Introduction
Content-Based Instruction Unit for ELLs

Introduction Page

1. **Title:** Three Digit Addition and Subtraction Word Problems
2. **Grade:** Second Grade
3. **Target Group:** Sheltered Content Course → My class focuses more on the language rather than the content, but I would like to find more of a balance.
4. **Source of Written Reading Materials:**
5. **Source of Lessons:**
6. **Goals:**
   - I want my students to know how to analyze word problems in order to dissect them and solve.
   - I want my students to know the different language used to distinguish an addition and subtraction word problem.
   - I want my students to know how to solve addition and subtraction triple digit word problems using regrouping and ungrouping.
Jessica Kamens
TSL 518
Summer 2015

Content-Based Instruction Unit for ELLs

Content Standards – Lesson #1

1. Students will be able to explain the methods used to solve addition problems.
2. Students will be able to discuss good explanations and good questions when solving addition problems.
3. Students will be able to apply methods and solve words problems.

Language Standards – Lesson #1

1. Students will be able to listen to the teacher and/or student model an explanation, and then orally discuss the explanation in small groups.
2. In small groups, students will be able to orally evaluate good explanations and questions based on the previous models and discussions.
3. Students will be able to read, discuss, and solve math word problems in small groups.
### Three Digit Addition and Subtraction Word Problems

**Lesson One by: Jessica Kamens**

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<th>Language Objectives</th>
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<tr>
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<tr>
<th>Domain/Topic</th>
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<th>Expanding Fluency Level 4</th>
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<tr>
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<td>Students will explain the method modeled and/or shared by fully participating in a discussion in small groups.</td>
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<td>Students will explain the method modeled and/or shared by participating in a discussion in small groups using short phrase responses (1-2 words).</td>
<td>Students will explain the method modeled and/or shared by participating in a discussion in small groups using repeated short phrases.</td>
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<td>Speaking – Evaluating explanations and questions</td>
<td>In small groups, students will evaluate explanations and questions by critiquing and explaining in complete sentences.</td>
<td>In small groups, students will evaluate explanations and questions by critiquing and explaining in short phrases and sentences.</td>
<td>In small groups, students will evaluate explanations and questions by critiquing and explaining using sentence starters provided by the teacher.</td>
<td>In small groups, students will evaluate explanations and questions by signaling with a thumb up to express good and a 1-2 word explanation with word bank support.</td>
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<td>In small groups and independently, students will solve addition problems using a student chosen method, verbal explanation in complete sentences, and written equation.</td>
<td>In small groups and independently, students will solve addition problems using a student chosen method, verbal explanation in short phrases, and written equation.</td>
<td>In small groups, students will solve addition problems using a modified text, a student chosen method, teacher supported verbal explanation, and written equation.</td>
<td>In small groups, students will solve addition problems using a modified text, the teacher will guide students through a visual method, teacher supported verbal explanation, and write equations.</td>
<td>In small groups, students will solve addition problems with a modified text by matching the equation to answers, either orally or pointing, as well as a teacher modeled/student repeated verbal explanation.</td>
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<td>Function</td>
<td>Situation</td>
<td>Knowledge Structure</td>
<td>Expressions</td>
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<tr>
<td>Explain</td>
<td>Methods used to solve addition problems.</td>
<td>Principle</td>
<td>1. I would use the _________ method because _______________.</td>
<td>1.a. Proof drawing, all totals, math mountain</td>
<td>Consequential conjunctions</td>
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<td></td>
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<td></td>
<td>1. b. It’s the best strategy for me, I can circle/regroup/bundle to make</td>
<td>Nouns</td>
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<td></td>
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<td>a ten or hundred; I understand this strategy best</td>
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<td></td>
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<td></td>
<td>2. The ones on the line mean I ___________.</td>
<td>2. Regrouped, bundled, made a ten</td>
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<td></td>
<td></td>
<td>3. a. hundred, ten, thousand</td>
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<td></td>
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<td></td>
<td>3. b. ten</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>3. c. ones, tens, hundreds</td>
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<td></td>
<td></td>
<td></td>
<td>3. The new group of <strong>a</strong> comes from <strong>b</strong> <strong>c</strong>_.</td>
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<tr>
<td>Discuss</td>
<td>Good explanations in solving word problems.</td>
<td>Principle</td>
<td>1. I chose to add due to _______.</td>
<td>1. Language in the word problem, solving for a total, two partners and</td>
<td>Nouns</td>
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<td></td>
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<td>we need a total</td>
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<td>2. I would ask myself, why did I _______? How did I ________?</td>
<td>2. bundle, regroup, solve, add, find the total/sum,</td>
<td>Wh- questions</td>
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<td>Good questions to ask when solving addition problems.</td>
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<td></td>
<td></td>
<td>Sequence/Principle</td>
<td>First, I _______.</td>
<td>1. wrote equation, made a proof drawing, boxes, sticks, circles</td>
<td>Sentence time relators (Time order words)</td>
</tr>
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<td></td>
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<td></td>
<td>Next, I _______.</td>
<td>2. Counted, ones, hundreds, added, bundled, regrouped, new groups</td>
<td>Past tense using ______ed words</td>
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<td>Then, I _______.</td>
<td>3. Counted, tens, bundled, regrouped, added, new group</td>
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<td>After that, I _______.</td>
<td>4. Counted, ones, hundreds, bundled, regrouped, added, new group</td>
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<td></td>
<td>Finally, I _______.</td>
<td>5. Checked proof drawing, total/sum, showed, opposite operation</td>
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<td>Apply/Solve</td>
<td>Addition word problems.</td>
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Three Digit Addition and Subtraction Word Problems

