

<b>Content:</b> Math	<b>Grade/Course:</b> 4 <sup>th</sup>	<b>Timeline:</b> week 2
<p><b>Standard(s):</b></p> <p><b>4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using &gt;, =, and &lt; symbols to record the results of comparisons.</b></p> <p><b>DOK 1: Simplify <math>70,000 + 300 + 40 + 6 = \underline{\quad}</math> Write in standard form. Write in word form.</b></p> <p><b>DOK 2: Compare the following numbers using &gt;, &lt; or =. Explain your answer. <math>23,456 \underline{\quad} 23,654</math>.</b></p> <p><b>I Can Statement(s):</b></p> <ul style="list-style-type: none"> <li>• I can write a whole multi-digit number using base-ten numerals</li> <li>• I can write a whole multi-digit number using words</li> <li>• I can write a whole multi-digit number in expanded form.</li> <li>• I can compare two multi-digit numbers.</li> <li>• I can identify the digit and place that is different when comparing numbers.</li> <li>• I can explain why a number is larger or smaller when compared to another number.</li> </ul>		
<p><b>Lesson Overview:</b></p> <p>Students will generalize their understanding of place value to be able to read numbers, compare numbers, round numbers to 1,000,000, and understand the relative sizes of numbers in each place.</p> <p style="text-align: center;"><b>8 Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Make sense of problems and persevere in solving them.</li> <li><input type="checkbox"/> 2. Reason abstractly and quantitatively.</li> <li><input type="checkbox"/> 3. Construct viable arguments and critique the reasoning of others.</li> <li><input type="checkbox"/> 4. Model with mathematics.</li> <li><input type="checkbox"/> 5. Use appropriate tools strategically.</li> <li><input type="checkbox"/> 6. Attend to precision.</li> <li><input type="checkbox"/> 7. Look for and make use of structure.</li> <li><input type="checkbox"/> 8. Look for and express regularity in repeated</li> </ul>	<p><b>Lesson Objective(s):</b></p> <p>In this lesson, students will be able to</p> <ul style="list-style-type: none"> <li>• To read and write numbers to hundred thousands in standard form, expanded form, and words. Lesson 1.3</li> <li>• To read and write numbers to 999,999. Lesson 1.5</li> <li>• To read, write, and understand numbers to hundred millions.</li> </ul>	

**Vocabulary:**

- Place value
- Multi-digit
- Round
- Estimate
- Standard form
- Sum
- Difference
- Digit
- Greater than
- Less than
- Equal to
- Number

**Focus Question(s):**

- How do we explain relative size of place value?
- How do we read and write multi-digit whole numbers?
- How do we compare whole numbers?
- How do we round whole numbers?
- How does the value of a number change when the digit in a specific place value increases or decreases?
- How does this same digit help me to understand ten thousands?

**Instructional Strategies (EL, SIOP, SPED, Marzano)**

**Lesson 1.3 Number Sense: expressing numbers pg. 6-7 (using the orange book Mathematics Plus)**

**Quick Check: Circle the true number sentences. Cross out the false sentences.**

1.  $8,300 = 83$  tens
2.  $210 = 210$  ones
3.  $3,470 = 347$  hundreds
4.  $9,500 = 95$  hundreds

**Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)

Students will be given a puzzle piece on which a number is written in one of the 3 forms being taught. Students will need to find their partners that have the other matching forms of their number. Students will be given 3 – 4 minutes to complete this task.

**Day 1: Cooperative groups:** Materials: for each group – 6 sets of digit cards: 8,4, and 2

Divide the class into groups of 4. Provide each group with the digit cards. Rotate the task of making a new number.

Ask: Can you find 6 different numbers using the digits 8,4, and 2? (**842, 824, 482, 428, 284, 248**)

Discuss the warm up questions. Elicit from students that you don't input commas or dollar signs into the calculator. See TE for directions.

**Independent work:** (using the Mathematic plus – orange book) Number sense – expressing numbers pg. 6-7 . Do # 1-18/ More practice – Lesson 1.3. pg. H34

**Closing/Summarizing Strategy: (1 -2 mins)**

Ticket Out the Door – write the number in word form and expanded form

## INTERVENTIONS

1. Provide students with partially completed forms of a number. Student fills in the missing information.
2. Students play a matching game (similar to the hook) in where they match up the different forms of the same number.
3. Allow students to use graph/ grid paper to color/ draw the base-ten representations of the numbers.
4. Destination Math

### Assessment(s):

Pre-assessment (beginning of unit)

Students will have up to 10 minutes to solve 3 word problems.

### Day 2: Cooperative group

**Activating Strategy/Hook: (5-10min)** (How will students become cognitively engaged and focused?) Each student will have an index card. On the card is a sticker or picture of a zoo animal. Students will use their card to find their partner (person with the same zoo animal). Students will read their number (on the card) to their partner. Students will discuss and determine who has the larger number and how they know it. Select 2 or 3 pairs to share their findings/ results. Allow student 3 – 4 minutes to complete this activity.

### Guided Practice: (10 – 15 mins)

Each student will be given a digit card (0 – 9). Call upon 4 students to come to the front of the room. Pair the students up so that they create 2 2-digit numbers. Allow remaining students to determine which pair has the larger number and how they know. Repeat this activity multiple times varying the size and number of digits each time. After a few times, students at their seat will hold up comparing symbol to show which number is larger.

**Cooperative Groups:** Materials: 2 place – value work mats to hundred thousands. 2 sets of number cards 0-9 shuffle the number cards and place them facedown.

- A student selects the top card and places it on the place-value mat in any of 6 positions.
- The partner does the same.

Play continues until each student forms a 6digit number. Students compare numbers. The student with the greater number goes first in the next round.

**Independent work using Mathematic Plus textbook:** Place Value to Hundred Thousands – pg. 10-11 # 1-17 / extra practice Lesson 1.5, pg. H35

## Day 3-4: PLACE VALUE TO MILLIONS

**I Can Statement(s):** I can read and write multi digit whole numbers in numeral and word form.

**Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)

Where do we see numbers every day? Student table groups brainstorm and record list for two minutes. Share and make a class list. Why is it important to be able to read the numbers we see? How do we read those numbers?

- Whole Class: Play “ What number AM I? with students.
- Example: My digits are 2,3,4,5,6,7.
- My ones-period digits are all even, while my thousands-period digits are all odd.
- My ones digit is 2 times my hundreds digit.
- My hundred-thousands digit is 4 more than my thousands digit.
- What number AM I? (753,264)

**Teacher Directed:** Think about what you know about reading numbers. Show five or six number cards and ask for volunteers to read them (a few will be written in word form). How do you know when you read a number correctly? What do you do when you have a problem reading a number? The desks in our room are arranged in sets of five/six. Each group has a name. How could I represent the desks in our classroom on a chart? Numbers are arranged in sets of three. Each set has a family name: ones, thousands, millions. Each digit in a family has a place: ones, tens, hundreds. We can represent that in a place value chart. What do we mean by place value? Using a place value chart and number tiles **model** reading and writing a number in numeral and word form. (Although I will make the place value chart to millions place, we will only make numbers to thousands' place at first.) Discuss how the place of a digit affects how the number is read.

**Guided Practice:** Students create a place value chart. What patterns do you notice? How can those patterns help you read and write a number? How are the families separated? (Make sure families are labeled correctly.) Students will use number tiles to make numbers, read and write them in numeral and word form.

**Independent Practice:** Students write how to read a number in their math journal. I can use \_\_\_\_\_ and label the commas \_\_\_\_\_ to help me read a number. I can write a number in word form by \_\_\_\_\_.

**Closing/Summarizing Strategy:** Students share what they have written with a table partner. Volunteers share what they wrote.

**Extended Independent work: (Mathematic Plus – orange book) Place Value to millions** pg. 12-13  
Discuss and students work on #1-23 / extra practice. Lesson 1.6, pg.35

### Intervention

Work with students on reading a set of two and three digit numbers. Provide a list of number words. Students write word form of number. Expand to higher places as students are ready.

**Assessment(s):**

Ticket out the door: Students will write the standard or word form of a numbers I have written on the board.

**Day 5: Review and Maintenance** Pg. 14-15 # 1-29 (mathematics plus-orange book)

**Closing/Summarizing Strategy:** Ticket out the door: Write the number 19,876 in standard form and word form. How many thousands are in the number?

Ticket out the door for day on dry erase boards.

Which of the following is equivalent to one million? \_\_\_\_\_

- a. Ten ten thousands
- b. Ten hundred thousands
- c. Ten one thousands

Strategies:

Instructionally, students need multiple opportunities to use real-world context to read and write multi-digit numbers.

Use cards to create digits that students use to make values that have specific characteristics to reinforce place value. For example, create a 4-digit value that is closest to 3000.

As you move into comparisons, begin by comparing values with the same number of digits before moving into comparing numbers with the same leading digit. Finally, have students compare values that have different numbers of digits and different leading digits. To support students in comparisons, be sure to use expanded notation as well as a visual representation of values on the number line.

Remember to stop to ask questions as students are comparing values so they really think about how the value are the same and how they are different. (Marzano: Identifying Similarities and Differences)  
For rounding, use context to assist this as well as solid questions, the number line, and hundreds charts. For example, ask students about 48 in relationship to 50 and in relationship to 40. Where does this value sit on the number line and which value is it closest to? Use these tools to help students develop the rules for place value.

It is critical that students continue to move from concrete models to abstract representations as they study place value. Instruction should always begin with and be continually reinforced by the use of concrete manipulatives, such as base-ten blocks or counters on place value charts. As students become more familiar with these models, they move to drawings representing the manipulatives (or even use virtual manipulatives as technology permits). The goal is to move all students to the more abstract representation as soon as possible, using manipulatives and drawings to help explain their work; all students will move along this developmental progression at different rates, allowing for differentiation to meet the needs of a variety of learners.

