Unit title: *Numbers and Number Operations*

Grade level: fourth grade

Target group: content-based ESL class

Source of written reading material: *Math Trailblazers Grade 4 Student Guide*; A TIMS Curriculum, University of Illinois at Chicago; Kendall/Hunt Publishing Company

Source of lessons: *Math Trailblazers Unit Resource Guide*

Barbara Hunt
FLA 518: Instructional Unit
August 1, 2005
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<td>1. Place value in our base-ten number system</td>
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<td>2. Numbers can be regrouped</td>
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<td>3. The value of each digit in a number</td>
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<td>Skills</td>
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<td>2. Discuss the regrouping process and record equivalent amounts</td>
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<td>3. Identify and explain the value of each digit in a number</td>
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<td>4. Write a paragraph to explain when to regroup for pieces of the next larger and smaller sizes</td>
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<td></td>
<td>1. Construct 2,3, and 4-digit numbers using base-ten pieces / shorthand</td>
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<td>2. Regroup 2,3, and 4-digit numbers using base-ten pieces / shorthand and rewrite each new configuration</td>
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<td>3. Represent 2,3, and 4-digit numbers and record them using expanded notation</td>
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<td>4. Solve addition and subtraction problems involving regrouping with and without base-ten pieces / shorthand</td>
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<tr>
<td>Attitudes/ Awareness</td>
<td></td>
<td>1. Gain a deeper understanding of the importance of position in our number system</td>
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<td></td>
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<td>2. Expand their understanding of trading ten units for the next-larger unit</td>
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Lesson 1
Lesson 1 (Modified): 2-day lesson
Day 1: 60 minutes
Day 2: 70 minutes

*OL = based on the original lesson plan from *Math Trailblazers*

**Content Objectives:**

All students will be able to:
- Construct one-digit and two-digit numbers using base-ten pieces. (OL)
- Regroup numbers with ten ones using base-ten pieces. (OL)
- Regroup and write numbers with ten or more ones using base-ten pieces and standard notation (OL)

**Language Objectives:**

All students will be able to:
- Count and record numbers from 0-99.
- Distinguish between the ones' place and the tens' place on the Base-Ten Board and Recording Sheet.
- Identify equal quantities.
- Trade 10 ones for 1 ten.
- Analyze two-digit place value.

Most students will be able to:
- Read the numbers from 0-10 and 20-99.

Some students will be able to:
- Use the terms “two-digit number” and “regroup.”
- Read numbers from 0-99.
- Explain the regrouping process.
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<td>Numbers 0-99</td>
<td>Count…</td>
<td>Imperative Nouns</td>
<td>Count number (numbers): zero - ninety-nine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I will add one more.</td>
<td>Verb: present conditional</td>
<td>(decade numbers): twenty – ninety</td>
</tr>
<tr>
<td>Distinguish</td>
<td>Ones’ and tens’ places</td>
<td>Add one more to the _____ place.</td>
<td>Imperative Verb (transitive)</td>
<td>add one more</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possessive nouns</td>
<td>ones’, tens’ place</td>
</tr>
<tr>
<td>Identify</td>
<td>Equal quantities</td>
<td>10 ones equal 1 ten</td>
<td>Verb (linking)</td>
<td>Equal</td>
</tr>
<tr>
<td>Trade</td>
<td>10 ones for 1 ten</td>
<td>What do ____ need to do?</td>
<td>Wh-question</td>
<td>I, you, we</td>
</tr>
<tr>
<td></td>
<td></td>
<td>____ need to trade 10 ones for 1 ten.</td>
<td>Subject pronouns</td>
<td>Need to trade</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Verb: present conditional</td>
<td></td>
</tr>
<tr>
<td>Analyze</td>
<td>Two-digit place value</td>
<td>____ is ____ ten(s) and ____ one(s)</td>
<td>Verb (Be) present tense</td>
<td>(decades): ten – ninety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>____ is a two-digit number</td>
<td></td>
<td>(numbers) one – nine</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>two-digit number</td>
</tr>
<tr>
<td>Regroup and rewrite</td>
<td>Numbers with 10 or more ones</td>
<td>Regroup “x” ten(s) and “y” ones (where x ≤ 8 and y ≥10)</td>
<td>Prefix re + base</td>
<td>regroup</td>
</tr>
<tr>
<td>Explain how to reenumerate</td>
<td></td>
<td>First I placed… Second I placed… Then I… Next I… Lastly I wrote…</td>
<td>Ordinal numbers</td>
<td></td>
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<td></td>
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<td>Subject pronoun</td>
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<td></td>
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<td></td>
<td>Verb (trans.) past tense</td>
<td></td>
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</tbody>
</table>
Lesson Materials
Base-Ten Ones Pieces (OL): one bag of 100 per student pair
Base-Ten Tens Pieces (OL): one bag of 10 per student pair
Base-Ten Ones and Tens Overhead Pieces (OL)
Assessment Worksheet #1: one per intermediate/advanced ELL—see page 10
Base-Ten Board #1 (OL): one per student pair—see page 11
Recording Sheet #1 (OL): one per student—see page 12
"Numbers" Chart:—see page 13
"Trade" Graphic:—see page 14
Pocket-Chart Word Wall
Content-Critical Vocabulary (written on index cards)—see page 15
Formulaic Expressions (written on sentence strips)—see page 15

Lesson Initiation: (10 minutes)
1. Hold up a ones piece and a tens piece and say, “We will make numbers, today,” and point to the “Numbers” chart.
2. Bring out a basketful of plastic sandwich bags (one per child) labeled “Ones” and filled with varying amounts of ones pieces (up to 50). Modification for pre-literacy/beginning ELLs: Provide a bag with an amount of ones pieces that is less than 10.
3. Pick a bag from the basket and model as you slowly say, “open...count...write the number, here (chalkboard).
4. Hand out the remaining bags. Gesture toward everyone with a sweeping motion of the hand, (henceforth, the “everyone signal”) and model as you slowly say, “Everyone, open...count...write the number on the chalkboard. Modification for intermediate/advanced ELLs: Say, “(Name), count in English.”
5. Point to each number, say its name, and have the students repeat the number name by pointing to your lips and then gesturing toward the number while you say, “Say (number name).” Modification for intermediate/advanced ELLs: Have them read the number names and pause for classmates’ repetition.
6. Say: “We will make numbers (point to all the numbers on the board) with these (hold up a bag of ones pieces) and these (hold up a bag of tens pieces) today.
7. Gesture to everyone with an extended, sweeping arm motion and model as you slowly say, “Everyone, return pieces...close the bag...return the bag to the basket.”
Lesson Development: (Part 1 / Day 1): 45 minutes

1. Hold up 1, ones piece and say “one.” Have the students repeat the name of the piece by pointing to your lips and then gesturing toward them as you say, “Say one.” (Henceforth, the “say it signal.”) Then hold up a handful of ones pieces, say, “ones,” and give the “say it signal.”

2. Show an overhead transparency of the Base-Ten Board place a handful of overhead ones pieces in the ones’ place. Point to the column name and say, “ones’ place.” Then, point to a student seated at his/her desk (e.g. Abe) and say, “Abe’s place.” Repeat with several more students. Then return to the overhead, point to the column name and say, “Ones’ place.”

3. Place 1, ones piece on the Base-Ten Board in the ones’ place and write the numeral 1 on an easel replica of the Recording Sheet The number name should be said with each placement / recording. Then say, “Add 1 more” as you place 1 more ones piece on the Base-Ten Board. Next, say, “Count” as you model this, and “Write” as you record the numeral 2 on the Recording Sheet. Say, “Say the number,” and give the “say-it signal.”

4. Pair students by placing an intermediate or advanced ELL with a pre-literate or beginning ELL. Give each pair a Base-Ten Board, and give each student a Recording Sheet. Then give the lower-level ELL one, sandwich bag filled with 100, ones pieces and labeled “Ones.” Say, “The “ones” are for (student’s name),” as you hand him/her the bag of ones pieces.

5. Clear your board and then count out 3, ones pieces from the bag of overhead pieces and place them on the overhead Base-Ten Board. Give the “everyone” signal and repeat the action with them. Write the numeral 3 on the easel as you say it, and give the “say-it signal.” Then pick up a pencil, write the numeral 3 on an extra, student copy of the recording sheet taped to the board, give the “everyone signal” and say, “Write it” while moving the pencil as if writing. (Henceforth, the “write-it signal.”)

6. Say, “Add 1 more” as you place 1 more ones piece on the Base-Ten Board and complete the given routine for numbers 4-9 with one exception: raise your hand and point to the easel to signal for volunteers to write the numeral on the easel. Give them and then everyone the “say-it signal.”

7. Give the “everyone signal” and then point to your eyes and then to yourself while saying, “Eyes on me.” (Henceforth, the “attention signal.”)

8. Point to yourself and say, “I will add one more” as you place 1 more ones piece in the ones’ place. Then count each piece and write 10 in the ones’ place on the easel.

9. Return to the 10, ones pieces on the overhead and recount them as you move them end to end in a rod-like formation, and then point to the equality visual on the “Trade” graphic. to show that 10, individual ones equals a rod-like arrangement of 10.

10. Hold up a plastic sandwich bag labeled “Tens” and filled with tens pieces. Hold up 1, tens piece, say, “Ten,” and give the “say-it signal.” Then hold up a handful of tens pieces, say, “tens,” and give the “say-it signal.”

11. Return to the Base-Ten Board, place a handful of overhead tens pieces in the tens’ place, and point to the column and say, “Tens’ place.” Then, point to the ones’ place and say,
“Ones’ place” and to the tens’ place and say, “Tens’ place.” Then call up an intermediate or advanced ELL to hold a “Tens” and a “Ones” bag for you.

12. Recount the 10, ones pieces in the ones’ place and say, “10 ones equals a ten,” while pointing to the equality on the “Trade” graphic.

13. Then gather up the 10 ones, turn to the ELL student holding the bags of “Tens” and “Ones” and say, “I need to trade 10 ones for 1 ten.” Give the student the 10, ones pieces and receive from him/her 1 tens piece in return and place it in the “Tens” place. Then say to the ELL helper, “Please, return the 10 ones to the “Ones” bag, and return to your seat.

14. Circle the numeral 10 in the ones’ place on the easel, draw an arrow to the tens’ place and write 1 in the tens’ place and 0 in the ones’ place. Point to the zero on the “Numbers” chart say, “Zero,” and give the “say-it signal.” Return to the Base-Ten Board and point and say, “Ten is 1, ten and 0 ones.” Give the “say-it signal” as you point to each word.

15. Give the higher-level ELL one, sandwich bag filled with 10, tens pieces and labeled “Tens.” Say, “The “tens” are for (student’s name),” as you hand him/her the bag of tens pieces.

16. Give the “everyone signal” as you slowly say and do each of the following steps with them: “Add 1 more to the ones’ place...count...and trade 10 ones for 1 ten.” Then, point to the easel and say, “10 is 1 ten and 0 ones. Give the “say it” and “write it” signals. Modification for intermediate/advanced ELLs: Say, “10 is called a two-digit number. It is made up of two digits, or numbers. Have them say “two-digit number” as you point to the phrase on the Word Wall, and ask them to name other two-digit numbers as you write them on the board.

Lesson Closure: 5 minutes

Return to the overhead transparency of the Base-10 Board with the 1 ten in the tens’ place. Give the “everyone signal” and say, “Count out 10 more ones in English.” When all have finished, say, “Trade 10 ones for 1 ten.” Wait for all to finish. Raise forearms with palms up and say, “What number? (Students may share with each other the word for 20 in their native language.) Raise your hand to signal a volunteer response, and have an intermediate/advanced ELL student write 20 on the board and pronounce it.
Lesson Development (Part 2 / Day 2): 45 minutes

To be preceded by a 10-minute initiation phase during which the students will:

- Recall the names of the ones and tens pieces and places.
- Use base-ten pieces to show and say one-digit numbers I write on the board.
- Show and say the number 10—each member of the pair will show it using his/her assigned ones/tens.

1. Say, “Add 1 more” as you place 1 more ones piece on the Base-Ten Board. Point to the tens’ place and say 1, ten and 1, one and say it again as you record the numeral 11 on the Recording Sheet. Say the number, as you show the vocabulary card to give the “say-it signal.” Modification for intermediate/advanced ELLs: Have them take turns writing the numeral on the easel, say it, and give everyone the “say-it signal.” Continue in this fashion with the numbers 12-19.

2. Give the “everyone” and “attention” signals, point to yourself and say, “I will add one more” as you place 1 more ones piece in the ones’ place. Then count the ones pieces and move them end to end in a rod-like formation. Then point to the “Numbers” chart picture to remind the students that 10, individual ones equals a rod-like arrangement of 10.

3. Invite another intermediate/advanced ELL student to come up and hold the bags for you. Then, gather up the 10 ones, turn to the ELL student holding the bags of “Tens” and “Ones” and say, “I need to trade 10 ones for 1 ten.” Give the student the 10, ones pieces and receive from him/her 1 tens piece in return and place it in the “Tens” place. Say to the ELL helper, “Please return the 10 ones to the “Ones” bag, and return to your seat.

4. Point to the Base-Ten Board and say, “Twenty is 2 tens and 0 ones.” Record this configuration on the easel, say “twenty” and give the “say-it signal.” Point out the word twenty on the “Numbers” chart. Modification for intermediate/advanced ELLs: Say, “What we have done is to regroup the number.” (Point to the word on the pocket chart; emphasize its prefix and base.) Regroup means to group again... reread means to read again... rewrite means to write again. “We regroup when we make a trade. We change the size of the group of ones. And we change the size of the group of tens. Say, regroup.”

5. Say, “Add 1 more, and say the number.” Modification for intermediate/advanced ELLs: Have them take turns writing the numeral on the easel, as everyone continues to count to 29.


