Unit 3 Study Guide - Operations and Algebraic Thinking: Patterns in Addition and Multiplication

Tentative Test Date:

Textbook Lessons:

- Lesson 5-8 Problem-Solving Skill: Multi-Step Problems
- Lesson 6-7 Using Multiplication to Compare
- Lesson 6-8 Patterns on a Table
- Lesson 6-10 Find a Rule
- Lesson 6-11 Problem-Solving Skill: Choose an Operation
- Lesson 7-1 Division as Sharing
- Lesson 7-2 Division as Repeated Subtraction
- Lesson 7-3 Writing Division Stories
- Lesson 7-5 Relating Multiplication and Division
- Lesson 8-13 Area

In this unit, students will:

- Understand concepts of area and relate area to multiplication and addition.
- Find the area of a rectangle with whole- number side lengths by tiling it.
- Multiply side lengths to find areas of rectangles with whole-number side lengths in context of solving real world and mathematical problems.
- Construct and analyze area models with the same product.
- Describe and extend numeric patterns.
- Determine addition and multiplication patterns.
- Understand the commutative property's relationship to area.
- Create arrays and area models to find different ways to decompose a product.
- Use arrays and area models to develop understanding of the distributive property.
- Solve problems involving one and two steps, and represent these problems using equations with letters **"n"** or **"x"** representing the unknown quantity.
- Create and interpret pictographs to create a line plot.
- Find area of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts.

Web Resources

- (IXL):
  - Multiplication (E Lessons 14-15)
  - Division (G Lessons 1-6)
  - Mixed Operations (I Lessons 1-8)
  - Multi-Step Problems(E-14 and E-15)
  - Geometry – Area (R Lessons 10-14)

Vocabulary

- Equation
- Area
- Square unit
- Area model
- Array
- Commutative property of multiplication
- Distributive property of multiplication
- Decomposing
- Tiling
- Difference

- Dimensions – length, width
- Divide
- Quotient
- Estimation
- Expression
- Unknown variable
- Factor
- Line plot
- Scale
- Pictograph