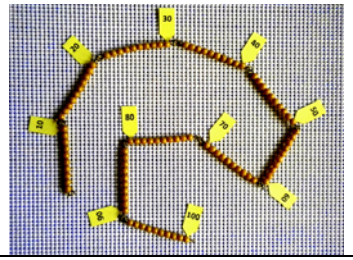
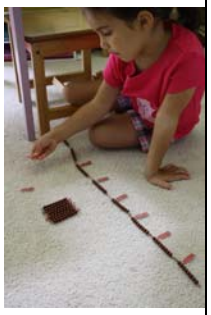
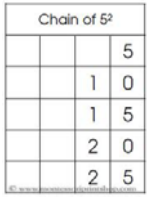
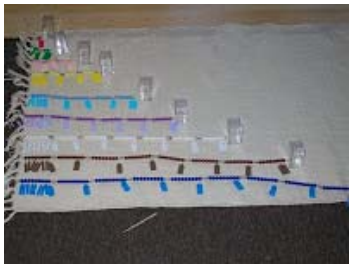
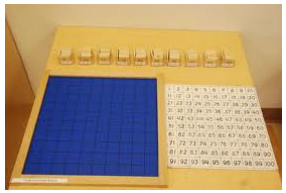
Grade Level	1	**Content Area**	**Mathematics (K-8)**
Course Title (grades 9-12 Only)	n/a		
Length of Unit	Each presentation is 15 to 30 minutes.	**Time of Year**	Fall
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Counting to 100 Linear counting Ten board and teen board		
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.*	In Montessori the hands on approach allows for greater understanding. Because the hand and mind develop so closely together in the first years of development the gain in one often leads to a growth in the other. If the child can develop their use of the hands during the lesson the mind will have a deeper understanding of the concepts. This often happens without the child knowing it. Because hand brain development are heavily correlated the Montessori method lessons often include a physical representation for the hand to manipulate while verbally announcing what the hand is doing. The bead cabinet serves this purpose for many of the concepts related to mathematics. For this particular exercise the student lays out the chain and labels the connections from one bead segment to another. This labeling allows the student to notice the concept of multiples. The beads segments in the bead cabinet come in sections of bead and of equal number (two bead segments of two beads, three bead segments of three beads, and so on through ten.) Each bead segment is also color coded to allow the student rapidly recognize different quantities. The labels for the bead cabinet are different sizes and colors for the same purpose. The student can then see the physical representation of counting by 2's, 3's, 4's, on up to 10's, 100's, and 1000's. This physical hand exercise of laying out the bead sequences and then the labels is then further reinforced with the abstract representation of the beads being written out in number form. The above combination allows for the student to be given a "bead problem", a verbal math problem, or a written math problem and have a very concrete understanding of why 53 is 10 more than 43.		
Standard Number and Description *List the Number* and full description for the required Standard.*	Grade: 1 1.NBT.6 Domain: Numbers and Operations in Base Ten (NBT) Cluster: Use place value understanding and properties of operations to add and subtract. Standard: #6 - Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.		
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*	Student's work—constructed tables w/verbal assessment Completed tables of multiples at 80% accuracy Demonstrates skip counting by 10's to 100 at 80% accuracy counting back from 100 by 10's at 80% accuracy		

of the summative assessment must be attached to the curriculum sample.	
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 the answer key and scoring rubric (whichever applicable*	**Elements of Mastery for Assessment:** Student is able to skip count to 100 by 10's Student is able to count back from 100 by 10's Student is able to use addition as control of error for subtraction Student is able to use subtraction as control of error for addition Student is able to demonstrate/record numerals by 10 to 100 Student is able to match word with quantity for 10's to 100 Student is able to identify various patterns by skip counting by 2's, 3's, 4's, to 10's. Student is able to articulate skip counting process
Materials/Resources Needed	Full bead cabinet – cubes with colored labels, bead chains, and work mat, tray, paper and pencil. Wooden box with wooden tiles with numbers printed on the tiles.

** **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	The bead cabinet consists of a shelf containing the labels in clear cubed containers. Each label has a color coded number which corresponds to the color coded beads. For example the tens are all golden beads and labels. During the first lesson the teacher shows the child the bead cabinet. The teacher shows the child how to properly take the different beads and or cubes down from the cabinet and place them on the work tray. Once the tray is placed in the work. This continues from ten to one hundred. The teacher then arranges the chain by bending and twisting to form the shape of a square. Then the teacher asks the child to straighten out the chain and the child is shown how to take the labels out of the cubed box and shown how to assemble the chain so that the labels show the connection between the quantity of ten and the numeral ten. Then the child and teacher label the rest of the chain so that the entire chain has labels at	The teacher then gives the student a sheet of paper with the numbers one through one hundred labeled inside a square in lines of ten. Then the teacher has the student circle the tens. The student then writes on a separate strip of paper the circled items.

	every ten bead connection. The teacher then shows the child counting by ten. The chain is counted forward by ten and backward by ten. The child demonstrates this back to the teacher. 	
2	  During the second lesson the teacher requests that the student select a skip counting chain. The teacher suggests using the or five chain by saying "Today we are going to work with the five chain." "What color is the five chain?" Next the teacher instructs the child to put the chain the cube, the labels on the tray. The teacher then asks the child "Do you remember how we counted the hundred chain?" Count aloud with the child listening to hear their counting skills, while placing the labels on the chain. Once they are counted and labeled by five the teacher with the student counts forward by five and backward by five.	The teacher gives the student the following paper and encourages the student to write down the five chain in its appropriate sequence (5, 10, 15, 20, and so on). Teacher then checks the sheet to make sure the student has mastered the concept.  Chain of 5 5 10 15 20 25
3	Next the teacher uses shows the child the skip counting for each of the bead segments. When the child has been shown all of the different segments the teacher shows the child to do all of them at once on the work area mat. 	 The student uses a blank number board and numbered tiles to give numbered representations to the beads laid out in this lesson. For each one of the bead labels the student puts a number tile on the blank board.

Paste Summative Assessment Here:

Student's work—constructed tables w/verbal assessment
Completed tables of multiples at 80% accuracy
Demonstrates
skip counting by 10's to 100 at 80% accuracy
counting back from 100 by 10's at 80% accuracy

Paste Answer Key/Scoring Rubric Here:
Total points possible – 24. Total needed for mastery – 20.

1st Grade Math Assessment Rubric SAMPLE

Student:	Date:		
Text Structure: Work with numbers in multiples of 10 in the range of 10-90 to gain foundation for place value.			
Standard/Objective: #6 Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.			
Criteria for Mastery: 20 out of 24 points	1 = Approaching—needs more practice	2 = Meets standard	3 = Exceeds standard
Student is able to skip count to 100 by 10's	Demonstrates little or no understanding of concept.	Has one or two errors.	No errors. Performed perfectly.
Student is able to count back from 100 by 10's	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student is able to use addition as control of error for subtraction	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student is able to use subtraction as control of error for addition	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student is able to demonstrate/record numerals by 10 to 100	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.

Student is able to match word with quantity for 10's to 100	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student is able to identify various patterns by skip counting by 2's, 3's, 4's, to 10's.	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
Student is able to articulate skip counting process	Demonstrates little or no understanding of concept	Has one or two errors.	No errors. Performed perfectly.
		TOTAL POINTS	
OBSERVATION NOTES:			