7. Point to the representation of thirty on the “Numbers” chart, say, “Thirty,” write the numeral on the easel and give the “say it signal.”

8. Continue to count on ones, make, trade, and introduce the decade words through 99 in this fashion.

9. (OL): Give the “attention signal” count out and display 3 tens and 14 ones on the Base-Ten overhead transparency. Raise forearms with palms up (Henceforth, the “question signal”), point to the easel Recording Sheet and ask, “What do I need to do to write this number?”
Raise hand to signal a volunteer response. Point to the 10 ones pieces equal 1 ten on the "Trade" chart if students need help in understanding. (Answer: "You need to trade 10 ones for 1 ten."). Help all students to say this by pointing to the sentence strip on the pocket chart.

10. (OL): Make the trade, write the number on the easel and give the "say-it signal."

11. (OL): Place 2 tens and 13 ones on the Base-Ten Board and give the "everyone signal." Give the "question signal" and ask, "What do you need to do to write this number?" Raise hand to signal a volunteer response, and point to the "10 ones pieces equal 1 ten" on the "Trade" chart if students need help in understanding. (Answer: "You need to trade 10 ones for 1 ten."). Help all students to say this by pointing to the sentence strip on the pocket. Say, "Everyone, trade and write the number." Gesture to an intermediate ELL to write and say the resulting number on the easel and give the "say-it signal."

12. (OL): Continue to practice regrouping and writing two-digit numbers.

Assessment (15 minutes)

- **Intermediate and advanced ELLs:** Complete Assessment Worksheet #1 (see p. 10).

- **Pre-literate and beginning ELLs:** While the above ELLs are completing the written component of the worksheet, these ELLs will review language and content goals by:
  1. Showing and saying a 2-digit number I give them using the base-ten pieces.
  2. Writing (on a raised index card) and saying a 2-digit number I show them using base-ten pieces.
  3. Using base-ten pieces to regroup a number I show them with ones pieces that exceed 10. They will also write, show (on a raised index card) and say the number.
Descriptive Narrative

The first lesson plan has been highly modified with sheltered strategies to make the content accessible to English Language Learners and to provide them with opportunities to interact with the content of the lesson, as well as with each other, to promote language development.

First, I employed a number of sheltered strategies to make the content accessible to all proficiency levels of English Language Learners. In order to contextualize the lesson, I gathered manipulatives in the form of base-ten pieces and used them as concrete models of two-digit numbers and to demonstrate the trading and regrouping processes. The overhead projector, overhead base-ten pieces and easel were also used in conjunction with the modeling and recording processes, respectively. In addition, teacher talk was linked to visual representations of content and language objectives in the form of the Base-Ten Board, Recording Sheet, Number charts, Trade and Equality graphics and the Word Wall. The concrete manipulatives and visual representations became critical points of focus when delivering the lesson content to the English Language Learners, especially those at the lowest levels of proficiency. Several visual signals were also developed and consistently used in conjunction with oral directives to make them comprehensible to everyone. Still another way I brought context to the lesson was by initiating it with an activity that connected the lesson’s theme and objectives to the English Language Learners’ background knowledge and experience with numbers. Finally, I contextualized the lesson by providing hands-on, application opportunities that allowed the English Language Learners to negotiate their understanding of the material throughout the lesson.

Another way I made the lesson accessible was by developing content-critical vocabulary words. This was accomplished through demonstrating the actions of the verbs: count, add one more, need to trade, and regroup. Another way was through the use of the Word Wall to feature the vocabulary and formulaic expressions outlined on the functional-notional chart. I also pointed to the number names and the concepts of equality and trading featured on the Number charts and graphics. In addition, I used the overhead projector to display the content-critical ones’ and tens’ places.
Still another sheltered strategy I used to give the English Language Learner access to the lesson content was that of “reducing the linguistic load.” Sentence syntax was simplified to the point of utilizing the content-critical vocabulary and/or formulaic expressions. These were both consistently and repeatedly used in conjunction with gestures to deliver the lesson content and to signal desired behaviors.

The final sheltered strategy I utilized was in adapting the lesson as outlined in the *Math Trailblazers Unit Resource Guide* (and as reflected in my first lesson plan) to my target group. It quickly became apparent that the manipulatives load was as heavy as the “linguistic load.” I opted not to complicate the modeling with the connecting cubes and not to complicate the terminology by referring to base-ten piece as bits and skinnies and standard notation as exhibiting the “Fewest Pieces Rule.” I am confident that my lesson will enable my students to regroup and discern a number in its standard, two-digit form when presented with an alternate form.

The second set of sheltered strategies I used provided the English Language Learner with opportunities to interact with the content of the lesson, with the teacher, and with his/her classmates to promote language development. First, I incorporated well-connected activities that were tailored to the proficiency level of the English Language Learner. For example, the lesson was designed and paced such that all levels had time to practice the skills and process the content. In addition, the lesson was modified to make the content comprehensible to pre-literate and beginning-level English Language Learners, as well as to expand the academic vocabulary of the intermediate and advanced students. There were also opportunities built into the lesson for the intermediate and advanced English Language Learners to polish their proficiency by assisting me with the lesson delivery—namely, with writing and pronouncing numbers. Furthermore, assessments were differentiated such that all levels were able to practice their newly acquired knowledge in a manner that was appropriate for their level of language proficiency and conducive to their language development.

Other opportunities to receive and produce the language were provided by pairing the students to apply lesson content through shared manipulatives and assignments.
Assessment Worksheet #1

1. Tell your partner how to show 78.
   Use tens and ones pieces.

2. Show and tell your partner how to regroup and write 4 tens and 16 ones as a 2 digit number.

3. Write how to regroup and rewrite 4 tens and 16 ones as a 2 digit number.
   Use the flow chart and finish the sentences.

   First, I placed

   Second, I placed

   Next, I

   Then, I

   Finally, I wrote
<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
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Recording Sheet 1
<table>
<thead>
<tr>
<th>zero</th>
<th>one</th>
<th>two</th>
<th>three</th>
<th>four</th>
<th>five</th>
<th>six</th>
<th>seven</th>
<th>eight</th>
<th>nine</th>
<th>ten</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
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<table>
<thead>
<tr>
<th>Ten</th>
<th>twenty</th>
<th>thirty</th>
<th>forty</th>
<th>fifty</th>
<th>sixty</th>
<th>seventy</th>
<th>eighty</th>
<th>ninety</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
</tr>
</tbody>
</table>
Trade

10
One Ten

= 1+1+1+1+1+1+1+1+1+1
Ten Ones

100
One Hundred

= 10+10+10+10+10+
10+10+10+10+10
Ten Tens

1000
One Thousand

= 100+100+100+100+100+
100+100+100+100+100
Ten Hundreds
Vocabulary

count
ones
tens
ones' place
tens' place
equals
trade
eleven 11
twelve 12
thirteen 13
fourteen 14
fifteen 15
sixteen 16
seventeen 17
eighteen 18
nineteen 19
regroup
two-digit number 32, 48

Formulaic Expressions

I will add one more.

Add one more to the _____ _____.
Add one more to the _____ _____.

10 ones equal 1 ten.

What do I need to do? I need to trade 10 ones for 1 ten
What do you need to do? You need to trade 10 ones for 1 ten.
What do we need to do? We need to trade 10 ones for 1 ten.

_____ is _____ ten and _____ one.
_____ is _____ tens and _____ ones.

Regroup _____ ten(s) and _____ ones.
Lesson 2
Lesson 2 (Modified): 2-day lesson / 60 minutes each day

*OL = based on the original lesson plan from *Math Trailblazers*

**Content Objectives:**
All students will be able to:
- Construct three-digit and four-digit numbers using base-ten pieces. (OL)
- Regroup numbers with 10 tens using base-ten pieces. (OL)
- Regroup numbers with 10 hundreds using base-ten pieces. (OL)
- Regroup and write numbers with 10 or more tens and 10 or more hundreds using base-ten pieces and standard notation (OL)

**Language Objectives:**
All students will be able to:
- Count and record numbers from 100-9999.
- Distinguish between the ones’, tens’, hundreds’, and thousands’ places on the Base-Ten Board and Recording Sheet.
- Identify equal quantities.
- Trade 10 tens for 1 hundred.
- Trade 10 hundreds for 1 thousand
- Analyze three-digit and four-digit place value.

Most students will be able to:
- Read all three-digit and four-digit numbers with the exception of those that feature 11-19 in the tens’ and ones’ places, respectively.
- Use the term, “regroup.”

Some students will be able to:
- Use the terms “three-digit number” and “four-digit number.”
- Read all the numbers from 0-9999.
- Explain the regrouping process.
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<tbody>
<tr>
<td>Count</td>
<td>3-digit and 4-Digit Numbers</td>
<td>a. hundred</td>
<td>Numbers as determiners</td>
<td>one-nine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. hundred b.</td>
<td>Numbers as nouns</td>
<td>hundred</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. thousand</td>
<td></td>
<td>thousand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. thousand a.</td>
<td></td>
<td>a. one-nine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. thousand b.</td>
<td></td>
<td>b. ten-ninety-nine</td>
</tr>
<tr>
<td></td>
<td>Hundreds and thousands manipulatives</td>
<td>What are these?</td>
<td>Wh-questions</td>
<td>What</td>
</tr>
<tr>
<td></td>
<td>Hundreds' and thousands' places</td>
<td>What place is this? This is the ___ ____</td>
<td>Verb (BE) present tense</td>
<td>is / are</td>
</tr>
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<td></td>
<td>Demonstrative pronouns</td>
<td>this / these</td>
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<td></td>
<td>Singular / plural nouns</td>
<td>hundreds(s) / thousand(s) place</td>
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<td></td>
<td>Verb (BE) present indicative</td>
<td>hundreds' place</td>
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<td></td>
<td>Possessive plural nouns</td>
<td>thousands' place</td>
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<tr>
<td>Identify</td>
<td>Equal quantities</td>
<td>10 ____ equal 1 ____</td>
<td>Verb (linking)</td>
<td>equal</td>
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<td></td>
<td>Numbers as singular / plural nouns</td>
<td>tens / hundred</td>
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<td></td>
<td>hundreds / thousand</td>
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<tr>
<td>Trade</td>
<td>10 tens for 1 hundred</td>
<td>____ need to trace 10 ____ for 1 ____</td>
<td>Subject pronouns</td>
<td>I, you, we</td>
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<td></td>
<td>10 hundreds for 1 thousand</td>
<td></td>
<td>Verb: present conditional</td>
<td>need to trade</td>
</tr>
<tr>
<td>Analyze</td>
<td>Three-digit place value</td>
<td>____ is ____ hundreds, ____ ten(s) and ____ one(s)</td>
<td>Verb (BE)</td>
<td>thousand(s)</td>
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<td></td>
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<td>____ is a three-digit number</td>
<td>Numbers as determiners</td>
<td>hundred(s)</td>
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<tr>
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<td>Four-digit place value</td>
<td>____ is ____ thousands, ____ hundreds, ____ ten(s) and ____ one(s)</td>
<td>Numbers as nouns</td>
<td>one(s)</td>
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<td>____ is a four-digit number</td>
<td>Compound adjectives</td>
<td>one — nine</td>
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<td></td>
<td></td>
<td>ten-ninety</td>
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<td>three-digit</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>four-digit</td>
</tr>
<tr>
<td>Regroup</td>
<td>Pairs to groups of three to groups of 4 Numbers with 10 or more ones, tens, hundreds</td>
<td>I need to regroup you.</td>
<td>Verb: present conditional Direct object pronoun</td>
<td>need to regroup</td>
</tr>
<tr>
<td>Regroup and rewrite</td>
<td></td>
<td>Regroup “x” thousand(s) “y” hundreds, “y” tens and “y” ones (where x ≤ 8 and 0 ≤ y ≤19)</td>
<td>Imperative sentence</td>
<td>you</td>
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<tr>
<td>Explain how to regroup</td>
<td></td>
<td>First, I traded...Then, I placed...Next, I traded...Then, I placed... ____ is (th’s), h’s, t’s o’s</td>
<td>Conjunctive adverbs</td>
<td>First, Then, Next</td>
</tr>
</tbody>
</table>
Lesson Materials
Base-Ten Ones Pieces (OL): one, labeled bag of 100 per student pair
Base-Ten Tens Rods (OL): one, labeled bag of 10 per student pair
Base-Ten Hundreds Flats (OL): one, labeled bag of 10 per student pair
Base-Ten Thousands Packs (OL): one, labeled box of 10 per student pair
Base-Ten Ones, Tens, and Hundreds Overhead Pieces (OL)
Assessment Worksheet #2: one per group of four students—see page 26
Base-Ten Board #1 (OL): one per student pair—see page 27
Base-Ten Board #2 (OL): one per student pair—see page 28
Recording Sheet #2(OL): one per student—see page 29
“Numbers” Charts: see pages 30-32
“Trade” Graphics: see pages 33
Digit cards: one set each of 0-9 hundreds, 0-9 tens, and 0-9 ones per group of three students—see page 34
Pocket-Chart Word Wall
Content-Critical Vocabulary (written on index cards)—see page 35
Formulaic Expressions (written on sentence strips)—see page 35

Lesson 2 (Modified): (Part 1/Day 1) 60 minutes

Lesson Initiation (15 minutes)
1. Create the same student pairs as in Lesson 1. (An intermediate or advanced ELL is paired with a pre-literate or beginning ELL.) Designate a pair to face the other students and work alongside you to model the process with the base-ten pieces as you model for all using the overhead base-ten pieces.

2. Hold up a ones' bag and say, “What are these?” as you give the “question signal” and point to the bag. Then give the “say-word signal.” Do the same with a tens' bag. Say, “The ones are for (student’s name),” as you hand the lower-level ELL student the bag of ones pieces. Do the same with the tens pieces as you hand them to the higher-level ELL student.