You will find additional support for this topic as well as all 4<sup>th</sup> grade math content through the following sources: [Kansas Unwrapping the Standards](#), [CCSS 4th Grade North Carolina Tasks](#), and [CCSS 4th Grade Lesson from Georgia](#)

**Accommodations/Modifications:**

Peer tutoring, extend time for completion,  
Simplified instructions  
Modified assessments

**Resources & Links to Technology**

Interventions -

Focus heavily on the differences between place value and value. Connect value with money. How much value does this game have? How much value does this bracelet have? Then stress what is the value of the 2 in twenty-three?

With “place,” connect to going places. When asked to go to the place that has food, where do you think to go? Then stress what “place” the 2 in twenty-three is (the tens place).

-Brain Pop Jr. Math—Number Sense—100

<http://www.brainpopjr.com/math/numbersense/>

Brain Pop Jr. Math—Number Sense—Place Value

<http://www.brainpopjr.com/math/numbersense/placevalue/>

**Online resources/activities:** <https://sites.google.com/a/bryantschools.org/math-common-core-resource-site/home-1/4th-grade/4-nbt-2>

**Worksheets for assessments and exit questions:**

<http://www.commoncoresheets.com/SortedByGrade.php?Sorted=4nbt2>

**Mathematics Plus pgs. 6 - 23**

**Illustrative Mathematics** An online resource with sample items that can be used in class or for assessment

**National Library of Virtual Manipulatives** A collection of online manipulatives that can be used by teachers and students

**Kansas Unwrapping the Standards** This source unwraps each standard for 4<sup>th</sup> grade and looks at strategies and misconceptions.

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<b>Content:</b> Math	<b>Grade/Course:</b> 4 <sup>th</sup>	<b>Timeline:</b> Sept. 8 -11
<p><b>Common Core State Standards:</b>  <b>Review previous standards:</b>  <i>4.NBT.1 - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</i>  <i>4.NBT.2 - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons.</i></p> <p><b>4.NBT. 3 Use place value understanding to round multi-digit whole numbers to any place.</b></p> <p><b>DOK 2: Round to the nearest 10, 100, 1,000, 10,000, and 100,000. Use a number line to explain your answer.</b></p> <p><b>I Can Statement(s):</b></p> <ul style="list-style-type: none"> <li>• <b>I can identify the digit and place that is being rounded.</b></li> <li>• <b>I can identify the digit and place that determines which direction to round.</b></li> <li>• <b>I can round a multi-digit number to any place.</b></li> </ul>		
<p><b>Lesson Overview:</b></p> <p>Students will generalize their understanding of place value to be able to read numbers, compare numbers, round numbers to 1,000,000, and understand the relative sizes of numbers in each place.</p> <p style="text-align: center;"><b>8 Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. <b>Make sense of problems and persevere in solving them.</b></li> <li><input type="checkbox"/> 2. Reason abstractly and quantitatively.</li> <li><input type="checkbox"/> 3. Construct viable arguments and critique the reasoning of others.</li> <li><input type="checkbox"/> 4. <b>Model with mathematics.</b></li> <li><input type="checkbox"/> 5. <b>Use appropriate tools strategically.</b></li> <li><input type="checkbox"/> 6. <b>Attend to precision.</b></li> <li><input type="checkbox"/> 7. Look for and make use of structure.</li> <li><input type="checkbox"/> 8. <b>Look for and express regularity in repeated reasoning.</b></li> </ul>	<p><b>Lesson Objective(s):</b>                  In this lesson, students will be able to</p> <ul style="list-style-type: none"> <li>• Compare numbers to millions</li> <li>• Compare and order numbers to hundred millions</li> <li>• To solve problems by using the find a pattern strategy</li> <li>• To use ordinal numbers through 100<sup>th</sup></li> <li>• To estimate by rounding numbers</li> </ul>	

**Focus Question(s):**

- How do we explain relative size of place value?
- How do we read and write multi-digit whole numbers?
- How do we compare whole numbers?
- How do we round whole numbers?

## **Instructional Strategies (EL, SIOP, SPED, Marzano)**

**Day 1:** Understand Place Value for Multi-Digit Numbers

**I Can Statement(s):** I can explain my answer when I round a number.

### **Online guided Intro:**

<https://learnzillion.com/resources/72547-round-multi-digit-whole-numbers-to-any-place>

**Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)

Why, when we talk about the prices of merchandise do we round the price? Ex: My new purse was \$30 (actually \$28). The computer game I want is \$60. It's easy to round the price and simple for everyone to understand it and relate to it. We round other things as well. Ex: I weigh about 100 lbs, not I weigh 96.7 lbs. Can you think of other numbers we might round? Ex: How many pieces of construction paper we need for a project.

**Teacher Directed:** Put problem on the board. I want a bicycle that costs \$76. Display number line 70 to 80. Point out 75. Where does 76 fall. How do we know to round to 80. It is closer to 80 than 70. Explain when something falls in the middle. Number line 900 to 910. What if the number is 905?

**Guided Practice:** Chant the place values ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions and label them on a chart. Practice reading numbers. Draw single number(s) from a bag and place it in a value. Ex: 3 in the ones, 9 in the tens, 8 in the hundreds. Chant the number, 893. Ask them to round it to the ones place, 890 and round to the hundreds place, 900. Repeat with other numbers, large and small.

**Independent Practice:** Now rapidly pull numbers from the bag and let kids round on to a designated place value on paper. Stop every five numbers and explain to a partner your answers. Teacher circulates. Go over as a class. Aim to do 20 together.

**Closing/Summarizing Strategy:** Rounding numbers correctly will help you solve problems your whole life, not just in math class but at the grocery store and in your future job. Hand out mini assessment check on a half sheet of paper. Include an open ended question, like Why do we round numbers? Plus several rounding problems. Check later to see who is on the right track and kids that need remediation can practice with you in a small group while others are at centers.

### **Differentiation Strategies:**

#### **Extension**

Make up estimation problems that involve rounding numbers to the nearest thousand, ten thousand, and hundred thousand. Exchange papers with a classmate.

#### **Intervention:**

Play a rounding game on the computer. Develop number value sense by comparing numbers. Ex: which is larger 853 or 535?

#### **Language Development:**

Use manipulatives to see the value of ones, tens, and hundreds, Practice writing a number on a board when you say it aloud.

**Day 2: Comparing Whole numbers (pg. 16-17 Mathematics plus orange book)**

**Whole Class approach:** On the chalkboard, draw a number line marked in multiples of 10.

0 10 20 30 40 50 60 70 80 90

Have volunteers mark points for 2 digit numbers and write the numbers.

After students locate several numbers on the number line, ask questions such as:

Which is greater, 25 or 35 (**35**)

What are 2 sentences that compare 25 and 35? **25 is less than 35; 35 is greater than 25.**

**Teach:** Developing Algebraic thinking

Understanding the number relationships shown by numerical inequalities will help students as they solve inequalities in algebra.

Discuss the WARM UP question. Elicit from students that the digit 7 is in the thousands place –value position.

Read with students about comparing numbers. See textbook pg. 16

- Are all the numbers to the left of another number on a number line less in value?
- How would you compare 2,519 to 2,567?
- Write 2 number sentences to compare 42,501 and 42,015.

**Independent work:** Pg. 16-17 # 1-37 / Lesson 1.7, pg. H36 for extra practice or homework

**Day 3: Ordering whole numbers pg. 18-19**

**Whole Class approach:** Materials: Number cards 1-9

Randomly distribute the number cards among students. Have students arrange the numbers left to right from greatest to least in front of the classroom.

- What symbol can be written between each pair of numbers? **>**
- Are numbers arranged from 9 – 1 on a number line? **No**
- How will the numbers be arranged on a number line? **Least to greatest; 1-9**

**Teach:** Discuss the WARM UP question. Guide students to conclude that the number with the fewest digits is the least and the one with the most digits is the greatest.

Establish the mathematical meanings of **compare** and **order**.

- In what order are the numbers arranged on the number line? **Least to greatest**
- Suppose a fourth space probe weighs 4,643 tons. Between what 2 numbers will you list it? **Between 4,636 and 4,652**
- When ordering 3 or more numbers, how many numbers do you compare at a time? **2 numbers**

**Independent work:** **Ordering whole numbers pg. 18-19** # 1-18/ extra practice Lesson 1.8, pg.H36

#### Day 4: Ordinal Numbers

**Cooperative Partners: Materials:** for each pair of students – six 3' x 3" squares of paper in 6 colors: red blue, yellow, green, orange, black

Have each partner take turns arranging the colored squares in a row in the order given above. Have each pair of students answer the following questions. Discuss the answers.

If the red square is first:

- What color square is last? **Black**
- What color square is 5<sup>th</sup>? **Orange**
- How many color squares are before the 3<sup>rd</sup> square? **2 squares**
- If the green square is removed, what will be the position of the orange square? **4<sup>th</sup>**

Teach: Discuss the WARM UP question. Students' answer will vary.

Read and discuss with students the story about Marty and his friends. (Mathematics plus pg. 22TE)

What ordinal patterns are there? **1<sup>st</sup>, 21<sup>st</sup>, 31<sup>st</sup>, 41<sup>st</sup>, and so on. 2<sup>nd</sup>, 22<sup>nd</sup>, 32<sup>nd</sup>, 42<sup>nd</sup>, and so on. 3<sup>rd</sup>, 23<sup>rd</sup>, 33<sup>rd</sup>, 43<sup>rd</sup>, and so on. All other ordinals end in *th*.**

**Independent Work:** Ordinal numbers pg. 22-23 # 1-20 / extra practice Lesson 1.10 pg.H37

#### Day 4 – 5: Estimate by rounding Numbers

**Whole Class:** Materials: for each student – 2 word cards: **APPROXIMATE** and **EXACT**

As a statement is read. Each student hold up an **exact** or an **approximate** card.

