Curriculum Sample Template

Max. 8 Pages

Grade Level	Grade 5 Math	**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**	3rd quarter
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Standards: Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. Read, write, and compare decimals to thousandths. Use place value understanding to round decimals to any 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 and to the sequence for Singapore Math. The domain of Numbers and Number Sense (CK) and Number and Operations in Base Ten (CCSS) will be taught at the 5th Grade g level. The skill of performing operations with decimals is revisited at increasingly higher levels of rigor as set forth in the ADE 2010 Mathematics Standards (CCSS). The content knowledge of number and number sense is spiraled throughout the Core Knowledge Sequence from Kindergarten to 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 graph 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.*	5. NBT. 7 Perform operations with multi-digit whole numbers and with decimals to hundredths. Add, subtract, multiply, and divide decimals to hundredths, 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 of the summative assessment must be attached to the curriculum sample.*	At the end of this unit, students will be given a summative assessment which will consist of two parts. In each section, students must apply what they've learned about adding, subtracting, multiplication and division of decimals to the hundredths place to solve problems. There are a total of eight items on the assessment. Please see attached.		
Scoring Scale and Mastery Level *Explain how the assessment is scored,*	Each item will be worth one point, for a total of 8 points. Items will be scored according to an answer key (see provided). Grading for the assessment will be based on the following scale: 0-4= Falls Far Below; 5-6=Approaching;		

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) must be attached to the curriculum sample.	7= Meets; 8= Exceeds. According to our program of instruction, 80% will indicate mastery. Thus, a score of 8 or 9 points will indicate mastery of this standard.
Materials/Resources Needed	Singapore Math 4b teacher's guide, 4b student textbook, place value charts, decimal discs, decimal cubes, white boards

* ***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** **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 direct students to review and graph their scores of the Math pre-test. TW guide students through creating a KWL chart based on the math test, identifying things they already know about addition of decimals, as well as skills they want to learn. TW give students addition and subtraction mental math problems. The mental math problems will be addition and subtraction of whole numbers and money. **Objective:** Students will add tenths and hundredths to decimal numbers of up to 2-places. They will use estimation to check reasonableness of answers. **INM:** Key Points: 1) Whole place value is to the left of decimal point and the part (or decimal) is to the right. 2) A decimal is a part of a whole. 3) Vocabulary terms: addends and sum. **Modeling:** TW put a number bond on the board. Then point out to students that the whole number part is split from the decimal part, as shown with the number bond. The tenths added together, the sum renamed as tens and ones, and then the sum is added back to the whole number part. Give each student a place value chart and number discs. Give the problem 3.6 + 1.8. (Discuss vocabulary terms) Step through the problem, showing each step with number discs on the place value chart and also in the written format. Have the students place number discs on the place value charts with the teacher.	SW review their homework from last night, and ask questions when necessary. SW use their mental math skills to answer the problems presented. 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 have a place value chart and number discs. SW place number discs on place value charts and follow the teachers lead.

	Step 1: Write the problem vertically, lining up the decimal point s and the place values. Add the tenths. 6 tenths + 8 tenths = 14 tenths=1 one and 4 tenths. (Replace ten .1 discs with a 1 disc.) Write the 1 above the ones column and the tenths below the line, in the tenths place. Step 2: Write the decimal point in the answer. Step 3: Add the ones, including the one that came from renaming. Write the total in the ones place. Check to see if the answer is reasonable. 3.6 + 1.8 is less than 4 + 2 =6, so 5.4 is a reasonable answer. (54 would not be reasonable) Now illustrate addition problems involving 2-place decimal numbers, using a place value chart and number discs. Step through the problem 2.68 +4.94, showing each step with number discs on the place value chart and also in the written format. Repeat steps above for problem. **Guided Practice:** TW provide number discs and a decimal number cube to groups of four students. Each player starts with five 1- discs and five .1 discs. They write down 5.5. Players take turn throwing the number cube. They collect a number of .1 discs according to the number showing on the number cube, trading in ten .1 discs for a 1 disc. The player writes an equation for each throw. The player who collects ten 1 discs first wins. Teacher will monitor groups to assess if the equations are correct and if they students are adding the decimals correctly. **Independent Practice:** TW assign 4b textbook page 33 task 7 and page 34 task 10. The independent practice focuses on independent learning of addition of decimals. It emphasizes correct placement of the decimal point. The problems start easier and progressively become more difficult. TW provide scaffolding and support as needed. When all students have completed exercise 17 the teacher will give the correct answers and answers any questions. **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 main group and have student share what they learned today. Give students 4b Singapore Math workbook exercises 17 and 18 to complete before class tomorrow. (e.g. TW assign relevant homework, which will be this lesson's corresponding page in students' Singapore Math workbook.)	SW play game in groups of four. Students will throw decimal number cube and add to 5.5. The students will replace number discs with higher value discs when necessary. SW complete 4b textbook page 33, task , and page 34, task 10. They will independently complete activity, working on mastery of addition of decimals. Problems will start off easier and increase in difficulty.