3. Then, give each pair a Base-Ten Board, give each student a copy of Recording Sheet #2. Give the “question signal” and ask, “What place is this?” as you point to the entire ones' place. Then give the “say-it signal” and point to “ones’ place” on the Word Wall. Then point to the ones' place, again, as you say, “This is the ones’ place,” and give the “say-it signal.” Repeat for the tens' place.

4. Hold up the base-10 pieces and say, “We will show numbers from 0-99” (as you write 0-99 on the board). And add, “We will count numbers from 0-99.” Modification for intermediate/advanced ELLs: Say, “What do we call these numbers?” and point to the “two-digit” card on the Word Wall, if necessary.

5. Give the “everyone signal” and begin to count (starting with zero) as you place each corresponding ones piece in the ones' place on the base-ten board. When you reach 10, ask, “What do you need to do?” as you point to
the corresponding question and answer sentence strips on the Word Wall. 
(Answer: “We need to trade 10 ones for 1 ten.”) Say, “Trade.” Continue in 
this fashion to 99.

6. Give the “everyone signal” and say “Return the ones and tens to the bags,” 
as you take a piece/pieces and return them to the bag. (Henceforth the 
“return signal.”)

7. Give the “everyone signal” and say, “Show 2 tens ,” as you point to the Base-
Ten board. Then say, “Show 3 ones,” and point to the Base-Ten board. 
Next say, “Write the number,” and give the “say-it signal.” Repeat as 
needed.

8. (OL): Give the “everyone...return signals.” Then say, “Show 3 tens...show 
15 ones,” as you point to the “15/fifteen” card on the Word Wall. Ask, “What 
do you need to do?” (Answer: “We need to trade 10 ones for 1 ten.”) Say, 
“Trade...write it...say it.” Repeat as needed.

9. Give the “everyone...return signals.” Then say, “Show 9 tens...show 9 ones 
...write it (as you write it on the easel Recording Sheet)...say it.” Next, say, 
“Add 1 more one,” as you model the process, and ask, “What do we need to 
do?” (Answer: “Trade 10 ones for 1 ten.”) Say, “Trade.” Give the “raise-hand 
signal,” hand a volunteer a piece of chalk, and give the “write-it signal.” Write 
several other 3-digit numbers on the board and say, “Today we will write 
numbers like these,” as you point to them. Modification for 
intermediate/advanced ELLs: Say, “These are three-digit numbers. You 
write them with three digits, or numbers. Have them say “three-digit number” 
as you point to the phrase on the Word Wall.

Lesson Development: 40 minutes

1. Point to each pair of students as you count each pair as a separate group. 
Say, “Group 1, Group 2, etc. Then say, “I need to regroup you,” and point to 
the word card. Ask a higher-level ELL to give the meaning of “regroup” and 
create new, heterogeneous groups of ELLs. Give each group of three 
students a copy of Base-Ten Board #2 and be sure they place it to the left of 
Base-Ten Board #1.

2. (OL): Return to the 10, tens pieces on the overhead (from step # 9 of the 
initiation), and recount them by 10’s to 100 as you move them end to end in a 
square formation, and then point to the equality visual on the “Trade” graphic 
to show that 10 individual tens equal a square arrangement of 100. Then 
display an overhead hundred flat. (At this point, space constraints 
necessitate that you put away the overhead and use the trio of students in 
the front to model the processes for the whole class.)

3. Hold up 1, hundreds flat and say “hundred.” Then hold up a stack of 
hundreds flats, say, “hundreds,” and give the “say it signal.” Next pass out 
the bags of hundreds flats to the highest-level ELL in each group and say,
"The hundreds are for (child's name)." In addition, reconfirm with each group who will be using the ones and tens pieces. (The lowest-level ELL should use the ones pieces.)

4. Hold up and point to the column name on the Base-Ten Board #2 and say, "This is the "hundreds' place," and give the "say it signal" as you hold up and place the stack of hundreds flats in front of the hundreds' column on the Base-Ten Board #2.

5. Then gather up the 10 tens on the model group's board, turn to the ELL student assigned to the bag of "Hundreds" and say, "I need to trade 10 tens for 1 hundred." Give the student the 10, tens pieces and receive from him/her 1 hundreds piece in return and place it in the "Hundreds" place.

6. Circle the numeral 10 in the tens place on the easel, draw an arrow to the hundreds' place and write 1 in the hundreds' place, 0 in the tens' place, and 0 in the ones place. Say, "One hundred is 1 hundred, 0 tens and 0 ones," as you point to each number and place on the easel Recording Sheet. Give the "say-it signal" as you point to each numeral and place name.

7. Return to the model group and replace the 1 hundreds piece on the Base-Ten Board with 10 tens. Give the "everyone signal" and say, "Count the tens." Together, count the 10 tens (1-10) and say, "What do we need to do?" Point to the Trade graphic as together you say, "We need to trade 10 tens for 1 hundred." Then say, "Everyone, trade." Return to the easel and say, "100 is 1 hundred, 0 tens, and 0 ones," as you point to each numeral and place name. Give the "say-it" and "write-it" signals.

8. Say, "Add one more ones piece...write the number." Say, "101" as you point to the 1 in the hundreds' place and the 1 in the ones' place. Give the "say-it signal." Continue in this fashion through 120, pausing to ask, "What do you need to do?" at 110 and 120, and pointing out how the 1 hundred is pronounced followed by the pronunciation of the tens' and ones' places as if they were a two-digit number.

9. Continue to count and make trades from 120-199 stopping once or twice within each of the decades to record the three-digit number on the easel. **Modification for intermediate/advanced ELLs:** Have volunteers record the numeral on the easel.

10. At 199, say, "Add one more," and "What do you need to do?" two times as the groups make the trades and you point to the Trade graphics. Stack the second hundreds flat on top of the first.

11. Continue counting together to 500, following the steps outlined in numbers 37 and 38.

**Lesson Closure:** 5 minutes

Say, "Count as far as you can in the next 5 minutes" as you hold up 5 minutes and point to the clock. Circulate and observe the groups; as each one to pause and record the number they've made and read.
Lesson 2 (Modified): (Part 2/Day 2)  60 minutes

Lesson Initiation: 10 minutes

Have the students work in the same groups of three as in Part 1 of Lesson 2. Hand each child in the group a set of digit cards (1-9) marked hundreds, tens, and ones according to the base-ten pieces s/he worked with in Lesson 2 (see pp. 21-22). Point to yourself, your lips, and your cards, as you say, "I will say a number. Show the number with the cards. Say various, two and three digit numbers. After each one, have a volunteer write it on the board and have groups signal thumbs up or thumbs down.

Lesson Development: 40 minutes

1. Point to each group of students as you count each trio as a separate group. Say, "Group 1, Group 2, etc. Then say, "I need to regroup you," and point to the word card. Ask a higher-level ELL to give the meaning of "regroup" and create new, heterogeneous groups of ELLs. (Place two, higher-level ELLs with two, lower-level students.) Select one group to sit up front facing the other students to serve as the model group. Give each group of four students copies of Base-Ten Boards #1 and #2, fresh copies of Recording Sheet #2 to each child. Give bags of ones and tens pieces to the lower-level ELLs in each group and a bag of hundreds to one of the higher-level students in each group.

2. Say to the model group, "Show 9 ones...9 tens...9 hundreds." (Be sure the hundreds flats are stacked.) Write 999 on the easel Recording Chart and give the "say it signal." Then say, "Add one more. What do we need to do? (two times) Write the resulting configuration on the easel.

3. (OL): Return to the stack of 10 hundreds flats and say, "Everyone, count" as together, you count by 100's to 1000. Then point to the equality visual on the Trade graphic to show that a stack of 10 hundreds equals a pack of 1000.

4. Hold up 1, thousands pack, say "thousand," and give the "say-it signal." Then hold up a box of thousands packs, say, "thousands," and give the "say it signal." Next pass out the boxes of thousand packs to the highest-level ELL in each group and say, "The thousands are for (child's name)."

5. Hold up and point to the column name on the Base-Ten Board #2 and say, "This is the "thousands' place," and give the "say it signal" as you hold up 2 thousands packs in front of the thousands' column on the Base-Ten Board #2.

6. Then gather up the 10 hundreds flats on the model group's board, turn to the ELL student assigned to the bag of "Thousands" and say, "I need to trade 10 hundreds for 1 thousand." Give the student the 10, hundreds pieces and receive from him/her 1 thousand pack in return and place it in the "Thousands" place.
7. Circle the numeral 10 in the hundreds' place on the easel, draw an arrow to the thousands’ place and write 1 in the thousands’ place, 0 in the hundreds’ place, 0 in the tens’ place, and 0 in the ones’ place. Say, “One thousand is 1 thousand, 0 hundreds, 0 tens and 0 ones,” as you point to each number and place on the easel Recording Sheet. Give the “say-it signal” as you point to each numeral and place name.

8. Return to the model group and replace the 1 thousand pack on the Base-Ten Board with 10 hundreds. Give the “everyone signal” and say, “Count the hundreds.” Together, count the 10 hundreds (1-10) and say, “What do we need to do?” Point to the Trade graphic as together you say, “We need to trade 10 hundreds for 1 thousand.” Then say, “Everyone, trade.” Return to the easel and say, “1000 is 1 thousand, 1 hundred, 0 tens, and 0 ones,” as you point to each numeral and place name. Give the “say-it” and “write-it” signals.

9. Say, “Add one more ones piece...write the number.” Say, “1001” as you point to the 1 in the thousands’ place and the 1 in the ones’ place. Give the “say-it signal.” Continue in this fashion through 1020, pausing to ask, “What do you need to do?” at 1010 and 1020, and pointing out how the 1 thousand is pronounced followed by the pronunciation of the tens’ and ones’ places as if they were a two-digit number.

10. Say, “Everyone, show 1 thousand, 0 hundreds, 3 tens and 5 ones...write it. Modification for intermediate/advanced ELLs: Have a volunteer write it on the easel, say the number and give the “say-it signal.” Repeat with 1099.

11. With 1099 still on the board, say, “Add one more,” and “What do you need to do?” (two times) as the groups make the trades and you point to the Trade graphics. Write 1100 on the easel and say the number as you point to the two 1’s and give their place value names. Read it again, and point out how the last three digits are read as if they were a three-digit number. Give the “say-it signal.”

12. Continue to count from 1101-1120, and stop to make trades, write and read several of the numbers. Modification for intermediate/advanced ELLs: Have volunteers write the numeral on the easel, read it, and give the “say-it signal.”

13. Say, “Everyone, show 1 thousand, 1 hundred, 6 tens and 3 ones...write it. Modification for intermediate/advanced ELLs: Have a higher-lever ELL write it on the easel, say the number and give the “say-it signal.” Repeat with 1199.

14. With 1199 still on the board, say, “Add one more,” and “What do you need to do?” (two times) as the groups make the trades and you point to the Trade graphics. Write 1200 on the easel and say the number as you point to the 1 and the 2 and give their place value names. Read it again, and point out how the last three digits are read as if they were a three-digit number. Give the “say-it signal.”
15. Say, “Everyone, show 1 thousand, 2 hundreds, 4 tens and 0 ones...write it. 
Modification for intermediate/advanced ELLs: Have a higher-lever ELL write it on the easel, say the number and give the “say-it signal.” Repeat with 1285, 1500, 1701, 1958, 1999.

16. With 1999 still on the board, say, “Add one more,” and “What do you need to do?” (three times) as the groups make the trades and you point to the Trade graphics. Write 2000 on the easel and say the number as you point to the 2 in the thousands’ place and give its place value name. Then, give the “say-it signal.”

17. Provide practice showing, writing and reading 2004, 2075, 2113, 2999.
18. Complete the trade sequence for 2999 as in step number 57.
19. Provide practice showing, writing and reading 3002, 3066, 3333, 3999.
20. Complete the trade sequence for 3999 as in step number 57.
21. Provide practice showing, writing and reading 4150, 4647, 4999.
22. Complete the trade sequence for 4999 as in step number 57.
23. Complete the trade sequence for 7999 as in step number 57.
24. (OL): Give the “attention signal” and say, “Everyone, show 5 thousands, 6 hundreds, 4 tens and 15 ones. Ask, “What do we need to do?” Say, “Trade and write the number. Modification for intermediate/advanced ELLs: Have a higher-lever ELL write it on the easel, say the number and give the “say-it signal.”

25. Repeat with: 2 thousands, 4 hundreds, 16 tens, and 5 ones.
26. Repeat with: 1 thousand, 17 hundreds, 3 tens, and 2 ones.
27. Repeat with: 3 thousands, 4 hundreds, 14 tens, and 12 ones.
28. Repeat with: 4 thousands, 13 hundreds, 12 tens, and 4 ones.
29. Repeat with: 2 thousands, 10 hundreds, 13 tens, and 11 ones.

Assessment (15 minutes)
• All groups: Complete Assessment Worksheet #2 (one per group): see p. 26.
• Intermediate and advanced ELLs: Each will orally explain how the group solved for one of the four-digit numbers.
Descriptive Narrative

Since the second lesson featured the next two places in our base-ten number system, and was thus a sequel to the first, similar sheltered strategies were employed to promote academic learning and language development on the part of the ELL. A review of the strategies used in both lessons to give ELLs access to the academic content follows:

- Use of base-ten pieces, boards, and recording sheets to provide concrete models of abstract numbers and regrouping processes
- Use of the overhead projector, overhead base-ten pieces, and the easel version of the Recording Sheet to model the trading, regrouping and recording processes
- Reduction of the “linguistic load” to content-critical vocabulary and formulaic expressions
- Repeated use of content-critical vocabulary and formulaic expressions
- Visual representations of the numbers, trade equalities, and content-critical vocabulary and formulaic expressions
- Frequent and consistent use of extralinguistic clues: gestures and signals
- Use of scaffolding to develop the number words with the lower-level ELLs

I was also very intentional about following the same instructional patterns and procedures I used in Lesson One in order to embed the new academic vocabulary and concepts in the established, familiar routines.

