Understanding by Design: School _____

Designer Name(s): Young and Cowsert   **Date:** 6/5/14

Subject Area: Math   **Grade Level(s):**3rd

Unit Title/Focus: Section 2 (Lessons 11-20)

Estimated Amount of Instructional Time: ~ **14 days**

Stage 1 – (Desired Results)

State Content and Skill Standards: <mark>*CCSS and section overview card*</mark>

Mathematic Claim #1: Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.

Domain: Operation and Algebraic Thinking

Target D.(3.OA.D) Solve problems involving the four operations, and identify and explain patterns in arithmetic. (DOK 2)

Gr. 3 Standards: 3.OA.8, 3.OA.9

  3.OA.8 Solve two-step word problems using the four operations. 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.

  3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

Domain: Numbers and Operations in Base Ten

Target E. (3.NBT.E)- Use place value understanding and properties of operations to perform multi-digit arithmetic. (DOK 1)

Gr. 3 Standards: 3.NBT.2

  3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Domain: Numbers and Operations- Fractions

Target E. (3.NF.A)- Develop Understanding of fractions as numbers. (DOK 1)

Gr. 3 Standards: 3.NF.1,3.NF.3a, 3.NF.3b, 3.NF.3c

  3.NF.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by a parts of size 1/*b*.

  3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

  a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

  b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.

  c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*

Domain: Geometry
Target K.(3.G.A) Reason with shapes and their attributes. (DOK 1, 2)
Gr. 3 Standards: 3.G.1, 3.G.2

3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*

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… • Mental computation can be used to add or subtract 2 digit numbers • When something is cut into equal pieces, each piece is a fraction of the whole • Geometric shapes can be identified by their attributes and have special names	• What strategy can I use when I add or subtract 10 from a 2 digit number? • When a shape is divided into equal parts, how do I name each piece? • How do I know if a shape is a polygon? Extend and Challenge • What strategies did you use to find the correct design?

Big Idea(s)/ Real World Application

Students will be able to use mental computation to solve real world addition and subtraction problems.

Students will be able recognize that a whole unit can be broken down into smaller pieces and distributed equally.

Students will be able to construct a polygon based on given attributes.

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- addition, eights, equal, fact family, fourths, fraction, half, inverse, operation, multiples of 10, nearest 10, palindrome, pentagon, polygon, quadrilateral, square, whole • There is a process to solving word problems • Introduction to parts of a whole • Mathematical term describing a line or object that is the same size and shape • Coins have a set value • Numbers are placed in order based on their value • 10 Fact Family • Date can be represented in different ways • Divide and Identify Halves, Fourths, and Eights	==(Saxon Lesson Objectives)== Students will be able to • Identify, Act Out, Draw Pictures, and Write Number Sentences for Some, Some More and Some, Some Went Away Story Problems • Divide a Square into Two and Four Equal Parts • Identify Congruent Shapes • Count Dimes and Nickels • Compare Values of a Set of Coins • Adding Numbers with a Sum of 10 • Identify the Value of the Pattern Blocks • Make a Design Worth a Certain Amount • Write the Date Using Digits

• Temperature is measured using a thermometer using the Fahrenheit scale • The number in the tens digit can be rounded up or stay the same depending on the number in the ones digit • Polygons are special shapes	• Divide and Identify a Square into Halves, Fourths, and Eighths • Read a Thermometer to the Nearest 10 Degrees • Round Numbers to the Nearest 10 • Use Problem Solving Strategies to Solve a Given Word Problem • Name and Draw Polygons

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)
• **Use logical reasoning to solve a problem** • **Use pattern blocks to determine what shapes are needed to cover the area of a design and worth of all the combined pattern blocks**	• Cumulative Written Assessments 15-1, 15-2, 20-1, 20-2 • Oral Assessment 2 • Teacher Observations • Guided Practice • Homework Practice • Fact Practice

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 Section 2

Lesson 11- Some, Some More and Some, Some Went Away Story Problems
Lesson 12- Equal Parts and Congruent Shapes- Grade 2 Review
Lesson 13- Value Sets of Dimes and Nickels
Lesson 14- Adding and Subtracting 10 from a 2 Digit Number- Grade 2 Review
Lesson 15-1- Addition Facts Quiz and Sums of Ten – Grade 2 Review
Lesson 15-2- Pattern Blocks- Area and Value
Literature Connection The $1.00 Word Riddle Book by Marilyn Burns
Lesson 16- Date using Digits
Lesson 17- Identifying and Shading Halves, Fourths, and Eighths- (Halves and Fourths- Grade 2 Review)
Lesson 18- Reading a Thermometer and Rounding Numbers to Nearest Ten
Lesson 19- Rounding Numbers to Nearest Ten
Lesson 20-1- Solving Problems with Different Methods- Grade 2 Review
Lesson 20-2- Naming and Drawing Polygons
Literature Connection The Greedy Triangle by Marilyn Burns

** Per conversation with Mrs.Ybarra, if you feel this review is not necessary for your class, skip lessons as needed.**

Journal Writing:
• Draw a picture of how you would share your favorite sandwich with a friend. Describe your favorite sandwich. (Lesson 12)
• How old will you be in 10 years? Describe what you would like to be doing then. (Lesson 14)
• What is your favorite date? Explain why it is your favorite. (Lesson 16)
• Describe the hottest day during summer vacation. Write about what you did that day. (Lesson 18)
• Why do you think a fact family is called a fact family? (Lesson 20-1)

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	**Saxon Math**