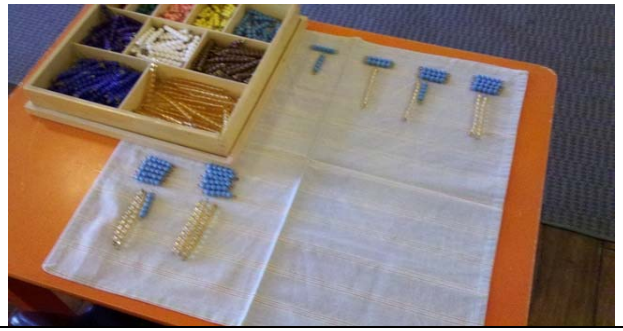
Grade Level	3	**Content Area**	**Mathematics (K-8)**
Course Title (grades 9-12 Only)			
Length of Unit	Each lesson is 15 – 30 minutes	**Time of Year**	Spring
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Addition and subtraction stamp game Bank game multiplication Multiplication in the unit (ones) place Bead Bar work		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	The Montessori materials are focused on giving the student the clear understanding of the reality of what the number represent on paper. While the problem of 9 x 80 might be abstract on paper the principle is very concrete when practiced with the Montessori materials. The goal of the multiplication bead bar for example is to have a subconscious preparation for the fact that the multiplicand remains the same and the multiplier changes. The child realizes that the multiplier is only indicative of how many times a given quantity is to be repeated. The most impressive part of this is that it is subconscious. The child does not need to know what the words mean to understand the concept. This is evident in the very simple dialogue that takes place between the teacher and the student. The concepts are so clearly displayed in the material that the teacher has only to present them correctly for the concept to be created in the child's mind. As in with any activity the concept is then transposed onto paper to give evidence of the concept's mastery.		
Standard Number and Description *List the Number* and full description for the required Standard.*	Grade: 3 3.NBT.3 Domain: Numbers and Operations in Base Ten (NBT) Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic. Standard: #3 - Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and properties of operations.		
Summative Assessment *Describe a cumulative and comprehensive activity, clearly separate from instruction and guided or independent practice, which allows each student to individually demonstrate mastery of the required Standard. A copy of the summative assessment must be attached to the curriculum sample.*	Multiples Research Charts for multiples 2-10 completed Multiplies multiples of 10 by single digit multiplier		
Scoring Scale and Mastery Level *Explain how the assessment is scored, to include points per question, how points are awarded, total points possible, criteria necessary to demonstrate mastery, and grading scale. A copy of*	Elements of Mastery: Student understands meaning of multiples Student can interpret multiples (12, 8, 4 = multiples of four) Student articulates multiples as fixed groups (each group in multiples is exactly the same) Student recognizes patterns in multiples from 2-10. (Multiples of 5 end in zero or 5; multiples of 10 end in zero; multiples of 2 are even numbers; etc.)		

the answer key and scoring rubric (whichever applicable	
Materials/Resources Needed	**Montessori Materials:** Golden Bead Material Skittles (units, tens, etc.) Bead Bars Box of Equation Symbols **Other Materials:** Demonstration rug/space Multiples booklets (2's, 3's, 4's, etc. to 10's) Colored pencils (one color for each bead representation—green = 2's; pink = 3's; etc. Graph paper (1cm x 1cm grid) Numerals in words cards (one-ten; eleven-nineteen; twenty, thirty, forty, etc.) for matching number symbol and/or word to quantity.