The following list provides a review of the strategies used in both lessons to give ELLs opportunities to interact with the content of the lesson, with the teacher, and with his/her classmates to promote language development:

- Provision of hands-on learning activities
- Formation of heterogeneous groups of three or four in which to apply learning and negotiate meaning
Assessment Worksheet #2

1. Show and say 305.
2. Show and say 634.
4. Show and say 4057.
5. Show and say 5400.
6. Show and say 8909.
7. Show and say 6123.

8. Show, regroup, rewrite, say:
   - 6 hundreds, 1 ten, 12 ones
   - 1 hundred, 13 tens, 5 ones
   - 3 hundreds, 11 tens, 10 ones
   - 5 thousands, 5 hundreds, 4 tens, 13 ones
   - 3 thousands, 7 hundreds, 10 tens, 11 ones
   - 4 thousands, 12 hundreds, 14 tens, 15 ones
Base Ten Board 1

Tens

Ones
Base Ten Board 2

Thousands

Hundreds
### Recording Sheet 2

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<td>![Tens symbol]</td>
<td>![Ones symbol]</td>
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29
Numbers

10 Ten
20 Twenty
30 Thirty

40 Forty
50 Fifty
60 Sixty

70 Seventy
80 Eighty
90 Ninety

100 Hundred
100  
One Hundred

200  
Two Hundred

300  
Three Hundred

400  
Four Hundred

500  
Five Hundred

600  
Six Hundred

700  
Seven Hundred

800  
Eight Hundred

900  
Nine Hundred

1000  
One Thousand
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<td>10</td>
<td>One Ten</td>
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<tr>
<td>100</td>
<td>One Hundred</td>
<td>10 + 10 + 10 + 10 + 10 + 10</td>
</tr>
<tr>
<td>1000</td>
<td>One Thousand</td>
<td>100 + 100 + 100 + 100 + 100 + 100 + 100</td>
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**Trade**
<table>
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Word Wall

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<th>tens</th>
<th>hundreds</th>
<th>thousands</th>
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<td>three</td>
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</tr>
<tr>
<td>five</td>
<td>six</td>
<td>seven</td>
<td>eight</td>
</tr>
<tr>
<td>nine</td>
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<table>
<thead>
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<th>Place</th>
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<td>ones’ place</td>
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<tr>
<td>tens’ place</td>
</tr>
<tr>
<td>hundreds’ place</td>
</tr>
<tr>
<td>thousands’ place</td>
</tr>
</tbody>
</table>

I
you
we

three-digit 352
four-digit 2175

Formulaic Expressions

What are these?
What place is this?

10 ones equal 1 ten.
10 tens equal 1 hundred
10 hundreds equal 1 thousand

What do ____ need to do? ____ need to trade 10 ____ for 1 ____
____ is a _____ number.

Regroup ____ thousand(s), ____ hundred(s), ____ ten(s) and ____ one(s).

First, I traded...
Then, I placed...
Next, I traded...
Then, I placed...
____ is ____ thousand(s), ____ hundred(s), ____ ten(s) and ____ one(s)
Lesson 3
Lesson 3 (Modified): 2-day lesson / 60 minutes each day

*OL = based on the original lesson plan from Math Trailblazers

Content Objectives:
All students will be able to:
• Determine the value of a digit when given its place in a number (OL)
• Write a number as equal to the sum of the value of each digit (expanded notation) (OL).
• Translate between different representations of numbers (concrete, pictorial, symbolic) (OL).

Language Objectives:
All students will be able to:
• Associate quantity with the numerical representation of a number.
• Interpret cardinal numbers as quantities that may be possessed.
• Identify the value of each digit in a number.
• Relate a number as the sum of the value of its digits.
• Interpret drawings of base-ten pieces as representations of the concrete and pictorial models.

Most students will be able to:
• Read all the numbers from 0-9999 with the exception of those that feature 11-19 in the tens’ and ones’ places, respectively.

Some students will be able to:
• Read all the numbers from 0-9999.
• Explain the value of each digit in a 1 to 4-digit number.
<table>
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<tr>
<th>Function</th>
<th>Situational Description</th>
<th>Formulaic Expressions</th>
<th>Grammar</th>
<th>Vocabulary</th>
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<tbody>
<tr>
<td>Associate</td>
<td>Quantity with the numerical representation of a number</td>
<td>What number is this? How much is this?</td>
<td>Wh-questions</td>
<td>How much...?</td>
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<tr>
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<td></td>
<td>Cardinal numbers as nouns</td>
<td>Demonstrative pronoun</td>
<td>0-9999</td>
</tr>
<tr>
<td>Interpret</td>
<td>Cardinal numbers as quantities that may be possessed</td>
<td>I have a b, and a b, etc. (Names of 2 children) have a b and a b, etc. (Name of 1 child) has a b, and a b, etc.</td>
<td>Verb (transitive) present indicative /singular and plural forms</td>
<td>have / has</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>a. Cardinal numbers as determiners</td>
<td>a. zero-nine</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b. Cardinal numbers as nouns</td>
<td>b. one(s), ten(s), hundred(s), thousand(s)</td>
</tr>
<tr>
<td>Identify / Explain</td>
<td>The value of each digit in a number</td>
<td>a is b thousands, and b hundreds, and b tens, and b ones.</td>
<td>Verb (BE) present indicative</td>
<td>is</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>a. Cardinal numbers as nouns</td>
<td>a. numbers 0-9999</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b. Cardinal numbers as determiners</td>
<td>b. zero-nine</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>value</td>
<td>value</td>
</tr>
<tr>
<td>Relate</td>
<td>A number as the sum of the value of its digits</td>
<td>a = b + c + d + e</td>
<td>Verb (linking) present indicative</td>
<td>Is / Equals / = And / +</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cardinal numbers as nouns</td>
<td>a. numbers 0-9999</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. thousands (1000-9000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. hundreds (100-900)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>d. tens (10)-(90)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>e. zero-nine (0-(9))</td>
</tr>
<tr>
<td>Interpret</td>
<td>Drawings of base-ten pieces as representations of the concrete and pictorial models</td>
<td>I will draw &quot;x&quot; ____ . Draw &quot;x&quot; ____ . Draw the number &quot;y.&quot;</td>
<td>Verb (present conditional) Imperative</td>
<td>&quot;x&quot; = zero-nine thousand(s) hundred(s) ten(s) one(s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;y&quot; = 0-9999</td>
</tr>
</tbody>
</table>
Lesson Materials
Base-Ten Ones Pieces (OL): one, labeled bag of 100 per student pair
Base-Ten Tens Rods (OL): one, labeled bag of 10 per student pair
Base-Ten Hundreds Flats (OL): one, labeled bag of 10 per student pair
Base-Ten Thousands Packs (OL): one, labeled box of 10 per student pair
Base-Ten Ones, Tens, and Hundreds Overhead Pieces (OL)
Practice Worksheet #1: one per student pair—see pages 42-43
Assessment Wksh. #3A (OL): one per pre-literate/beginning ELL—see pp. 44-45
Assessment Wksh. # 3B (OL): one / intermediate/advanced ELL—see pp. 46-47
Practice Worksheet #2A (OL): one / pre-literate/beginning ELL—see pp. 50-52
Practice Worksheet #2B (OL): one / intermediate/advanced ELL—see pp. 53-55
Assessment Worksheet #4 (OL): one per student—see pages 56-57
Base-Ten Board #1 (OL): one per student pair—see page 58
Base-Ten Board #2 (OL): one per student pair—see page 59
Recording Sheet #2(OL): one per student—see page 60
“Numbers” Charts: see pages 61-63
“Trade” Graphics: see page 64
Digit cards: one set each of 0-9 thousands, 0-9 hundreds, 0-9 tens, and 0-9
ones per group of three students—see page 65
Content-Critical Vocabulary (written on index cards)—see page 66
Formulaic Expressions (written on sentence strips)—see page 66

Lesson 3 (Modified): (Part 1/Day 1) 60 minutes

Lesson Initiation: (10 minutes)

1. Arrange students into the same groups of 4 as in Lesson Two and provide
them with Base-Ten Boards #1 and #2 (one each per group) and Recording
Sheet #2 (one per student). Hold up the ones, tens, hundreds and
thousands pieces and say, “What are these?” as you raise each bag/box.
Hand out the pieces such that the higher-level ELLs receive the hundreds
and thousands pieces and the lower-level ELLs receive the ones and tens
pieces. As you do, say, “(Child’s name) has the (ones, tens, hundreds, or
thousands), today.”

2. Take out 3 overhead tens pieces, hold them up and say, “I have 3 tens,” and
place them on the projector. Do the same with 6 ones. Then say, “I have 3
tens and 6 ones,” as you point to the overhead and corresponding sentence
strip on the Word Wall. Give the “question signal” and ask, “How much is
this?” as you point to the corresponding sentence strip on the Word Wall and
then to the configuration on the overhead. Then give the “write-it signal” as
you say, “Write the number.” Repeat, “How much is this?” as you point to the
corresponding sentence strip on the Word Wall and then to the configuration
on the overhead. Then give the “say-it signal,” and write the number on the
board. Repeat with 245 and 3167.

3. (OL) Say, “Today we will read (point to the sentence strip) ‘How much is
this?’ and hear (point to your ear), ‘How much is this?’ and write the number.”
Lesson Development: 40 minutes

1. **(OL)** Have two advanced ELL students join you in the front of the room and hand one a bag of 4 overhead tens pieces and the other a bag of 8 overhead ones pieces. Say, “Show these, here,” as you point to the overhead. When the pieces are in place, say, “(Children’s names) have 4 tens and 8 ones,” as you point to the corresponding sentence strip on the Word Wall. “How much is this? Write the number.” Direct the ELL helper to write the number on the easel version of Recording Sheet #2, and the other students to signal their agreement or disagreement with a thumbs up or thumbs down. Repeat two more times with two other intermediate or advanced ELLs.

2. **(OL)** Call up another advanced ELL, hand him/her a collection of base-ten pieces to arrange on Base-Ten Boards # 1 & 2 and slowly say “(Child’s name) has 15 ones and 2 tens,” as you point to the corresponding sentence strip on the Word Wall. “Everyone, show 15 ones and 2 tens.” Ask, “How much is this?” and “What do we have to do?” (Answer, “Trade 10 ones for one ten.”) Say, “Write the number,” and direct the student helper to write the number on the easel chart and the groups to give a thumbs up or down signal. Repeat with another advanced ELL helper and 13 tens, 6 hundreds and 7 ones.

3. **(OL)** Show 5 overhead tens and 9 overhead ones on the transparency of the Base-Ten Board #1. Then have two advanced ELLs come to the front of the room. Hand one the 5 tens digit card and the other the 9 ones digit card. Say, “(Child’s name) has 5 tens and (child’s name) has 9 ones. (Children’s names) have 5 tens and 9 ones. How much is this?” Raise your hand as you say, “What number is this?” Call on a volunteer to respond. Write “59 is 5 tens and 9 ones” on the chalkboard.

4. **(OL)** Ask the child holding the 5 tens digit card to step forward. Say, “(Child’s name) has 5 tens. How much is this?” as you raise your hand. Repeat “How much is 5 tens?” as you point to 5 tens/50 on the Numbers chart and call on a volunteer to respond. Then ask the child holding the 8 ones digit card to step forward. Say, “(Child’s name) has 8 ones. How much is this?” as you raise your hand and then call on a volunteer to respond. Then rewrite the equation on the board as 59=50+9.

5. Repeat steps 73 and 74 with 78 and 245. **Modification for intermediate/advanced ELLs:** Point to the word card “value” on the Word Wall and say, “The value of the digit 5 in the tens’ place is 50. The value of the digit 9 in the ones’ place is 9.” Repeat with 78 and 245.

6. Hand out the Practice Worksheet # 10n pp. 42-43 (one per student) and the Digit Cards (one set of thousands, hundreds, tens and ones per group).

7. **(OL)** Together, complete example 1 for the number 27. Student groups should continue to complete the worksheet as you circulate and observe their progress. When groups finish, pair a lower-level ELL with a higher-level ELL.
and direct them to take turns reading their answers to each other. When all
groups have competed Practice Worksheet #1, call on volunteers to share
their answers and record them on a transparency of the worksheet.

**Lesson Closure:** 10 minutes

- **(OL) Pre-literate and beginning ELLs:** Complete Assessment Worksheet
  #3A (see pp. 44-45).

- **(OL) Intermediate and advanced ELLs:** Complete Assessment Worksheet
  #3B (see pp. 46-47)
Descriptive Narrative

In Lesson 3, I added a few new sheltered strategies to my repertoire in order to make the lesson content comprehensible, provide opportunities for engagement with the lesson and with each other, and to create a safe and stimulating environment.

Since written text is first used in the original version of Lesson 3, it became a major focus of revision in the modified lesson. The lesson exercises were rewritten for all levels in order to feature content-critical vocabulary—namely, ones, tens, hundreds and thousands—rather than bits, skinnies, flats and packs. I also removed the context of the TIMs Candy Company from the exercises in order to further simplify them and maintain the focus on the content-critical vocabulary.

The text-related worksheets and assessments also became a vehicle for the students' engagement with the lesson and each other. All but Assessment #4 were assigned to be completed and/or shared in pairs, within the small group, or with the whole group.

