



San Diego Unified School District

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Instructional Module to Enhance the Teaching of

**HARCOURT**

**Math**

**California Edition**

**Grade 1**

**Module 3 – Revised**

*Numbers to 100*

**- WORK IN PROGRESS -**

San Diego City Schools  
 Instruction and Curriculum Division  
**MATHEMATICS CURRICULUM MAP – GRADE 1**

**MODULE 3 – Numbers to 100**  
**Modules represent individual units of study that lead to essential learnings**

**THREADS THROUGHOUT THE YEAR- FIRST GRADE**

*This represents what students should do throughout all modules (units of study). These items should not be isolated to a particular unit of study.*

**Students will:**

Develop understanding of numbers and the number system and use their understanding to solve problems and recognize reasonable results.

Use mathematical reasoning to solve problems.

Develop understanding of and fluency in basic computation and procedural skills.

Express generalizations of patterns and relationships.

Make connections among mathematical ideas and between other disciplines.

Develop and use strategies, skills, and concepts to solve problems.

Use appropriate tools, including technology as vehicles to learn mathematical concepts.

**Essential learnings that represent bigger ideas/concepts \***

- Students understand that numbers to 100 are organized into groups of tens and ones.
- Students understand that sets of tens can be perceived as single entities.
- Students count and organize objects in ones and tens.
- Students model and compare two digit numbers to determine which is greater.
- Students know ten less and ten more for any two digit number without counting.
- Students compare and order whole numbers to 100.
- Students understand that there are patterns in our number system.

**\* Essential learnings listed above will be developed by students over the course of the year**

Essential questions that will lead to the essential learnings

How can I represent equivalent forms of the same number to 20 using models, diagrams, and number expressions?

How can I write the numerals from 10 to 100 as tens and ones and as standard numerals?

How can I model and compare two digit numbers to determine which is greater?

How can I use the symbols for less than, equal to or greater than ( $<$ ,  $=$ ,  $>$ ) to record the comparisons of whole numbers to 100?

In what ways can I describe patterns used in our system of numbers?

*Resources: Van de Walle, Chapter 12 pp. 178-182, 190-192; K. Richardson, Hiding Assessment; Combination Trains, Ten Frames*

**Harcourt Math – Grade 1****Module 3  
Numbers to 100****19 Days****Key Mathematical Concepts:**

- Identify groups from 10 to 100; to write the numbers as tens and ones and as standard numerals
- Compare numbers and use the symbols for less than, greater than and equal to
- Identify one less than, one more than and ten less than, ten more than a given number
- Identify ordinal position through tenth
- Recognize and extend number patterns
- Solve problems by using an appropriate strategy

**Note:**

In this module students begin to count groups of ten. Adding groups of ten is a developmental milestone for young children even if they *can* add numbers smaller than ten because the **unit for counting is changing**. Children have been taught to touch only *one* object, say one, mean only *one object*. As the unit for counting changes, now children must almost negate what they have been taught for establishing one-to-one correspondence and touch *one group* of ten, say *one*, but mean **ten ones as a group**. Also, some students will have success with counting by rote by tens, but have not yet attached meaning to grouping/ counting by tens.

**Routines:**

Students will need many opportunities to develop meaning when counting by groups of ten. Try to incorporate a routine that gives students practice in counting groups of tens. Suggestions for routines are given for every lesson. However, routines should be selected based on the needs of individual classrooms. Some classes will benefit from the routines suggested; others might not. The concepts listed above might need to be previewed, reviewed or developed more fully with the use of routines throughout the day. This does not mean that you must always design new routines, but you may want to introduce new questions (especially if you do calendar routines):

*What would one more than \_\_\_\_\_ be? One less? Ten more? Ten less?*

**As students line up:** *Who is the first, second, third, etc.*

*Is the answer you gave greater than \_\_\_\_\_? Or less than \_\_\_\_\_?*

*You said the answer was \_\_\_\_\_. How many groups of 10 would that be and how many leftovers?*

