

**Grade Two**  
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**Correlations with Oklahoma**  
**Instructional Mathematical Goals and Objectives**

The following concepts and skills are required by all students completing second grade. The **Major Concepts** should be taught in depth using a variety of methods and applications so that all students have accessibility to and an understanding of these concepts. **Maintenance Concepts** have been taught previously and are a necessary foundation for success in mathematics at this level.

**MAJOR CONCEPTS**

**Patterns-With Symbols**

**Number Sense-**

**Place Value to 100s,**

**Estimation**

**Operations-**

**Add, Subtract with 2 digits,**

**Facts to 18**

**Geometry-Symmetry**

**Measurement-Time, Money, Calendar**

**Concept of Units, Estimation**

**Data Analysis-Symbolic Bar Graphs**

**MAINTENANCE CONCEPTS**

**Patterns-Repeating, Growing**

**Number Quantities to 100**

**Add, Subtract, Facts to 10**

**Geometry-Congruent Shapes**

**Measurement-Time, Money, Calendar**

**Data Analysis-Concrete, Picture  
Graphs**

**THINK STAR** ★

Use the image of a star with **Content** at its center and **Problem Solving, Communications, Connections, Reasoning, and Representation** at its five points to design illuminating lessons (see page 77).

**KEY TO SUCCESS!**

When introducing new concepts **CONNECT** from Concrete -> Pictorial -> Abstract

**I. Patterns**

- A. Describe and record patterns (e.g., build a table showing the cost of one pencil at 10 cents, 2 pencils at 20 cents, etc.). **Appetizers 2 D, E, and F; Main Dish Objective 2 (Mathematical Relations) lessons 4, 5, and 6; Applications; Final Tests; Reasonableness Problems**
- B. Identify, extend, and record both repeating and growing patterns made up of sets of concrete objects, pictures, and symbols (e.g., 3, 6, 9 . . . ). **Appetizers 1 C; 2 D; Main Dish Objective 1 (Number Concepts) lesson 3; Objective 2 (Mathematical Relations) lesson 4; Applications; Final Tests; Reasonableness Problems**

- C. Create patterns by combining different shapes and taking them apart.

## II. Number Sense

- \*A. Use concrete models of hundreds, tens, and ones to develop the concept of place value. **Appetizers 1 A and B; Main Dish Objective 1 (Number Concepts) lessons 1 and 2; Applications; Final Tests; Reasonableness Problems**
- B. Link place value concepts to the reading and writing of numbers (e.g., bean sticks, base-10 blocks). **Appetizers 1 B; Main Dish Objective 1 (Number Concepts) lesson 2; Applications; Final Tests; Reasonableness Problems**
- C. Develop and use strategies of estimation (e.g., compose, decompose and regroup numbers, use knowledge of 10 to **estimate** quantities and sums [two numbers less than 10 cannot add up to more than 20], use body parts to **estimate** measurements). **Appetizers 10 A, B, and C; Main Dish Objective 10 (Estimation) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**
- D. Determine whether a number is odd or even. **Appetizers 1 C; Main Dish Objective 1 (Number Concepts) lesson 3; Applications; Final Tests; Reasonableness Problems**
- E. Represent a number in a variety of ways (e.g., write the calendar day in different ways write 15 as  $8 + 7$ , write 25 as 2 tens + 5 ones). **Appetizers 2 A, B, and C; Main Dish Objective 2 (Mathematical Relations) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**
- F. Write a number sentence to compare numbers (e.g., 5 is more than 3, 3 is less than 7, page 51 comes after 50, and 51 is between 50 and 60). **Appetizers 1 A; Main Dish Objective 1 (Number Concepts) lesson 1; Applications; Final Tests; Reasonableness Problems**
- G. Demonstrate (using concrete objects, pictures, and numerical symbols) fractional parts including halves, thirds, and fourths. **Appetizers 1 D and E; Main Dish Objective 1 (Number Concepts) lessons 4 and 5; Applications; Final Tests; Reasonableness Problems**