Lesson 1

Common Core Standards:
Mathematical Content – CC.2.NBT.7, CC.2.NBT.9

Duration: 60 minutes

Vocabulary: Plant fossils, fish fossils, birch tree, pine tree

Materials:
- Mathboards
- Student Activity pg. 271 (modified page for Levels 1-3)
- Highlighters/pencils

Grouping: Whole class, small group, individual

Math Background: Since the beginning of the year, students have been exposed to a number of different strategies/methods (All Totals, Proof Drawing, Make-A-Ten, New Groups Below, New Groups Above) in order to solve addition and subtraction equations. We began the year adding and subtracting single digit, continued to build to double digit, and are finally solving triple digit addition and subtraction equations.

Assessment:

As students are working observe:
- Discussions and explanations among groups
- Participation in whole class discussions
- Correct answers with labels
- Homework pg. 167 (modified page for Levels 1-3)

Instructional Procedures:

Activity #1 - Solve and Discuss (15 minutes)

Whole Class/Small Group/Individual

Direct students attention to student page 271/teacher page 620 (Activity 6-6). Read and discuss the first word problem going over vocabulary, such as plant fossils and fish fossils. Students should highlight the numbers in the problem as well as the question. Using the Solve and Discuss structure, have four to five children solve the first problem at the board while the rest of the class work at their seats. Once
most of the students have finished solving the first problem, the students at the board will discuss and share the method they used and how they came to their sum/total.

Activity 6-6/student page 271/teacher page 620:

**Level 4+5:** Allow students the opportunity to work in partners.

**Level 3:** Students should come back to table to work in small groups. Read modified word problem and student will choose method in order to solve.

**Level 2:** Students should come back to the table to work in small groups. Read modified word problem and teacher will model how to solve using a visual method/proof drawing (box =100, stick=10, and circle=1).

**Level 1:** Students should come back to the table to work in small groups. Read modified word problem and teacher will model how to solve using a visual method/proof drawing (box=100, stick=10, and circle=1. Student will then match the equation to the correct total/sum.

When children have completed the first problem, select two or three children who used different methods to come to the board to explain what they did. Have the rest of the class comment and ask questions. On the board, create a word splash as students explain their method. This will be helpful and a reference for when students need to explain their own method in small groups. Also, on an anchor chart note the sequential words that students can use as they explain. Teacher should model one of the problems pointing to the word splash and sequential vocabulary as she explains one of the methods demonstrated on the board by the students.

**Word Splash:** Ones, tens, hundreds, bundled, regrouped, proof drawing, counted, added, total/sum, equation, new group

**Sequential Vocabulary:** First, next, then, after that, finally

Activity #2 – Discuss Good questions (5-7 Minutes)

Whole Class

Use this lesson as an opportunity to help children learn to ask good questions and give thoughtful answers that show their understanding main concepts. Be sure children understand what a “good” question might be. Ask them to suggest sample “good” questions. Encourage children who are explaining their solution to justify the methods they used if other children challenge them.