1. There are 738 students in the school. **Exact**
2. The truck was about 12 feet high. **Approximate**
3. The bike cost around \$300. **Approximate**
4. Memorial stadium holds 33,472 people. **Exact**

Discuss situations where using approximate numbers may be appropriate. Examples: **population, distances.**

**Teach:** Discuss the WARM UP question on page 24. Elicit the following response from students: because 68 is ore than halfway to the next hundred.

Talk about the satellite and its orbit. Then discuss rounding numbers and amounts of money.

Some students may have difficulty understanding that 283 is closer to 300.

What number is halfway between 200 and 300? **250**

Is 283 > 250? **Yes**

How can you round 250 to the nearest hundred? **Round up if digit to the right is 5 or greater; 300**

**Independent work: Estimate by rounding numbers** – pg. 24-25 # 1-17 / Lesson 1.11, pg H37

**Assessment:** Chapter Review Test pg. 26 – 27 # 1-52

Cumulative Test: pg. 31 #1-12

**Student reflection:**

Write about it: Have students write a paragraph explaining to a third grader how to round an amount of money to the nearest ten dollars. Have students use \$613.59 as an example.

Compare the student's paragraph to his or her response to a similar question on TE page xxiv.

**Evaluate whether student**

\_\_\_\_\_ gives a clearer, more complete response.

\_\_\_\_\_ rounds \$613.59 to the nearest ten dollars correctly.

**Strategies:**

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**Accommodations/Modifications:**

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Simplified instructions  
Modified assessments

**Resources (Textbook and Supplemental):**

Mathematics plus pg. 16-27

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<p><b>Standard(s):</b>  <b>4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.</b>  <b>DOK 1: Find the sum of 2930 + 1862 = _____</b>   <b>Find the difference of 2930 + 1862 = _____ DOK 2: Write an equation that equals, 3876.</b></p> <p><b>Learning Targets</b></p> <ul style="list-style-type: none"> <li>• I can add multi-digit numbers using the standard algorithm (starting in the ones place, then moving to the tens place, etc)</li> <li>• I can subtract multi-digit numbers using the standard algorithm (starting in the ones place, then moving to the tens place, etc)</li> </ul>		
<p><b>Lesson Overview:</b>          Students will generalize their understanding of place value to be able to read numbers, compare numbers, round numbers to 1,000,000, and understand the relative sizes of numbers in each place.</p>	<p><b>Lesson Objective(s):</b>          In this lesson, students will be able to</p> <ul style="list-style-type: none"> <li>• To use the counting on, doubles, doubles plus one, zero, and order strategies to recall addition facts</li> <li>• To add 3 or more 1-digit numbers with regrouping. To use the grouping (associative) property of addition</li> <li>• To estimate 3 digit sums</li> <li>• To add 2-digit numbers with and without regrouping</li> <li>• Adding three-digit numbers</li> <li>• To estimate differences by using rounding</li> <li>• To choose a strategy for solving a problem</li> <li>• To subtract 2-digit numbers with and without regrouping</li> <li>• To subtract 3-digit numbers with and without regrouping</li> </ul>	
<p><b>I Can Statement(s):</b>  <b>I can identify the digit and place that is being rounded.</b>  <b>I can identify the digit and place that determines which direction to round.</b>  <b>I can round a multi-digit number to any place.</b>  <b>I can use many different strategies to solve addition problems within 1,000,000</b>  <b>I can use many different strategies to solve subtraction problems within 1,000,000</b>  <b>I can decide if my answers make sense and are reasonable using mental math and estimation.</b></p>		

<p><b>Vocabulary:</b></p> <ul style="list-style-type: none"><li>• Place value</li><li>• Multi-digit</li><li>• Round</li><li>• Estimate</li><li>• Standard form</li><li>• Sum</li><li>• Difference</li><li>• Digit</li><li>• Greater than</li><li>• Less than</li><li>• Equal to</li><li>• Number</li></ul> <p><b>8 Mathematical Practices:</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> 1. Make sense of problems and persevere in solving them.</li><li><input type="checkbox"/> 2. Reason abstractly and quantitatively.</li><li><input type="checkbox"/> 3. Construct viable arguments and critique the reasoning of others.</li><li><input type="checkbox"/> 4. Model with mathematics.</li><li><input type="checkbox"/> 5. Use appropriate tools strategically.</li><li><input type="checkbox"/> 6. Attend to precision.</li><li><input type="checkbox"/> 7. Look for and make use of structure.</li><li><input type="checkbox"/> 8. Look for and express regularity in repeated</li></ul>	<p><b>Focus Question(s):</b></p> <ul style="list-style-type: none"><li>• How do we explain relative size of place value?</li><li>• How do we read and write multi-digit whole numbers?</li><li>• How do we compare whole numbers?</li><li>• How do we round whole numbers?</li><li>• How does the value of a number change when the digit in a specific place value increases or decreases?</li><li>• How does this same digit help me to understand ten thousands?</li></ul>

**DAY 1: Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  
Teach students “The Rounding Rap – Keep It Low”.

**Teacher Directed: (15 – 20 mins)**

Teacher will go over the key vocabulary for the lesson (power point presentation). Students will use a Frayer model (or other graphic organizer) for each vocabulary word which will be recorded in their math journal. Use a bubble map and have students discuss and generate other words that mean the same as ‘rounding’. Complete a class bubble map. Using a hill or roller coaster scenario, model for students how to use a picture to determine where to round a digit to. Emphasize that there are only two options when deciding what to round to. Model 3 or 4 different places using the same number. Students will record the information in their journal.

**Guided Practice: (20 – 25 mins)**

Each student will be given a digit card (0 – 9). Call upon students to come to the front of the room and create a number (can be specific or random). Call out a place that will be rounded (hundreds). Ask students at their desks who is in that place, then have them say the digit. Using wipe boards, have students write down (and show their picture) the rounded/ estimated number. Repeat this activity several times.

Using their digit cards, have students create a number (teacher determines the number of digits). Ask 1 student to write their number on the board. Select a student to roll a multi-colored die. The color rolled determines the place to be rounded. (red = ones, orange = tens, yellow = hundreds, green = thousands, blue = ten thousands, purple = millions). Students write the rounded number on wipe-boards. Call on 4 – 5 students to share their number and roll die.

**Independent Practice: (10 – 15 mins)**

“Milling to the Music”. When music is playing, students walk around the room. When music stops, students freeze and look at the board. Display a number on the board. Roll the die to determine which place is being rounded. Students write the rounded number on their wipe board. Do 4 – 5 numbers.

## Instructional Strategies (EL, SIOP, SPED, Marzano)

### Day 2: Mental Math – addition fact strategies (Mathematics Plus orange book)

**Motivate – cooperative partners:** Materials: 8 counters for each pair of students

Have students use counters to find 5 addition facts that have a sum of 8. Partners take turns recording until all facts are found. **0 + 8, 7 + 1, 6 + 2, 5 + 3, 4 + 4 (note: 2 + 6 counts the same as 6 + 2)**

Will  $7 + 1$  and  $1 + 7$  have the same sum? **Yes**

**Teach:** For students who would benefit from a review of addition and subtraction fact families. **Use the Bridge Lesson on pages H4-H5**

**Developing algebraic thinking:** Understanding the different roles of variables is critical to success in algebra.

Discuss the WARM up question on pg. 34.

**Independent work:** Addition fact strategies pg. 34 -35 # 1- 35 / Bridge lessons 2.1, pg H38  
Continue lesson with **GROUPING ADDENDS PG. 36 -37 #1-30**

### DAY 3: Estimating Sums (mathematics plus – orange book)

**Cooperative Partners:** write the sequences on the whiteboard. Student 1 says the first sequence.

Student 2 rounds each number in the sequence to its greatest place-value position and records. Both students confer to find a pattern in the rounded numbers. Have students sign their paper and share their results with the class.

1. 29, 37, 48, 57 . . . . . **30, 40, 50 , 60; add 10**
2. 32, 47, 68, 85 . . . . . **30, 50, 70, 90; add 10**
3. 156, 289, 385, 467 . . . . . **200, 300, 400, 500; add 100**
4. 98, 279, 535, 673 . . . . . **100, 300, 500, 700; add 200**

**Teach:** Discuss the WARM UP question. Students' estimates will vary.

Materials: Calculators (options)

Front-end estimation is well suited to young children because of all the numbers to be operated on are visible in the problem. It is quicker and easier than the more traditional rounding approach but may not be as close to the exact answer as rounding.

Have students read about the roller coaster. Pg. 38

- What word in the story problem indicates that an exact answer is not needed? **Estimate**
- Can you use mental math to estimate the sum? **Yes**
- How do you think each estimate compares with the actual sum? **\$3 is less; \$4 is more**

**Independent work:** Estimating Sums pg. 38-39 # 1- 16 / Extra practice Lesson 2.3, pg.H38

**Extra activity: PROBLEM SOLVING activity pg. 40 – 41 Using strategy for solving a problem**

**Day 4: Adding Two-digit numbers and Three digit numbers (mathematics plus – orange book)**

**Cooperative Groups:**

Materials: Number cards 3, 5, 7, and 6 for each group

Using the digit 3, 5, 7, and 6 only once in each number sentence, students take turns finding:

1. all possible sums for two 1-digit addends. **8; 10; 9; 12; 11; 13**
2. all possible sums for three 1-digit addends. **15; 14; 16; 18**

**Independent Work:** Adding two-digit numbers and three-digit numbers pg. 42-43 # 1-10 and 44-45 # 1-10

**More practice, Lesson 2.5, pg. H39/ lesson 2.6 pg. H39**

**Day 5: Adding – Three or more addends (48-49)**

**Partners:** Write these numbers on the whiteboard:

**477      462      573      374      676      588**

Have students work in pairs to find 3 addition examples, each with 2 addends, that have a sum of 1,050.  
***573 + 477; 462 + 588; 374 + 676***

How did a zero in the ones place of the sum help you choose the correct addends? ***Look for combinations of digits in the ones place that have a sum of 10***

**Teach:** Discuss the WARM UP questions on pg.48. Elicit from students that the sum is the total when you put two or more addends together.