## III. Number Operations and Computations

- A. Develop operation sense by applying the following property of addition  $(3 + 2) + 1 = 3 + (2 + 1)$ . **Appetizers 1 A; Main Dish Objective 1 (Number Concepts) lesson 1; Applications; Final Tests; Reasonableness Problems**
- B. Use mental strategies (or decomposition strategies) for addition and subtraction (e.g., make a group of 10 objects and 2 objects from a group of 7 objects and 5 objects). **Appetizers 2 A, B, and C; Main Dish Objective 2 (Mathematical Relations) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**

- C. Write addition and subtraction number sentences; complete addition number sentences with a missing **addend** and use to solve everyday problems. **Appetizers 2 A, B, and C; Main Dish Objective 2 (Mathematical Relations) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**
- D. Use a variety of techniques (mental, paper and pencil, concrete manipulation) to solve two-digit addition and subtraction problems with and without regrouping (e.g., floor number line, base-10 blocks). **Appetizers 6 B; 7 B; Main Dish Objective 6 (Addition) lesson 2; Objective 7 (Subtraction) lesson 2; Applications; Final Tests; Reasonableness Problems**
- E. Use a variety of strategies to develop understanding leading to the ability to recall and apply basic addition and subtraction facts to 18 (e.g., counting on, doubles, **ten frames**). **Appetizers 2 A, B, and C; 6 A; 7 A; Main Dish Objective 2 (Mathematical Relations) lessons 1, 2, and 3; Objective 6 (Addition) lesson 1; Objective 7 (Subtraction) lesson 1; Applications; Final Tests; Reasonableness Problems**

#### IV. Geometry and Spatial Sense

- A. Sort and classify symmetric and **congruent** figures. **Appetizers 3 C; Main Dish Objective 3 (Geometry) lesson 3; Applications; Final Tests; Reasonableness Problems**
- B. Identify geometric shapes and use to represent and describe everyday situations (e.g., shapes in the classroom). **Appetizers 3 A; Main Dish Objective 3 (Geometry) lesson 1; Applications; Final Tests; Reasonableness Problems**

#### V. Measurement

- A. Measure objects with **nonstandard** and standard units (e.g., use a human foot [nonstandard] then a ruler [standard] to measure length). **Appetizers 4 A; Main Dish Objective 4 (Measurement) lesson 1; Applications; Final Tests; Reasonableness Problems**
- B. Select and use appropriate units of measurement in problem solving and everyday situations. **Appetizers 4 A, B, and C; Main Dish Objective 4 (Measurement) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**
- C. Develop and use strategies to **estimate** measurement (e.g., use the width of a little finger to measure approximate centimeters). **Appetizers 10 A and B; Main Dish Objective 10 (Estimation) lessons 1 and 2; Applications; Final Tests; Reasonableness Problems**

- D. Identify and count money; connect coins and bills with place value. **Appetizers 6 C; 7 C; Main Dish Objective 6 (Addition) lesson 3; Objective 7 (Subtraction) lesson 3; Applications; Final Tests; Reasonableness Problems**
- E. Tell time on digital and **analog** clocks to the hour, half-hour, and quarter-hour. **Appetizers 4 C and E; Main Dish Objective 4 (Measurement) lessons 3 and 5; Applications; Final Tests; Reasonableness Problems**

#### IV. Data Analysis

- A. Collect, sort, organize, and display data in charts, bar graphs, and tables (e.g., collect data on teeth lost and display results in a chart). **Appetizers 5 A, B, and C; Main Dish Objective 5 (Probability/Statistics) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**
- B. Summarize and interpret data in charts, bar graphs, and tables. **Appetizers 5 A, B, and C; Main Dish Objective 5 (Probability/Statistics) lessons 1, 2, and 3; Applications; Final Tests; Reasonableness Problems**
- C. Make predictions and **estimates** to describe data (e.g., predict what data on teeth lost might look like for younger children and/or older children). **Appetizers 5 C; Main Dish Objective 5 (Probability/Statistics) lesson 3; Applications; Final Tests; Reasonableness Problems**