

**Understanding by Design: MHSD 193**

**Designer Name(s):** 2<sup>nd</sup> Grade Team

**Date:** 6.4.14

**Subject Area:** Mathematics

**Grade Level(s):** 2

**Unit Title/Focus:** Lessons 121-130

**Estimated Amount of Instructional Time:** ~12 Days

**Stage 1 – (Desired Results)**

**State Content and Skill Standards:**

- CC.K-12.MP.1, 2, 4, 5, 6, 7 & 8
- 2.NBT.2. Count within 1000; skip-count by 5s, 10s, and 100s.
- 2.OA.3. Determine whether a group of objects (up to 20) has an odd or even #
- 2.OA.4. Use addition to find the number of objects arranged in rectangular arrays
- 2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies
- 2.MD.10. Draw a picture graph and a bar graph (with single-unit scale)
- 2.G.2. Partition a rectangle into rows and columns of same-size squares

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

Students will understand:

- An array can represent a multiplication problem.
- Number sentences can be written for arrays to find the product.
- Mathematicians have special words they use to tell how shapes and objects move.

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

- What does the first number in a 4 x 2 array mean? The second number?
- How do I find the product of an array
- What is the difference between a rotation, a reflection, and a translation? What are some real-life situations in which I would need to use rotations, reflections, and translations?

**Big Idea(s)**

**Work with equal groups of objects to gain foundations for multiplication.  
Work with time and money.  
Represent and interpret data.**

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

- Arrays are organized into equal groups, or units
- Number sentences may represent arrays
- Hours are divided into fourths, or quarters
- Definition of Transformations, Translations, Rotations, and Reflections
- A set of objects can be divided into equal groups
- Multiplying by 4 means 4 units of \_\_\_\_; skip counting by 4's
- Elements of survey
- Graphs are used to represent data
- Points are plotted on coordinate graphs
- Change must be given if the amount paid is greater than the price
- Dividing by 2 means dividing in half
- Rectangles are related to arrays
- Multiplying by 0 means 0 units of \_\_\_\_; product is always 0
- Definitions of multiples
- Guessing and Checking may be used to solve a problem
- Elements of a multiplication table

*Vocabulary: array, coordinate graph, coordinates, division, multiples, multiplication table, origin, quarter hour, quarters, reflection, rotation, rows, slide, translation, turn*

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

- Make and Label an Array
- Write Number Sentences for Arrays
- Tell and Show Time to the Quarter Hour
- Identify and Show Transformations" Translations, Rotations, and Reflections
- Divide a Set of Objects Into Equal Groups
- Multiply by 4
- Choose a Survey Question and Choices
- Represent Data Using a Graph
- Locate and Graph Points on a Coordinate Graph
- Show and Count Back Change for \$1.00
- Mentally compute dividing by 2
- Find the Area of a Rectangle
- Multiply by 0 Facts
- Identify the Multiples of 2, 3, 4, and 5
- Solve a Problem by Guessing and Checking when appropriate
- Make and Use a Multiplication Table

<b>Stage 2 - Assessment Evidence (acceptable assessment evidence that students understand)</b>	
<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 130B:</i></p> <ul style="list-style-type: none"> <li>Denise has a domino with a total of 7 dots. One half of the domino has three more dots than the other half. Show what the dots on her domino look like.</li> </ul>	<p><i>Other Evidence: (quizzes, tasks, academic prompts, homework, observations)</i></p> <p>Fact Assessment 24-1 &amp; 24-2</p> <ul style="list-style-type: none"> <li>Multiplying by 3</li> <li>100 Subtraction Facts</li> </ul> <p>Written Assessment 24</p> <ul style="list-style-type: none"> <li>SSM story with three-digit numbers; writes numbers sentence; solves</li> <li>Reads, draws bar graph with scale of 2</li> <li>Identifies right angles</li> <li>Shows mixed number</li> <li>Number patterns; counts by 5's, counts by 10's</li> <li>Adds three digit numbers; subtracts two digit numbers</li> </ul> <p>Fact Assessment 25-1 &amp; 25-2</p> <ul style="list-style-type: none"> <li>Multiplying by 4</li> <li>100 Subtraction Facts</li> </ul> <p>Written Assessment 25</p> <ul style="list-style-type: none"> <li>Draws equal groups story; writes numbers sentence; solves</li> <li>Labels, writes number sentence for array</li> <li>Draws, identifies perpendicular lines</li> <li>Identifies most likely; justifies answer</li> <li>Writes mixed number for picture</li> <li>Adds/subtracts three-digit numbers, money amounts</li> </ul> <p>Oral Assessment 13</p> <ul style="list-style-type: none"> <li>Counting and showing money amounts to \$1.00</li> </ul>
<b>Stage 3 - Learning Plan (sequence of teaching and learning activities that will produce desired understandings, engagement and development) Use WHERETO elements to help you:</b>	
<p><i>Learning Activities:</i></p> <p>Math Meetings 121 through 130-2</p> <ul style="list-style-type: none"> <li>Calendar</li> <li>Attendance graph</li> <li>Temperature</li> <li>Counting</li> <li>Problem of the day</li> <li>Clock</li> <li>Pattern</li> <li>Number of the day</li> <li>Money</li> <li>Fact family</li> <li>Secret Number</li> </ul> <p>New Concepts 121 through 130-2</p> <ul style="list-style-type: none"> <li>State objective</li> <li>Explicit Instruction</li> <li>Guided Practice</li> <li>Written Practice</li> <li>Recap: "Who would like to share something they learned in math today?"</li> <li>Homework</li> </ul> <p>Journal Writing</p> <ul style="list-style-type: none"> <li>Describe how to make an array. Draw a picture that shows an array. (After lesson 122)</li> </ul>	