*Using the first word problem, record some of these good questions on chart paper or anchor chart for later lessons. Discuss and underline key questions words that students should include when asking “good” questions (what, where, when, why, how). Provide students with questions starters on an anchor chart as a guideline.*

_How did you/I know________________?_
Why did you/l ______________? 

What happened when ______________? 

What does the __ (number) _______ mean? 

Where did the new group of __________ come from?

Activity #3 – Discuss Good Explanations (10-15 Minutes)

Whole Class/Small Group

Discuss how a good explanation uses hundreds, tens, and ones language and addresses the problem with both numbers and a drawing. Refer back to word splash and sequential words. Teacher should model a good explanation and a poor explanation as the teacher continues to use the first word problem.

295 + 47 = ________

• Teacher modeled good explanation:

  First, I wrote my equation in vertical form.

  Next, I counted my ones. I had 5 ones plus 7 ones, which made 12 ones, so I wrote a 1 on the line in the tens column. I had 2 extra ones, so I wrote a 2 in the ones place.

  Then, I counted my tens. I had 9 tens plus 4 tens and a new ten from adding the ones, which makes 14 tens. I wrote the number 4 for 4 tens and on the line in the hundreds column I wrote a 1 for a new hundred.

  After that, I counted my hundreds. I had 2 hundreds plus 1 new hundred, which made 3 hundreds. I wrote 3 in the hundreds column.

  Finally, I checked my answer with another method to make sure the two answers were the same. I chose to show a proof drawing and I found the sum/total was the same.

• Teacher modeled poor explanation:

  I wrote my equation.

  I counted my ones equals 12. Write a 2 and then a 1.

  I counted my tens. Total is 14, so I write a 4 and 1.

  After that, I counted my hundreds. Total is 3.

  I’m done.
Have students discuss in small groups and create a T-chart (cause/effect chart) what makes is “good” (thumbs up) or “poor” (thumbs down) explanation.

<table>
<thead>
<tr>
<th>“Good”</th>
<th>“Poor”</th>
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<tbody>
<tr>
<td>Vocabulary from Word Splash</td>
<td>Out of Order</td>
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<tr>
<td>Sequential Words</td>
<td>No sequential vocabulary</td>
</tr>
<tr>
<td>Reference to Visual Drawing</td>
<td>Lack of visual vocabulary</td>
</tr>
<tr>
<td>Shows equation</td>
<td>Does not show drawing</td>
</tr>
<tr>
<td>Shows work</td>
<td>No Label</td>
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<tr>
<td>Label</td>
<td></td>
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</tbody>
</table>

Allow one or two more advanced students to model. Teacher should record on the board the model student’s explanation in numbered steps, so the class can refer to it during discussion. Have students discuss in small groups whether it was a “good” or “poor” explanation.

- **Level 4+5** - Students can critique and explain why using complete sentences.
- **Level 3** – Students can provide a thumb up or down and give a short phrase to explain why.
- **Level 1-2** - Students can provide a thumb up or down.

Be sure that your more advanced children are modeling good explanations such as the ones below and on the next page. Expand children’s explanations as necessary, and have children help other children make full explanations.

**Activity #4 – Solve Word Problems 2-4 (15 minutes)**

**Small Group or Individual**

Students will continue a similar process as done in activities 1-3. Discuss vocabulary before allowing students to begin working – birch tree and pine tree. Students should solve, explain, and ask questions as previous modeled for word problem #1.

- **Level 4+5**: Allow students the opportunity to work in partners. Remind students before starting that they can refer to the anchor charts at the front of the room. All problems should be solved, discussed, and explained. Students will be asked to share and model answers at the end.
- **Level 3**: Students should come back to table to work in small groups. Read modified word problem and students will choose method in order to solve. Teacher can support verbal explanations as necessary.
- **Level 2**: Students should come back to the table to work in small groups. Read modified word problem and teacher will model how to solve using a visual method/proof drawing (boxes,
sticks, and circles). Teacher will also support students in a verbal explanation having students repeat in short phrases.

**Level 1:** Students should come back to the table to work in small groups. Read modified word problem and teacher will model how to solve using a visual method/proof drawing (boxes, sticks, and circles. Student will then match the equation to the correct total/sum.

**Activity #5 – Discuss Completed Problems/Closure (5 minutes)**

**Whole Class**

After most students have completed problems, reread each problem as a class. Allow one student to model each problem and explain. Students should evaluate problems with a thumb up or down. Allow some students to ask “good” questions and provide time to critique explanations.