**Counting the Number of Days in School:**

Many teachers keep track of the number of days that students are in school. Using straws or sticks bundled together makes it difficult for students to see an actual group of ten. You may want to begin a new math routine by keeping track of the number of days students are in school by utilizing ten-frames. The ten frames can be placed next/near where you conduct any calendar activities. Each day, fill in another square on the ten frame and ask:

- *How many days have we been in school?*
- *How many ten frames or how many groups do you see?*
- *How can we count them? (Pair the language together of ten frames with groups of tens.) How could we write that?*
- *What would the number be if we added one more group ten? Two more? Ten less?*

Ten frames, introduced in Module 2, provide a clearer model for counting groups of ten. You will need to Xerox 19 ten frames to keep track of the total number of days in school. You will also need to dedicate enough space on a wall or bulletin board to display the ten frames so that they can be easier seen by students when you count. You will also want labels to designate areas for the ONES, TENS, HUNDREDS. The frames will need to be placed in an area on the board that students can easily see. The hundreds chart is also a great tool to help students think and visualize groups of ten and adding on to groups of ten.

Another idea is to connect what students know about dimes. Although working with money (specifically dimes) is not introduced by Harcourt until much later, you might preview the value of dimes and begin a routine where students are utilizing their ideas about units of ten in a context of the real world.

<p><b>Chapter 9: Building Numbers to 100</b></p> <p>Lesson: 9.1: Tens                  Lesson: 9.2: Tens and Ones to 20                  Lesson: 9.3: Tens and Ones to 50                  Lesson: 9.4: Tens and Ones to 100                  Lesson: 9.5: Expand Numbers                  Lesson: 9.6: Problem Solving: Make Reasonable Estimates</p>	<p><b>Chapter 10: Comparing and Ordering Numbers</b></p> <p>Lesson: 10.1: Greater Than                  Lesson: 10.2: Less Than                  Lesson: 10.3: Use &gt;, &lt;, or =                  Lesson: 10.4: Before, After, or Between                  Lesson: 10.5: 1 Less, 1 More                  Lesson: 10.6: 10 Less, 10 More</p>
<p><b>Chapter 11: Number Patterns</b></p> <p>Lesson: 11.1: Ordinal Numbers                  Lesson: 11.2: Patterns on a Hundred Chart                  Lesson: 11.3: Skip Count by 2s, 5s, and 10s                  Lesson: 11.4: Problem Solving: Find a Pattern</p>	<p><b>Module 3 Assessment</b></p> <p><u>Day</u>                  17 Independent Work Stations                  18 Independent Work Stations                  19 Independent Work Stations  <b><u>NOTE: These three days may be used at any time during Module 3. Use them at a time you feel is the best opportunity to formally assess.</u></b></p>

**Module 3: Numbers to 100****19 Days**

<b>Day 1</b> Lesson 9.1	<b>Day 2</b> Lesson 9.2	<b>Day 3</b> Lesson 9.3	<b>Day 4</b> Lesson 9.4	<b>Day 5</b> Lesson 9.5
<b>Day 6</b> Lesson 9.6	<b>Day 7</b> Lesson 10.1	<b>Day 8</b> Lesson 10.2	<b>Day 9</b> Lesson 10.3	<b>Day 10</b> Lesson 10.4
<b>Day 11</b> Lesson 10.5	<b>Day 12</b> Lesson 10.6	<b>Day 13</b> Lesson 11.1	<b>Day 14</b> Lesson 11.2	<b>Day 15</b> Lesson 11.3
<b>Day 16</b> Lesson 11.4	<b>Day 17*</b> Assessment	<b>Day 18*</b> Assessment	<b>Day 19*</b> Assessment	

**NOTE:** Days 17, 18 and 19 may be used at any time during Module 3. Use them at a time you feel is the best opportunity to formally assess.

