Curriculum Sample Template
Max. 8 Pages

Grade Level	Seventh 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 be on grade level and will have a working knowledge of percents, decimals, fractions, and how they relate to one another. They will have a conceptual understanding of each of these numerical forms and be able to translate between the three with ease. Students will also understand numerical expressions and equations and how they relate to word problems.		
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 sequence for Singapore Math, and to the 2010 AZ Math Standards. The domain of Pre-Algebra for Expressions and Equations will be taught at the 7th Grade level. The skill of solving multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form is revisited at increasingly higher levels of rigor as set forth in the ADE 2010 Mathematics Standards (CCSS), and taught through Core Knowledge and Singapore Math. The content knowledge of Pre-Algebra is spiraled throughout the Core Knowledge Sequence from 5th to 7th grade, and then Algebra in 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.*	7. EE. 3 Solve real-life and mathematical problems using numerical and algebraic expressions and equations. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.		

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.*	Students will complete a 10 question open-response summative to assess their ability to understand word problems involving percents, decimals, and/or fractions and be able to apply properties of operations in order to solve the problems. The assessment will also test students' knowledge of translating between percents, decimals, and fractions and their ability to estimate answers given the information in the problem. The summative is attached.
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) must be attached to the curriculum sample.*	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= Meets; 9-10= Exceeds. According to our program of instruction, 80% will indicate mastery. Thus, a score of 8-10 points will indicate mastery of this standard.
Materials/Resources Needed	Construction paper, white boards/markers, poster paper, notebooks, worksheets

* ***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 review concepts of percents, decimals, and fractions learned in the previous unit and relate it to the upcoming unit. Students will take their previous knowledge and apply it to real-world situations that involve percents, decimals, and fractions. **Objective:** Students will be able to convert between percents, decimals, and fractions **INM:** Key Points: Percents to fractions 1. Write the percentage as the numerator over 100 in the denominator. 2. Drop the percent sign. 3. Simplify as usual. Percents to decimals 1. Move decimal two places to the left. 2. Drop the percent sign. Decimal to percent 1. Move decimal two places to the right.	**Do Now:** SW review basic concepts of a percents, decimals, and fractions by answering 7 review problems from the previous unit. SW repeat today's objective and discuss with a partner what that means based off of their current knowledge. SW take notes on their guided notes worksheet and work through problems as the teacher models.

<table>
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<td></td>
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2. Add percent sign.
Modeling: TW begin by modeling the conceptual understanding of percents, decimals, and fractions by discussing the slices of a pizza.

TW then model key points by walking students through problems that convert between percents, decimals, and fractions. TW model how students should fill out their table that organizes the information (see below). TW connect the previous knowledge by discussing the explaining the connection between percents, decimals, and fractions.
<table>
<tr><td>Percent</td><td>Decimal</td><td>Fraction</td></tr>
<tr><td>35%</td><td></td><td></td></tr>
<tr><td></td><td>0.79</td><td></td></tr>
<tr><td></td><td></td><td>1/2</td></tr>
</table>
Guided Practice: TW facilitate guided practice where students cut paper pizzas into slices and fill out a table like the one above. TW walk around and monitor as needed.

Independent Practice: TW instruct students on how to create a “menu” at a pizza parlor. 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 the white board and the pizza menus, sharing what they learned today.
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SW complete the table and notes as teacher models.

Guided Practice: SW cut pizzas into slices and fill out a table that outlines percents, decimals, and fractions. SW “eat” different amounts of pizza and write the corresponding values in the table. SW then switch their pizzas (which will have different numbers of slices) and complete another table.

Independent Practice: SW design a menu that consists of pizzas with varying numbers of pizza slices. SW complete tables that outline the percents, decimals, and fractions for eating one slice of pizza, two slices of pizza, and 3 slices of pizza.

Assessment: SW complete the assessment within the allotted time period.
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Activation of Prior Knowledge: TW have students take out their homework and will review any problems that were most commonly missed. TW answer questions and monitor student progress.

Objective: Students will be able to evaluate a written expression by translating it into an algebraic expression
INM: Key Points:
1. Circle the key words in the expression that relate to an operation (adding, subtracting, multiplying, or dividing)
2. Write the algebraic expression using numbers, variables, and signs/operations
3. Solve and simplify (if necessary)
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Do Now: SW review basic concepts of a percents, decimals, and fractions by answering 7 review problems from the previous day.