Today we focused on explaining our method and the steps used to get to our answer. We also discussed how to ask good questions in order to check our understanding. Finally, we had an opportunity to solve word problems either independently, in small groups, or with teacher support. I want you to think about and evaluate yourself on your performance today and the class’s performance. Give me thumb up if we completed our objective. Show me a thumb up/side/down on how well you think you did explaining your method? Asking good questions? Solving each word problem?

Tomorrow we will continue working with addition word problems, but we will dig deeper and try using another method that I will demonstrate for you.
ACTIVITY 1

Solve and Explain Word Problems

**40 MINUTES**

**FOCUS** Discuss the methods used to solve addition word problems. Discuss good explanations and good questions. Generate methods for adding two 3-digit numbers.

**MATERIALS** MathBoard materials, Student Activity Book page 271

Whiteboard Lesson

Learning Community—Best Practices

**Building Concepts:** The purpose of this lesson is to help children focus their attention on good questions and good explanations as they use what they already know about addition to add larger numbers.

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**Solve and Discuss**

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1. Milo makes a display of plant fossils for the library. He puts in 748 plant fossils. He puts in 67 fish fossils. How many fossils are in the display?

   - 748 fossils
   - 67 fossils

2. The nature club plants some pine and birch trees. They plant 156 spruce trees. Then they plant 283 pine trees. How many trees does the club plant in all?

   - 545 trees
   - 479 trees

3. There are 818 ducks entered in the Rubber Duck River Race. Then 182 more are added. How many ducks are in the race now?

   - 1,000 ducks
   - 564 ducks

4. There are 189 children at Camp Sunshine. There are 373 children at Camp Bluebird. How many children are there at the two camps?

   - 564 children
   - 762 children

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**Solve and Discuss** **WHOLE CLASS**

Direct children's attention to Student Activity Book page 271. Using the Solve and Discuss structure, have four to five children solve the first problem at the board while the rest of the class works at their seats. They may use any method they choose.

**MP.3 Construct a Viable Argument** **Compare Methods** When children have completed the first problem, select two or three children who used different methods to come to the board and explain what they did. Have the rest of the class comment and ask questions.

Use this lesson as an opportunity to help children learn to ask good questions and give thoughtful answers that show their understanding of math concepts.
Solve and Discuss (pg. 271)

Solve each word problem. Be able to explain what you did.

1. Milo shows 478 plant fossils.
   Then, he shows 67 fish fossils.
   How many fossils are there altogether?

2. The nature club plants 496 birch trees.
   Then, they plant 283 pine trees.
   How many trees does the club plant in all?

3. There are 818 ducks entered in the race.
   Then, 182 are added.
   How many ducks are in the race?

4. There are 189 children at Camp Sunshine.
   There 375 children at Camp Bluebird.
   How many children are there at both camps?
### Solve and Discuss (pg. 271)

**Solve** each word problem. Be able to **explain** what you did.

<p>| | |</p>
<table>
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<tr>
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<tr>
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<td><strong>2.</strong> The nature club plants 496 <strong>birch</strong> trees. <strong>Then,</strong> they plant 283 <strong>pine</strong> trees. <strong>How many trees does the club plant in all?</strong></td>
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<td><strong>trees</strong></td>
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<tr>
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<td><strong>4.</strong> There are 189 <strong>children</strong> at Camp Sunshine. <strong>There</strong> 375 children at Camp Bluebird. <strong>How many children are there at both camps?</strong></td>
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<td></td>
</tr>
<tr>
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<td><strong>children</strong></td>
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Solve and Discuss (pg. 271)

Solve each word problem. Be able to explain what you did.

1. 478 plant fossils. 67 fish fossils. How many altogether?

2. 496 birch trees. 283 pine trees. How many trees in all?

3. 818 ducks. 182 are added. How many ducks are in all?

4. 189 children at Camp Sunshine. 375 children at Camp Bluebird. How many children altogether?
Solve and Discuss (pg. 271)

Solve each word problem. Be able to explain what you did.

1. \[ 478 + 67 = 545 \]

2. \[ 375 + 189 = 564 \]

3. \[ 818 + 182 = 1000 \]

4. \[ 496 + 283 = 779 \]
**Homework and Remembering**

Use this Homework page to provide children with more practice in multidigit addition.

1. Martin sells 56 tickets to the roller coaster ride. He sells 267 tickets to the boat ride. How many tickets does Martin sell altogether?