Independent work: Adding Three or More addends pg. 48 – 49 #1-16/ more practice pg. Lesson 2.7 H39.

**Closing/Summarizing Strategy: (up to 5 mins)**

Ticket Out the Door – round this number to the nearest 100

**Assessment(s): (up to 5 minutes)**

Answer 3 rounding questions

Rounding Math-Up and Rounding Scavenger Hunt

**Teacher Reflection:** Due to activities and time the following lessons will need to be reviewed and or continued next week (week 5)

Estimating Differences Pg. 50 -51

Subtracting Two-Digit numbers pg. 52-53

Subtracting Three-Digit numbers pg. 54-55

Assessments: Chapter Test pg. 62-63 #1-40

Cumulative Review pg. 67 # 1-12

**Accommodations/Modifications:**

Peer tutoring, extend time for completion,

Simplified instructions

Modified assessments

**Resources (Textbook and Supplemental):**

[https://learnzillion.com/lesson\\_plans/7152#fndtn-lesson](https://learnzillion.com/lesson_plans/7152#fndtn-lesson)

**Resources & Links to Technology**

**Mathematics Plus – orange book**

**Mental math – addition fact strategies pg. 34-35**

**Grouping addends pg. 36-37**

**Estimating sums pg. 38 -39**

**Adding Two-digit numbers pg. 42-43**

**Adding three digit numbers pg. 44-45**

**Adding three or more addends pg. 48-49**

[Illustrative Mathematics](#) An online resource with sample items that can be used in class or for assessment

[National Library of Virtual Manipulatives](#) A collection of online manipulatives that can be used by teachers and students

[Kansas Unwrapping the Standards](#) This source unwraps each standard for 4<sup>th</sup> grade and looks at strategies and misconceptions.

[CCSS 4th Grade North Carolina Tasks](#) This source provides examples of tasks and assessments aligned to CCSS.

[CCSS 4th Grade Lesson from Georgia](#) This Web site provides units of study as aligned to Georgia's pacing guide for the

Name: \_\_\_\_\_

4. NBT. 4

Write a subtraction problem for which the difference equals 1,557.  
Show your work below.

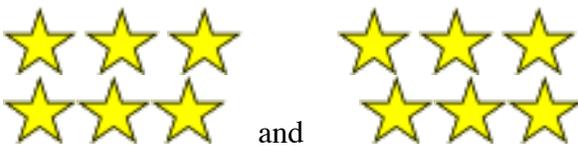
Write an addition problem in which an addend is 1,557.  
Show your work below.

Teacher notes:

<b>Not yet:</b> Student shows evidence of misunderstanding, incorrect concept or procedure		<b>Got It:</b> Student essentially understands the target concept.	
<b>0 Unsatisfactory: Little Accomplishment</b>  The task is attempted and some mathematical effort is made. There may be fragments of accomplishment but little or no success. Further teaching is required.	<b>1 Marginal: Partial Accomplishment</b>  Part of the task is accomplished, but there is lack of evidence of understanding or evidence of not understanding. Further teaching is required.	<b>2 Proficient: Substantial Accomplishment</b>  Student could work to full accomplishment with minimal feedback from teacher. Errors are minor. Teacher is confident that understanding is adequate to accomplish the objective with minimal assistance.	<b>3 Excellent: Full Accomplishment</b>  Strategy and execution meet the content, process, and qualitative demands of the task or concept. Student can communicate ideas. May have minor errors.

Adapted from Van de Walle, J. (2004) Elementary and Middle School Mathematics: Teaching Developmentally. Boston: Pearson Education, 65

## Guam District Level Lesson Plan

<b>Content:</b> Math	<b>Grade/Course:</b> 4 <sup>th</sup>	<b>Timeline:</b> Sept. 21-25
<p><b>Standard(s):</b></p> <p><b>4.OA.1</b> Interpret a multiplication equation as a comparison, e.g., interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p><b>DOK 1: What is number 3 times larger than 4?</b>  <b>DOK 2: Write an equation that shows 8 times as many as 24.</b></p> <p><b>4.OA.2</b> Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p> <p><b>DOK 1: Jenny has 5 dolls. Susie has 3 times as many dolls as Jenny. How many dolls does Susie have in all?</b></p> <p><b>DOK 2: Joan works on a loading dock. She can load 45 boxes in one hour. Write an equation that can be used to find b, the number of boxes she can load in 2 hours.</b></p>		
<p><b>Lesson Overview:</b>  Numbers, expressions, and measures can be compared by their relative values. Additive comparisons focus on the difference between 2 quantities.</p> <p>Multiplicative comparisons focus on comparing 2 quantities by showing that a quantity is a specified number of times larger than the other.</p> <p>This lesson builds on students' understanding of a multiplication equation as a comparison. The task allows students to compare an additive comparison to a multiplicative comparison. Students will work with both types of comparisons in the same context in order to investigate how the two situations differ. This builds toward solving word problems involving multiplicative comparisons.</p>	<p><b>I CAN...</b></p> <p><b>Write and explain the meaning of a multiplication equation. 4.OA.1</b></p> <p><i>For example: I know that in the equation <math>4 \times 5 = 20</math>, I have four groups of five. When I count them up, I get 20!</i></p> <p><b>I can create and solve multiplication equations that compare two sets. 4.OA.1</b></p> <p><i>For example: I know that 2 groups of 3 equals six and that 3 groups of 2 equals six!</i></p> <div style="text-align: center;">  </div>	

Objectives: Students will ....

Explore multiplications and division.

Multiply 2 and 3 by a 1 –digit number.

Multiply 4 and 5 by a 1-digit number.

Use the order, one, zero, and Grouping Properties of multiplication

Identify too much or too little information to solve a problem.

**I can represent verbal statements of multiplicative comparisons as equations. 4.OA.1**

*For example: I can show the commutative property of multiplications by writing the equations  $7 \times 5 = 35$  and  $5 \times 7 = 35$ !*

**I can solve word problems using multiplication and division that involve multiplicative comparison. 4.OA.2**

*For example: I know that  $8 \times 3$  is the same as  $3 \times 8$ ! They are part of the fact family 3,8,24!*



**I can use drawings and equations with a symbol for the unknown number to solve word problems. 4.OA.2**

*For example: 6 divide by 3 = A*



**I can interpret the quotient of whole numbers through 9,999. 4.OA.2**

*For example: I know that  $12 \div 4 = 3$  means that I have twelve things divided into four groups with three in each group.*

**I can identify when to multiply and when to divide in word problems. 4.OA.2**

*For example: I can look for key words like of, times, divide, and separate to help me know if I should multiply or divide.*

**Vocabulary:**

- prime,
- composite
- rule
- factors
- product
- comparison
- equation
- remainder
- estimation
- rounding

**8 Mathematical Practices:**

- 1. Make sense of problems and persevere in solving them.
- 2. Reason abstractly and quantitatively.**
- 3. Construct viable arguments and critique the reasoning of others.**
- 4. Model with mathematics.
- 5. Use appropriate tools strategically.**
- 6. Attend to precision.
- 7. Look for and make use of structure.
- 8. Look for and express regularity in repeated

**Essential Questions:**

- How do you illustrate and explain multiplication calculations by using equations, rectangular arrays, and/or area models
- How do you multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations

**Instructional Strategies (EL, SIOP, SPED, Marzano)**

**Directions:** Begin the lesson by writing  $6 \times 32$  for all the students to see. Ask the students to compute  $6 \times 32$  mentally without paper, pencil, or calculators. Ask volunteers to share different methods of mental computation for this problem, and record their methods on the board. Spotlight any method that uses the distributive property:

Example of a response that uses the distributive property:

$$6 \times 32 = 6 \times 30 + 6 \times 2 = 180 + 12 = 192$$

Point out how the number 32 was broken into  $30 + 2$ . This makes it easier to multiply and add mentally. Thus, this problem could be written as follows:

$$6 \times 32 = (6 \times 30) + (6 \times 2)$$

- Using base ten materials (such as blocks), students should model  $6 \times 32$ . This task should be

- completed independently or with a neighbor by showing 6 groups of 32 as shown below:
- Using the base ten blocks, guide students to observe that they have 6 groups of 30 and 6 groups of 2. Ask the students, “How would these groups look in a number expression?” Help students make a connection between the blocks and the expression  $(6 \times 30) + (6 \times 2)$
- Using the base ten blocks, guide students to observe that they have 6 groups of 30 and 6 groups of 2. Ask the students, “How would these groups look in a number expression?” Help students make a connection between the blocks and the expression  $(6 \times 30) + (6 \times 2)$
- Have students record their drawings and solution in symbols on their Recording Sheets.
- Present students with another problem  $4 \times 53$  by recording it on the board. Ask the students to model this problem with base ten blocks. Have them draw their diagram on the Recording Sheet. Then work with a partner to show this problem using numbers and symbols. Students should take turns explaining the mathematics they are using and why it makes sense. Once all have explained the problem to their partners, write the steps on the board.
- When most pairs have finished, ask students to share their thinking about the mathematics they are using. Based on student explanations, introduce the term “Distributive Property.” Ask student to explain how the distributive property is related to expanded notation. As students share their thinking record any method that makes this connection such as:

$$53 = 50 + 3 \text{ So } 4 \times 53 = (4 \times 50) + (4 \times 3)$$

- Once again, present a third problem such as  $3 \times 67$  by writing it on the board. Ask students to solve the problem by grouping their blocks. They should use the same process of modeling the problem with blocks and recording their work on the Recording Sheet. This time, challenge students to use the term “distributive property” as they explain the mathematics they used with their partners.
- When most pairs have finished, ask students to share the mathematics they used with the whole class. Challenge them to use the term “distributive property” as they explain their reasoning.
- Finally students will apply their understanding in the context of a word problem such as:  
A candy company has orders for chocolate bars from 5 different stores. Each order contains 45 chocolate bars. Use the distributive property to figure out how many chocolate bars the candy company needs to make.

