Designer Name(s): 4th Grade Team

Date:

Subject Area: Math

Grade Level(s): 4th

Unit Title/Focus: Lessons 51-60, Investigation 6

Estimated Amount of Instructional Time: 13 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)

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
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.

4.NBT (Numbers and Operations in Base Ten)

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.
5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.NF (Numbers and Operations-Fractions)

2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction 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.

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… • Using a number line can help round numbers. • Estimation is one method to find out if an answer is reasonable. • There are visual differences between bar graphs, line graphs, and pictographs.	 • How can a number line help you round numbers? • How can estimation be used to find out if an answer is reasonable? • What are some visual differences among bar graphs, line graphs, and pictographs?

• The date influences the type of graph that is created.	• How does the type of data affect the type of graph that is created?

<table>
<tr><td colspan="2" align="center">Big Idea(s)
Use the four operations with whole numbers to solve problems.
Gain familiarity with factors and multiples.
Extend understanding of fraction equivalence and ordering.</td></tr>
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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 – digit, division, product, formula, multiplication, regroup, remainder, gallon, quart, century, chronological order, common year, decade, leap year, calendar, day, month, round, week, year, composite numbers, divisible, prime numbers, area, array, factor, multiple, multiplication table, perimeter, whole numbers, congruent, circle, fraction, pair, rate, pattern, algorithm, equation, product, estimate, sum, bar graph, circle graph, graph, key, legend, line graph, pictograph, data, horizontal, scale, survey • Understand the importance of keeping numbers aligned (ones place on top of or below ones place) to get an accurate answer. • Understand that division answers can be checked by multiplying. • Understand that when adding or subtracting that you always start in the ones place. • Understand how to regroup to make subtracting across many places possible. • Understand that word problems with "equal groups" will have a multiplication formula, however if you know the total you will need to divide. • Understand how to solve a division problem and show the answer when it has a remainder. • Understand the meanings of a common year, leap year, decade, and century. • Understand when solving the difference of years always use "larger # - smaller # = the difference. • Utilize a number line to assist with rounding • Understand that a multiple is a product of a given number. • Understand that factors the numbers multiplied to produce a whole number. • Understand that a number is prime when it only has 2 factors (1 and itself) • Understand that a composite number is a number with more than 2 factors. • Understand how to utilize models and pictures to compare fractions. • Understand that rate shows the relationship between 2 different measures (miles per hour). • Understand when multiplying by three-digit numbers you start in the ones place, then move to the tens place, and then the hundreds place. • Understand how to utilize rounding when that is all that is necessary to solve the problem. • Understand how to solve rate problems when the total is given. • Understand when information is best conveyed with a pictograph, bar graph, line graph, or circle graph.	• If I have ____ jellybeans how many people can have 5 • If each person is getting ____ jellybeans how many will 13 people get (multiple) • Decide if something can be divided equally • Find how many classrooms you will need for 120 students if only 30 can be in each classroom • If you have 127 students how many students will be in each of 4 classrooms • Figure out how many days old you are, how many decades owl your parents are • Find how old someone is by knowing the year that they were born • Decide which slices of the pizza are bigger • Find the total cost of items then find the change from a $50 bill • Decide how long it will take you to get to _____ traveling 75 miles per hour

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 6 • Activities from pages 339, 353, 360, and 390-391 • Reinforcing the Content Standards activity on insert page SOV6 • 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 51 – Adding Numbers with More Than Three – Digits and Checking One – Digit Division 4.OA.1, 4.OA.2, 4NBT3, 4NBT4,4NBT5, 4NF6, 4MD1, 4MD2, 4G1
Lesson 52 – Subtracting Numbers with More Than Three Digits and Word Problems About Equal Groups 4OA1, 4OA2, 4NBT3, 4NBT4, 4NBT5, 4NF6, 4MD1, 4MD2, 4G1, 4G2
Lesson 53 – One-Digit Division with a Remainder 4OA1, 4OA2, 4NBT3, 4NBT5, 4NBT6, 4NF6, 4MD1, 4MD2
Lesson 54 – The Calendar and Rounding Numbers to the Nearest Thousand 4NBT3, 4NBT4, 4NBT5, 4NF6, 4MD1, 4MD2, 4MD3
Lesson 55 – Prime and Composite Numbers and Using Arrays to Find Factors 4OA4, 4NBT5, 4MD1, 4MD3, 4G2
Lesson 56 – Using Models and Pictures to Compare Fractions 4OA1, 4OA4, 4NBT3, 4NBT4, 4NBT5, 4NF2, 4NF6, 4MD1, 4MD2, 4MD3, 4G1, 4G2
Lesson 57 – Rate Word Problems 4OA1, 4OA2, 4OA4, 4NBT4, 4NBT5, FNF2, 4MD1, 4MD2, 4MD3, 4G1, 4G2
Lesson 58 – Multiplying Three-digit Numbers 4OA1, 4OA2, 4OA4, 4NBT4, 4NBT5, 4MD1, 4MD2, 4G1, 4G2
Lesson 59 – Estimating Arithmetic Answers 4OA3, 4OA4, 4NBT4, 4NBT5, 4NF2, 4MD1, 4MD2, 4MD3, 4G1, 4G2
Lesson 60 – Rate Problems with a Given Total 4OA1, 4OA2, 4OA3, 4OA4, 4NBT5, 4MD1, 4MD2, 4G1, 4G2
Investigation 6 – Displaying Data Using Information on Graphs *Not a 4th Grade Standard*

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	