

Understanding by Design: School: Mountain Home School District

Designer Name(s): 4th Grade Team

Date:

Subject Area: Math

Grade Level(s): 4th

Unit Title/Focus: Lessons 1 – 10, Investigation 1

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)

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.

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.

4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Enduring Understandings: *(what are the big ideas, what are the specific understandings desired)*

Students will understand that...

- Changing the order of addends does not affect their sum.
- Sequences are arranged according to rules.
- Letters and symbols are used for missing numbers.

Essential Questions: *(what questions will foster inquiry, understanding, and transfer of learning)*

- How does the order of addends affect the answer?
- What are the rules for sequences?
- How do we represent missing numbers in problems?

Big Idea(s)

Use the four operations with whole numbers to solve problems.

Generate and analyze patterns.

Generalize place value understanding for multi-digit whole numbers.

Use place value understanding and properties of operations to perform multi-digit arithmetic.

What Students will know: *(what knowledge will they acquire)*

Math vocabulary – addend, addition, Commutative Property of Addition, formula, Identity Property of Addition, number sentence, sum, add, number, plot, equation, counting numbers, digit, sequence, pattern, arranged, place value, cardinal numbers, ordinal numbers, month, date, year, difference, expression, fact family, subtraction, number sentence, related, whole numbers, similar, even numbers, odd numbers, reasonable, comparison symbol, equal to, greater than, less than, line, line segment, negative numbers, number line, positive numbers, tick mark, debt

- Understand that a number sentence contains addends and a sum.
- Understand the commutative property of addition.

What Students will be able to do: *(what will they eventually be able to do as a result of their skills learned/knowledge)*

- Write a check using number and word form
- Figure out how much the tax was knowing the cost of an item and the total.
- Go shopping with a set allowance and know your total (so you don't overspend) before getting to the register.
- Order the competitors in the race from 1st and 10th place.
- Know before you divide up your candy if you will have extra pieces or not.

<ul style="list-style-type: none"> • Understand the identity property of addition. • Understand how to find a missing addend using addition or subtraction. • Understand that digits are numerals 0-9. • Understand that a sequence is a counting pattern either going up or down. • Understand that you can add up to check subtraction problems. • Understand how to write numbers in word form. • Understand that when adding you must line up each place (ex. 10's place with 10's place). • Understand how to regroup numbers once that have a group of 10. • Understand the difference between even and odd numbers. • Understand that you only look at the number in the 1's place to determine if the number is even or odd. • Understand how to utilize a number line to add or subtract. • Understand that each digit in 1 place represents ten times what it represents in the place to its right. • Understand that ordinal numbers are numbers that tell position. 	
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Stage 2 - Assessment Evidence (acceptable assessment evidence that students understand)

<p><i>Performance Tasks: (what authentic performance task (s) will students demonstrate understanding; by what criteria will it be judged?)</i></p> <ul style="list-style-type: none"> • Performance Task 1 • Activities from pages 25, 47, and 62 • Reinforcing the Content Standards activity on insert page SOV1 • Any idea from "What will students be able to do" section 	<p><i>Other Evidence: (quizzes, tasks, academic prompts, homework, observations)</i></p> <ul style="list-style-type: none"> • Daily homework • Power-up tests • Cumulative tests • Performance on daily Power-up activities
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Stage 3 - Learning Plan (sequence of teaching and learning activities that will produce desired understandings, engagement and development) Use WHERETO elements to help you:

<p><i>Learning Activities:</i></p> <p>Saxon Table of Contents:</p> <p>Lesson 1 – Review of Addition 4.NBT.4, 4.OA.4, Lesson 2 – Missing Addends 4.OA.3, 4.OA.4, 4. NBT.4 Lesson 3 – Sequences and Digits 4.OA.3, 4.OA.4, 4.OA.5, 4.NBT 4 Lesson 4 – Place Value and Comparing Money 4.OA.4, 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.4 Lesson 5 – Ordinal Numbers and Months of the Year 4.Oa.4, 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.4 Lesson 6 – Review of Subtraction 4.OA.4, 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.4 Lesson 7 – Writing Numbers Through 999 4.OA.4, 4.OA.5, 4.NBT.1, 4.NBT.2, 4NBT.4 Lesson 8 – Adding Money Amounts 4.OA.3, 4.OA.4, 4.OA.5, 4.NBT.2, 4.NBT.4 Lesson 9 – Adding with Regrouping 4.OA.3, 4.OA.4, 4.OA.5, 4.NBT.1, 4.NBT.2, 4.NBT.4 Lesson 10 – Even and Odd Numbers 4.OA.4, 4.OA.5, 4.NBT.2, 4.NBT.4 Investigation 1 – Number Lines 4.OA.5</p>

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	<input type="checkbox"/> Claim #1/DOK 1, 2, 3, 4 (circle one):
	<input type="checkbox"/> Claim #2/DOK 1, 2, 3, 4 (circle one):
	<input type="checkbox"/> Claim #3/DOK 1, 2, 3, 4 (circle one):
	<input type="checkbox"/> Claim #4/DOK 1, 2, 3, 4 (circle one):
Achievement Level Descriptors	ALD #1: ALD #2: ALD #3: ALD #4: (circle one):
Materials/Resources	