Students should solve this problem using the same process: modeling with blocks, recording on the Recording Sheet, and discussing their reasoning with a partner.

- Once most pairs have completed the task, close the lesson by asking students to explain how using the distributive property can help you solve multiplication problems. This question might prompt a small group or whole-class discussion or it might be used as a journal prompt.

## Questions to Pose:

As students work with their partner:

- How does your model/drawing connect to the numbers and symbols?
- Why does it make sense to use an addition symbol in the expression?
- How does breaking the number apart help you solve the problem?
- How did you decide where to start solving this problem?

During class discussion:

- Explain how the distributive property is helpful when you are multiplying large numbers.

Create a multiplication problem that supports your explanation.

- What would happen if you tried to use the distributive property to solve a problem such as

$$458 \times 7?$$

- How does the distributive property connect to the models we have been using?

- **Possible Misconceptions/Suggestions:**

Possible Misconceptions	Suggestions
Students have difficulty decomposing numbers using place value. They have trouble recognizing that 32 is the same as $30 + 2$ .	Give students the opportunity to build two-digit numbers with a variety of manipulatives. Emphasize the values of tens and ones.
Students do not connect multiplication with equal groups.	Provide a variety of manipulatives for students to partition into equal groups. Encourage students to provide stories that match their manipulatives such as "Four squirrels each carried 8 acorns." Help students write a multiplication expression that corresponds with their manipulatives and context.

## Special Notes:

Follow up lessons could

- Extend to multiplying with larger numbers including three digits by one digit and four digits by one digit

- Vary the problem type based on Table 2 “Common Multiplication and Division Situations.”

This table is found on page 89 of the Common Core State Standards for Mathematics

Glossary. [http://www.corestandards.org/assets/CCSSI\\_Math%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf)

- This lesson applies the distributive property to decomposing large numbers ( $32 = 30+2$ ). Provide problems that model and apply the distributive property in reverse such as  $4 \times (8 + 5)$
- Explore whether or not the distributive property could be used in addition, subtraction, and division

### **Day 1: Exploring Multiplication and Division** pg. 70

Cooperative Partners: Materials: 30 counters for each pair or group

Students each model one problem with counters to find the answer.

1. In gym class, there are 4 teams with 5 students on each team. How many students are in gym class? **20 students.**
2. There are 20 students going on a field trip. The school van holds 5 students. How many vans are needed? **4 vans**

**Teach:** For students who would benefit from a review of using arrays to model multiplication and division facts, use the Bridge Lessons on pages H8-H9.

Discuss the meaning of the **array**, and the difference between a row and a column.

**Building Understanding: Materials:** counters - After students work in cooperative groups to complete the tasks on page 70, have the groups compare and discuss their findings.

**Question:** When is multiplication used for addition and division used for subtraction? **When the same numbers is repeatedly added or subtracted.**

**Independent work** Pg. 71 # 1- 18 / Extra practice: lesson 3.1, pg H42

## Day 2: Multiplication 2 and 3 as factors (72-73)

Motivate: cooperative partners

Materials: 30 counters for each pair

Have students 1 arrange counters in the first arrays and have student 2 write the number sentence. Then switch roles.

4 groups of 2	4 groups of 3	3 groups of 2	2 groups of 3
**	***	**	***
**	***	**	***
**	***	**	***
**	***	**	***
<b>4x2=8</b>	<b>4x3=12</b>	<b>3x2=6</b>	<b>2x3=6</b>

Partners confer to answer the question.

- Is 3 groups of 2 equal to 2 groups of 3? **Yes** Why? **Order Property of Multiplication**

**Teach:** Discuss the WARM up question on page 72. Elicit the following response from students: count by fives, 5, 10, 15

**Independent work:** Multiplication 2 and 3 as factors pg. 72 – 73 # 1- 31/ Lesson 3.2 H42 extra practice

## Day 3: Multiplication 4 and 5 as factors (74-75)

Motivate: Whole class

Have students play a game of multiple clap to a practice multiple of 5.

The first *student says “one,”* the next *student says “two,”* and so forth. When the counting comes to a number that is a multiple of 5, the student claps his or her hands instead of saying the multiple of 5. The counting continues to 130.

Have students play the same game for multiples of 4, to 120.

**Teach:** Discuss the warm up question on page 74. Students should conclude that multiplication is faster.

Multicultural note: Several sports are popular in Brazil, but none is as popular as soccer. Large soccer stadiums are found in most cities. The largest stadium in Brazil is the Maracana in Rio De Janeiro. This stadium has a normal capacity of 205,000 people.

Student may model the problem with counters.

Question: Would 6 groups of 4 give the same product? **Yes** Would the story be the same? **No; It would be a story about 4 teams, with 6 runners each.**

Independent work Pg. 74-74 Multiplication 4 and 5 as factors. # 1-30/ Lesson 3.3 H42

**Day 4: Mental Math: Using Multiplication Properties (76-77)**

**Motivate: Whole Class:**

Materials: Graph Paper

Have students draw rectangles on graph paper to show 2 groups of 4 and then 4 groups of 2

Discuss the rectangles.

Questions:

- How many squares are in each rectangle? **8 squares**
- What multiplication sentence fits each rectangle?  **$2 \times 4 = 8$ ;  $4 \times 2 = 8$**

Teach: An understanding of the properties of numbers will help students solve equations.

Discuss the WARM UP question on page. 76. Elicit from students that the factors are in different order. The products are the same.

Discuss the properties of multiplication with students.

- If you know the product of  $3 \times 2$ , will you also know the product of  $2 \times 3$ ? **YES**
- Write the addition sentence that corresponds to  **$2 \times 0 = 0$ .  $0 + 0 = 0$**

Independent work: Using multiplication properties pg. 76 -77 # 1- 26 / Lesson 3.4 H42

**Day 5: Problem Solving ( 78 – 79)**

Motivate: Cooperative Groups

Have each group of four students decide what kind of information is needed to complete the direction. Each person should choose a different number.

1. Deliver this envelope. **WHERE**
2. Count by twos. **TO WHAT NUMBER**
3. Complete exercises 1-15 in the math book. **PAGE NUMBER**
4. Check to see if 25 is the correct answer. **PROBLEM**

After all group members have discussed the responses and are in agreement, Have each group report its conclusions.

**Teach:** Talk through the 4 steps process.

**UNDERSTAND** – have students restate the problem I their own words.

**PLAN** – Discuss the problem.

What in formation is given that can be used to solve the problem? **THERE ARE 7 VANS.**

Suppose the number of students in each van is given but the number of vans is not given. Will there be enough information? **NO**

**Independent work: Problem solving pg. 78-79 #1-7**

**Accommodations/Modifications:**

Peer tutoring, extend time for completion,  
Simplified instructions  
Modified assessments

**Resources (Textbook and Supplemental):**

[Illustrative Mathematics](#) An online resource with sample items that can be used in class or for assessment

Mathematics plus pages 70 - 81

[Factor Game](#)

[Product Game](#)

Guam District Level Lesson Plan

<p><b>Content:</b> Math</p>	<p><b>Grade/Course:</b> 4<sup>th</sup></p>	<p><b>Timeline:</b> September 28-Oct.2</p>
<p><b>Standard(s):</b></p> <p><b>4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.</b></p> <p><b>DOK 1: Identify the equation used to solve this word problem. Noah is planning a birthday party. 24 girls are attending and 28 boys plan to attend. He is serving the cake that will feed 75 people. How many more people can Noah invite to his party before he runs out of cake? <math>75-(24+28) = \underline{\hspace{2cm}}</math></b></p> <p><b>DOK 2: Solve: Mary had 3 apple trees with 12 apples on each tree. She had 4 orange trees with 16 oranges on each tree. Write an equation with a letter standing for the unknown quantity that shows how much fruit she has in all.</b></p> <p><b>DOK 3: Write and solve a two-step word problem that uses 2 different operations.</b></p>		
<p><b>Lesson Overview:</b></p> <p>The intended outcome of this Big Idea is for students to use the four operations with whole numbers to solve problems (4.OA.3). With that in mind, students will continue to develop their conceptual understanding of the key concepts identified in the standards here so that they can effectively translate what they already know into applied understanding.</p> <p>Students will be able to utilize the four basic operations with whole numbers to solve problems.</p>	<p><b>Lesson Objective(s):</b></p> <p>In this lesson, students will be able to</p> <ul style="list-style-type: none"> <li>• Multiply 6 and 7 by a 1-digit number, to use the order property to recall facts.</li> <li>• Multiply 8 and 9 by a 1-digit number, to understand the pattern of nines.</li> <li>• Use a multiplication table to practice facts. To find patterns on the multiplication table.</li> <li>• Recognize that multiplication and division are inverse operations; to find the missing factor</li> <li>• Understand the meaning uses of division, to recall division facts with divisors of 2 and 3.</li> <li>• To recall division facts with divisors of 4 and 5; to use multiplication facts to find quotients.</li> <li>• Choose a strategy for solving a problem</li> </ul>	
<p><b>Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Prime</li> <li>• Composite</li> <li>• Rule</li> </ul>	<p><b>Focus Question(s):</b></p> <ul style="list-style-type: none"> <li>• How do you illustrate and explain multiplication calculations by using equations, rectangular arrays, and/or area models</li> <li>• How do you multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using</li> </ul>	

