

Understanding by Design: MHSD 193

Designer Name(s): 2nd Grade Team

Date: 6.4.14

Subject Area: Mathematics

Grade Level(s): 2

Unit Title/Focus: Lessons 111-120

Estimated Amount of Instructional Time: ~12 Days

Stage 1 – (Desired Results)

State Content and Skill Standards:

- CC.K-12.MP.1, 2, 4, 7, 8
- 2.NBT.7. Add and subtract within 1000, using concrete models or drawings
- 2.NBT.9. Explain why addition and subtraction strategies work
- 2.OA.4. Use addition to find the number of objects arranged in rectangular arrays
- 2.MD.10. Draw a picture graph and a bar graph (with single-unit scale)
- 2.G.1. Recognize and draw shapes having specified attributes, angles or equal faces.¹ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
- 2.G.2. Partition a rectangle into rows and columns of same-size squares
- 2.G.3. Partition circles and rectangles into two, three, or four equal shares

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

Students will understand:

- Multiplication is a fast way to put equal groups together to make larger groups.
- Mathematical expressions represent problem-solving situations
- Angles can be recognized by their shape.
- Problems can be solved using a variety of strategies.
- Mathematical arguments must be supported by investigated and developed numeric facts.

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

- How are addition and multiplication alike?
- How can I write a multiplication or addition expression for an equal groups story?
- What are some objects in the room that have at least one right angle?
- How can I use pennies to act out an equal groups story?
- What strategies can I use to find the answer to a multiplication problem?

Big Idea(s)

**Work with equal groups of objects to gain foundations for multiplication.
Reason with shapes and their attributes.**

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

- Mixed Numbers tell whole and partial amounts
- Bar Graphs can have different scales
- Definition of right angles
- Multiplying by 2 means 2 units of ____; skip counting by 2's
- area may be estimated
- One-Inch Color Tiles may be used to find area
- How to tell "Equal Groups" Stories
- Writing Number Sentences for "Equal Groups" Story Problems
- Definition of Intersecting lines
- Definition of perpendicular lines
- Three-Digit Numbers and Money Amounts may be subtracted to find the difference
- Differences may be estimated
- A set of objects may be divided into equal groups
- Multiplying by 3 mean 3 units of ____; skip counting by 3's

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

- Represent and Write Mixed Numbers
- Create and Read a Bar Graph With a Scale of 2
- Identify Right Angles
- Multiply by 2 Facts
- Estimate Area
- Find Area Using One-Inch Color Tiles
- Act Out and Draw Pictures for "Equal Groups" Stories
- Write Number Sentences for "Equal Groups" Story Problems
- Identify Intersecting Lines
- Identify Perpendicular Lines
- Subtract Three-Digit Numbers and Money Amounts
- Estimate Differences
- Divide a Set of Objects Into Equal Groups
- Multiply by 3
- Make a Table to Solve a Problem when appropriate
- Describe the Likelihood of an Event

<ul style="list-style-type: none"> • Making a Table can be used to Solve a Problem • Words used to describe the Likelihood of an Event • Experiments may have different outcomes <p>Vocabulary: <i>certain, commutative property of multiplication, equal change, factors, impossible, intersect</i></p>	<ul style="list-style-type: none"> • Predict the Outcome of a Probability Experiment
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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> <p><i>Worksheet 120B:</i></p> <ul style="list-style-type: none"> • At the school store Marybeth can buy a folder for 25 cents. Marybeth has \$1.60. Show how many folders Marybeth can buy with her money. 	<p><i>Other Evidence: (quizzes, tasks, academic prompts, homework, observations)</i></p> <p>Fact Assessment 22-1 & 22-2</p> <ul style="list-style-type: none"> • Multiplying by 5 • 100 Subtraction Facts <p>Written Assessment 22</p> <ul style="list-style-type: none"> • SWA story with extra information; writes number sentence; solves • Shows one half of even, odd numbers by sharing • Counts money (quarters, dimes, nickels); writes amount two ways • Draws, identifies parallel lines • Writes, shows, identifies time to the minutes • Adds/subtracts two-digit numbers with regrouping <p>Fact Assessment 23-1 & 23-2</p> <ul style="list-style-type: none"> • Multiplying by 2 • 100 Subtraction Facts <p>Written Assessment 23</p> <ul style="list-style-type: none"> • Draws equal groups story; writes number sentence; solves • Measures using centimeters; finds perimeter • Draws line segment using centimeters • Draws, counts money (quarters, dimes, nickels); writes amount two ways • Draws bar graph with a scale of 2 • Multiplies by 5; adds/subtracts two and three digit numbers with regrouping <p>Oral Assessment 12</p> <ul style="list-style-type: none"> • Modeling and Describing Subtraction with Regrouping
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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>Math Meetings 111 through 120-2</p> <ul style="list-style-type: none"> • Calendar • Attendance graph • Temperature • Counting • Problem of the day • Clock • Pattern • Number of the day • Money • Fact family • Secret Number <p>New Concepts 111 through 120-2</p>

- State objective
- Explicit Instruction
- Guided Practice
- Written Practice
- Recap: "Who would like to share something they learned in math today?"
- Homework

Test-Taking Strategies Practice 20 (for use after Lesson 115)

- Comparing Data on a Graph
- Identifying the Area of a Shaded Region
- Identifying a Missing Number in a Number Sentence

Test-Taking Strategies Practice 21 (for use after Lesson 120)

- Determining the Likelihood of an Event
- Identifying the Area of a Figure
- Picturing an Array

Cumulative Review B (for use after Practice 21)

Journal Writing

- Write a mixed number and explain what it means. (After lesson 112)
- Write 3 questions about one of our class graphs (After lesson 113)
- How can you check to see if an angle is a right angle? What are three things in our classroom that have right angles? (After lesson 114)
- What are some things you are likely to do this weekend? (After lesson 120-2)
- What are some things you are not likely to do this weekend? (After lesson 120-2)

*Math Center Activities 95-103

*Extend and Challenge Activity 9 & 10

*Differentiated Instruction Activities 111 through 120-2

*if needed

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

Saxon Math Lessons 111 through 120-2
Math Folders
Lesson Worksheets 111 through 120-2
Guided/Written Practice 111 through 120-2
Journal
Written Assessment 22 & 23
Fact Assessment 22 & 23
Oral Assessment 12 Recording Form
Math Palettes
Math Center Activities
Extend and Challenge Guide
Differentiated Instruction Guide

Teacher Fact Cards
Student Fact Cards
Pennies
Chart 113
Geoboards
Geobands
Work mat
Color Tiles
Index Cards
Chart Paper
Chart 120-2
Brown Paper Bags

DRAFT