2	**Activation of Prior Knowledge:** TW review and correct homework from the night before. Review regrouping with subtraction of whole numbers. TW review homework from the night before. **Objective:** Students will subtract 1 and 2 place decimal numbers using the subtraction algorithm. They will use estimation to check reasonableness of answers. **INM:** Key Points: 1.) Subtraction and addition are the inverse of each other. 2.)Vocabulary terms: minuend, subtrahend and difference. **Modeling:** TW use number discs and a place-value chart to illustrate subtraction of 1-place decimal numbers. Students will have number discs and place value charts so they can work with the teacher. Write the problem 4.3 - 1.8 on the board. Have students rewrite the problem vertically on their whiteboards. Step 1: Since there are not enough tenths to subtract 8 tenths, replace a 1 disc with ten .1 discs. On the written problem rename 4 ones 3 tenths as 3 ones 13 tenths. Step 2: Subtract the tenths. Write the difference in the tenths column under the line. Put in the decimal point. Step 3: Subtract the ones. Write the difference in the ones column below the line. Write the problem, 5 - 1.2, showing a 1 place decimal number subtracted from a whole number. Have students rewrite the problem in vertical format. Make sure the students see that the digits are aligned with the place value. They should put a decimal point and add a 0 in the tenths place for the whole number. Students rename 5 ones as 4 ones, 10 tenths and then subtract. Have the students estimate 5-1 =4 and 5 - 1.2 = 3.8 so there answer is correct. Then proceed to subtraction of 2-place decimal numbers. TW use number discs to illustrate subtraction of 2-place decimal numbers. Students will continue to use their place value charts and number discs to follow along. Write the problem 6.02 - 2.49. Since there are not enough hundredths to subtract 9 hundredths, replace a 1 disc with ten .01 discs. On the written problem, rename 2 hundredths as 12 hundredths and 6 ones as 5 ones and 9 tenths. Make sure the place values are aligned. Have students work through the problem 9.20 - 2.49 on their whiteboards to check for understanding. **Guided Practice:** TW provide laminated pictures of common items with	SW review their homework from last night, and ask questions when necessary. Students will review several subtraction problems with regrouping to prepare for the lesson today. SW have number discs and place value charts so they can work with the teacher. They will record the problem in a vertical format. 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.

	prices attached. The students will be given $10.27 to start. They will have to combine and purchase items they choose. The student will be required to complete three purchases and show equations to teacher on the whiteboard. **Independent Practice:** TW assign 4b textbook page 38 and 39, tasks 24 and 26-27. The independent practice will practice subtraction of decimals. The independent practice will include several word problems to test students skill level and understanding of concept. TW provide scaffolding and support 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 activities done, sharing what they learned today. TW assign Singapore math workbook 4b workbook exercise 22 and 23 for homework. . (e.g. TW assign relevant homework, which will be this lesson's corresponding page in students' Singapore Math workbook.)	SW use pictures with prices attached and purchase items, subtracting the values from the amount given to them, $10.27. They will combine purchases and complete three equations on a whiteboard. SW complete in class assignments with teacher scaffolding and support as needed. SW complete homework for class tomorrow.
3	**Activation of Prior Knowledge:** TW will have students complete mental math problems in addition and subtraction of decimals. Students will need work on a timed 3 minute sprint of addition and subtraction of decimals. TW review homework from the night before. **Objective:** Students will multiply decimal numbers by 1 and 2 digit whole numbers. They will use estimation to check reasonableness of answers. **INM:** Key Points: 1.) Understanding place value 2.) Vocabulary: factors and sum. 3.) The decimal is a part of the whole. **Modeling:** TW illustrate multiplication of a 1-place decimal by a whole number using number discs. Students should have a place value chart and number discs so they can follow the steps. Write the problem 16.8 x 3 in horizontal format. Remind students that we take the number in each place value and multiply it by 3, and then add the parts together. Write the problem in vertical format and step through the solution, illustrating with number discs. Put one 10-disc, six 1-discs, and eight .1 discs on the chart. Step 1: Multiply 8 tenths by 3. Triple the number of .1 discs. 3 x 8 = 24 tenths. Remove twenty .1 discs and put two 1 discs at the top of the chart in the ones column. Step 2: Multiply 6 ones by 3. Triple the six 1 discs. Remind students that we not also triple the 2 discs we	SW review their homework from last night, and ask questions when necessary. SW complete mental math problems and sprint. Students will have place value charts and decimal discs to follow along with teacher. SW repeat today's objective, and discuss how it will help them reach