DAY 1  
Chapter 9: Building Numbers to 100  
LESSON 9.1 TE pg. 127A

<b>LESSON FOCUS:</b>	<b>Tens</b>
<b>CALIFORNIA STANDARD:</b>	<b>Number Sense 1.4</b> Count and group objects in ones and tens.
<b>PURPOSE OF LESSON:</b>	To model groups of 10; to count by tens; to write the numbers
<b>ROUTINE:</b> TE pg.127  TE pg.127A	<b>Suggestion:</b> <b>Daily Routine: TE pg.127A</b> Or: <b>P.O.D.: TE pg. 127A</b> <ul style="list-style-type: none"> <li>• Continue to keep the Number Line and Hundred Chart visible to students to use as a tool for solving problems.</li> <li>• Continue questioning each day: <ul style="list-style-type: none"> <li>– <i>How did you think about the problem to come up with that answer?</i></li> <li>– <i>Did anyone think about it another way?</i></li> <li>– <i>Do you agree or disagree with this response?</i></li> <li>– <i>What was your strategy?</i></li> <li>– <i>Explain how you got your answer.</i></li> </ul> </li> </ul>
<b>LAUNCH:</b> Class number grid For each small group 20 connecting cubes	<b>Getting Started:</b> <ul style="list-style-type: none"> <li>• Model Counting to Ten: <b>TE, pg. 127A</b> (Begin by counting by tens using class number grid.)</li> </ul>
<b>EXPLORE:</b> For each small group 10 craft sticks, 109 dried beans, paper plates for white glue, construction paper	<b>Alternative Teaching Strategy: Beans and Sticks: TE, pg. 128A</b> <ul style="list-style-type: none"> <li>• Put students in groups of 4 or 5 to create 10 sticks with 100 beans as a group rather than per student.</li> <li>• After groups complete ten sticks of ten beans, make sure each group has 9 more single beans as well. Ask groups to show you various 2-digit numbers using their tens and ones. For example, say: <i>Show me 21 using tens and ones. How do you know you have 21 beans?</i> Do this a number of times.</li> <li>• Next, give each group a piece of construction paper and a 2-digit number like 67 or 34. Ask them to use their sticks of ten and single beans to show the number. Groups glue the sticks and beans to the construction paper, then write the number on the construction paper.</li> </ul> <p><b>Students share</b> work and discuss their process. Display bean numbers on the wall.</p>
<b>PRACTICE:</b> TE pg.127-128 Workbook pg.127-128	<b>As time allows: Teach and Practice: TE, pg.127-128; Workbook, pg.127-128</b> Ask questions such as, "How do you know that tens equal 40?"

<b>SUMMARIZE:</b>	<b>Revisit</b> with students the lesson's objective by connecting the following discussion to the purpose of the lesson. <b>Discuss and Write:</b> <i>What strategies could we use to count 30 cubes? ( By 1s, 2s, 5s, and now 10s).</i> <ul style="list-style-type: none"><li>• You might want to have students explain their thinking by demonstration with manipulatives since some students can rote count by tens, but might not fully understand how to group by tens.</li></ul>
<b>HOMEWORK:</b>	<b>Suggestion:</b> <b><u>Family Involvement Activities:</u></b> pg.FA37 or <b>Challenge Master 9.1</b>

DAY 2  
Chapter 9: Building Numbers to 100  
LESSON 9.2 TE pg.129A

<b>LESSON FOCUS:</b>	<b>Tens and Ones to 20</b>
<b>CALIFORNIA STANDARD:</b>	<b>Number Sense 1.4</b> Count and group objects in ones and tens.
<b>PURPOSE OF LESSON:</b>	To identify groups from 10 to 20; to write the numbers as tens and ones and as standard numerals
<b>ROUTINE:</b> Class number grid	<p><b>Suggestion:</b> <b>Model Counting by 10s using the class number grid: (You may choose to practice this routine for the next several days)</b></p> <ul style="list-style-type: none"> <li>• First start 0,10,20, etc. pointing as you count. Ask students to join in counting.</li> <li>• Then start with 5. Then 6. Then 9.</li> </ul> <p>Ask, “What is my finger doing each time I count by tens?”  “How can we use the number grid to help us count by tens starting from any number?”  “When we look at numbers going down on the number grid, what patterns do you notice?”</p> <p><b>Note:</b> Continue counting by 10s using the number grid starting at different numbers each day during routines.</p> <ul style="list-style-type: none"> <li>• Discuss patterns students notice.</li> <li>• As they become more comfortable, introduce counting backwards by tens as well.</li> <li>• Then you may start to ask them to use the number grid to add and subtract ten from any number.</li> </ul>
<b>LAUNCH:</b> <u>Intervention Strategies and Activities</u> <i>Pg. IS110</i> Materials; 10 lunch bags of connecting cubes (bags containing 10 - 20 cubes) 20 connecting cubes, paper, pencil for whole group. Tens and ones recording sheet. You may use Workmat #3 ( <u>Teacher’s Resource Book p. TR115</u> ).	<b>Skill 18: <u>Intervention Strategies and Activities, Alternative Teaching Strategy pg. IS110.</u></b> Model this activity for students.

