Curriculum Sample Template

Max. 8 Pages

Grade Level	3rd grade	**Content Area**	Mathematics
Course Title (grades 9-12 Only)	N/A		
Length of Unit	4 days + 1 day for the summative assessment	**Time of Year**	2nd quarter
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students will understand the concept of multiplication as the addition of groups of numbers. Students will be able to multiply single-digit numbers from 1-9 fluently. Students will be able to add and subtract numbers within 1000. Students will understand and be able to model the concept of place value, through the one hundredths place.		
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.*	This unit aligns to the Core Knowledge Sequence for Math, to the sequence for Singapore Math, and to the 2010 AZ Math Standards. The domain of Numbers and Number Sense (CK) and Number and Operations in Base Ten (CCSS) will be taught at the Third Grade level. The skill of computing numbers is revisited at increasingly higher levels of rigor as set forth in the ADE 2010 Mathematics Standards (CCSS). The content knowledge of number computation and number sense is spiraled throughout the Core Knowledge Sequence from Kindergarten to 8^{6h} Grade, and then further applied through Pre-Algebra and Algebra in 7th and 8th Grade. As described in the Program of Instruction, cooperative learning will take place throughout this unit. Each lesson includes a combination of teacher-led instruction, small group interaction, independent practice, and ongoing assessment. Prior to beginning instruction, the teacher will administer an aligned pre-test to assess student understanding, and use data from this to target individual students' needs throughout the unit. Students will individually graph their results on both the pre- and post-tests, and record their results in an individual portfolio, which serves as a visual representation of their progress towards their "Big Goal" in Math.		
Standard Number and Description *List the Number* and full description for the required Standard.*	3. NBT. 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.*	At the end of this unit, students will complete a ten-item summative assessment. The assessment will consist of three parts. In part I, students must identify the factors and product of a multiplication problem. In Part II, students must find the value of multiplication facts containing one 1-digit factor and one two-digit factor that is a multiple of ten. In Part III, students must solve word problems by finding the factors and multiplying. Please see a copy of the assessment attached.		
Scoring Scale and Mastery Level *Explain how the assessment is scored, to include points per question, how points are awarded,*	Each item will be worth one point, for a total of 10 points. Items will be scored according to an answer key (see provided). Grading for the assessment will be based on the following scale: 0-5= Falls Far Below; 6-7=Approaching; 8-9= Meets; 10= Exceeds. According to our program of instruction, 80% will indicate mastery. Thus, a score of 8, 9,		

total points possible, criteria necessary to demonstrate mastery, and grading scale. A copy of the answer key and scoring rubric (whichever applicable) must be attached to the curriculum sample.	or 10 points will indicate mastery of this standard.
Materials/Resources Needed	Primary Mathematics Teacher's Guide, number discs, place value chart, document camera, student white boards and markers.

Lesson (add as needed)	**Instruction** TW= Teacher will; SW = Student will; TPS= Think, Pair, Share; INM = Introduction to new material; CFU = Check for understanding; GP= Guided practice; IP = Independent practice	**Student Activities**
1	**Activation of Prior Knowledge:** TW lead students through a review of their pre-test for this unit. TW allow time for each student to graph his/her result on the pre-test. TW lead a discussion of what students already know, and what they will know by the time they take the post-test. **Objective:** Students will relate the terms "product" and "factors" to multiplication. **INM:** Key Points: 1. To understand multiplication, we have to understand the vocabulary that goes with it. 2. The "factors" in a multiplication problem are the numbers that are multiplied together. 3. The "product" of a multiplication problem is the answer, or what the two factors produce when multiplied. **Modeling:** TW direct students to work out a simple, already-mastered multiplication fact (1 x 2). TW tell students that the "1" and the "2" in this problem are called the factors. TW check for understanding by showing another problem (2 x 3 = 6) and asking students what the factors are. Then, TW go back to the first problem, and explain that 1 x 2 produces the answer of "2" and will show this with number discs. TW explain that the answer in a multiplication problem is called the "product." TW check for understanding by asking students what the product in the second problem is. TW project a word problem on the board: "Mr. Garcia bough three bananas. They each cost $1. How much money did he spend?" TW write this problem in number sentence form, and use the "think aloud" strategy to describe which numbers are the factors (3 and 1 bananas) and which is the product ($3).	SW graph the results of their individual pre-test score in their portfolio. SW analyze what they already know, and see what they'll learn in this unit. SW repeat today's objective, and discuss how it will help them reach their Big Goal in Math. SW actively listen to today's key points. SW actively engage as the teacher models what the factors and products are. SW see that the factors are the two numbers multiplied together, and the product is the answer. SW watch as the teacher solves a word problem by identifying the factors and finding the product. SW answer questions to demonstrate their understanding of the vocabulary.