- Factors
- Product
- Comparison
- Equation
- Remainder
- Estimation
- Rounding

**8 Mathematical Practices:**

- 1. Make sense of problems and persevere in solving them.
- 2. Reason abstractly and quantitatively.
- 3. Construct viable arguments and critique the reasoning of others.
- 4. Model with mathematics.
- 5. Use appropriate tools strategically.
- 6. Attend to precision.
- 7. Look for and make use of structure.
- 8. Look for and express regularity in repeated

strategies based on place value and the properties of operations

**I CAN ....**

**I can solve multi-step word problems using division where remainders must be interpreted. 4.OA.3**

*For example: If I have the problem  $29 \div 7 = x$ , I can understand that 7 goes into 29 four times with one left over!  $29 \div 7 = 4 \text{ r.}1$*

**I can represent multi-step word problems using a letter that stands for the unknown number. 4.OA.3**

$6 \div 3 = A$        $781 \div 8 = T$

**I can identify when to add, subtract, multiply or divide in multi-step word problems. 4.OA.3**

**X**      +      -      ÷

**I can use many different strategies to figure out x and divide multi-step word problems. 4.OA.3**

*Arrays, tables, pictures, number lines, fact families*

**I can check the reasonableness of my answers using mental math, estimation and rounding. 4.OA.3**

*I can think to myself ‘does this make sense? Can I prove it? Did I make a reasonable estimate?’*

## Instructional Strategies (EL, SIOP, SPED, Marzano)

### Review and Continuations from week 5:

1. Multiplication 6 and 7 as factors pgs. 80-81 ( 4.OA.1-2)
2. Multiplication 8 and 9 as factors pgs. 82-83

**Day 1: Mental Math** – Practicing Multiplication facts ( pg. 84-85 Mathematics plus book )

**Motivate: Whole Class**

**Materials:** for each group of 4 students – multiplication fact cards.

Give each group of 4 students 20 cards. Let 1 student flash the cards to the others in the group. The first student to give the correct product receives the card. When all cards have been shown, the student with the most cards shows all the cards for the next round.

**Teach:**

Discuss the WARM UP question. Guide students to conclude that they are products for the same fact but with the factors in a different order.

Have students complete the riddle. Correct the facts with students.

1. For which facts A – Z will the Order Property not apply? **DOUBLES FACTS Q, R, S, Z**

Discuss the TALK ABOUT IT questions.

- What kind of numbers are the products of the doubles facts? **SQUARE NUMBERS**
- What pattern is formed in each column and row? **THE NUMBER IN EACH ROW AND COLUMN ARE MULTIPLES OF THE OTHER NUMBERS IN THE ROW OR COLUMN.**
- Is the product **even** or **odd** if both factors are even? **EVEN** odd? **ODD** one factor odd and the other factor even? **EVEN**

**Independent work:** Mental Math Practicing Multiplication facts pg. 84-85 / Lesson 3.8, H43 extra

**Ticket Out the Door:** *How can you tell that there are 100 multiplication facts on a multiplication table?*

**Day 2: Connecting Multiplication and division (pg. 88-89 Mathematics plus)**

Motivate: Whole Class

Materials: 24 counters, 6 paper clips

Model the following problem with students.

A florist has 24 roses. The same number of roses are placed in each of 6 vases. How many roses are in each vase? **4 roses**

How can the roses be distributed into vases? **“deal” the counters 1 by 1 into the 6 cups.**

**Teach:** Understanding the relationship between inverse operations provides a foundation for understanding the process of solving equations.

Discuss the WARM UP question. Elicit from students that the 2 division facts are the inverse of the multiplication facts; they undo each other.

Students read about Yoshi and Shameka.

Have students model  $20 \div 5 = 4$  with counters.

- Is order of numbers important in the division sentence? **YES** is  $20 \div 5$  the same as  $5 \div 20$ ? **NO**
- Is finding a missing factor the same as finding a quotient? **YES**
- Since multiplication is the inverse of division, can multiplication be used to check the answer? **YES** How? **Quotient  $\times$  divisor = dividend;  $4 \times 5 = 20$**

Discuss with students why knowing multiplication facts helps them to know division facts.

**Independent work:** Connecting Multiplication and Division (pg. 88 – 89)

**Ticket Out the Door: How are all four operations related to each other?**

**Day 3: Dividing by 2 and 3 (90-91) / Dividing by 4 and 5**

Motivate: Cooperative Partners

Materials: 24 counters for each pair of students

Have students use counters and confer to answer the following questions.

How many groups of 2 are in 10? **5 groups** in 14? **7 groups** in 16? **8 groups**

How many groups of 3 are in 15? **5 groups** in 18? **6 groups** in 21? **7 groups**

**Independent Work:** Dividing by 2 and 3 pg. 90 -91 # 1-12 / Dividing by 4 and 5 pg. 92 – 93 #1-20

**Visual thinking: #27 - 28**

**Ticket out the door: Demonstrate the two ways to use division.**

**Day 4-5: Problem Solving (94-95)**

Motivate: Cooperative partners

Have students work with a partner to write 1 addition and 1 subtraction question for the following information.

Craft show attendance: fri, 346; Sat, 436; Sun, 635

Have students exchange and solve each other's problems and then discuss questions and write number sentences to answer questions. *Questions and answers will vary. Example: How many people attended the Craft show on the 3 days?  $346 + 436 + 635 = 1,417$*

**Independent Practice: Pg. 94-95****Day 5: Assessment(s): (up to 5 minutes) Formative**

Review and Maintenance pg. 86 # 1-19

**Extensions:**

1. Rounding Math-Up and Rounding Scavenger Hunt

**Accommodations/Modifications:**

Peer tutoring, extend time for completion,

Simplified instructions

Modified assessments

**Resources (Textbook and Supplemental):**

Mathematics Plus pg. 80 – 95

Illustrative Mathematics An online resource with sample items that can be used in class or for assessment

[Factor Game](#)

[Product Game](#)

[http://www.internet4classrooms.com/common\\_core/index.htm](http://www.internet4classrooms.com/common_core/index.htm)

Guam District Level Lesson Plan

<b>Content:</b> Math	<b>Grade/Course:</b> 4 <sup>th</sup>	<b>Timeline:</b> October 5-9th
<p><b>Standard(s):</b></p> <p><b>4.OA.4</b> Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> <li>• I can define factors and multiples and list the factor pairs of any number between 1 and 100.</li> <li>• I can define prime and composite numbers and determine if a number is prime or composite.</li> </ul> <p><b>Continue with previous lesson Standard 4.OA.3 from last week.</b></p>		
<p><b>Lesson Overview:</b>  <b>Big Idea 2,</b> Quarter 1: Students will be able to utilize the four basic operations with whole numbers to solve problems.</p> <p><b>DOK 1: Identify the prime number. Which number is a composite? What are the factors of 25? List the multiples of 7 up to 70.</b></p>	<p><b>Lesson Objective(s):</b>            In this lesson, students will be able to</p> <ul style="list-style-type: none"> <li>• Create factor trees</li> <li>• To explore multiplication and division</li> <li>• To multiply 2 and 3 by a 1-digit number</li> <li>• To multiply 4 and 5 by a 1-digit number</li> <li>• To use the Order, One, Zero, and Grouping Properties of Multiplication</li> </ul>	
<p><b>Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Prime</li> <li>• Composite</li> <li>• Rule</li> <li>• Factors</li> <li>• multiply</li> <li>• Product</li> <li>• Comparison</li> <li>• Equation</li> <li>• Remainder</li> <li>• Estimation</li> </ul>	<p><b>Focus Question(s):</b></p> <ul style="list-style-type: none"> <li>• How do you illustrate and explain multiplication calculations by using equations, rectangular arrays, and/or area models</li> <li>• How do you multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations</li> </ul>	

- Rounding

### **8 Mathematical Practices:**

- 1. Make sense of problems and persevere in solving them.
  - 2. Reason abstractly and quantitatively.**
  - 3. Construct viable arguments and critique the reasoning of others.**
  - 4. Model with mathematics.
  - 5. Use appropriate tools strategically.**
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-

## Instructional Strategies (EL, SIOP, SPED, Marzano)

**PRIME AND COMPOSITE VIDEO:** <https://www.splashmath.com/math-skills/fourth-grade/algebra/prime-and-composite-numbers>

**Day 1: Lesson Introduction:** Give students a pattern to go over

1. 5, 10, 15, \_\_\_\_, \_\_\_\_
2. 4, 8, 12, \_\_\_\_, \_\_\_\_
3. 15, 12, 9, \_\_\_\_, \_\_\_\_
4. 30, 24, 18, \_\_\_\_, \_\_\_\_

Ask students to explain their findings

### Step-by Step Procedure:

1. Discuss learning target: To identify all of the factors of 24 and other numbers between 1 and 100.
2. Review with students the definition of a factor. And why do we need to know the factors of a particular number? As they get older, and have to work more with fractions with like and unlike denominators, factors grow increasingly important.
3. Draw a simple evergreen tree shape at the top of the board. Tell students that one of the best ways to learn about factors is by using a tree shape.
4. Begin with the number 12 at the top of the tree. Ask students what two numbers can be multiplied together to get the number 12. For example, 3 and 4. Underneath the number 12, write  $3 \times 4$ . Reinforce with students that they have now found two factors of the number 12.
5. Now let's examine the number 3. What are the factors of 3? What two numbers can we multiply together to get 3? Students should come up with 3 and 1.
6. Show them on the board that if we put down the factors 3 and 1, then we would be continuing this work forever. When we get to a number where the factors are the number itself and 1, we have a prime number and we are done factoring it. Circle the 3 so that you and your students know that they are done.
7. Draw their attention back to the number 4. What two numbers are factors of 4? (If students volunteer 4 and 1, remind them that we aren't using the number and itself. Are there any other factors?)