<b>EXPLORE:</b>	<p>Students work independently on <b>Skill 18 Alternative Teaching Strategy</b>.</p> <ul style="list-style-type: none"> <li>• To suit the needs of different abilities, you may put students in homogeneous groups and vary the amount of cubes in bags depending on instructional levels.</li> <li>• For example, one group may have a variety of bags containing from 10 to 35 cubes. One group may have bags containing from 10 to 20 cubes. Another may have bags containing 1 to 11 cubes.</li> </ul>
<b>PRACTICE:</b> TE and Workbook Pg. 129-130	<p><b>As time allows:</b> <b>Teach and Practice:</b> TE, pg. 129-130; Workbook, pg. 129-130 Ask questions such as, <i>“How do you know that 1 ten and 3 ones equals 13?”</i></p>
<b>SUMMARIZE:</b>	<p><b>Revisit</b> with students the lesson’s objective by connecting the following discussion to the purpose of the lesson. <b>Discuss:</b> Using tens and/or ones, how many ways can we make 17? (one ten, seven ones; seventeen ones)</p>
<b>HOMEWORK:</b>	<p><b>Suggestion:</b> <b>Problem Solving Master 9.2</b></p>

DAY 3  
Chapter 9: Building Numbers to 100  
LESSON 9.3 TE pg.131A

<b>LESSON FOCUS:</b>	<b>Tens and Ones to 50</b>												
<b>CALIFORNIA STANDARD:</b>	<b>Number Sense 1.4</b> Count and group objects in ones and tens.												
<b>PURPOSE OF LESSON:</b>	To write numbers from 10 to 50 as tens and ones and as standard numerals												
<b>ROUTINE:</b> Class number grid	<b>Suggestion:</b> Continue the routine introduced yesterday: <b>Practice counting by 10s using the class number grid.</b>												
<b>LAUNCH:</b> <u>Intervention Strategies and Activities</u> Pg. IS110	<b>Reintroduce Skill 18: <u>Intervention Strategies and Activities, Alternative Teaching Strategy</u> pg. IS110.</b> <ul style="list-style-type: none"> <li>• Today, expand this activity by asking students to write the numbers on paper.</li> <li>• Model for students how to create their own charts (see example below) to record their numbers. You may ask students to fold a blank piece of paper in half then in half again so that 4 columns are created.</li> </ul> <b>EXAMPLE:</b> <table style="margin-left: 40px;"> <tr> <td style="text-align: center;">Tens</td> <td style="text-align: center;">Ones</td> <td style="text-align: center;">=</td> <td style="text-align: center;">Number</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">7</td> <td style="text-align: center;">=</td> <td style="text-align: center;">17</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">=</td> <td style="text-align: center;">23</td> </tr> </table>	Tens	Ones	=	Number	1	7	=	17	2	3	=	23
Tens	Ones	=	Number										
1	7	=	17										
2	3	=	23										
<b>EXPLORE:</b> Lunch bags with cubes from yesterday’s lesson. Blank piece of paper for each student.	Students work independently recording numbers for <b>Skill 18.</b>												
<b>PRACTICE:</b> TE and Workbook pg. 131-132	<b>As time allows:</b> <b>Teach and Practice:</b> TE, pg. 131-132; Workbook, pg. 131-132 Continue questioning students as to their understanding rather than rote rules.												
<b>SUMMARIZE:</b> Connecting cubes	<b>Revisit</b> with students the lesson’s objective by connecting the following discussion to the purpose of the lesson. <b>Discuss:</b> Show students a group of 3 trains of ten and 1 single cube. Ask: “How many tens? How many ones? What is the number or How many cubes all together?” (31) Next show one train of ten and 3 individual cubes. (13) <ul style="list-style-type: none"> <li>• Repeat the questions.</li> </ul> <b>Challenge:</b> How are 31 and 13 alike and how are 31 and 13 different?												
<b>HOMEWORK:</b>	<b>Suggestion:</b> <b>Family Involvement Activities:</b> pg. FA40												

