplication into what it might mean. The teacher will allow students to try and break down word and then the teacher will take all the ideas and explain that the word multiplication has a word inside of it that is 'multiply' which means to make duplicate. The teacher will then ask the students what the word duplicate means. The teacher will explain	The teacher will ask the students to take out their interactive student notebook and to re-read the teachers definition of multiplication the example they have entered in their notebook and their own definition. The teacher will then give students base ten blocks to help students build, draw and explain their findings for this lesson. The teacher will put four problems on the board and ask students to place all four problems in their notebook by building the problem drawing what they built and then explaining in a number sentence as well as a	The teacher will have three multiplication situations on the board and ask the students to draw and explain them in their interactive student notebook. The teacher will monitor and assist students. When everyone has completed the task the teacher will ask students to volunteer and explain how to solve the problems. The teacher will then place students in groups of three and giving each group 15 markers, 12 marbles and 6 pieces of construction paper. The teacher will then ask students to solve	The teacher will have on the board two story problems that the students will need to draw and explain in their interactive student notebook. The teacher will monitor and assist any struggling students. The teacher will then ask students to create their own story problem. The teacher will ask students when finished writing their problem to show the teacher for editing. Once the problem is acceptable then the teacher will give each student a piece of construction paper and markers to create the story problem and give it color and life.	The teacher will ask students to take out their notebook and solve this problem: On a farm there are cows, chickens and pigs. In the farmers house the farmer can see 6 cow ears, 6 chicken heads and 8 pig eyes. How many legs total from all animals on the farm should the farmer have stomping on his ground? Draw and explain how you solved your answer. The teacher will monitor the students and give guiding questions to those who are

	that a duplicate is the same as a reprinted picture. Then give the students the definition of multiplication to place in their notebooks. The teacher will then write on the board 5+7 and ask the students to draw what 5 + 7 would look like in their notebooks, explain what they draw and to solve. The teacher will monitor and assist students. Then the teacher will write on the board 5 • 7. Explaining that "•" represents multiplication. The teacher will draw five boxes on the board explaining how to read a multiplication situation left to write as five multiplied by seven. The teacher will again remind students about the definition of multiplication, and then duplicate the five boxes seven different times below the first	description in their notebook. The four problems are: 4 · 6 = , 2 · 9 = , 5 · 5 = , and 8 · 1 =. The teacher will monitor and assist any struggling student. If a student's gets finished early the teacher will ask what they can assume with the last problem and to write it in their notebook. When everyone has finished the task the teacher will ask students to volunteer to show how they performed and thought about each situation. The teacher will then ask students what they can assume about the last problem and why anything multiplied by a number one is the number that is being multiplied. Then asks students to create a situation that looks like 0 · 5 =? The teacher will create the example on the board by drawing no boxes and counting five	a problem. One person from each group has all the markers, one person has all the paper and one has all the marbles. The teacher explains that this wasn't supposed to be the case, each person is supposed to have the same amount of materials to accomplish the task. Asks the students if they figure out a way to break down each group to make it fair. The teacher will monitor what each group is doing and ask guiding questions to help and make more rigorous. Next the teacher will ask students to create a multiplication story about what they just did explaining that we had a total and we broke it down but how? The teacher asks the students to draw and explain	Once a pair of students finish their story problem they will switch and solve the others story problem on the backside of the construction paper. The teacher will explain to draw the problem and explain how you solved it. When everyone is finished the teacher will ask the students to write a journal in their notebooks about how they solved their partners problem and the difficulties or successes they had while doing the project.	stuck. When student finishes the questions the teacher will give their exam.

	set of five boxes. The teacher then asks the students what was drawn. The teacher will explain that there is now seven rows of five boxes and asks students to count how many boxes are in the picture. The teacher ends the tutorial by saying 5 multiplied by 7 ends up with 35 duplicated boxes. The teacher then gives another example situation as $6 \cdot 3$. The teacher ask students to draw this situation in their notebook and to explain in words what they found. The teacher will monitor. Finally the teacher will ask students to write a journal entry about their personal definition of multiplication.	spaces down asking how many boxes do we have? The teacher will then ask students to write a journal entry explaining why anything multiplied by 1 is the other number and anything multiplied by zero is zero.	what happened on their construction paper. The teacher will monitor to make sure each group is drawing and explaining $3 \cdot 5 = 15$, $3 \cdot 2 = 6$ and $3 \cdot 4 = 12$. The teacher will ask students to write a journal about another profession like a restaurant owner and how they can use multiplication in their job.		