2. Justine jumps 485 times on a pogo stick. Then she jumps 329 times when she tries again. How many times does she jump altogether?

Add.
3. \(18 + 549 = \) 567
4. \(190 + 89 = \) 279

5. \(76 + 570 = \) 646
6. \(75 + 656 = \) 731

7. \(348 + 162 = \) 510
8. \(407 + 394 = \) 801

Label the shapes using the words in the box.

- **Cube, Quadrilateral, Pentagon, Hexagon**

Add.
9. \(300 + 70 = \) 370
10. \(20 + 40 = \) 60
11. \(8 + 650 = \) 658

7. Stretch Your Thinking: Add a 3-digit number and a 2-digit number. Use the digits 5, 6, 7, and 8 to write the addition exercise. You can use a digit more than once. Find the sum.
   Possible answer: \(617 + 57 = 674\)

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**Home and School Connection**

**Family Letter**: Have children take home the Family Letter on Student Activity Book page 269. This letter explains how the concepts of 3-digit addition are developed in Math Expressions. It gives parents and guardians a better understanding of the learning that goes on in math class and creates a bridge between school and home. A Spanish translation of this letter is on the following page in the Student Activity Book.
Homework (pg. 167)

Solve each word problem.

1. Marin sells 58 tickets to the roller coaster.  
   He sells 267 tickets to the boat ride.  
   How many tickets altogether?

2. Justine jumps 485 times.  
   Then, she jumps 329 times.  
   How many times does she jump altogether?

Add.

3. \( 3.18 + 549 = \)  
4. \( 190 + 89 = \)  

5. \( 7.76 + 570 = \)  
6. \( 75 + 656 = \)  

7. \( 348 + 162 = \)  
8. \( 407 + 394 = \)
Homework (pg. 167)

Solve each word problem.

1. Marlin sells 58 tickets to the roller coaster. He sells 267 tickets to the boat ride. How many tickets altogether?

2. Justine jumps 485 times. Then, she jumps 329 times. How many times does she jump altogether?

Add.

3. 3.18 + 549 =
4. 190 + 89 =
5. 76 + 570 =
6. 75 + 656 =
7. 348 + 162 =
8. 407 + 394 =
Homework (pg. 167)

Solve each word problem.

1. 58 tickets.  
   267 tickets.  
   How many tickets altogether?  
   \[ 267 + 58 = \square \text{ tickets} \]

2. 485 times.  
   329 times.  
   How many times altogether?  
   \[ 485 + 329 = \square \text{ times} \]

Add.

3. 549  
   + 18  

4. 190  
   + 89  

5. 485  
   + 329  

6. 656  
   + 75  

7. 348  
   + 162  

8. 407  
   + 394
Lesson #1 Reflection:

The original math lesson of this unit was modified for my sheltered classroom.

I want my students to know and understand how to solve addition word problems, explain the steps they followed to solve the problem, and ask good questions. I also feel that it is important for students to be able to work and discuss in small groups.

The modifications in this lesson include visuals, amplified teacher modeled explanations/questions, gestures, graphic organizers, sentences/questions starters, word splash with key vocabulary terms, and modified text according to language level. All of these modifications are critical to ELLs. It allows them to participate in discussion, and demonstrate understanding of concepts and skills taught in the lesson.

All of these modifications will allow any level students to be successful in solving addition word problems.
Lesson 2
Content-Based Instruction Unit for ELLs

Content Standards – Lesson #2

1. Students will be able to apply and explain the adding up method to solve unknown addend equations with 3 digit numbers.
2. Students will be able to use the adding up method to solve word problems with unknown addends.

Language Standards – Lesson #2

1. Students will be able to listen to the teacher and/or student model an explanation and then orally discuss and apply the method in small groups.
2. In partners, students will be able to read, explain, and solve word problems.
### Content Objectives

1. Students will be able to apply and explain the adding up method to solve unknown addend equations with 3 digit numbers.
2. Students will be able to use the adding up method to solve word problems with unknown addends.

### Language Objectives

1. Students will be able to listen to the teacher and/or student model an explanation and then orally discuss and apply the method in small groups.
2. In partners, students will be able to read, explain, and solve word problems.