	Guided Practice: TW direct students to work in groups of three. TW show five different single digit multiplication facts on the document camera, and students will Think-Pair-Share which numbers are the factors, and which are the quotients. TW monitor each group as they record their answers on white boards. TW direct students to share their answers with the class, and will modify instruction as needed. Then, TW direct each group to walk to a specified piece of chart paper in the room (TW have prepared these before the lesson). Each piece of chart paper will include a word problem. TW direct students to work together to write the number sentence for that problem, the share with the class which number are the factors and which is the product.	SW work in groups of three. SW TPS with their groups, analyzing each of the problems on the board, and recording the factors and product for each on their individual white boards. Then, SW walk to their assigned word problem. They will read the problem, and discuss with their team to identify the factors and the product.
	Independent Practice: TW direct students to complete a worksheet, on which they will match the terms "product" and "factor" to numbers in multiplication sentences, as well as write the relevant number sentence for two word problems, and identify the factors and products in the number sentence they create.	SW independently complete the practice worksheet. They will match the terms "product" and "factor" to numbers in the multiplication facts provided.
	Assessment: TW use the Independent Assessment to track student mastery of the objective in a data tracker. The teacher will remediate for any student who does not show mastery of this vocabulary.	Any student who did not master the academic vocabulary of "product" and "factor" will meet with the teacher in a small group setting for scaffolding and support.
	Closure: TW refer class back to today's objective. TW direct students to TPS about what they learned today. TW assign the homework for tonight, which will include extra practice in identifying the products and factors in multiplication problems.	SW TPS with a partner to recall what they learned today. Then, SW listen to their homework assignment for tonight.
2	**Activation of Prior Knowledge:** TW lead the class in a review of last night's homework. Then, TW direct students to TPS what they learned about yesterday. TW also refresh students' memory on place value, especially ones and tens.	SW review last night's homework, and ask any questions they may still have about the terms "factor" and "product." Then, SW TPS to discuss what they learned yesterday.
	Objective: Students will multiply tens by a 1-digit number. (This lesson will be spread out over two days).	SW repeat the lesson objective, and discuss how it will help them achieve their Big Goal in Math.
	INM: Key Points: 1. We use the same algorithm, or method, for multiplying two-digit number as we do with one-digit numbers. 2. A multiple of ten up to 90 is any of the following numbers: 10, 20, 30, 40,	SW actively listen as the teacher introduces today's key points.

	50, 60, 70, 80, or 90. 3. When we multiply these multiples of ten by a single-digit number, the answer will always be another multiple of ten. **Modeling:** TW display two groups of three ones with number discs on the document camera. TW ask students how many ones there are altogether (6). TW write: "3 ones x 2 = 6 ones" on the board. TW explain that three times two is six. TW write "3 x 2 = 6" on the board. TW check for understanding. Then, TW display two groups of three tens on the document camera. TW write "3 tens x 2 = 6 tens" on the board. TW tell students that 30 x 2 = 60. TW write "30 x 2 = 60" on the board. TW check for understanding. TW go through two more examples for students in exactly the same way (4 x 3, 40 x 3 and 6 x 4, 60 x 4). **Guided Practice:** TW provide each pair of students with number discs, in ones and tens. TW walk students through five practice problems, first directing them to show a single digit problem, then the corresponding double digit problem. Each pair will use the discs and write the final product for each problem on their individual whiteboards, and show the teacher. TW monitor each group's work, and modify instruction as needed. This is where the first day of the lesson will end. On the second day, TW begin the lesson with more guided practice problems, directing students to work with a different partner from yesterday to work through more of the problems. **Independent Practice:** TW direct students to complete their textbook pages, requiring them to multiply two-digit multiples of ten by a single-digit number. TW allow students to use number discs as needed. **Assessment:** TW use the Independent Assessment to track student mastery of the objective in a data tracker. The teacher will remediate for any student who does not show mastery. **Closure:** TW refer class back to the lesson objective. TW direct students to TPS what they've learned so far this unit. Then, TW assign tonight's homework, which will be a review of this objective.	SW actively engage as the teacher models how to solve multiplication problems with 1-digit and 2-digit factors. SW see how the teacher uses the one digit multiplication fact to aid in solving the similar 2-digit problem. SW see how the teacher uses the place value discs to model each problem and find the product. SW answer questions to demonstrate understanding. SW work in pairs. SW use the number discs to work through the five practice problems on the board together. SW use the concept of "ones" and "tens" to solve the problems, and write the product for each on their whiteboards. SW explain their thought process to the teacher, as she comes around to work with each group. After completing these five problems, the first day of the lesson will end. On the second day of the lesson, students will work with a new partner. They will again use the ones and tens number discs to help them solve ten practice problems. SW ask and answer questions as they arrive. SW complete the textbook pages independently, to show their understanding of how to solve multiplication facts with multiples of ten and 1-digit numbers. SW use their number discs as needed. Any student who does not show adequate mastery of this objective will meet with the teacher in a small group setting. SW TPS with a partner about what they've learned so far in this unit. Then, SW listen to their homework assignment for tonight.
3	**Activation of Prior Knowledge:** TW guide students through a review of last night's homework. Then, TW give students number discs, and direct them to solve the following problems: 30 x 2; 80 x 3; and 20 x 7. TW	SW review last night's homework. Then, SW complete three practice problems and explain their answers.