- Name something you could divide into equal groups. Describe how you would divide these objects into four equal groups. (After lesson 125-1)
- If you were going to take a survey, what would your question be and how would you collect the information? (After lesson 125-2)
- Why is it important to know how much change you should get back when you buy something? (After lesson 127)

\*Math Center Activities 104-110

\*Extend and Challenge Activity 11

\*Differentiated Instruction Activities 121 through 130-2

\*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

<b>Assessment Tasks that Provide Evidence for Claims including DOK</b>	<input type="checkbox"/> <b>Claim #1/DOK 1, 2, 3, 4 (circle one):</b>		
	<input type="checkbox"/> <b>Claim #2/DOK 1, 2, 3, 4 (circle one):</b>		
	<input type="checkbox"/> <b>Claim #3/DOK 1, 2, 3, 4 (circle one):</b>		
	<input type="checkbox"/> <b>Claim #4/DOK 1, 2, 3, 4 (circle one):</b>		
<b>Achievement Level Descriptors</b>	<b>ALD #1: ALD #2: ALD #3: ALD #4: (circle one):</b>		
<b>Materials/Resources</b>	<table border="1"> <tr> <td> <b>Saxon Math Lessons 121 through 130-2</b>  <b>Math Folders</b>  <b>Lesson Worksheets 121 through 130-2</b>  <b>Guided/Written Practice 121 through 130-2</b>  <b>Journal</b>  <b>Written Assessment 24 &amp; 25</b>  <b>Fact Assessment 24 &amp; 25</b>  <b>Oral Assessment 13 Recording Form</b>  <b>Math Palettes</b>  <b>Math Center Activities</b>  <b>Extend and Challenge Guide</b>  <b>Differentiated Instruction Guide</b> </td> <td> <b>Teacher Fact Cards</b>  <b>Student Fact Cards</b>  <b>Quarters, Dimes, Pennies</b>  <b>Color Tiles</b>  <b>Student Clocks</b>  <b>Scissors</b>  <b>Action Figure</b>  <b>Playing Cards</b>  <b>Chart Paper</b>  <b>Envelopes</b>  <b>Price Tags</b>  <b>Dollar Bill</b>  <b>Work Mat</b>  <b>Crayons</b> </td> </tr> </table>	<b>Saxon Math Lessons 121 through 130-2</b> <b>Math Folders</b> <b>Lesson Worksheets 121 through 130-2</b> <b>Guided/Written Practice 121 through 130-2</b> <b>Journal</b> <b>Written Assessment 24 &amp; 25</b> <b>Fact Assessment 24 &amp; 25</b> <b>Oral Assessment 13 Recording Form</b> <b>Math Palettes</b> <b>Math Center Activities</b> <b>Extend and Challenge Guide</b> <b>Differentiated Instruction Guide</b>	<b>Teacher Fact Cards</b> <b>Student Fact Cards</b> <b>Quarters, Dimes, Pennies</b> <b>Color Tiles</b> <b>Student Clocks</b> <b>Scissors</b> <b>Action Figure</b> <b>Playing Cards</b> <b>Chart Paper</b> <b>Envelopes</b> <b>Price Tags</b> <b>Dollar Bill</b> <b>Work Mat</b> <b>Crayons</b>
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