Designer Name(s): 4th Grade Team | **Date:**

Subject Area: Math | **Grade Level(s): 4th**

Unit Title/Focus: Lessons 31-40, Investigation 4A and B

Estimated Amount of Instructional Time: 14 days (1 day per lesson/investigation, 1 day for testing, 1 day for Performance Task Activity)

Stage 1 – (Desired Results)

State Content and Skill Standards:

4.OA (Operations and Algebraic Thinking)

1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

4. Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

4.NBT (Numbers and Operations in Base Ten)

1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
3. Use place value understanding to round multi-digit whole numbers to any place.
4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

4.NF (Numbers and Operations-Fractions)

5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

6. Use decimal notation for fractions with denominators 10 or 100.

7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.

4.MD (Measurement and Data)

1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

4.G (Geometry)

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

Enduring Understandings: (what are the big ideas, what are the specific understandings desired)	*Essential Questions:* (what questions will foster inquiry, understanding, and transfer of learning)
Students will understand that… • Numbers can be expressed in different ways. • Identifying the place value relates to the position of the number in the base-ten numeration system.	• What are some ways that numbers can be expressed?

• Decimal numbers can be expressed using words.	• How does place value relate to the position of the number in the base-ten numeration system? • How can words be used to express decimal numbers?

Big Idea(s) Understand decimal notation for fractions, and compare decimal fractions. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

What Students will know: (what knowledge will they acquire)	*What Students will be able to do:* (what will they eventually be able to do as a result of their skills learned/knowledge)
Math vocabulary – difference, formula, greater than, point, digit, less than, multiplication, product, place value, mixed numbers, decimal point, fraction, whole numbers, combinations, fourth, number line, segment, multiple, quarter, scale, tick mark, capacity, fluid ounce, liter, cup, estimate, gallon, metric system, pint, quart, U.S. Customary System, base-ten system, decimal place, hundredth, tenth, decimal number • Understand how to evaluate word problems in order to solve them. • Understand how to use patterns to assist with memorizing multiplication. • Understand place value in order to write numbers in word form. • Understand place value in order to compare numbers. • Understand fractions in order to write a mixed number. • Understand when writing numbers you will use either a cent sign or a decimal point and a dollar sign, and you will use the word "and" when reading a number with a decimal. • Understand that part of a dollar can be described by using a fraction or a dollar sign and decimal point. • Understand how to utilize a number line to read fractions and mixed numbers. • Understand the importance of memorizing multiplication facts. • Understand what the different tick marks represent on a ruler, and be able to utilize these to measure to the nearest fourth. • Understand that capacity is the quantity of liquid a container can hold and the customary units are cup, pint, quart, and gallon. The metric unit base is liter. • Understand the each place is ten times the value of the place to its right. • Understand to the right of the decimal point are fractions of a dollar (ex. 1/10 is your dimes, 1/100 is your pennies). • Understand how to represent decimal numbers and fractions in a unit square. • Understand that fractions and decimals are related.	• Know which total is greater (you always want the job that pays the most) • Write checks using correct word form • Measure the distance between 2 points • Complete a recipe by measuring liquid ingredients and reading and measuring dry ingredients (usually found in fractional parts • Find the total if you know how many are in a group

Stage 2 - Assessment Evidence (acceptable assessment evidence that students understand)	
Performance Tasks: (what authentic performance task (s) will students demonstrate understanding; by what criteria will it be judged?)	*Other Evidence:* (quizzes, tasks, academic prompts, homework, observations)

• Performance Task 4 • Activities from pages 244, 256, 260, and 262 • Reinforcing the Content Standards activity on insert page SOV4 • Any idea from "What will students be able to do section	• Daily homework • Power-up tests • Cumulative tests • Performance on daily Power-up activities

Stage 3 - Learning Plan (sequence of teaching and learning activities that will produce desired understandings, engagement and development) Use WHERETO elements to help you:

Learning Activities:

Saxon Table of Contents:

Lesson 31 – Word Problems About Comparing 4.OA.4, 4.OA.5, 4.NBT.2, 4.NBT.4, 4.MD.1, 4.MD.2, 4.G.1
Lesson 32 – Multiplication Facts: 9's, 10's, 11's, 12's 4.OA.5, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1, 4.MD.2, 4.MD.3, 4.G.1
Lesson 33 – Writing Numbers Through Hundred Thousands 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1, 4.MD.2, 4.MD.3, 4.G.1
Lesson 34 – Writing Numbers Through Hundred Millions 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1, 4.MD.2, 4.G.1
Lesson 35 – Naming Mixed Numbers and Money 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1, 4.MD.2, 4.G.1
Lesson 36 – Fraction of a Dollar 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1 4.G.1
Lesson 37 – Reading Fractions and Mixed Numbers from a Number Line 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.1, 4.MD.2, 4.MD.3
Lesson 38 – Multiplication (Memory Group) 4.OA.1, 4.OA.4, 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.MD.4, 4.MD.2, 4.MD.3, 4.G.1
Lesson 39 – Reading an Inch Scale to the Nearest Fourth 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.4, 4.MD.1, 4.MD.3, 4.MD.3, 4.G.1
Lesson 40 – Capacity 4.NBT.1, 4.NBT.2, 4.NBT.4, 4.MD.1, 4.MD.2, 4.G.1
Investigation 4A – Tenths and Hundredths, Use money Manipulatives to represent decimal numbers 4.NF.5, 4.NF.6, 4.NF.7
Investigation 4B – Relating Fractions and Decimals, Use Decimal Numbers on Stopwatch Displays 4.NF.5, 4.NF.6, 4.NF.7

It was discussed that the "fact" section of the daily Power-Ups be done on Tuesday/Thursday and the "mental math" section be done on Monday, Wednesday, and Friday. Teacher may also want to cut back on "Written Practice", possibly only 15 problems each day or having 1 assignment every 2 lessons. This will free up some time for higher level discussion of concepts and Performance Tasks.

W=help the students know WHERE the unit is going and WHAT is expected/Help teacher to know where the students are coming from (prior knowledge, interests)
H=HOOK all students and hold their interest
E=EQUIP students, help them EXPERIENCE the key ideas and EXPLORE the issue
R=Provide opportunities to RETHINK and REVISE their understanding/work
E (2)=Allow students to EVALUATE their work
T=Be TAILORED (personalized) to different needs, interests, and abilities of learners
O=Be ORGANIZED to maximize initial and sustained engagement as well as effective learning

Assessment Tasks that Provide Evidence for Claims including DOK	☐ **Claim #1/DOK 1, 2, 3, 4 (circle one):**
	☐ **Claim #2/DOK 1, 2, 3, 4 (circle one):**
	☐ **Claim #3/DOK 1, 2, 3, 4 (circle one):**
	☐ **Claim #4/DOK 1, 2, 3, 4 (circle one):**
Achievement Level Descriptors	**ALD #1: ALD #2: ALD #3: ALD #4: (circle one):**
Materials/Resources	