	facilitate discussion around how each student approached the solution to each problem.	
	Objective: Students will review multiplication of tens by a 1-digit number, and solve word problems.	SW repeat today's objective, and discuss how it will help them reach their Big Goal in Math.
	INM: Key Points: 1. We use the same algorithm, or system, to solve one digit multiplication and two digit multiplication facts. 2. When we multiply these multiples of ten by a single-digit number, the answer will always be another multiple of ten. 3. We can use place value (ones and tens) to help us multiply larger numbers. 4. We can solve word problems by using what we know about multiplying multiples of ten by 1-digit numbers.	SW actively listen to today's key points.
	Modeling: TW use number discs to model 4 x 5 (20) and 40 x 5 (200). TW use the "think aloud" method to illustrate how these two problems are related, and how thinking about place value helps us solve them and check our answer. TW explain that we can identify factors and find the product of problems when we read word problems. TW display the following word problem on the board: "Stacey has 3 books. Each book has 10 pages. How many pages are there in all?" TW explain that 3 and 10 are the factors, and use number discs to illustrate the problem. Then, TW show students how to get the product (30). TW check for understanding. TW model one more word problem, and use the "think aloud" strategy to model finding the factors and product.	SW watch as the teacher models some multiplication facts they learned to solve over the past few days. Then, SW see the teacher use this skill to solve word problems. SW answer questions to demonstrate understanding.
	Guided Practice: TW direct students to work in pairs. TW project one word problem using the document camera. TW direct students to read the word problem, and work with their partner to identify the factors and use the number discs to find the product. TW monitor each group's work, and modify instruction as needed. TW repeat this process with three more practice problems.	SW work with a partner. SW share number discs. SW work together to read each work problem, and model it with their discs. Then, SW discus with one another how to solve the problem, and write the entire number sentence on the board. SW share their answers with the class, and use academic vocabulary when answering.
	Independent Practice: TW assign students to complete the independent practice pages in their student workbook. Here, they will be asked to read and solve ten word problems, in which one fact is a single digit number, and the other is a two-digit multiple of ten.	SW complete ten word problems independently, using their tens numbers discs if needed.
	Assessment: TW use the Independent Assessment to track student	Any student who does not show adequate mastery of this skill will meet

	mastery of the objective in a data tracker. The teacher will remediate for any student who does not show mastery. **Closure:** TW refer class back to today's objective. TW direct students to TPS about what they've learned in this multiplication unit. TW ask students to discuss what their goal is for the end of unit test tomorrow. TW assign homework, which will be a review of everything learned in this unit.	with the teacher in a small group setting. SW share what they've learned to day with a partner and with the class. Then, SW discuss how this learning will help them on their post-test tomorrow, and explain what their goals are for the test. Finally, SW listen to their homework assignment.

Math Unit Summative Assessment

Name: _____

ADE 2010 ELA Standard (CCSS): 3. NBT. 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.

Part I: Fill in the blanks.

A) 4 x 30 = 120 Write the factors here: _____, _____ Write the product here: _____

Part 2: Find the product of each of the following. You may use your number discs.

B) 50 x 5 =_____
C) 40 x 3 = _____
D) 20 x 8 = _____
E) 80 x 4 = _____
F) 90 x 6 = _____
G) 10 x 9 = _____
H) 40 x 7 = _____

Part 3: Read each word problem, and solve. You may use number discs.

I) Jaime arranged four rows of toy soldiers. He put 40 toy soldiers in each row. How many toy soldiers did Jaime have in all?

J) Stephanie had 8 empty jars. She put 30 bugs in each jar. How many bugs did she have altogether?

Answer Key
A. Factors: 4, 30; Product: 120
B. 250
C. 120
D. 160
E. 320
F. 540
G. 90
H. 280
I. 4 x 40 = 160 toy soldiers
J. 8 x 30 = 240 bugs

Score: _____/10 Grading Scale: 0-5 points= Falls Far Below; 6-7 points= Approaches; 8-9 points= Meets; 10 points= Exceeds