

Grade7 Number Specific Outcomes	Key Understandings underpinning the Curriculum Outcomes from FSIM: Number Resource Books	Sample Diagnostic Tasks and Activities	Sample Learning Tasks Selected from FSIM: Number Resource Books	Math Station Ideas:
N7.1 Demonstrate an understanding of division through the development and application of divisibility strategies for 2, 3, 4, 5, 6, 8, 9, and 10, and through an analysis of division involving zero.	Operations KU5: • Repeating equal quantities and partitioning a quantity into equal parts helps us relate multiplication and division and understand their properties. Computations KU3: • We can think of a number as a multiplication or division in different ways. We can rearrange the factors of a multiplication without changing the quantity. Patterns and Algebra KU6: • Some numbers have interesting or useful properties. Investigating the patterns in these special numbers can help us understand them better.	Finding Factors (Course Book, pp. 215 - 216)	Operation Sense: Pages 78 - 80 • Multiplication and Division • Arrays • Factors Operation Sense: Pages 139 -141 • Using Factors • Finding Multiples • Using Shapes • Multiple Slices • Factor Bingo • Divisibility Divisibility Rules p. 141 Operation Sense: Pages 276-277 • Venn Diagrams (extended)	Kahn Academy: Playing with Numbers (online interactive) Divisibility Rules (document) Drag and Drop Math (online interactive) Zombie Board Game (document) Factors Millionaire Game (online interactive)

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N7.2 Expand and demonstrate understanding of the addition, subtraction, multiplication, and division of decimals to greater numbers of decimal places, and the order of operations.	Whole and Decimal Numbers KU7: • We can extend the patterns in the way we write whole numbers to write decimals. Did You Know? (Number Sense Book p. 81) Computations KU4: • Place value and basic number facts together allow us to calculate with any whole or decimal number. Computations KU6: • There are some special calculating methods that we can use for calculations we find hard to do in our head. Computations KU9: • To use a calculator well, we need to enter and interpret the information correctly and know about its functions. Background Notes: Operation Sense, pages 22 – 29, 108-109, 113-115	Decimals (Course Book, pp. 197 - 200) Numbers (Course Book, pp. 201 – 202) Money (Course Book, pp. 203 - 204) Buying Apples (Course Book, pp. 227 - 228)	Number Sense: Pages 84 - 85 • Place Invaders • Decimal Fractions • Lengths as Decimals Operation Sense: Pages 148 - 149 • Decimals • Rewriting Multiplication • Division Number Sentences Operation Sense: Pages 170 - 171 • Total Scores • Rules Rule! • Multiplication Grids • Grids and Base Ten Blocks • Which is Easier? Case Study 3 (Operation Sense Book pp. 172 -175) Operation Sense: Pages 198 - 199 • Complex Calculations 1 and 2 • Compare Answers • Rounding	“Represent and Review” p. 157 in TS-CM 6-8 “Where Does the Decimal Go? Multiplication” p. 160 TS-CM 6-8 “Where Does the Decimal Go? Division” p. 162 TS-CM 6-8 “Open Sentences” p. 230 TS-CM 6-8 “Exact Sums and Differences” p. 271 TS-CM 3-5 Decimals Jeopardy (online interactive) The Decimals Cruncher (online interactive) Decimals Workshop (online interactive)

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N7.3 Demonstrate an understanding of the relationships between positive decimals, positive fractions (including mixed numbers, proper fractions and improper fractions), and whole numbers. N7.4 Expand and demonstrate an understanding of percent to include fractional percents between 1% and 100%.	Patterns and Algebra KU6: - Some numbers have interesting or useful properties. Investigating the patterns in these special numbers can help us understand them better. Fractions KU7: - A fraction symbol may show a ratio relationship between two quantities. Percentages are a special kind of ratio we use to make comparisons easier. Operations KU3: - Multiplying numbers is useful when we: - Repeat quantities - Use rates - Make ratio comparisons or changes (scales) - Make arrays and combinations - Need products of measures. Operations KU8: - Thinking of a problem as a number sentence often helps us solve it. Sometimes we need to rewrite the number sentence in a different but equivalent way.	Did You Know (Operation Sense Book, p. 59) Did You Know (Operation Sense Book, p. 81)	Operation Sense: 276-277 - Fraction Patterns - Terminating Decimals Number Sense: 165 - 168 - Proportional Relationships - Discounts - Units of Measure - Ratio Relationships - Percentages - Finding Percentages Operation Sense: 54 - 55 - Changes in Ratio - Rate Situations - Scales - Combination Problems - Multiplication - Rate Problems Operation Sense: Pages 99 – 101 (substitute with percents) - Everyday Problems - Exploring Word Problems	Match Fractions, Decimals, and Percentages (online interactive) Treefrog Treasure: World Three (online interactive) Battleship Numberline (online interactive) Fractions, Decimals, and Percents Jeopardy (online interactive) Dunk Tank! Fractions, Decimals, and Percents (online interactive) Math Scavenger Hunt (p. 72-87 of document) Decimal, Fraction, and Percent Concentration (document) Khan Academy: Fractions, Decimals, and Percentages (online interactive)

	Computations KU5: f • There are strategies we can practice to help us do calculations in our head. Operations Background Notes: Multiplication and Division Problems (Operation Sense, p. 25)		Operation Sense: 99 – 101 • Partitioning with Fractions • Sale Time • Converting	
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N7.5 Develop and 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).	Computations KU5: • There are strategies we can practice to help us do calculations in our head Computations KU7: • We can calculate with fractions. Sometimes renaming fractions is helpful for this. Computations KU8: • Thinking of a problem as a number sentence often helps us solve it. Sometimes we need to rewrite the number sentence in a different but equivalent way.	Sensible Fractions (Number Sense Book, p. 165)	Operation Sense: Pages 159-161 • Compensating with Fractions • More Compensating with Fractions Operation Sense: Pages 178-181 • Making a Whole • Equivalent Fractions • Check for Sense • Pattern Blocks 1 and 2 • Pattern Blocks 2 Operation Sense: Pages 187-188 • Adding Fractions • Other Strategies	Fractangle Puzzles (printable) Kahn Academy: Fractions (online interactive) Fruit Splat Fraction Addition (online interactive) Fruit Splat Fraction Subtraction (online interactive) Adding Fractions Bump Game (printable) Fraction Crossword Puzzles: Adding and Subtracting (printable) Roll and Answer: Adding and Subtracting Fractions (printable) On a Roll (printable)

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N7.6 Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially, and symbolically.	Whole and Decimal Numbers KU8: • We can compare and order the numbers themselves. Computations KU9: • To use a calculator well, we need to enter and interpret the information correctly and know about its functions.		Number Sense: Pages 88 - 93 • Negative Numbers • Number Line • Correct Order • Skip Counting Backwards • Temperatures • Changing Values Operation Sense: Page 199 • Change of Sign	“What Is Her Net Worth?” p. 181 TS-CM 6-8 “(American) Football Statistics” p. 183 TS-CM 6-8 Walk the Plank: Adding and Subtracting Integers (online interactive) Integer Football (online interactive) Positive and Negative Integers Card Game (link to instructions) Absolute Value War (printable)