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<td>In partners and independently, students will solve addition problems using a student chosen method, verbal explanation in complete sentences, and written equation.</td>
<td>In partners and independently, students will solve addition problems using a student chosen method, verbal explanation in short phrases, and written equation.</td>
<td>In partners, students will solve addition problems using a modified text, a student chosen method, teacher supported verbal explanation, and written equation.</td>
<td>In partners, students will solve addition problems using a modified text. The teacher will guide students through a visual method, teacher supported verbal explanation, and write equations.</td>
<td>In partners, students will solve addition problems with a modified text by matching the equation to answers, either orally or pointing, as well as a teacher modeled/student repeated verbal explanation.</td>
</tr>
<tr>
<td>Function</td>
<td>Situation</td>
<td>Knowledge Structure</td>
<td>Expressions</td>
<td>Words</td>
<td>Grammar</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------</td>
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<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Explain</td>
<td>Adding up Method used to solve addition problems.</td>
<td>Principle</td>
<td>1. This is an __________ problem.</td>
<td>1. unknown addend</td>
<td>Consequential conjunctions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. I can show this problem by ___________.</td>
<td>2. writing an equation, drawing a math mountain</td>
<td>Nouns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. We can add up to find an unknown addend by ___________.</td>
<td>3. adding to the next ten and then adding the total, adding to the next and next hundred and then adding the total.</td>
<td></td>
</tr>
<tr>
<td>Apply/Solve</td>
<td>Addition word problems using the adding up method.</td>
<td>Sequence/Principle</td>
<td>First, I added _____ and _____ ones is ___________.</td>
<td>Ex. 156 + ___ = 734</td>
<td>Past tense using _____ed words</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Next, I added _____ and _____ is ___________.</td>
<td>First, I added 156 and 4 ones is 160.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Then, I added _____ and _____ is ___________.</td>
<td>(156 + 4 = 160)</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td>After that, I added _____ and _____ and _____ is ___________.</td>
<td>Next, I added 160 and 40 is 200.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Finally, the unknown addend is ___________.</td>
<td>Then, I added 200 and 534 is 700.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(200 + 534 = 734)</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>After that, I added 4 and 40 and 534 is 578.</td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>(4 + 40 + 534 = 578)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Finally, the unknown addend is 578.</td>
<td></td>
</tr>
</tbody>
</table>
Three Digit Addition and Subtraction Word Problems

Lesson 2

Common Core Standards:


Mathematical Content – CC.2.OA.1, CC.2.NBT.7, CC.2.NBT.9

Duration: 45-50 minutes

Vocabulary: Yams, afternoon, evening, collection

Materials:

- Mathboards
- Student Activity pg. 277 (modified page for Levels 1-3)
- Highlighters/pencils

Grouping: Whole class, small group, individual

Math Background: Since the beginning of the year, students have been exposed to a number of different strategies/methods (All Totals, Proof Drawing, Make-A-Ten, New Groups Below, New Groups Above) in order to solve addition and subtraction equations. We began the year adding and subtracting single digit, continued to build to double digit, and are finally solving triple digit addition and subtraction equations. The method used today, Adding Up Method, is a review from Unit 4.

Assessment:

As students are working observe-

- Discussions and explanations among groups
- Participation in whole class discussions
- Correct answers with labels
- Homework pg. 171 (modified page for levels 1-3)

Instructional Procedures:

Activity#1 - Solve and Discuss (15-20 minutes)

Whole Class/Small Group/Individual

On the board, write the problem show below. Have a volunteer read it aloud to the class. After one student has read it aloud, ask the class to reread the word problem as a chorus (all together):
Main School has 734 children.

156 children walk to school.

The rest take the bus.

How many children take the bus?

Ask students to turn and discuss with their partner, what kind of problem is this? (unknown addend problem) How do you know this is an unknown addend problem? (We have total and only one addend/partner) What is the total? (734) What is our addend/partner? (156) What is a way to show this problem? (write an equation, draw a math mountain) Ask children to come to the board to show the two different ways to show the equation. Allow students time to record both ways on their mathboard.