My efforts to create a safe and stimulating environment seemed to become very apparent to me when I modified this lesson. I decided to change the base-ten-piece assignments for the first time since I felt that the students should be very familiar with the trade routines and ready for a little novelty. I also continued to enlist the assistance of the higher-level ELLs in the lesson delivery to stimulate their level of interest. Furthermore, when I rewrote the text for the intermediate and advanced ELLs, I was very intentional about maintaining the open-ended nature of some of the questions in order to appropriately challenge them and promote their language development.
Practice Worksheet #1

A. Show the number.
   Use ones, tens, hundreds, and thousands pieces.
   Use number cards.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

B. Write the number:

27 is 2 tens and 7 ones

27 = 20 + 7

1A. Show 41

1B. Write 41:

41 is ___tens and ___one

41 = ___ + ___
2A. Show 356

2B. Write 356:

356 is _hundreds and _tens and _ones
356 = ___ + ___ + ___

3A. Show 518

3B. Write 518:

518 is _hundreds and _ten and _ones
518 = ___ + ___ + ___

4A. Show 1639

4B. Write 1639:

1639 is _thousand and _hundreds and _tens and _ones
1639 = ___ + ___ + ___ + ___

5A. Show 4902

5B. Write 4902:

4902 is _thousands and _hundreds and _tens and _ones
4902 = ___ + ___ + ___ + ___
Assessment Worksheet #3A

Use ones, tens, hundreds and thousands pieces. Write the number.

1. Sam has 3 hundreds, 1 ten and 5 ones. How much is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Sam and Kim have 4 thousands, 2 hundreds, 3 tens and 7 ones. How much is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

3. Juan has 3 hundreds, 3 ten and 15 ones. How much is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
4. Joe has 5 hundreds, 12 tens and 8 ones. How much is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image1" alt="Hundreds" /></td>
<td><img src="image2" alt="Tens" /></td>
<td><img src="image3" alt="Ones" /></td>
</tr>
</tbody>
</table>

5. Maya and Mark have 14 hundreds, 4 tens and 15 ones. How much is this? _____

6. Sue has 2 thousands, 4 hundreds, 5 tens, and 3 ones. How much is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4" alt="Thousands" /></td>
<td><img src="image5" alt="Hundreds" /></td>
<td><img src="image6" alt="Tens" /></td>
<td><img src="image7" alt="Ones" /></td>
</tr>
</tbody>
</table>
Assessment Worksheet #3B

Use ones, tens, hundreds and thousands pieces. Write the number.

1. Sam has 3 hundreds, 1 ten and 5 ones. How much is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image" alt="hundreds" /></td>
<td><img src="image" alt="tens" /></td>
<td><img src="image" alt="ones" /></td>
</tr>
</tbody>
</table>

2. Sam and Kim have 4 thousands, 2 hundreds, 3 tens and 7 ones. How much is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="thousands" /></td>
<td><img src="image" alt="Hundreds" /></td>
<td><img src="image" alt="Tens" /></td>
<td><img src="image" alt="Ones" /></td>
</tr>
</tbody>
</table>

3. Juan has 3 hundreds, 3 tens and 15 ones.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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<tbody>
<tr>
<td><img src="image" alt="hundreds" /></td>
<td><img src="image" alt="tens" /></td>
<td><img src="image" alt="ones" /></td>
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</table>

Juan wrote the number 345. Is this the correct number?

Juan wrote the number 345. Is this the correct number?
4. Joe has 5 hundreds, 12 tens, and 8 ones.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[diagram]</td>
<td>[diagram]</td>
<td>[diagram]</td>
</tr>
</tbody>
</table>

Joe wrote the number 528. Is this the correct number?

---

5. Maya and Mark have 14 hundreds, 4 tens and 15 ones.

[diagram]

Maya and Mark wrote the number 1456. Is this the correct number?

---

6. Sue has 2 thousands, 5 tens, 4 hundreds, and 3 ones.

[diagram]

Sue wrote the number 2543. Is this the correct number?
Lesson 3 (Modified): (Part 2/Day 2)  

Lesson Initiation: 10 minutes

1. Pair the ELLs (higher-level with lower-level) and have them share answers on the Assessment Worksheets #3A and #3B from Lesson 3/Part 1. Circulate and answer questions. **Modification for intermediate/advanced ELLs:** Show the word card “value” and ask, “What is the value of (various digits)” on Assessment #3B.

2. **(OL)** Say, “Today we will say good-bye to the ones, tens, hundreds, and thousands pieces” (as you return them to the math bin and wave good-bye) and say hello (wave) to drawings of ones...tens...hundreds...thousands.” (point to the drawings on the Numbers charts—see pp. 61-63)...Point to the pictures of the base-ten pieces on the Numbers charts and say, “I have pictures of ones, tens, hundreds and thousands pieces. And I have drawings of ones, tens, hundreds, thousands.”

Lesson Development: 35 minutes

1. **(OL)** Say, “I will draw 3 ones,” and draw them on the board. Repeat with tens, hundreds and thousands.

2. **(OL)** Say, “I will draw the number 45,” and show 5 ones and 4 tens on a transparency of the Base-Ten Recording Sheet # 2. Repeat with 327, 2153, and 4042.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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</tbody>
</table>

3. **(OL)** Provide each student (still in pairs) with copies of the Base-Ten Recording Sheet #2. Say, “Everyone, draw the number 18,” as you write it on the board. Have a volunteer draw it on the overhead transparency and all students signal with a thumbs up or down response. Repeat with 469, 3586, 705, and 1060.

4. **Modification for intermediate/advanced ELLs:** Ask, “What is the value of (various digits)” on the overhead.

5. **(OL)** Draw the following on a clean, overhead transparency of Recording Sheet #2 (Figure 1):
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 2:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Ask, “What number is this?” and “What do I have to do?” (Answer: “Trade 10 ones for 1 ten.”)

7. (OL) Show how to do this by circling the ones, drawing an arrow to the tens’ place and drawing an additional ten in the tens’ place (Figure 2). Ask, “What number is this?” and give the “say-it signal.” Repeat with:
   - 2 hundreds, 11 tens, 4 ones
   - 1 thousand, 13 hundreds, 8 tens, 6 ones
   - 3 thousands, 5 hundreds, 9 tens, 17 ones
   - 4 thousands, 11 hundreds, 12 tens, 5 ones
   - 1 thousand, 9 hundreds, 13 tens, 18 ones

8. (OL) Give each student (still in pairs) a copy of a practice worksheet (noted below). (The practice items are the same through item # 14; items #15 and #16 differ only in the format of the activity and answer.)
   - Pre-literate and beginning ELLs: Complete Practice Worksheet #2A (see pp 50-52).
   - Intermediate and advanced ELLs: Complete Practice Worksheet #2B (see pp. 53-55)

Lesson Closure (15 minutes)
Together, discuss the answers to the practice worksheets.
Assign Assessment Worksheet # 4 (pp. 56-57) as homework.
Practice Worksheet #2A

Draw the number. Use: □ □ | •

315  □ □ □ | • • • • •

1. 237
2. 345
3. 618
4. 1455

5. What number is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

6. What number is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. What number is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

8. What number is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

9. What number is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

10. What number is this? ____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
11. What number is this? ____

12. What number is this? ____

13. What number is this? ____

14. What number is this? ____

15. Draw 157:

157 is __hundred and __tens and __ones

157 = ___ + ___ + ___

16. Draw 571:

571 is __hundreds and __tens and __one

571 = ___ + ___ + ___
Practice Worksheet #2B

Draw the number. Use:

\[ \square \square \square \square | \ldots \ldots \]

315

| \square \square \square | \ldots \ldots |

1. 237
2. 345
3. 618
4. 1455

5. What number is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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<tbody>
<tr>
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<td></td>
<td>1 1</td>
<td>...</td>
</tr>
</tbody>
</table>

6. What number is this? _____

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1 1</td>
<td>...</td>
</tr>
</tbody>
</table>

53
7. What number is this? 

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

8. What number is this? 

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

9. What number is this? 

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

10. What number is this? 

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
11. What number is this? ____

[Diagram with boxes and dots]

12. What number is this? ____

[Diagram with boxes and dots]

13. What number is this? ____

[Diagram with boxes and dots]

14. What number is this? ____

[Diagram with boxes and dots]

15. The number 157 has three digits: the 1, the 5, and the 7. The number 571 has the same three digits but in different places. Do the 1, the 5, and the 7 have the same value in each number? Explain.
Assessment Worksheet #4

How much is this? Write the numbers.

1. ______  / / / : : : : :

2. ______  |   | : : : : :

3. ______  [ ][ ][ ][ ] / / : :

4. ______  [ ][ ]

5. ______  [ ][ ][ ][ ][ ][ ][ ][ ][ ]

6. ______  [ ][ ][ ] .
Draw the numbers. Use: □□□□□□□□□□□

7. 356

8. 4206

9. 5179

10. What number is this? ______

11. What number is this? ______

12. What number is this? ______

13A. Draw 2678.

13B. Write 2678:

2678 is __thousands and __hundreds and __tens and __ones

2678 is ___ + ___ + ___ + ___
Base Ten Board 1

Tens

Ones
Base Ten Board 2

Thousands

Hundreds
### Recording Sheet 2

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Image]</td>
<td>[Image]</td>
<td>[Image]</td>
<td>[Image]</td>
</tr>
</tbody>
</table>

- Thousands: [Image]
- Hundreds: [Image]
- Tens: [Image]
- Ones: [Image]
Numbers

1
One

2
Two

3
Three

4
Four

5
Five

6
Six

7
Seven

8
Eight

9
Nine

10
Ten
Numbers

10 Ten

20 Twenty

30 Thirty

40 Forty

50 Fifty

60 Sixty

70 Seventy

80 Eighty

90 Ninety

100 Hundred
Numbers

100  Two Hundred
One Hundred

200  Three Hundred

300  

400  Five Hundred
Four Hundred

500  Six Hundred

600  

700  Seven Hundred

800  Eight Hundred
Nine Hundred

900  

1000  One Thousand

One Thousand
<table>
<thead>
<tr>
<th>Number</th>
<th>Value</th>
<th>Trade Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>One Ten</td>
<td>$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$ Ten Ones</td>
</tr>
<tr>
<td>100</td>
<td>One Hundred</td>
<td>$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$ Ten Tens</td>
</tr>
<tr>
<td>1000</td>
<td>One Thousand</td>
<td>$100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100$ Ten Hundreds</td>
</tr>
<tr>
<td>Ones</td>
<td>Tens</td>
<td>Hundreds</td>
</tr>
<tr>
<td>------</td>
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</tr>
<tr>
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<td>0</td>
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<td>1</td>
<td>1</td>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
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</tr>
</tbody>
</table>
Word Wall

zero
one
one(s)
ten
hundred
thousand
ones' place
tens' place
hundreds' place
thousands' place

two
three
four
five
six
seven

three
four
five
six
seven

eight
nine

ten

eleven
twelve
thirteen
fourteen
fifteen
sixteen
seventeen
eighteen
nineteen

twenty
thirty
forty
fifty
sixty
seventy
eighty
ninety

one
two
three
four
five
six
seven

--one
--two
--three
--four
--five
--six
--seven
--eight
--nine

I
you
we

equals =
and +

value

Formulaic Expressions

What are these?
I have ___ ___
(Child's name) and (Child's name) have ___ ___
(Child's name) has ___ ___

What number is this?
How much is this?
What do ___ need to do? ___ need to trade 10 ___ for 1 ___

___ is ___ thousand(s) and ___ hundred(s) and ___ ten(s) and ___ one(s)

___ = ___ + ___ + ___ + ___

I will draw ___ ___.
Draw ___ ___.
Draw the number ___.

66
Lesson 4
Lesson 4 (Modified): 60 minutes

*OL = based on the original lesson plan from Math Trailblazers

Content Objectives:
All students will be able to:
• Solve addition problems involving regrouping using base-ten shorthand and the traditional addition algorithm. (OL)
• Solve addition word problems involving regrouping using base-ten shorthand and the traditional addition algorithm. (OL)
• Translate between different representations of numbers (pictorial and symbolic). (OL)

Most students will be able to:
• Solve addition problems without the place-value-formatted recording sheets.

Some students will be able to:
• Solve addition problems without the pictorial representations.

Language Objectives:
All students will be able to:
• Combine one quantity with another and answer the question, “How much is this, altogether?”
• Decide whether or not to regroup and rewrite a number.
• Translate drawings of the addition and regrouping processes into numerical representations of the same.
• Read and solve word problems featuring the content-critical unit vocabulary.

Most students will be able to:
• Use the term “plus.”

Some students will be able to:
• Use the terms, “plus,” “total,” “sum,” and the contraction, “don’t.”
• Explain their decision whether or not to regroup both orally and in writing.
• Solve word problems featuring real-life scenarios.
<table>
<thead>
<tr>
<th>Function</th>
<th>Situation</th>
<th>Formulaic Expressions</th>
<th>Grammar</th>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combine</td>
<td>One number with another to compute a total quantity.</td>
<td>Add \textbf{a. b.}</td>
<td>Command</td>
<td>Add a. 0-9&lt;br&gt;b. one(s), ten(s), hundred(s), thousand(s) altogether</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How much is this, altogether?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decide</td>
<td>Whether or not to regroup</td>
<td>a. count the \textbf{b.}</td>
<td>a. Ordinal numbers as conjunctive adverbs&lt;br&gt;b. Numbers as nouns</td>
<td>a. First / second / third / fourth&lt;br&gt;b. ones / tens / hundreds / thousands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do you need to trade?</td>
<td></td>
<td>Do</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes, I need to trade.</td>
<td>Yes/No question</td>
<td>Yes, I need to...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No, I do not / don't need to trade.</td>
<td>Verb: present&lt;br&gt;conditional&lt;br&gt;Negative present&lt;br&gt;conditional / contraction</td>
<td>No, I do not / don't...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. I count the \textbf{b.}&lt;br&gt;When there are \textbf{c. b.}, I \textbf{d.} need to trade.</td>
<td>c. coordinating conjunction forming a&lt;br&gt;compound determiner /&lt;br&gt;predeterminer +&lt;br&gt;determiner&lt;br&gt;d. auxiliary / negative&lt;br&gt;auxiliary</td>
<td>c. 10 or more / fewer than 10&lt;br&gt;d. do / don't</td>
</tr>
<tr>
<td>Explain</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Translate</td>
<td>Drawings of the addition and regrouping processes into numerical representations of the same</td>
<td>(x) + (y) = (z)&lt;br&gt;The \textbf{a.} is \textbf{b.}</td>
<td>(x), (y), (z) — cardinal numbers&lt;br&gt;Number sentence:&lt;br&gt;coordinating conjunction / compound subject&lt;br&gt;Verb (linking)</td>
<td>a. sum / total&lt;br&gt;b. 0-9999</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>
Lesson Materials
Practice Worksheet #3A (OL): one / pre-literate/beginning ELL—see pp. 75-77
Practice Worksheet #3B (OL): one / intermediate/advanced ELL—see pp. 78-80
Assessment Wksh. # 5A (OL): one / pre-literate/beginning ELL—see pp. 81-83
Assessment Wksh. # 5B (OL): one / intermediate/advanced ELL —see pp. 84-86
Recording Sheet #3 (OL): two per student—see page 87
Transparency of Recording Sheet #3 (OL)
"Trade" Graphics:—see page 88
Addition Poster:—see page 89
Content-Critical Vocabulary (written on index cards)—see page 90
Formulaic Expressions (written on sentence strips)—see page 90

Lesson 4 (Modified): 60 minutes

Lesson Initiation (10 minutes)
1. Pair the ELLs (higher-level with lower-level) and have them share answers on the homework Assessment Worksheet #4 from Lesson 3 / Part 2. Circulate and answer questions. Modification for intermediate/advanced ELLs: Show the word card “value” and ask, “What is the value of (various digits)” on Assessment #4.