SW repeat today’s objective and discuss with a partner what that means based off of their current knowledge.
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	Modeling: TW model how to translate a written expression into words by identifying words that represent an operation. Words that mean addition→ increased by, altogether, together, in total, more than, plus, sum. Example of a phrase→ The sum of a number and 4→ x + 4, a number increased by 1.2 → x + 1.2, the sum or a number and 8 → x + 8 Words that mean subtraction→ difference, less than, minus, decreased by, fewer than, subtracted from. Example: a number minus 4 → x – 4. A number decreased by 33 → n – 33. The difference of a number and 2 → n - 2 Words that mean multiplication - times, multiply, tripled, product, doubled, of, twice. Example: the product of 4 and a number → 4n, a number multiplied by 66 → 66n, 12.5 times a number → 12.5n Words than mean division→ third, half, fraction, quotient, divided by, per. Example: a number divided by 5 → n/5, 5 divided by a number → 5/n, the quotient of a number and 0.75 → n/0.75	SW take notes on their guided notes worksheet and work through problems as the teacher models.
	Guided Practice: TW instruct students to participate in a BINGO activity. The activity will consist of problems that convert written expressions into algebraic expressions. Examples include: 1. Write the following in algebraic terms: four minus a number 2. Write the following in algebraic terms: two times ten plus a number 3. Write the following in algebraic terms: fourteen less than a number TW call out answers on the BINGO squares and SW have to mark their answers and cross off boxes. TW go over all medium/hard level problems on the board periodically throughout the game.	**Guided Practice:** SW participate in the BINGO activity, placing their answers on the BINGO board and crossing off boxes. The activity will test students' skill at translating written expressions to algebraic expressions involving variables. SW ask questions throughout the activity if they are unsure of the answer.
	Independent Practice: TW provide students with a practice worksheet reviewing percents, decimals, fractions, and the new material covered today. TW provide scaffolding and support as needed. **Assessment:** TW use the Independent Assessment to track student	**Independent Practice:** SW work independently to solve problems and ask questions when necessary. Questions will relate to the objective and include review problems from the previous day's lesson covering converting between percents, decimals, and fractions.

	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 board, sharing what they learned today and asking review questions. TW intro tomorrow's lesson by talking about real-world problems that use operations, percents, decimals, and fractions.	**Assessment:** SW complete the assessment within the allotted time period.
3	**Activation of Prior Knowledge:** TW remind students of their pizza menus from two days ago and tell a story about going to the restaurant and ordering pizza. In the story, TW talk about how much the pizza cost, how she applied a coupon, and how she had to pay taxes/tip. This will lead into the concept of today: word problems involving percents. **Objective:** Students will be able to evaluate word problems involving percents, decimals, and fractions. **INM:** Key Points: 1. Read the word problem. Circle any important words and information that relates to operations, percents, decimals, or fractions. 2. Write an expression that represents the word problem 3. Solve the problem and simplify when necessary **Modeling:** TW model the process of circling important information, writing an algebraic expression, and solving with the following word problems: 1. A test has 40 questions. Carlos gets 80% of them correct. How many problems did he get correct? 2. In a school 40% of the teachers are male. If there are a total of 200 teachers how many of them are male? 3. Mr. Pak went out to dinner with his family. He spent $35.70 on food. The tax rate was 10%. How much did he spend in taxes? What was the total bill? **Guided Practice:** TW review the paragraphs that students wrote in the Do Now. TW use these paragraphs to write a word problem for students. SW then solve these word problems with a partner. TW check students' work on their white boards as they hold them up. TW bring the class	**Do Now:** SW be asked to write a paragraph about a purchase that they recently made at the mall and answer the following questions: How much did it cost? Was it on sale? If so, how much was the discount? How much did you pay in tax (estimate if necessary)? SW share their paragraphs with the class. SW repeat today's objective and discuss with a partner what that means based off of their current knowledge. SW take notes on their guided notes worksheet and work through problems as the teacher models. SW put question marks over any information that they are unsure of. **Guided Practice:** SW work with a partner to solve the word problems the teacher puts on the board. SW have 40 seconds to solve the problem, then 10 seconds to check their answer with a partner. If both answers are the same (and ideally correct) then students will write their answers on a white board and show the teacher. The word problems will test students' knowledge of identifying important information in a word problem, translating that information into an algebraic expression with operations,