** **Standard Number**: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

Lesson (add as needed)	**Instruction**	**Student Activities**
1	During the first lesson the teacher and the child get the materials and bring them to the work table. The teacher announces, "These are the multiplication bead bars." "Will you please unroll the mat?" The teacher then removes the lid and removes a three bead bar, placing it horizontal on the mat. The teacher then asks the student "What is that?" The child will answer "3". "Yes, 3" and count it aloud. The teacher then removes another three bead bar and places it vertically below the top bead bar, and repeats again, "Yes, 3 one time is 3." As the teacher takes out 2 three bead bars and places them horizontal on the mat they say, "If we see 3, 2 times, how many beads do we see?" The child should answer 6, and the teacher repeats this "Yes 6, three 2 times is 6" and then counts them aloud as they remove a six bead bar and place it vertically below the 2 sets of three bead bars. This process is continued while giving the child more parts of the process with each problem. The child is allowed to continue using the material with the exception of 1's and 10's.	The child is observed working with the material. The teacher notes any error in the process. The material will be presented a second time if errors persist. 
2	During the first lesson the child gains experience working with all the numbers. The teacher in the second lesson announces "We are going to do something interesting, let's pick the number 5." The teacher then writes 5 on a paper. Make 5, 10 times." The child should start to line up rows of 5 bead bars counting 1 5's, 2 5's, 3 5's ….10 5's. The teacher says "Let's count them." The child is allowed to count aloud, and the teacher may	The student is given 30 multiplication problems to solve in a work sheet.

	count softly along, at 50 the counting naturally stops. The teacher refers to the paper with the 5 written on it and adds a zero to make it 50. “It is so easy, when we multiply a number by 10, we write the number and add zero.” “Let’s try another.” The teacher has the child pick a number, write it on the paper, and has the child make the problem, and count it. As you are working on the problem the teacher will explain that 5 x 10 and 10 x 5 are the same problem.	
3	The third lessons begins with the teacher saying “Let’s see how many different ways we can make the number 12.” “Can we make it with 2?”The teacher gets out a two bead bar. “How many do we need?” “6.” The teacher then has the child make 6 rows of two bead bars. Once the student has counted the teacher says, “Yes, 6 x 2 = 12.” “How about 3, can we make 3, can we make 12 with 3’s?” The teacher follows the above steps. “How about 4?” The student follows the above steps. Then the teacher asks the student about 5. The student should say no. Follow this process for 6, 7, 8, and 9. The teacher then picks another number and lets the student explore the material.	The child is observed working with the material. The teacher notes any error in the process. The material will be presented a second time if errors persist.
4	The fourth lesson uses the stamp game which the child will have used during the addition and subtraction exercises. The child is familiar with the material. The teacher asks the student, “Do you remember what we do in multiplication?” The teacher proceeds to explain that it is putting together of the same number several times. The teacher then writes a problem. Example 3 x 80. The problem is written as 80, 80, 80. The teacher then has the child get out the quantity in stamps for each number and place it on the table allowing for spaces between the numbers. The teacher then gets out the X sign and places it to the left of the numbers. The teacher then says “Now we will put it all together”, and has the child push the lower two sets of stamps up, meeting and in line with the categories. The teacher then asks the student questions to reveal the answer, “How many units do you have?” “How many tens do you have?” Then the student is asked to write down each of the answers in numbers on the paper. The teacher then says “I will show you another way to write this problem.” The teacher then demonstrates the traditional display of the problem 3 x 80. The teacher then gives the student a prepared list of problems to write and solve.	The student is given 30 multiplication problems to solve in a work sheet.

Paste Summative Assessment Here:

3rd Grade Math Assessment Rubric SAMPLE

Student:	Date:
Standard/Objective: *#3 - Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and*	

properties of operations.			
Criteria for Mastery: 9 out of 12 points	1 = Approaching—needs more practice	2 = Meets standard	3 = Exceeds standard
Student understands meaning of multiples	Demonstrates little or no understanding of concept.	Has one or two errors.	No errors. Performed perfectly.
Student can interpret multiples	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student articulates multiples as fixed groups	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student recognizes patterns in multiples from 2-10. (Multiples of 5 end in zero or 5; multiples of 10 end in zero; multiples of 2 are even numbers; etc.)	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
		TOTAL POINTS	
OBSERVATION NOTES:			

Paste Answer Key/Scoring Rubric Here:

See above for scoring Rubric