DAY 4  
Chapter 9: Building Numbers to 100  
LESSON 9.4 TE pg.133A

<b>LESSON FOCUS:</b>	<b>Tens and Ones to 100</b>
<b>CALIFORNIA STANDARD:</b>	<b>Number Sense 1.4</b> Count and group objects in ones and tens.
<b>PURPOSE OF LESSON:</b>	To count groups of objects; to write numbers to 100 as tens and ones and as standard numerals
<b>ROUTINE:</b> Class number grid	<b>Suggestion:</b> Continue <b>Counting by 10s using the class number grid</b> and ten frames showing the number of days in school or <b>P.O.D.: TE, pg. 133A</b>
<b>LAUNCH:</b> Base-10 blocks	<ul style="list-style-type: none"> <li>• Introduce Base-Ten Blocks to students. You may want to discuss some of the following:</li> <li>• Ask students to count the individual cubes they see on a ten-rod.</li> <li>• Demonstrate that a ten-rod represents the same thing as the connecting cube train of ten they are accustomed to working with. The individual cubes are like the individual connecting cubes.</li> <li>• Ask students to build a ten-rod using the cubes and line it up next to an existing ten-rod.</li> <li>• Show how to use the ten-rods to count by tens.</li> </ul> <b>Model Early Finishers, Activity: TE pg. 134A</b>
<b>EXPLORE:</b> One Hundred chart cut into 100 squares and placed in an envelope. 20 Hundred charts. For partners, 10 base-ten rods and 10 cubes.	<b>Play Early Finishers Activity, TE pg. 134A</b> , as a whole group. Teacher draws a number out of the envelope. Students work in pairs (or small groups if supplies are limited) to build the number with base-ten blocks and each student colors in the number on their own Hundred Chart.
<b>PRACTICE:</b> TE and Workbook pg. 133-134	<b>As time allows:</b> <b>Teach and Practice: TE, pg. 133-134; Workbook, pg. 133-134</b> Continue questioning students to determine understanding of concepts rather than rote memorization.
<b>SUMMARIZE:</b>	<b>Revisit</b> with students the lesson's objective by connecting the following discussion to the purpose of the lesson. <b>Discuss:</b> Show students 3 ten-rods and 8 single blocks. Ask: "How many tens? How many ones? What is the number or How many cubes all together?" (38) Next show 8 ten-rods and 3 individual blocks. (83) Repeat the questions. <b>Challenge:</b> Ask students to explain how 38 and 83 are alike and how are they different.
<b>HOMEWORK:</b>	<b>Suggestion:</b> Family Involvement Activities: pg. FA39