8. Below the number 4, write down  $2 \times 2$ .
9. Ask students if there are any other factors to consider with the number 2. Students should agree that these two numbers are “factored out”, and should be circled as prime numbers.
10. Repeat this with the number 20. If your students seem confident about their factoring abilities, have them come to the board to mark the factors.
11. If it is appropriate to refer to Christmas in your classroom, ask student which number they think has more factors - 24 (for Christmas Eve) or 25 (for Christmas Day)? Conduct a factor tree contest with half of the class factoring 24 and the other half factoring 25.

**Closing/Summarizing Strategy: (up to 5 mins)**

Ticket Out the Door – round this number to the nearest 100

**Assessment(s): (up to 5 minutes)**

**Homework/Assessment:** Send students home with a tree worksheet or a blank sheet of paper and the following numbers to FACTOR:

- 100
- 99
- 51
- 40
- 36

**Evaluation:** At the end of math class, give your students a quick [Exit Slip](#) as an assessment. Have them pull a half sheet of paper out of a notebook or binder and factor the number 16. Collect those at the end of math class and use that to guide your instruction the next day. If most of your class is successful at factoring 16, make a note to yourself to meet with the small group that is struggling. If many students have trouble with this one, try to provide some alternate activities for the students who understand the concept and reteach the lesson to the larger group.

**Day 2 Continue 3.1 Multiplication and Division Lesson 1: Cooperative Partners**

Materials: 30 counters for each pair

Students each model one problem with counters to find the answer.

1. In gym class, there are 4 teams with 5 students on each team. How many students are in gym class? **(20 students)**
2. There are 20 students going on a field trip. The school van holds 5 students. How many vans are needed? **(4 vans)**

Go over pg. 70 by discussion of what the lesson will be about (5min)

Discuss the meaning of the word array, and the difference between a row and a column.

After students work in cooperative groups to complete the tasks on page 70, have the groups compare and discuss their findings.

When is multiplication used for addition and division used for subtraction? **When the same number is repeatedly added or subtracted.**

Discuss the first fact family on page 71.

If the counters represented model cars, how would you describe each diagram? **2 groups of 3 cars; 3 groups of 2 cars; 6 cars divided into 2 equal groups; 6 cars divided into 3 equal groups.**

**Independent work:** Students work on the problems pg. 71 # 1-18

Critical thinking Questions: Do 4 groups of 2 and 2 groups of 4 have the same number of counters? **Yes**  
Why? **Order Property of multiplication**

**Evaluation/ assessments:**

Summarize by discussing how to write a fact family for a set of numbers

For each number sentences, draw an array of counters and name the 3 other facts to make a fact family.

1.  $2 \times 5 = 10$      **$5 \times 2 = 10$**   
\* \* \* \* \*         **$10 \div 2 = 5$**   
\* \* \* \* \*         **$10 \div 5 = 2$**

2.  $3 \times 4 = 12$      **$4 \times 3 = 12$**   
\* \* \* \*         **$12 \div 4 = 3$**   
\* \* \* \*         **$12 \div 3 = 4$**   
\* \* \* \*

### **Day 3: Lesson 3.2 Multiplication 2 and 3 as factors**

**Prompt:** Complete the Pattern

1. 2, 4, 6, **8, 10**
2. 3, 6, 9, **12, 15**
3. 12, 15, 18, **21, 24**
4. 10, 12, 14, **16, 18**

**Cooperative Partners:**

Materials: 30 counters for each pair

Have students 1 arrange counters in the first arrays and have student 2 write the number sentence. Then switch roles. 5 min activity (max of 10 min)

4 groups of 2	4 groups of 3	3 groups of 2	2 groups of 3
**	***	**	***
**	***	**	***
**	***	**	
**	***	**	
<b>4 x 2 = 8</b>	<b>4 x 3 = 12</b>	<b>3 x 2 = 6</b>	<b>2 x 3 = 6</b>

Partners confer to answer the questions.

- Is 3 groups of 2 equal to 2 groups of 3? **Yes** why? **Order Property of Multiplication**

**Independent work:** Students work on the problems on page. 73 # 6-32 ans. Only

**Evaluation/Summary: (wrap up)**

**Q: How is counting by threes related to multiplying by three?**

Summarize by discussing the wrap up question. A possible response from students is that counting by threes is like repeated addition, which is like multiplying by 3.

**Day 4: Multiplication 4 and 5 as factors pg. 74 – 75**

**Prompt: Find the Product (1 min)**

1.  $3 \times 2 =$     2.  $5 \times 2 =$
3.  $8 \times 3 =$     4.  $9 \times 2 =$
5.  $7 \times 3 =$     6.  $6 \times 3 =$
7.  $9 \times 3 =$     8.  $2 \times 3 =$

**Whole Class Activity:**

Have students play a game of multiple clap to practice multiples of 5.

The first student says “one,” the next student says “two,” and so forth. When the counting comes to a number that is a multiple of 5, the student claps his or her hands instead of saying the multiple of 5. The counting continues to 130.

Have students play the same game for multiples of 4, to 120.

**Teach:**

Discuss the warm up question. Students should conclude that multiplication is faster.

**Multicultural note**

Several sports are popular in Brazil, but none is as popular as soccer. Large soccer stadiums are found

in most cities. The largest stadium in Brazil is the Maracana in Rio de Janeiro. This stadium has a normal capacity of 205,000 people.

Students may model the problem with counters.

- Would 6 groups of 4 give the same product? **Yes** Would the story be the same? **No; it would be a story about 4 teams, with 6 runners each.**

**Independent work:**

Students work on problems #7-30 and correct together once completed. Go over errors and provide assistance if needed.

**Evaluation/assessments:**

Wrap up.... **Why do some facts in the fours and fives have the same products?**

Summarize by discussing the wrap up question. A possible response is that some facts have the same factors but in a different order such as  $5 \times 4 = 20$  and  $4 \times 5 = 20$ . Also, whenever 0 is a factor, the product will always be 0, so  $0 \times 4 = 0$  and  $0 \times 5 = 0$ .

**Day 5: Mental Math – Using multiplication Properties pg. 76-77**

**Prompt:** Write a multiplication sentence

1. \* \* \*  
\* \* \*

**$2 \times 3 = 6$**

2. \* \* \* \* \*  
\* \* \* \* \*

**$2 \times 5 = 10$**

3. \* \* \* \* \* \* \* \* \* \*  
\* \* \* \* \* \* \* \* \* \*

**$2 \times 9 = 18$**

**Whole Class:**

Material: Graph paper

Have students draw rectangles on graph paper to show 2 groups of 4 and then 4 groups of 2. Discuss the rectangles.

- How many squares are in each rectangle? **8 squares**
- What multiplication sentence fits each rectangle?  **$2 \times 4 = 8$ ;  $4 \times 2 = 8$**

Have students repeat with other pairs of rectangles. Conclude that rectangles with the same number of squares can lie in different position.

**Independent work:** Students work on pg. 77 # 4-26 / 27 – 28 Word problems

Check for understanding: Have students work in pairs to discuss questions 1-3 and write the answers in their math notebook.

**Assessment/Evaluation:**

**Q:** Which multiplication properties can you use to explain  $1 \times 0 = 0$ ?

Summarize by discussing the wrap up question. A possible response from students: Zero Property or Property of one.

Double Check:

Write the property that is shown.

1.  $4 \times 3 = 3 \times 4$  **Order Property**
2.  $4 \times 1 = 4$  **Property of One**
3.  $(2 \times 4) \times 1 = 2 \times (4 \times 1)$  **Grouping Property**
4.  $(2 \times 4) \times 0 = 0$  **Zero Property**

**Accommodations/Modifications:**

Lesson 3.1 see TE meeting individual needs for directions pg. 70

Lesson 3.2 pg. 72

Peer tutoring, extend time for completion,

Simplified instructions

Modified assessments

**Resources (Textbook and Supplemental):**

Mathematics Plus (orange book)

Lesson 3.1 exploring multiplication and division pg. 70 -71 #1-18

Lesson 3.2 Multiplication 2 and 3 factors pg. 72-73 #1-20 word problems #32-35

Lesson 3.3 Multiplication 4 and 5 as factors pg. 74 – 75 # 7-30

Lesson 3.4 Mental Math Using Multiplication Properties pg. 76 -77 #4-26 Word problem #27 - 28

Name \_\_\_\_\_

Date \_\_\_\_\_

My Score:

1. Is the number 426 prime or composite?
2. True or False, 36 is a multiple of 4.
3. List all of the factor pairs for 64.
4. Is 35 prime or composite?
5. Explain how prime and composite numbers are different. Use mathematical terms.

