Design Topic	FRACTIONS, DECIMALS AND PERCENT	Subject(s)	MATH	Grade(s)	SEVEN	Designer(s)	PAMELA SARFO

Unit Title: FRACTIONS, DECIMALS AND PERCENTS

Established Goals:

● 7.N.2 Demonstrate an understanding of the addition, subtraction, multiplication, and division of decimals to solve problems (for more than 1-digit divisors or 2-digit multipliers, technology could be used).
● 7.N.3 Solve problems involving percent from 1% to 100%.
● 7.N.4 Demonstrate an understanding of the relationship between repeating decimals and fractions and terminating decimals and fractions.
● 7.N.7 Compare and order fractions, decimals (to thousandths), by using benchmarks, place value, equivalent fractions and/or decimals.

Understandings: *Students will understand that…*

- The principles of operations and algorithms used with whole numbers also apply to operations with decimals, and fractions.
- Percent can be thought of as a ratio comparing to 100 or a fraction out of 100.
- Percent, fractions, decimals, and ratios are different representations of the same quantity.

Essential Questions:

● How can we demonstrate and use addition, subtraction, multiplication and division with decimals?
● What is the relationship between decimals and fractions?
● How can we compare and order fractions and decimals?
● How can percent be used to solve problems?

Knowledge: Students will know:

● That the same quantity can be represented in a variety of ways: as percent, fractions, decimals, and ratios.
● How repeating decimals and fractions, and terminating decimals and fractions are related.
● Mental math and estimation strategies related to decimals and fractions.

Skills: Students will be able to:

● Add, subtract, multiply, and divide decimals to solve problems.
● Solve problems involving percent from 1% to 100%.
● Convert/relate decimals, fractions and percent.
● Compare and order fractions and decimals (to thousandths) by using benchmarks, place value, equivalent fractions and/or decimals.

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ASSESSMENT EVIDENCE

Please indicate the purpose of your strategy by using a check mark under the appropriate category.	Assessment of learning (Summative)	Assessment as learning	Assessment For learning (Formative)
Vocabulary crossword		X	X
Worksheet for fractions, decimals, and fractions.	x		X
Common formative assessment worksheet		X	X
Unit test	X		X
Grade 7 BLM worksheets	x		X
Color notes for students to rate themselves on a scale of 3-1		X	X
Daily Math Minute	x		X
Student checklist Yes/No cards		X	X
Homework book questions	X		X
Dunk Tank Game	x		x

ADAPTATIONS	**DIFFERENTIATION STRATEGIES**
• Access to calculators	• Manipulatives (Base ten blocks or grid paper) for students who may want to use them during class time
• Multiplication charts	• Class time for working on textbook and homework questions are provided so teacher can help if needed
• The unit test may need to be adapted for certain students simpler fractions/decimals, less questions.	

CROSS-CURRICULA CONNECTIONS	**REAL-WORLD CONNECTIONS**
ELA- word problems in solving fractions, decimals, and percent.	Decimals and percent = money and budgeting taxes, discounts/sale price, totals
ART- Design activities	Fractions are used everyday sports, food, money, time, distance
	Relating fractions to everyday language half-way there, quarter past 6pm, half a dozen.

MATERIALS
• Decimals worksheets
• Common formative assessment worksheet
• Math Minute
• Color note and pencils
• Base ten blocks
• Math Makes Sense Volume 7 by Pearson (Practice workbook)
• Grid Paper
• Videos on base ten blocks
• Black line masters
• Base ten grid
• Dunk Tank (https://www.pbslearningmedia.org/resource/f79f8bb4-ef77-4ca5-afa8-4e5c69211786/f79f8bb4-ef77-4ca5-afa8-4e5c69211786/)

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INSTRUCTIONAL SEQUENCE

LESSON	CLASSES	SPECIFIC TOPIC	OUTCOME	MATERIALS	ASSESSMENT
1	4	ADDITION AND SUBTRACTION OF DECIMALS	Solve a problem involving the addition of two or more decimal numbers. ⇔ Solve a problem involving the subtraction of decimal numbers. (7.N.2)	Worksheet 3.3, Common formulative assessment 1, 2 & 3, Practice workbook Practice workbook (Math Makes sense), Base ten blocks, Color note, Grid Paper	FOR, AS, OF
2	3	MULTIPLICATION AND DIVISION OF DECIMALS	Solve a problem involving the multiplication or division of decimal numbers (for more than 1-digit divisors or 2-digit multipliers, technology could be used). (7.N.2)	Worksheet 3.4 and 3.5, Common formulative assessment 4 ,5 & 6, Practice workbook (Math Makes sense), Base ten blocks, Color note, Grid paper	FOR, AS, OF
3	2	ORDER OF OPERATIONS	Solve a problem that involves operations on decimals (limited to thousandths), taking into consideration the order of operations. (7.N.2)	Worksheet 3.6, Common formulative assessment 7, Practice workbook (Math Makes sense), Base ten blocks, Color note	FOR, AS, OF
4	1	DIVISIBILITY RULES	Determine and explain why a	Practice workbook	FOR, AS

			number is divisible by 2, 3, 4, 5, 6, 8, 9, or 10, and why a number cannot be divided by 0. (7.N.1)	(Math Makes sense), Color note	
5	2	PERCENTS	Solve problems involving percent from 1% to 100%. (7.N.3)	Worksheet 3.7, Practice workbook (Math Makes sense), Color note, BLM 7 N 3.6, BLM 7 N 3.7, BLM 7 N 3.8	FOR, AS, OF
6	2	TERMINATING DECIMALS AND ROUNDING NUMBERS	7.N.4 Demonstrate an understanding of the relationship between repeating decimals and fractions and terminating decimals and fractions.	Practice workbook (Math Makes sense), Base ten blocks, Color note, BLM 7. N.3.3	FOR, AS
7	1	ADDITION AND SUBTRACTION OF FRACTIONS AND MIXED NUMBERS	7.N.5 Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially, and symbolically (limited to positive sums and differences).	Practice workbook (Math Makes sense), Base ten blocks, Color note	FOR, AS
8	2	COMPARISON	Compare and order fractions, decimals (to thousandths),	Practice workbook (Math Makes sense), Base	FOR, AS

			and integers by using benchmarks, place value and equivalent fractions and/or decimals. (7.N.7)	ten blocks, Color note	
9	2	RELATING FRACTIONS TO DECIMALS AND PERCENTS	Compare fractions to decimals and percent.	BLM 7.N.3.4, Worksheet 3.7, Practice workbook (Math makes sense) Dunk tank Game	FOR, AS, OF
10	2	UNIT REVIEW AND UNIT TEST		Unit review worksheet, Unit test	FOR, AS, OF