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Student Activities	Student will to pull out their interactive student notebook (ISN). Student will break down the word multiplication and think what it might mean. Student will write what the word duplicate means and the definition of multiplication in their notebooks. Student will draw what 5 + 7 would look like in their notebooks, explain what they draw and solve. Student will draw boxes in notebook and represent multiplication. Student will to draw guided practice situation in their notebook and explain in words what they found. Finally students will write a journal entry about their personal	Student will take out their interactive student notebook and to re-read the teachers definition of multiplication the example they have entered in their notebook and their own definition. Student will solve four problems on the board in notebook by building the problem with base ten blocks on desk, drawing what they built and then explaining in a number sentence as well as a description. The four problems are: When student finishes early the student will answer what they can assume with the last problem and write it in their notebook. Student will to create a situation that looks like $0 \cdot 5 =?$ Student will write a journal entry explaining why anything	The student will solve three multiplication situations on the board and draw and explain them in their interactive student notebook. Student will be in groups of three and giving each group 15 markers, 12 marbles and 6 pieces of construction paper. Student will solve a problem. One person from each group has all the markers, one person has all the paper and one has all the marbles. Students work as groups to divvy out materials then figure out a way to break down each group to make it fair. Students will create a multiplication story about what they just did explaining that we had a total and	Student will solve two story problems in their interactive student notebook. Students will create their own story problem get teachers approval and recreate story problem on construction paper. Once a pair of students finish their story problem they will switch and solve the others story problem on the backside of the construction paper. Student will write a journal in their notebooks about how they solved their partners problem and the difficulties or successes they had while doing the project.	Student will take out their notebook and solve the farm problem. Student will draw and explain how they solved the situation. Student when finished will be given their exam.

	definition of multiplication.	multiplied by 1 is the other number and anything multiplied by zero is zero.	we broke it down but how? Student will draw and explain what happened on their construction paper. The group will draw and explain $3 \cdot 5 = 15$, $3 \cdot 2 = 6$ and $3 \cdot 4 = 12$. Student will write a journal about another profession like a restaurant owner and how they can use multiplication in their job.		

Multiplying by grouping Assessment

Name_____ Date_____

1. Draw and explain 7 · 5:

2. Draw and explain 4 · 3

3. Draw and explain 6 · 1 :

4. Draw and explain 0 · 5:

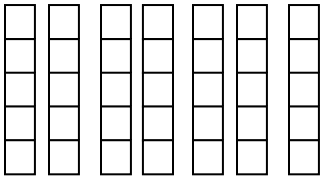
5. Chef Eric has 10 tables with 3 chairs each, how many chairs does Eric have in his restaurant? The volume of a cubic figure is 125 yds^3 what is the length of one side?

6. Dwayne Wade hits 2 three point shots and 5 two point shots in one quarter how many points does he have total in that quarter?

Multiplying by grouping Assessment – Answer Key

1. Draw and explain 7 · 5: (2 points)

7 rows of 5 make 35 boxes
7 multiplied by 5 is 35



2. Draw and explain 4 · 3: (2 points)

4 rows of 3 make 12 stars
4 multiplied by 3 is 12

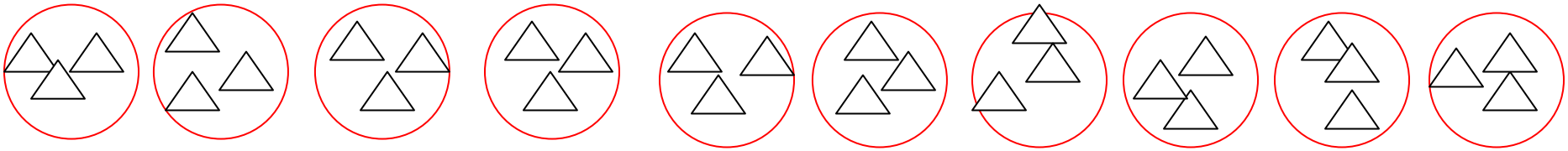
3. Draw and explain 6 · 1 : (2 points)

6 rows of 1 make 6 circles anything multiplied by 1 is the other because you duplicate it once.

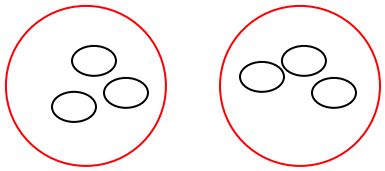
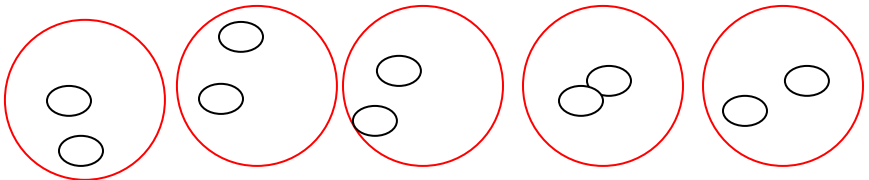
4. Draw and explain 0 · 5: (2 points)

0 rows of 5 is 0 because you cannot duplicate something that doesn't exist.

5. Chef Eric has 10 tables with 3 chairs each, how many chairs does Eric have in his restaurant? (6 points)



10 tables with 3 chairs would be 30 chairs total. 10 multiplied by 3 is 30

6. Dwayne Wade hits 2 three point shots and 5 two point shots in one quarter how many points does he have total in that quarter? (6 points)

2 three point shots are 6 points and 5 two point shots are10 points. 10 points added to 6 points totals 16 points.