DAY 5  
Chapter 9: Building Numbers to 100  
LESSON 9.5 TE pg. 135A

<b>LESSON FOCUS:</b>	<b>Expand Numbers</b>
<b>CALIFORNIA STANDARD:</b>	<b>Number Sense 1.4</b> Count and group objects in ones and tens.
<b>PURPOSE OF LESSON:</b>	To write numbers to 100 as tens and ones and as standard numerals
<b>ROUTINE:</b> Class Number Grid Class Number Line Base-10 Blocks	<b>Suggestion:</b> Continue <b>Counting by 10s using the class number grid</b> and/or <b>P.O.D.:</b> <i>Jayne has 30 pennies. Her mom gives her 2 more. How many pennies does Jayne have?</i> <ul style="list-style-type: none"> <li>• Solve this problem using whatever strategies that will be helpful to you.</li> <li>• Share students' strategies.</li> </ul> <b>Ask:</b> <i>What would the number sentence look like for this problem? How could the hundred chart help solve this problem? How could the number line help solve this problem? How could base ten blocks help solve this problem?</i>
<b>LAUNCH:</b> Option: make overhead transparency of pg. FA 38	<b>Introduce and Model Activity: Tens and Ones Game: <u>Family Involvement Activities</u>, pg. FA38</b>
<b>EXPLORE:</b> For each pair, pg. FA 38, a game marker for each player, coin.	Students work in pairs on Tens and Ones Game: <b><u>Family Involvement Activities</u>, pg. FA38</b> <ul style="list-style-type: none"> <li>• You may ask students to write the number of blocks in each space.</li> <li>• Ask students to find the space with the largest number, the smallest.</li> </ul>
<b>PRACTICE:</b> TE and Workbook pg. 135-136	<b>As time allows:</b> <b>Teach and Practice: TE, pg. 135-136; Workbook, pg. 135-136</b> Continue questioning students.
<b>SUMMARIZE:</b> Base-ten blocks	<b>Revisit</b> with students the lesson's objective by connecting the following discussion to the purpose of the lesson. <b>Discuss:</b> Show 4 ten-rods and 5 cubes. Ask students to write the number you are showing in as many different ways as they can. ( <i>45, 4 tens, 5 ones, forty-five, 4 tens plus 5 ones, 40 + 5, 4 tens + 5; 3 tens and 15 ones; etc.</i> )
<b>HOMEWORK:</b>	<b>Suggestion:</b> <b>Practice Master 9.5</b>

DAY 6  
Chapter 9: Building Numbers to 100  
LESSON 9.6 TE pg. 137A

<b>LESSON FOCUS:</b>	<b>Problem Solving: Make Reasonable Estimates</b>
<b>CALIFORNIA STANDARD:</b>	<b>Number Sense 3.1</b> Make reasonable estimates when comparing larger or smaller numbers.
<b>PURPOSE OF LESSON:</b>	To solve problems by using an appropriate skill such as <i>make a reasonable estimate</i>
<b>ROUTINE:</b>	<b>Suggestion:</b> <b>Mixed Review and Test Prep: TE, pg.138</b> or <b>Daily Routine: TE, pg. 137A</b>
<b>LAUNCH:</b> A variety of books to stack	<b>Getting Started: Reading Support: TE, pg.137A</b> <ul style="list-style-type: none"> <li>• You may extend this activity by adding more books and asking students to change their estimate.</li> <li>• Take books away, what should happen to our estimate?</li> </ul> <p><b>Challenge:</b> Compare two stacks of different sized books. For example, a stack of about 7 dictionaries next to a stack of about 7 emergent readers will generate discussion about what clues we need to look for to make good estimates.</p> <p>[Note: Students who are only just developing in their understanding of number, will find this type of activity challenging. Notice which students must still count, count, count each item in a set to give an estimate and who are not troubled by wild guesses. These students have not yet internalized some fundamental concepts about number and will need additional practice (possibly at math center time or in a routine) to develop number sense more fully.]</p> <p>Introduce/model <b>Alternative Teaching Strategy: TE pg. 138A</b></p>
<b>EXPLORE:</b> For partners, Dot Card 1-12 (p. <u>Teacher Resource Book</u> , pg. 29-30), counters	Students work in pairs on <b>Alternative Teaching Strategy: TE, pg.138A</b> <ul style="list-style-type: none"> <li>• Place the dot card for 5 face up. Place the remaining cards face down in a pile.</li> <li>• Partners take turns drawing a card and estimating if the dots on the card are more than 5 or fewer than 5.</li> <li>• Partners use counters to determine if their answers are reasonable.</li> <li>• Play continues until all cards have been used.</li> </ul>
<b>PRACTICE:</b> TE and Workbook pg. 137	<b>As time allows,</b> <b>Teach and Practice: TE, pg. 137, Workbook, pg. 137</b>
<b>SUMMARIZE:</b>	<b>Revisit</b> with students the lesson's objective by connecting the following discussion to the purpose of the lesson. <b>"Discuss and Write": TE pg.138</b>
<b>HOMEWORK:</b>	<b>Suggestion:</b> <b>TE and Workbook pg. 138</b> <b>Or Challenge Master 9.6</b>