	back together and walk through the process as a group. TW then repeat this process with multiple more examples. **Independent Practice:** TW give students a practice worksheet to assess their knowledge. The worksheet will review information over the objectives already covered including: translating between percents, decimals, and fractions, writing algebraic expressions from written expressions, and solving word problems. 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 the Do Now and her story at the beginning of class, reiterating the importance of being able to solve these problems in real-life situations.	and solving. **Independent Practice:** SW work independently to solve problems and ask questions when necessary. The worksheet will focus specifically on reviewing key information from the objectives already covered including: translating between percents, decimals, and fractions, writing algebraic expressions from written expressions, and solving word problems. **Assessment:** SW complete the assessment within the allotted time period.
4	**Activation of Prior Knowledge:** TW review word problems from yesterday and add another level to the students' understanding: estimation. TW discuss estimating the cost of the bill at dinner last night including tax and tip. **Objective:** Students will be able to evaluate word problems involving percents, decimals, and fractions and estimate approximate answers. **INM:** Key Points: 1. Read the word problem. Circle any important words and information that relates to operations, percents, decimals, or fractions. 2. Write an expression that represents the word problem 3. Solve the problem 4. Estimate your answer if the percent/decimal is longer than 3 decimal places by rounding **Modeling:** TW model how to evaluate a word problem by walking students through the steps for the following problems. TW scaffold level of difficulty: 1. Last night, Ms. Meyer went to dinner with her family. The bill was $50. She wanted to leave a 10% tip. How much is the tip? What is the total?	**Do Now:** SW be asked to write a paragraph about a purchase that they recently made at the mall and answer the following questions: How much did it cost? Was it on sale? If so, how much was the discount? How much did you pay in tax (estimate if necessary)? SW share their paragraphs with the class. SW repeat today's objective and discuss with a partner what that means based off of their current knowledge. SW take notes on their guided notes worksheet and work through problems as the teacher models. SW put question marks over any information that they are unsure of.

	2. This morning Mr. LaRue stopped at Starbucks. He bought a coffee for $4.35 and paid a tax rate of 10%. How much did he pay in taxes? What was the total bill? 3. Mr. Chase wanted to buy a pair of shoes. He had $50 in his pocket. The original cost of the shoes was $60, but they had a discount of 20%. How much money did he have left over? 4. Ms. Monroe wants to put a picture on her wall. The wall is 12.5 feet and the picture is 2 feet. How far from each end of the wall will the picture be if it is positioned in the middle? **Guided Practice:** TW instruct students on how to use white boards and markers. TW put a word problem on the board. SW have to write an algebraic expression, solve, and estimate their answer if necessary. **Independent Practice:** TW give students a practice worksheet to assess their knowledge TW provide scaffolding and support as needed. This worksheet will review all material learned thus far in the unit (translating between percents, decimals, and fractions, writing algebraic expressions from word problems, and solving real-life word problems.) There will be an emphasis placed on using critical thinking skills to estimate solutions to word problems. Students will also be asked to explain their mental process of solving a word problem by writing a paragraph. **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 stories from the Do Now and reiterate why this lesson is important for real life situations. SW reflect on how they use percents, decimals, and fractions in their lives each day.	**Guided Practice:** SW use white boards and markers to work through problems that the teacher places on the board. If students encounter issues, they should look back on their notes first. When students have an answer on their white board, they will turn to their partner and check their answers. If correct, both students will raise their white boards and the teacher will check their answers. **Independent Practice:** SW work independently to solve problems and ask questions when necessary. The problems will review all material taught in the unit with an emphasis on explanation and critical thinking. SW write a paragraph explaining the mental process they walked through in order to solve the word problems. **Assessment:** SW complete the assessment within the allotted time period.

Math Unit Summative Assessment:

Grade: 7 Domain: 7. Expressions and Equations (EE). Standard: #3 Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Write each as a percent, decimal, and fraction.

	Percent	Decimal	Fraction

1.	28%		
2.		0.05	
3.			$\frac{5}{8}$

4. A test has 20 questions. If Peter gets 80% correct, how many questions did Peter get correct?
5. In a school, 25% of the teachers teach math. If there are 60 teachers, how many math teachers are there in the school?
6. 24 students in a class took an algebra test. If 18 students passed the test, what percent do not pass?
7. Ms. Carter went to eat dinner with her family. The bill was $25.50 and Ms. Carter wanted to leave a 10% tip. What was the total amount that she paid for the meal and the tip?
8. You are hanging a new poster on your wall and you want it to be exactly in the middle. The wall is 10.5 feet from end to end and the poster is 2.5 feet long. Estimate approximately how far the poster will be from each edge of the wall.
9. Luis bought a pair of shoes that had a discount of 10%. If the original price of the shoes was $50, how much did he pay after the discount?
10. The original cost of a t-shirt is $10.50. There is a discount of 20% and a tax rate of 7%. Estimate the final cost of the shirt after the discount and taxes.

Paste Answer Key/Scoring Rubric Here:

	Percent	Decimal	Fraction
1.	28%	0.28	$\frac{7}{25}$
2.	5%	0.05	$\frac{1}{20}$
3.	62.5%	0.625	$\frac{5}{8}$

4. 16 questions 5. 15 math teachers 6. 25% 7. $28.05 8. 4 feet 9. $45 10. $8.99

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