	renamed; they are part of the answer from multiplying the tenths. 6 ones x 3 = 18 ones. Add to the 2 ones to get 20 ones. Replace the 20 ones with two tens. Step 3: Multiply 1 ten by 3. Triple the one 10-disc. With the 2 from multiplying ones there are now five 10-discs. Point out that we have the same answer this way as we got by multiplying each place value separately and then adding up the products. Illustrate multiplication of a 2-place decimal number by a whole number. The way we multiply a 2- place decimal number by a whole number is the same as with 1- place decimal numbers, but now we start calculating with the hundredths, not the tenths. Go through the steps with number discs. Remind students to estimate answer to see if the answer they received on the problem is close. Otherwise they need to check their math and redo. **Guided Practice:** TW place the following problems on the whiteboard: Problem Estimate Answer 3.2 x 6 30.2 x 6 2.2 x 5 14.2 x 3 **Independent Practice:** TW assign Singapore Math textbook pages 49 and 50, tasks 9-14. The assignment will provide practice for multiplication of decimals to the tenths and hundredths place. TW provide scaffolding and support 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 lesson and into a group encouraging student to share what they learned today. Teacher will assign Singapore Math workbook exercises 29, 30 and 31 for homework. . (e.g. TW assign relevant homework, which will be this lesson's corresponding page in students' Singapore Math workbook.)	their Big Goal in Math. SW actively listen to today's key points. SW complete problems on their whiteboards. Assigned students will fill in their answers on the main whiteboard. Other students will look to see if they have similar or different answers and discuss any conflicts results. SW complete independent practice assignment in class. Problems will start out easier and increase in difficulty. SW complete homework for the next class period.
4	**Activation of Prior Knowledge:** TW have students participate in mental math problems of addition, subtraction and multiplication of decimals. TW then give a 3-minute sprint with equations using addition, subtraction and multiplication of decimals. TW then review homework from the previous lesson. **Objective:** Students will divide decimal numbers by 1 and 2 digit whole numbers. Give quotients as decimal numbers. Use estimation to check	SW review their homework from last night, and ask questions when necessary. SW participate in mental math activities and work to complete sprint in 3 minutes. SW repeat today's objective, and discuss how it will help them reach

	reasonableness of answers. **INM:** Key Points: 1.) The dividend is the quantity to be divided and the divisor is the quantity by which another quantity is to be divided. 2.) Quotient can be expresses as a whole number with a remainder, a whole number with a fraction or a whole number with a decimal. **Modeling:** TW display number discs to illustrate division of tenths and hundredths by a whole number (without a remainder). Students should have place value cards and number discs. Display 15 1-discs and ask students how they would divide them by 3. Rearrange the discs in an array. Have students write "15 ones ÷ 3 = 5 ones" and the division equation in both the horizontal and vertical format. Now display fifteen .1 discs and say they are to be divided by 3. Write "15 tenths ÷ 3 = 5 tenths" on the whiteboard in horizontal and vertical format. When we write the equation in the vertical format, we align the decimal point of the answer with the decimal point of the number we are dividing (the dividend). Point out that .5 X 3 = 1.5 Now display fifteen .01 discs and say they are to be divided by 3. Write "15 hundredths ÷ 3 = 5 hundredths" in both the horizontal and vertical formats. The decimal points of the number we are dividing by and of the answer have to be aligned in the vertical format. Make sure students see the relationship between the three equations. To solve .15 ÷ 3, they can think of the answer to 15 ÷ 3 and then determine where to put the decimal point. Display or draw two 1-discs and ask students for suggestions on how to divide this by 5. We cannot divide the two 1-discs into 5 equal groups. Lead them to see that they can rename each 1-disc as twenty .1 discs. We can put them into 5 equal groups. 20 tenths ÷ 5 = 4 tenths. Show how to record this vertically. 5 does not go into 2. So, we write a decimal and add a 0 after it to show 20 tenths. Write a decimal above the line as well. Then write 4 after it to show that there are 4 tenths in each group. Display twenty .01 discs, and contine with each step as before to find .2 ÷ 5 = .04 **Guided Practice:** TW write the following problems on the board. Problem Estimate Answer .36 ÷ 6 3.6 ÷ 6 2.5 ÷ 5 39.3 ÷ 3	their Big Goal in Math. SW actively listen to today's key points. SW use place value charts and number discs to follow teacher's examples. SW complete problems on their whiteboards. Select students will fill in their answers on the board. The teacher and students will discuss if there is any dispute of the answers on the board and if there are any questions. SW will work in the textbook on tasks 8 - 10.

	Independent Practice: TW assign Singapore Math textbook 4b pg. 56, task 8-10. Assignment provides independent practice on division of decimals. Some problems require students to recall inverse property rules between multiplication and division. TW provide scaffolding and support 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 group and have students share what they learned today. TW assign Singapore Math workbook exercises 34 and 35 for homework. .	Students will complete homework and bring it to next class.

Paste Summative Assessment Here:
Name: _____
ADE 2010 MA Standard CCSS:
5. NBT. 7 Perform operations with multi-digit whole numbers and with decimals to hundredths.
Add, subtract, multiply, and divide decimals to hundredths, 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.

Solve.
(a) 26.45 + 29.73 (b) 4.83 + 0.6 (c) 2.3 – 0.37 (d) 40 – 0.08

(e) 23.73 x 7 (f) 4 x 49.08

Give the answer correct to 1 decimal place.
(g) 42.3 ÷ 3 (h) 68.31 ÷ 8

Paste Answer Key/Scoring Rubric Here:
(a) 56.18 (b) 5.43 (c) 1.93 (d) 39.92

(e) 166.11 (f) 196.32 (g) 14.1 (h) 9.7

Score: _____/8 Grading Scale: 0-4 points= Falls Far Below; 5 points= Approaches; 6-7 points= Meets; 8 points= Exceeds