ANSWER:

4.OA.4

1.composite

2. true

3. 1,64; 2,32;

4,16; 8,8 4. composite

5. prime numbers are only divisible by 1 and themselves

Guam District Level Lesson Plan

<b>Content:</b> Math	<b>Grade/Course:</b> 4 <sup>th</sup>	<b>Timeline:</b> week 8 – 9 October 12-16
<p><b>Standard(s):</b>  <i>4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.</i></p>		
<p><b>Lesson Overview:</b></p> <p>Students will be able to utilize the four basic operations with whole numbers to solve problems.</p> <p><b>DOK 1: A pattern is created with a number by adding 6 each time. Which of these number patterns follows that rule?</b></p> <p><b>DOK 2: Predict the next three numbers in the pattern using the rule add 3.</b></p> <p><b>DOK 3: Given the rule “multiply by 2” and the starting number 2, predict the first 5 terms in the pattern and identify features of those terms.</b></p>	<p><b>Lesson Objective(s):</b></p> <p>In this lesson, students will be able to</p> <ul style="list-style-type: none"> <li>• To solve problems by using the find a pattern strategy.</li> <li>• To multiply 6 and 7 by a 1 digit number; to use the Order property to recall facts.</li> <li>• To multiply 8 and 9 by a 1 digit number; to understand the pattern of nines.</li> <li>• To use multiplication table to practice facts; to find patterns on the multiplication table.</li> </ul> <p><input type="checkbox"/> I can create a number or shape pattern that follows a given rule.</p> <p><input type="checkbox"/> I can notice different features of a pattern once it is created by a rule.</p>	
<p><b>Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• prime,</li> <li>• composite</li> <li>• rule</li> <li>• factors</li> <li>• product</li> <li>• comparison</li> <li>• equation</li> <li>• remainder</li> <li>• estimation</li> <li>• rounding</li> </ul>	<p><b>Focus Question(s):</b></p> <ul style="list-style-type: none"> <li>• How do you illustrate and explain multiplication calculations by using equations, rectangular arrays, and/or area models</li> <li>• How do you multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations</li> </ul>	

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### Instructional Strategies (EL, SIOP, SPED, Marzano)

#### Day 1: Problem Solving – Strategy Find a Pattern

**Prompt:** Students in their groups discuss the two given problem and explain their findings.

#### 1. Fill in the blanks following the pattern.

3, 8, 7, 12, 11, 16, 15, 20\_\_\_, \_\_\_

#### 2. What rule is being used to make the following pattern?

5, 10, 12, 20, 25, 30, 35, 40

Find the missing number:

1. 50, 75, 100, **125**
2. 100, 400, 700, **1,000**
3. 4,000; 6,000; 8,000; **10,000**
4. 70, 50, 30, **10**

Whole Class Motivate: For each of the following patterns, have students form a line facing the class. Have students determine whether the next student in line should be a boy or a girl.

1. boy, girl, boy, girl, boy, girl, boy, **GIRL**
2. girl, girl, boy, boy, girl, girl, girl, boy, boy, girl, **GIRL**
3. girl, boy, boy, girl, boy, boy, girl, boy, **BOY**

### Teach: Guided Instruction

For students who would benefit from a review of the find a pattern strategy  
Discuss the four steps process:

**Understand** – Have students restate the problem in their own words and answer the questions.

**Plan** – discuss the name for each figure

- Can you write the word name for each figure to help find the pattern? **Yes; planet; rocket; star**
- Can the word pattern replace the word order? **Yes**
- Do you think most wallpaper borders follow a pattern? Why? **Yes; to appeal to the eye**

**Solve** – Discuss the question.

- Is it important to determine the pattern before choosing **C** or **B**? Why? **Yes; otherwise you would just be guessing.**
- If the planet is not included in the border, what is the pattern? **Rocket, star, rocket, star**

**Independent work:** Have students work on pg. 21 on their own. Once they complete the problems the whole class will discuss in a groups to explain in their own words how they used the 4-step plan to determine the patterns for exercises 1-9.

Students may also want to record their descriptions and drawings for the pattern of the moon in their math notebooks.

### Closing/Summarizing Strategy: (up to 5 mins)

Challenge students to describe why finding a pattern is a good strategy for solving some problems. **It organizes the information A pattern can be extended until a solution is found.**

### Assessment(s): (up to 5 minutes)

Complete the pattern.

1. triangle, circle, square, triangle, circle, square, triangle **CIRCLE.**
2. Blue, green, green, blue, green, **GREEN**
3. 3, 4, 7, 3, 4, **7**
4. <, <, =, >, <, **<, =, >**

### Extensions:

More practice, lesson 1.9, pg. H37

## Day 2: Multiplication 6 and 7 as factors pg. 80 -81

### Prompt

#### Cooperative Group

Materials: 12 counters for each pair of students

Have student 1 model  $6 \times 2$  and student 2 model  $2 \times 6$  with counters. Confer to answer the questions.

- Do the groupings look the same? **No, they are in reverse positions.**
- Are there the same number of counters in each grouping? **Yes**
- What multiplication property is shown by the models? **Order Property**

#### Guided Instruction:

Discuss the warm up question. Elicit the following response from students: count by fives: 5, 10, 15, 20, 25,....; the ones digit must be a 0 or a 5.

#### Multicultural note: Integration of subject to Social Studies

The Scottish Highland Games are held in many cities throughout the United States. The games include athletic contests, dancing, and drumming. Ask students to name cultural events and festivals in your community. (Guam cultural events)

Materials: 63 counters for each pair of students.

Read about the Scottish Highland Games. Have students work in pairs to model the multiplication with counters.

- How will the Order Property help you to learn the multiplication facts for 6 and 7? **Already know facts up to  $5 \times 6$  and  $5 \times 7$**
- Suppose 6 teams have 6 members each. How many team members are there? **36** What shape will the counters make? **Square** is 36 a square number? **Yes**

**Independent work:** Student work on the problems #5-25 Students need to indicate *composite* or *prime* for problems 5, 6 and 7 explain why

#### Summary/assessments:

**Q: How can you show that  $6 \times 7$  and  $7 \times 6$  have the same product?**

Summarize by discussing the wrap up question. A possible response from student is that you can draw an array or use counters to show the Order property.

Extra Practice: Mixed Review pg. 81 #1-6

Students can work as a group to solve each problem. First one to solve come up to the board to show work.

### **Day 3: Multiplication 8 and 9 as factors pg. 82-83**

#### **Prompt:**

##### **Whole Class**

Have all students stand and play Buzz, using multiples of 8. When a student comes to a multiple of 8, the student says “buzz” and sits down. Continue until 1 student is left standing.

Have student play again for multiples of 9.

#### **Guided Instruction:**

Discuss the warm up question. Possible answers are: each one is 9 more; the digits in each product add to 9; 18 is 2 less than 20, 27 is 3 less than 30, 36 is 4 less than 40, etc.

Read about the pickles. Have a volunteer model the multiplication with counters.

- What fact related to  $3 \times 8$  shows the Order Property?  **$8 \times 3$**
- Suppose Mario brought 8 jars of pickles. How many pickles are in 8 jars?  **$8 \times 8 = 64$**

Discuss the talk About it questions.

- What happens to the ones digit as you count by 9? **Decreases by 1** tens digit? **Increases by 1**

#### **Independent work:**

Students work on lesson solving problems #5-26

#### **Summary/assessments:**

**Q: How can you find the product of  $9 \times 9$  if you know that  $8 \times 9 = 72$ ?**

Summarize by discussing the wrap up question. A possible response is that  $9 \times 9$  is nine more than  $8 \times 9$ , so add 9 to 72.

### **Day 4: Mental Math Practicing Multiplication Facts pg. 84 – 85**

#### **Prompt:**

##### **Whole Class**

Materials: For each group of 4 students – multiplication fact cards

Give each group of 4 students 20 cards. Let 1 student flash the cards to the others in the group. The first student to give the correct product receives the card. When all cards have been shown, the student with the most cards shows all the cards for the next round.

**Guided Instruction:**

Discuss the warm up question. Guide students to conclude that they are products for the same fact but with the factors in a different order.

Have students complete the riddle. Correct the facts with students.

- For which facts A – Z will the Order Property not apply? **Doubles facts Q R S Z**

Discuss the talk about it questions.

- What kind of numbers are the products of the doubles facts? **Square numbers**
- What pattern is formed in each column and row? **The numbers in each row and column are multiples of the other numbers in the row or column.**
- Is the product *even* or *odd* if both factors are even? **Even** odd? **Odd** one factor odd and other factor even? **Even**

**Check for understanding:** You may want students to work in pairs to find the products on the multiplication table.

Which exercises show the Order property? **Exercises 1 and 9**

**Independent work:** students work on problems # 1 – 23

**Summary/Assessments:**

Q: How can you tell that there are 100 multiplication facts on a multiplication table?

Summarize by discussing the wrap up question. A possible response is: to look at the multiplication table. It is made up of 10 rows and 10 columns.

Extra Practice: Number Sense Geometry  
26 – 30

**Day 5: Testing and make up work**

**Testing: Review and Maintenance** pg. 86 #1-20

Word Problems pg. 87 #1-4

**Accommodations/Modifications:**

Peer tutoring, extend time for completion,  
Simplified instructions  
Modified assessments

**Resources (Textbook and Supplemental):**

Mathematics Plus (orange book)

Lesson 1.9 Problem Solving pg. 20 -21 Find a Pattern

Lesson 3.6 Multiplication 6 and 7 as factors page 80-81 #1-24

Lesson 3.7 Multiplication 8 and 9 as factors page 82-83 #1-25

Lesson 3.8 Mental Math Practicing Multiplication Facts pg. 84-85 #1-23

Lesson 3.9 Connecting Multiplication and Division pg. 88-89 pg.#1-29

Lesson 3.10 Dividing by 2 and 3 pg. 90-91 #1-26

Lesson 3.11 Dividing by 4 and 5 pg. 92-93 #1-26

Online:

[Illustrative Mathematics](#) An online resource with sample items that can be used in class or for assessment

[Factor Game](#)

[Product Game](#)