2. Draw 4 ones on an overhead transparency of the Recording Sheet #3, and write 4 in the ones' place on the easel version of Recording Sheet #3. Say, “I will add 3 ones,” and draw and record 3 ones beneath the 4 ones on the overhead recording sheet. Go to the easel recording sheet and repeat, “I will add 3 ones,” as you write + 3 beneath the 4 and draw a line underneath the 3. Point to the overhead drawing, give the "question signal" and ask, “Everyone, how much is this, altogether? (as you circle your index finger over the entire amount) Count 1...2...3...4...5...6...7” Return to the easel as say as you point to each component, “4 +(and) 3 = 7,” and write the 7 beneath the line. Point to the “and / +”card on the Word Wall and show the “plus / +” card. Point to the equation and say, “4 and 3 = 7; 4 plus 3 = 7. Today we will draw, write and add numbers” (as you point to the plus sign). I will ask ("question signal"), “How much is this altogether?” as you point to the sentence strip on the Word Wall.
Lesson Development: 40 minutes

1. Draw 6 ones on an overhead transparency of the Recording Sheet #3, and write 6 in the ones' place on the easel version of Recording Sheet #3. Say, “I will add 5 ones,” and draw and record 5 ones beneath the 6 ones on the overhead recording sheet. Go to the easel recording sheet and repeat, “I will add 5 ones,” as you write + 5 beneath the 6 and draw a line underneath the 5. Point to the overhead drawing, give the “question signal” and ask, “Everyone, how much is this, altogether?” Repeat this and point to the sentence strip bearing the same question. Point to the ones, count to 11, and ask “What do we need to do? (Answer: “Trade 10 ones for 1 ten.”) Circle ten ones, draw an arrow to the tens' column, draw 1 ten there and say, “11 is 1 ten and 1 one.” Return to the easel as say as you point to each component, “6 plus 5 = 11; 11 is 1 ten and 1 one,” as you write it beneath the line. **Modification for intermediate / advanced ELLs:** Point to the quantity on the overhead and say, “11 is the total.” Then point to the 11 on the easel and say, When we add, 11 is the sum.”
2. Draw 2 tens and 8 ones on an overhead transparency of the Recording Sheet #3, and write 28 on the easel version of Recording Sheet #3. Say, “I will add 7 ones,” and draw and record 7 ones beneath the 8 ones on the overhead recording sheet. Go to the easel recording sheet and repeat, “I will add 7 ones,” as you write +7 beneath the 8 and draw a line underneath the 7. Then ask, “How much is this altogether?” as you point to the space where the sum will be written and point to the sentence strip on the Word Wall. Go to the “To Add” poster, point to step #1 and say, “First, count the ones.” Return to the overhead, count the 15 ones. Again, point to step #1 on the poster, give the “question signal” and ask, “Do you need to trade?” (Answer: “Yes, trade 10 ones for 1 ten.”) Circle ten ones on the overhead, draw an arrow to the tens column, draw 1 ten there and say, “15 is 1 ten and 5 ones.” Return to the easel, say, “8 plus 7 = 15; 15 is 1 ten and 5 ones,” as you record this on the easel. Then turn to the “To Add” poster, point to step #2 and say, “Second, count the tens.” Return to the overhead and count the 3 tens. Then circle your index finger over the whole quantity as you say, “Everyone, how much is this, altogether?” Repeat this, and point to the sentence strip bearing the same question, and give the “say-it signal.” Then add, “The total is 35,” and point to the card on the Word Wall. Next, go to the easel, say, “1 plus 2 = 3 tens and record the 3 in the tens’ place on the easel. Say, “28 + 7 = 35,” as you point to the representation on the easel. “The sum is 35,” and point to the card on the Word Wall. Repeat with 37 + 16; and 45 + 23. The latter example will provide an experience where the students must respond, “No, I don’t need to trade.”

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td><img src="image" alt="Image" /></td>
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</table>

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
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<td><img src="image" alt="Image" /></td>
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<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Image" /></td>
<td>+</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Image" /></td>
<td><img src="image" alt="Image" /></td>
<td>3</td>
</tr>
</tbody>
</table>
3. Provide each student with 2 copies of Recording Sheet #3. Say, “Everyone, draw 3 tens and 5 ones, as you do this with them on the overhead transparency. Then say, “Write 35 on this sheet,” as you hold up a clean second copy of Recording Sheet #3, and then record 35 on the easel version of the recording sheet. Say, “Add 1 ten and 8 ones, here” as you draw 1 ten and 8 ones beneath the 3 tens and 5 ones on the overhead recording sheet. Go to the easel recording sheet and repeat, “Add 1 ten and 8 ones,” as you write + 18 beneath the 35 and draw a line underneath the 18. Point to step #1 on the “To Add” poster and say, “First, count the ones.” Return to the overhead, and count the 13 ones. Then point to step #2 on the poster, give the “question signal,” and ask, “Do you need to trade?” (Answer: “Yes, trade 10 ones for 1 ten.”) Circle ten ones on the overhead, draw an arrow to the tens’ column, draw 1 ten there and say, “13 is 1 ten and 3 ones.” Return to the easel, say, “5 plus 8 = 13; 13 is 1 ten and 3 ones,” as you record this on the easel. Then point to step #3 on the “To Add” poster and say, “Third, count the tens.” Return to the overhead and count the 5 tens. Then go to the easel, say, “1 plus 3 plus 1 = 5 tens and record the 5 in the tens’ place on the easel. Say, “How much is 35 + 18 altogether?” as you point to the 53 on the easel and give the “say-it signal.” Finally, say, “35 + 18 = 53; the sum is 53.” as you point to the 53 and the “sum” card on the Word Wall. Repeat with 54 + 67; and 64 + 34. The former example will provide experience trading 10 tens for 1 hundred, and the latter with the decision, “No, I don’t need to trade.”

4. (OL): Continue in this fashion, working together and doing examples that require making trades of 10 tens for 1 hundred and 10 hundreds for 1 thousand. Consistently refer to the “To Add” chart as each step is applied. Provide examples that require more than one regrouping per addition problem as well as those that require no regrouping at all. Modification for intermediate / advanced ELLs: After students become familiar following the routine on the chart, point to the “Do I need to make a trade?” question on the “To Add” poster, read it, and ask, “How do you know when you need to trade?” (Give time for students to respond orally, then point to the sentence strips on the Word Wall: “First, I count the ones. When there are 10 or more ones, I do need to trade 10 ones for 1 ten. When there are fewer than 10 ones, I do not need to trade.”) Pose this question when students need to decide whether or not to make trades involving tens and hundreds, and substitute the appropriate vocabulary cards in the blank slots.

5. (OL): Model how to draw and solve a problem at the board without the recording sheets. (Everything else remains the same—there are just no labeled columns in which to draw and write the numbers.) Then have a volunteer, advanced-level ELL do an addition problem involving regrouping at the board in this fashion, while you and the remaining students do the problem on the overhead / easel / student copies of Recording Sheet #3. Repeat with several examples and student volunteers.
6. **(OL):** Pair students (one higher-level ELL with one lower-level) and provide Practice Sheet #3A *(pre-literate and beginning ELLs)* and #3B *(intermediate and advanced ELLs).* The worksheets are the same with the exception of the last item.

**Lesson Closure:** 10 minutes

Have volunteers place several selected problems on the board (without the recording sheet columns) while I call on intermediate / advanced ELLs to tell me what to draw / write on the overhead transparency / easel and how they followed the steps on the “To Add” poster to solve the problems. Encourage the participation of beginning ELLs in writing and explaining the problem solutions.

**Note:** Successive lessons would feature similar practice solving addition problems and word problems involving regrouping with sums up to 4-digits. Students would be encouraged to solve problems without “base-ten shorthand” (i.e. drawing the numbers) as they appear ready to do so.

An Assessment component for Lesson 4 is included on pages 81-86.

The fifth and final lesson in the unit features subtraction with regrouping using base-ten shorthand and the traditional algorithm. Instruction would involve having the students draw the minuend, only, on Recording Sheet #3, but recording the entire problem, numerically, on the easel. The students would then apply the steps on the “To Subtract” chart (see page 89). As trades are made, 1 ten, 1 hundred and / or 1 thousand is circled and an arrow drawn into the place to the right of the circled base-ten piece, and the 10 pieces displayed in that column. This is accomplished in traditional fashion on the numerical representation of the problem. Finally, the amount of ones, tens, hundreds, and / or thousands in the subtrahend are circled and “taken away” from the recording sheet on the overhead by showing an arrow pointing from them to the bottom of the paper. What is left is the difference, which should reflect the numerical difference as recorded on the easel.
Descriptive Narrative

In Lesson 4, the regrouping exercises of the preceding lessons were applied to the addition with regrouping algorithm. As a result, the familiar, formulaic expressions used in the earlier lessons became a critical sheltered strategy in making the more complex content of Lesson 4 comprehensible. For example, the question, “How much is this?” was used, again, but expanded to include the word “altogether,” in order to connote the combination of quantities. Furthermore, the question, “What do you need to do?” to signify a trade was revised to, “Do you need to trade?,” in order to prompt the decision-making aspect of solving addition problems at this level. Since the addition of two or more quantities is, in fact, a multi-step procedure, the “To Add” visual was created to help the students through the process. Differentiated worksheets and assessments for the two levels of English Language Learners were also created to provide simpler text that features content-critical vocabulary, as well as opportunities for the higher-level group to produce both oral and written language. It is hoped that the lower-level English Language Learners will be enabled to produce the language as well as negotiate meaning by working with a partner to discuss the Lesson 3 homework assignment and complete the Lesson 4 worksheet. At the end of this lesson, I was also hopeful that I might be able to encourage the pre-literate and intermediate / advanced English Language Learners to participate more fully in the whole-group dialogue of the “Lesson Closure” which features the (by now) very familiar and formulaic routines of the regrouping process.
Practice Worksheet #3A

A. Draw the numbers.
Add the numbers.

1. 

<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>

/ / / / / 

\[ 46 + 37 = 83 \]

2. 

<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>69</td>
</tr>
</tbody>
</table>

\[ 69 + 56 = 125 \]

3. 

<table>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>235</td>
</tr>
</tbody>
</table>

\[ 235 + 146 = 381 \]

4. 

<table>
<thead>
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<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>354</td>
</tr>
</tbody>
</table>

\[ 354 + 258 = 612 \]
5.  

<table>
<thead>
<tr>
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476

+659

6. 

<table>
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5635

+3289

7. 

<table>
<thead>
<tr>
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<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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</table>

6546

+3476

B. Draw the numbers.  
Write the numbers.  
Add the numbers.

8. Kim has 4 hundreds, 5 tens and 6 ones.  
Abe has 3 hundreds, 6 tens and 8 ones.  
How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>
9. Dan has 1 thousand, 7 hundreds, 5 tens, and 8 ones.
Sue has 2 thousands, 3 hundreds, 5 tens, and 7 ones.
How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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<tbody>
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</tbody>
</table>

10. Maria has 2 thousands, 0 hundreds, 3 tens, and 9 ones.
Jim has 5 thousands, 9 hundreds, 9 tens, and 6 ones.
How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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<tbody>
<tr>
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</tbody>
</table>
Practice Worksheet #3B

A. Draw the numbers.
Add the numbers.

1. |
---|
<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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2. |
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3. |
---|
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<th>Tens</th>
<th>Ones</th>
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</tr>
</tbody>
</table>

4. |
---|
<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
5.  
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| 476       | +659     |

6.  
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

| 5635      | +3289    |

7.  
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

| 6546      | +3476    |

B. Draw the numbers.
Write the numbers.
Add the numbers.

8. Kim and Abe collect baseball cards. Kim has 456 baseball cards. Abe has 368 baseball cards. How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

79
9. Dan and Sue went to a two-day fair. 2357 people were there on the first day. 1758 people attended on the second day. How many people went to the fair altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

10. Last year, the students at Gainfield Elementary School brought 2039 soup labels to school. This year, they brought 5996 soup labels to school. Find the sum of the labels they brought to school. How much is it altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

11. Explain how you know when to make a trade when you add numbers. Use the Word Wall.
### Assessment Worksheet #5A

**A. Draw the numbers.**
Add the numbers.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>57</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+35</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+46</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>349</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+303</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>462</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+298</td>
</tr>
</tbody>
</table>
5. | Thousands | Hundreds | Tens | Ones |
---|-----------|---------|------|------|
589 |           |         |      |      |
+475 |           |         |      |      |

6. | Thousands | Hundreds | Tens | Ones |
---|-----------|---------|------|------|
6437 |           |         |      |      |
+2678 |           |         |      |      |

7. | Thousands | Hundreds | Tens | Ones |
---|-----------|---------|------|------|
7484 |           |         |      |      |
+1859 |           |         |      |      |

B. Draw the numbers.  
Write the numbers.  
Add the numbers.

8. Kim has 5 hundreds, 6 tens and 7 ones.  
Abe has 2 hundreds, 6 tens and 8 ones.  
How much is this altogether?

| Thousands | Hundreds | Tens | Ones |
---|---------|------|------|
|          |         |      |      |
9. Dan has 5 thousands, 1 hundred, 5 tens, and 5 ones.  
   Sue has 2 thousands, 8 hundreds, 5 tens, and 7 ones.  
   How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

10. Maria has 6 thousands, 4 hundreds, 4 tens, and 2 ones.  
    Jim has 2 thousands, 8 hundreds, 9 tens, and 9 ones.  
    How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
### Assessment Worksheet #5B

**A. Draw the numbers.**
**Add the numbers.**

1. **Hundreds** | **Tens** | **Ones**
   |           |           |       |
   |           |           | 57     |
   |           |           | +35    |

2. **Hundreds** | **Tens** | **Ones**
   |           |           | 78     |
   |           |           | +46    |

3. **Hundreds** | **Tens** | **Ones**
   |           |           | 349    |
   |           |           | +303   |

4. **Hundreds** | **Tens** | **Ones**
   |           |           | 462    |
   |           |           | +298   |
5. Tens Ones Thousands  
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

589 + 475

6. Tens Ones Thousands  
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

6437 + 2678

7. Tens Ones Thousands  
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

7484 + 1859

B. Draw the numbers.  
Write the numbers.  
Add the numbers.

8. Jill and Joe collect stamps. Jill has 567 stamps. Joe has 268 stamps. How much is this altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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<tbody>
<tr>
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</tbody>
</table>

85
9. Maya and Mark's family like to travel. Last summer they traveled 1507 miles. This summer they traveled 2593 miles. How many miles did they travel altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

10. Last year, the students at Gainfield Elementary School read 4678 books. This year, they read 6546 books. Find the total number of books they read. How many did they read altogether?

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

11. Explain how you solved problem number 6. Use the Word Wall and the “To Add” poster.
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Recording Sheet 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hundreds</td>
</tr>
<tr>
<td></td>
<td>Tens</td>
</tr>
<tr>
<td></td>
<td>Ones</td>
</tr>
</tbody>
</table>
Trade

10
One Ten = 1+1+1+1+1+1+1+1+1+1
Ten Ones

100
One Hundred = 10+10+10+10+10+10+10+10+10+10
Ten Tens

1000
One Thousand = 100+100+100+100+100+100+100+100+100+100
Ten Hundreds
To Add

1. Count the ones.  
   Do you need to trade?

2. Count the tens.  
   Do you need to trade?

3. Count the hundreds.  
   Do you need to trade?

4. Count the thousands.  
   Do you need to trade?

To Subtract

1. LOOK at the ones. Is the top number smaller?  
   Then you need to trade.

2. LOOK at the tens. Is the top number smaller?  
   Then you need to trade.

3. LOOK at the hundreds. Is the top number smaller?  
   Then you need to trade.

4. LOOK at the thousands. Is the top number smaller?  
   Then you need to trade.
Word Wall

zero
ones
tens
hundreds
thousands
ones’ place
tens’ place
hundreds’ place
thousands’ place

and +
plus +

Yes
No
do
do not / don’t

sum / total

First
Second
Third
Fourth

ten or more
fewer than ten

Formulaic Expressions

Add _____.

How much is this altogether?

Do you need to trade?
_____ , I _____ need to trade.

_____ I count the _____.
When there are _____ _____ , I _____ need to trade.
Checklists
## Unit: Numbers and Number Operations
### Grammar and Functions Checklists

<table>
<thead>
<tr>
<th>Grammar</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjectives: compound</td>
<td>2</td>
</tr>
<tr>
<td>Adverbs: conjunctive</td>
<td>2,4</td>
</tr>
<tr>
<td>Conjunctions: coordinating (and, or)</td>
<td>4</td>
</tr>
<tr>
<td>Determiners: cardinal numbers</td>
<td>2,3,4</td>
</tr>
<tr>
<td>Imperative sentences</td>
<td>1,2,4</td>
</tr>
<tr>
<td>Nouns: cardinal numbers</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Nouns: possessive plural</td>
<td>1,2</td>
</tr>
<tr>
<td>Nouns: plural</td>
<td>2,4</td>
</tr>
<tr>
<td>Nouns: singular</td>
<td>1,2,4</td>
</tr>
<tr>
<td>Nouns: subject complements</td>
<td>4</td>
</tr>
<tr>
<td>Predeterminers</td>
<td>4</td>
</tr>
<tr>
<td>Prefix (re-)</td>
<td>1,2</td>
</tr>
<tr>
<td>Pronouns: demonstrative</td>
<td>2,3</td>
</tr>
<tr>
<td>Pronouns: direct object</td>
<td>2</td>
</tr>
<tr>
<td>Pronouns: subject</td>
<td>1</td>
</tr>
<tr>
<td>Verb: (Be) third person singular, present tense</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Verb: (Have) first + third person singular + plural, present tense</td>
<td>3</td>
</tr>
<tr>
<td>Verbs: (linking) third person singular + plural, present tense</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Verbs: negative present conditional /contracted form</td>
<td>4</td>
</tr>
<tr>
<td>Verbs: present conditional</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Verbs: transitive / past tense</td>
<td>1</td>
</tr>
<tr>
<td>Verbs: transitive / present tense</td>
<td>1,3</td>
</tr>
<tr>
<td>Wh-questions</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Yes/No questions</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>Functions</th>
<th>Lesson</th>
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</thead>
<tbody>
<tr>
<td>Count</td>
<td>1,2</td>
</tr>
<tr>
<td>Distinguish</td>
<td>1,2</td>
</tr>
<tr>
<td>Identify</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Trade</td>
<td>1,2</td>
</tr>
<tr>
<td>Analyze</td>
<td>1,2</td>
</tr>
<tr>
<td>Regroup</td>
<td>1,2</td>
</tr>
<tr>
<td>Regroup/Rewrite</td>
<td>2</td>
</tr>
<tr>
<td>Explain</td>
<td>2,3,4</td>
</tr>
<tr>
<td>Associate</td>
<td>3</td>
</tr>
<tr>
<td>Interpret</td>
<td>3</td>
</tr>
<tr>
<td>Relate</td>
<td>3</td>
</tr>
<tr>
<td>Combine</td>
<td>4</td>
</tr>
<tr>
<td>Decide</td>
<td>4</td>
</tr>
<tr>
<td>Translate</td>
<td>4</td>
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</table>
FLA 518: Sheltered ELL Strategies Checklist

Write the page numbers and any other identifying features to identify those parts of your lessons that employ the following strategies.

<table>
<thead>
<tr>
<th>I. Contextualize Lesson</th>
<th>Lesson</th>
<th>Lesson</th>
<th>Lesson</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Visuals (Realia, Manipulatives, Gestures)</td>
<td>5-10</td>
<td>20-26</td>
<td>39-40</td>
<td>48-49</td>
</tr>
<tr>
<td>3. Activate Background Knowledge</td>
<td>5</td>
<td>20-23</td>
<td>39-48</td>
<td>70</td>
</tr>
<tr>
<td>4. Negotiate Meaning/Check Understanding</td>
<td>5-10</td>
<td>20-26</td>
<td>39-57</td>
<td>70-86</td>
</tr>
</tbody>
</table>

II. Make Text Comprehensible

<table>
<thead>
<tr>
<th>II.1. Graphic Organizers</th>
<th>Lesson</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>20-26</td>
<td>39-57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II.2. Develop Vocabulary</th>
<th>Lesson</th>
</tr>
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<tbody>
<tr>
<td>5-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II.3. Simplify Written Text</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

III. Make Talk Comprehensible

<table>
<thead>
<tr>
<th>III.1. Graphic Organizers: Listening Guides</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III.2. Frame Main Ideas</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9</td>
<td>20-25</td>
</tr>
</tbody>
</table>

IV. Engage: Opportunities for Output

<table>
<thead>
<tr>
<th>IV.1. Teacher Questioning and Response Strategies: Instructional Conversations</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV.2. Small Group Work (including Info Gap Activities)</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV.3. Meaningful, real-life activities; Students as Researchers</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 7-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

V. Engage at Appropriate Language Proficiency Levels

<table>
<thead>
<tr>
<th>V.1. Use questions appropriate for language levels in conversations, activities, assessments</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 7-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>

VI. Literacy/Academic Development

<table>
<thead>
<tr>
<th>VI.1. Allow use of L1 for planning and conceptualizing</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 7</td>
<td>20-26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VI.2. Lots of real oral and written language</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10</td>
<td>20-26</td>
</tr>
</tbody>
</table>
Original
Lessons
Original Lesson Plan

Math Trailblazers Lesson Plans
Unit 3: Lesson 1

Objectives: Students will:
• understand place value: tens and ones.
• group and count by tens and ones.
• translate between different representations of numbers (concrete, pictorial, symbolic).
• regroup and represent a 2-digit number in different ways.
• represent 2-digit numbers using the Fewest Pieces Rule.

Procedure:
1. Describe the context of the lesson: the TIMS Candy Company.
2. Introduce the individual connecting cubes as base-ten bits, which represent Choco candies. Then, model how ten bits (candies) can be snapped (packed) together to make a skinny.
3. Introduce the Base-Ten Board Part 1 and the Recording Sheet.
4. Place 16 individual bits on the Base-Ten Board and record the numeral 16 in the bits' column on the Recording Sheet. Next, snap together a group of ten cubes, place the skinny in the skinnies' column on the Base Ten Board and record the resulting regrouping using numerals on the Recording Sheet. Emphasize that the two representations equal the same amount of candy. Model the same procedure with 34 bits; record each regrouping on the Recording Sheet as it is made.
5. Provide the students with bits, Base-Ten Boards and Recording Sheets and have them regroup and record a given number of bits in different ways.
6. Discuss the Fewest Pieces Rule.
7. Have students express a number in different ways on the Base-Ten Board and on the Recording Sheet and have them identify which representation uses the Fewest Pieces Rule.

Assessment:
Use the Observational Assessment Record to document students' progress with the lesson objectives.
Original Lesson Plan

_Math Trailblazers_ Lesson Plans
Unit 3: Lesson 2

Objectives: Students will:
- understand place value: hundreds and thousands.
- group and count by tens, hundreds, and thousands.
- translate between different representations of numbers (concrete, pictorial, symbolic).
- regroup and represent 3 and 4-digit numbers in different ways.
- represent 3 and 4-digit numbers using the Fewest Pieces Rule.

Procedure:
1. Review the base-ten pieces—bits and skinnies—as an efficient system for keeping track of the candy made by the TIMS Candy Company.
2. To reinforce yesterday’s activity, have students take a handful of bits, make trades on a copy of the _Base Ten Board_, record each trade on the _Recording Sheet_, and identify which representation exhibits the Fewest Pieces Rule.
3. Introduce the flat and show how 10 skinnies can be exchanged for 1 flat and vice versa. Skip count by 10s to 100 to determine the number of bits in a flat.
4. Represent a 3-digit number using flats, skinnies, and bits. Have students offer other ways of representing the same number, model the trades, and record the representations. Have the students practice with other numbers.
5. Introduce the pack, and show how 10 flats can be exchanged for 1 pack and vice versa. Skip count by 100s to 1000 to determine how many bits there are in a pack. Then skip count by 10s to 100 to determine how many skinnies there are in a pack.
6. Represent a 4-digit number using packs, flats, skinnies, and bits. Have students offer other ways of representing the same number, model the trades, and record the representations. Have the students practice with other numbers.
7. Model how to make and record trades to represent a 4-digit number using the Fewest Pieces Rule when given an example such as: 4 bits, 15 skinnies, 11 flats, 1 pack. Have students practice similar examples.

Assessment:
Use the Observational Assessment Record to document students’ progress with the lesson objectives.
Original Lesson Plan

Math Trailblazers Lesson Plans
Unit 3: Lesson 3

Objectives: Students will:
- determine the value of a digit when given its place in a number.
- write a number using expanded notation.
- translate between different representations of numbers (concrete, pictorial, symbolic).

Procedure:
1. Review all of the base-10 pieces as well as their relationship to each other.
2. Together, read “The TIMS Candy Company” (p. 68). Then, pair students and have them complete the activities on pp. 69-71:1-6. Discuss answers.
3. Represent a 3-digit number on the Base-Ten Board using flats, bits, and skinnies and the Fewest Pieces Rule, and ask students to tell how many “candies” each digit represents. Write the number using expanded notation. Repeat with a 4-digit number. Do several more of these as needed.
4. Together, read “Base-Ten Shorthand” on p. 71 and complete numbers 7-9 on pp. 71-72. Have students record their answers on cards and “flash” their responses.
5. Pair students and have them complete pp. 73-76:10-16. Share answers whole group.

Assessment:
- Use the Observational Assessment Record to document students’ progress with the lesson objectives.
Original Lesson Plan

*Math Trailblazers* Lesson Plans
Unit 3: Lesson 4

Objectives: Students will:
- solve addition problems involving regrouping using base-ten shorthand and the traditional addition algorithm.
- translate between different representations of numbers (pictorial and symbolic).

Procedure:
1. Model how to use base-ten shorthand to record and solve an addition problem involving 2, 2-digit addends with one regrouping. Use the context of the TIMS Candy Company, the *Base-Ten Board Parts 1 and 2*, and the *Recording Sheet*. Then, adjacent to the problem, model how to solve it using the traditional addition algorithm. Give guided practice with several other similar addition problems.
2. Repeat step 1, above, with problems involving more than 2, 2-digit addends and 2, 3-digit addends with one or two regroupings.
3. Guide students in solving addition problems involving regrouping using the traditional addition algorithm, only.
4. Have students independently solve addition problems involving regrouping using the addition algorithm at the board and at their seats.

Assessment:
- Use the Observational Assessment Record to document students' progress with the lesson objectives.
- Assign as homework p. 84:1-10
Original Lesson Plan

Math Trailblazers Lesson Plans
Unit 3: Lesson 5

Objectives: Students will:
• solve subtraction problems involving regrouping using base-ten shorthand and the traditional subtraction algorithm.
• translate between different representations of numbers (pictorial and symbolic).

Procedure:
1. Model how to use base-ten shorthand to record and solve a subtraction problem involving 2, 2-digit numbers with one regrouping. Use the context of the TIMS Candy Company, the Base-Ten Board Parts 1 and 2, and the Recording Sheet. Then, adjacent to the problem, model how to solve it using the traditional subtraction algorithm. Provide guided practice with several other similar subtraction problems.
2. Repeat step 1, above, with problems involving 2, 3 or 4 digit numbers with one or two regroupings.
3. Guide students in solving subtraction problems involving regrouping using the traditional subtraction algorithm, only.
4. Have students independently solve subtraction problems involving regrouping using the subtraction algorithm at the board and at their seats.

Assessment:
• Use the Observational Assessment Record to document students' progress with the lesson objectives.
• Assign as homework pp. 84-85:11-18
• “Place Value Addition and Subtraction Quiz”
• Unit 3 Assessment
Mr. and Mrs. Haddad own a chocolate factory that makes Chocos. The name of their company is the TIMS Candy Company. They use base-ten pieces to keep track of how much candy they make.

They use a **bit** for each Choco.

Whenever there are 10 bits, they can be packed together to make a **skinny**.

When there are 10 skinnies, they can be packaged together to make a **flat**.

A group of 10 flats makes a **pack**.

Mr. and Mrs. Haddad use a **Base-Ten Board** to show the bits, skinnies, flats, and packs. They also write the amounts in numbers on the **Recording Sheet**. For example, one day the company made 236 Chocos. This is how they recorded the candy:
Rhonda and Joe work for the TIMS Candy Company.

1. Rhonda has 3 flats, 1 skinny, and 5 bits. How many pieces of candy is that?

2. Joe has 4 packs, 2 flats, 3 skinnies, and 7 bits. How many pieces of candy is that?
3. Rhonda had 15 bits, 3 flats, and 3 skinnies. She said this was 345 pieces of candy. Is she correct? If not, how many pieces of candy did she really have?

4. Joe had 5 flats, 12 skinnies, and 8 bits. He said this was 528 pieces of candy. Is he correct? If not, how many pieces of candy did he really have?

5. Sometimes Rhonda and Joe do not use the Base-Ten Boards. They put the blocks on a table.

5. Rhonda had 14 flats, 15 bits, and 4 skinnies. She said this was 1456 pieces of candy. Is she correct? If not, how many pieces of candy did she really have?
6. Joe had 2 packs, 5 skinnies, 4 flats, and 3 bits. He said this was 2543 pieces of candy. Is he correct? If not, how many pieces of candy did he really have?

Base-Ten Shorthand

Sometimes it is useful to record your work with the base-ten pieces. Other times, base-ten pieces are not available but drawing a picture of the base-ten pieces is helpful. Mr. Haddad decided to use a shorthand for the base-ten pieces.

- = Bit  = Skinny  = Flat  = Pack

7. Joe says there are often several ways to show an amount of candy on the Base-Ten Board. For example, 26 can be shown as:

There is one more way 26 can be shown on the Base-Ten Board. What is this third way? Use base-ten shorthand to sketch your answer.
8. Use base-ten shorthand to show the number of candies Rhonda and Joe had in Questions 1–6.

9. Joe showed several ways of putting 32 Chocos on the Base-Ten Board by using base-ten shorthand. Some of Joe’s work was erased. Fill in the missing pieces. Use base-ten shorthand to sketch your answer.

A. Here is one way to show 32.

B. Here is another way to show 32.

C. Here is a third way to show 32.

A. Here is one way to make 267.

B. Here is another way to show 267.
The Fewest Pieces Rule

The TIMS Candy Company decided that the best way to record the amount of candy it makes is to use the smallest possible number of base-ten pieces. The company calls this the Fewest Pieces Rule. For example, the best way to record 32 candies is to use 3 skinnies and 2 bits.
The best way to record 457 candies is to use 4 flats, 5 skinnies, and 7 bits.

11. Show each number using the Fewest Pieces Rule. Record your answer by using base-ten shorthand. You do not have to sketch the columns.
   A. 236   B. 507   C. 5235   D. 6008

In problems 12-15:
A. Write how many Chocos were made.
B. Then, check if the Fewest Pieces Rule is followed. If it is not, use base-ten shorthand to show the candy using the fewest pieces possible.

12.

13.

14.
16. The number 157 has 3 digits: the 1, the 5, and the 7. Explain the value of each of the digits. Do you have the same amount if you mix up the digits and write 571? Explain why or why not.
Homework

Dear Family Member:

Your child is reviewing place value—the idea that the value of a digit in a number depends upon where it is placed. For example, the 2 in 329 stands for 2 tens but the 2 in 7293 is 2 hundreds.

In class your child uses base-ten pieces to represent numbers. When the pieces are not available, students are encouraged to draw pictures of the base-ten pieces. We call these drawings of the base-ten pieces base-ten shorthand. To help your child with homework Questions 1–11, you may wish to review the Base-Ten Shorthand section on the previous pages.

Thank you for your cooperation.

The sketches below show the number of Chocos made by workers at the TIMS Candy Company. Write the amount of candy using numbers.

1. \[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\end{array}
\]
2. \[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\end{array}
\]

3. \[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\end{array}
\]
4. \[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\end{array}
\]

5. \[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\text{\ } \\
\end{array}
\]
6. \[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\text{\ } \\
\end{array}
\]

The workers at the TIMS Candy Company recorded the amount of candy they made in numbers. Sketch each amount using base-ten shorthand.

7. 356
8. 4206
9. 240
10. 3005

11. One way to show 352 using base-ten shorthand is:

\[
\begin{array}{c}
\text{\ } \\
\text{\ } \\
\end{array}
\]

Sketch 352 two other ways using base-ten shorthand.

The TIMS Candy Company
Addition

One day, Rhonda made 326 pieces of candy. She used the base-ten pieces to show her work. She recorded 3 flats, 2 skinnies, and 6 bits. Joe made 258 candies which he recorded as 2 flats, 5 skinnies, and 8 bits. Mrs. Haddad wanted to know how much candy they made altogether. She recorded her addition like this:

Mrs. Haddad saw that she was not using the fewest base-ten pieces possible. Since there are 14 bits, she can make 1 more skinny with 4 bits left over. Mrs. Haddad recorded her work like this:
1. On another day, Rhonda made 1326 candies and Joe made 575. They recorded their work by sketching the base-ten pieces using base-ten shorthand. Use your base-ten pieces to solve this problem.

Joe remembered the Fewest Pieces Rule and wrote:

Mrs. Haddad noticed that drawing columns on the **Recording Sheet** was not necessary if she always used the Fewest Pieces Rule. Mrs. Haddad called this the **quick paper-and-pencil method for addition**. She wrote the problem like this:

\[
\begin{align*}
1326 \\
+ 575 \\
\hline
1901
\end{align*}
\]

At the end of one day Rhonda had made 1046, Joe had made 878, and Sam had made 767 candies. Mrs. Haddad found their total using the quick paper-and-pencil method:

\[
\begin{align*}
1046 \\
878 \\
+ 767 \\
\hline
2691
\end{align*}
\]

2. Explain Mrs. Haddad's method for adding the three numbers.
3. Dominque has 325 baseball cards. Her sister Rosie has 416. About how many baseball cards do the two girls have altogether?

One way to estimate is to think about base-ten pieces. The number of baseball cards Dominque has is 3 flats and some more. The number of baseball cards Rosie has is 4 flats and some more. Together they have 7 flats and some more—or over 700 baseball cards.

Subtraction

Next to the factory, Mr. and Mrs. Haddad have a store where they sell their Chocos. They keep track of how much candy is sold using the base-ten pieces. Sometimes they have to break apart skinnies, flats, or packs to keep track of how much candy they have in the store.
One morning, there were 3 flats, 6 skinnies, and 4 bits worth of candy in the store.

A customer came in and bought 147 pieces of candy. To find how much candy was left, Mrs. Haddad did the following:

Since 7 bits cannot be taken away from 4 bits, a skinny must be broken apart. Then there are 3 flats, 5 skinnies, and 14 bits. Now 1 flat, 4 skinnies, and 7 bits can be taken away.
There are 2 flats, 1 skinny, and 7 bits left. Mrs. Haddad said she knew a different method to figure out how much candy is left. This is what Mrs. Haddad did:

\[
\begin{array}{c}
3 \text{ \&} 4 \\
- 1 \text{ \&} 7 \\
\hline
2 \text{ \&} 1 \text{ \&} 7 \\
\end{array}
\]

4. Explain Mrs. Haddad's method in your own words.

Another day there were 1237 pieces of candy in the store. The store sold 459 pieces of candy that day. To find how much was left, Rhonda used Mrs. Haddad’s method. Rhonda called this the quick paper-and-pencil method for subtraction.

Joe saw that he had to trade 1 skinny for 10 bits to subtract 9 bits.

\[
\begin{array}{c|c|c|c|c|c|c|c}
\hline
\text{ flats } & \text{ skins } & \text{ bits } & \ldots \ldots \\
\hline
\text{ &} & & & & & \\
\hline
1237 & & & & & \\
\hline
& & & & & \\
\end{array}
\]

\[
\begin{array}{c|c|c|c|c|c|c|c}
\hline
\text{ flats } & \text{ skins } & \text{ bits } & \ldots \ldots \\
\hline
\text{ &} & & & & & \\
\hline
12 \text{ } \text{ &} 7 & & & & & \\
\hline
& & & & & & \\
\end{array}
\]

Joe saw that he had to trade 1 skinny for 10 bits to subtract 9 bits.
Joe then broke up one flat so that he had 12 skinnies and was able to subtract.

\[
\begin{array}{c}
1 \times 12 \times 7 \\
- 459 \\
78
\end{array}
\]

At the next step, Joe broke up his only pack so that he had 11 flats. Joe found that there were 778 pieces of candy left in the store.

\[
\begin{array}{c}
0 \times 12 \times 7 \\
- 459 \\
778
\end{array}
\]

For problems 5-8:
A. Use base-ten pieces or base-ten shorthand to solve the problem.
B. Then, do the problem using paper and pencil or mental math.

5. There were 578 pieces of candy in the store (5 flats, 7 skinnies, and 8 bits). The store sold 349 pieces of candy. How many pieces of candy were left?

6. Another day there were 4443 pieces of candy and 1718 of them were sold. How many pieces of candy were left?

7. There are 2075 Chocos. The store sold 1539. How many are left?
8. There are 5204 Chocos. A customer came in and bought 565. Another customer came in and wanted to buy 4859 pieces of candy. Was there enough candy in the store so that he could buy so much?

**Homework**

In Questions 1 through 3, draw a picture of the problem using base-ten shorthand. Then, solve the problem using the picture to help you.

1. \[364 + 125\]
2. \[1078 + 2451\]
3. \[1837 + 2548\]

On Monday, Tuesday, and Wednesday, Rhonda and Joe were very busy and did not have time to compute their totals for the day. Help Rhonda and Joe compute their totals. Estimate to make sure your answer is reasonable.

<table>
<thead>
<tr>
<th>Name</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhonda</td>
<td>478</td>
<td>1003</td>
<td>576</td>
</tr>
<tr>
<td>Joe</td>
<td>589</td>
<td>1947</td>
<td>1756</td>
</tr>
</tbody>
</table>

4. How much candy was made on Monday?
5. How much candy was made on Tuesday?
6. Explain how you can compute the amount of candy made on Tuesday in your head.
7. How much candy was made on Wednesday?
8. How much candy did Rhonda make altogether on all three days?
9. How much candy did Joe make altogether on all three days?
10. How much candy did Rhonda and Joe make altogether on Monday, Tuesday, and Wednesday?

Solve the following problems. You may use any method you wish. Check your answer to make sure it is reasonable. Use base-ten shorthand when you need to.

11. \[2357 - 528\]
12. \[2001 - 432\]
13. \[678 + 1546\]
14. \[1239 - 643\]
15. The students from Livingston School and Stanley School are going on an outing. There are 765 students at Livingston School and 869 students at Stanley School. How many students are going on the outing?

16. To get free playground equipment, Livingston School needs to collect 4000 soup can labels by the end of the school year. In the first four months of school they collected 487 soup labels. By the end of the first semester they collected 752 more labels. How many more do they still need?

17. A high school has 2456 student desks. The principal decided that 548 of these desks should be replaced because they are not safe. How many old desks will be kept by the high school?

18. At Livingston School, Mr. Jones gave his class the following problem: Maya had 4006 stamps in her stamp collection. She sold 1658 of them. How many stamps does she have left? How would you solve this problem?

Maya thought about the base-ten pieces to solve Question 18.

John thought, "I can count up and do it in my head: 1658-2658-3658. That’s 2000. Then 658-758-858-958. That’s 300. Then 58-68-78-88-98 is 40. So far 2340. I have 8 more to go, so 2348 is the answer."

19. Think about John’s method. Can you think of another way to do this problem? Describe your method.