<table>
<thead>
<tr>
<th>Equation</th>
<th>Math Mountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>156 + _______ = 734</td>
<td>734</td>
</tr>
<tr>
<td></td>
<td>156</td>
</tr>
</tbody>
</table>

Review the Adding up method that children learned in Unit 4 for finding unknown addends. Who can tell me how we add up to find an unknown addend? (We add to the next ten and then add to the total. Or, we add to the next ten, and to the next hundred, and then add to the total)

Have several children work at the board to find the unknown addend for the word problem above using the Adding Up Method, while the rest of the children work at their seats on a white board in small groups. After students have completed solving the problem on the board they should discuss and explain the method they used in their small group. Remind children that yesterday we discussed what makes a good explanation vs. a poor explanation (refer to the chart/T chart created yesterday). Also, we reviewed yesterday how to ask good questions. Below is an example of a good explanation along with good questions that can be modeled for all students before they begin explaining. Teacher should model the problem pointing to the word splash and sequential vocabulary words as he/she explains the Adding Up method demonstrated on the board by the students.

On the board, create a similar word splash as yesterday that students can use in order to explain the Adding Up method. This will be helpful and a reference for when students need to explain the Adding Up method in small groups. Also, refer students to the anchor chart created yesterday with sequential words they can use to explain.

Word Splash: Ones, tens, hundreds, bundled, regrouped, proof drawing, counted, added, total/sum, equation

Sequential Vocabulary: First, next, then, after that, finally
1. $156 + \_\_ = 734$
   + 4 is 160
   + 40 is 200
   + 534 is 734
   \_578

2. $156 + \_\_ = 734$
   + 4 is 160
   + 40 is 200
   + 500 is 700
   + 34 is 734
   \_578

3. $\overline{\phantom{}}$
   \_156
   \_4 is 160
   \_40 is 200
   \_534 is 734
   \_578

- **Teacher modeled good explanation:**

  (Chose to explain example #1)

  First, I wrote a horizontal equation.

  Next, I counted my ones until I reached a ten. So, $156 + \_\_ = 160$. The ones is 4. I wrote an addition sentence under my original equation. (+ 4 is 160)

  Then, I counted my tens until I reached a hundred. So, $160 + \_\_ = 200$. The tens is 40. I wrote an addition sentence under my original equation. (+ 40 is 200)

  After that, I counted my hundreds (as well as any addition tens/ones) until I reached my total/sum. So, $200 + \_\_ = 734$. The hundreds (as well as the additional ones/tens) is (+534 is 734). Now I need to add up all of the partners/operands in order to find my missing total addend/partner. (4 + 40 + 534 = 578). My missing addend is 578.

  Finally, I checked my answer with another method to make sure the two answers were the same. I chose to subtract and I found the missing addend was the same.

- **Teacher modeled good questions:**

  How did you know to find the missing addend?
  How did you find the ones? Tens? Hundreds?
  Why did you choose to write a math mountain or a horizontal equation?
  Why do you think this is a helpful method?
  Will you continue to use this method? Why?
  Are there any other methods you could have used?

**Level 4+5:** In small groups, students should be discussing and explaining the adding up method that was modeled and/or shared by having level 5 students lead the discussion, while level 4 students participate.

**Level 3:** In small groups, students will be discussing and explaining the adding up method that was shared and/or modeled using sentence starters provided by the teacher for support.
Level 2: Students should come back to the table to work in small groups. The teacher will support the discussion regarding the adding up method encouraging students to use 1-2 word short phrases.

Level 1: Students should come back to the table to work in small groups. The teacher will support the discussion regarding the adding up method by remodeling the example and encouraging students to repeat short phrases provided by the teacher.

After children have had a chance to solve and discuss the sample problem on the board, call the class back together and allow one or two advanced students to model and share their explanation. After each student has finished, allow the class to evaluate the students explanation providing a thumb up/side/down, if appropriate have one or two students justify their evaluation. Allow students the opportunity to ask good questions.

Activity #2 – Solve Word Problems 1-4 (25 minutes)

Small Group or Individual

Have children work in helping pairs to solve the word problems on student page 277/teacher page 639 (activity 6-8).

Students will continue a similar process as done in activity 1. Encourage students to highlight the numbers and questions. Then, discuss vocabulary before allowing students to begin working – yams, afternoon, evening, collection. Students should solve, explain, and ask questions as previous modeled in the sample problem.

When children have completed the first word problem on student page 277/teacher page 639 (Activity 6-8), reread the word problem as a class and then select two or three advanced children to model the Adding Up Method by coming to the board to solve and explain what they did. Allow students time to evaluate each modeler with a thumb up/side/down and if time allows have one or two students justify their evaluation. Have the rest of the class comment and ask questions.

Allow students time to complete word problems #2-4 in small groups or individually. Remind students if they complete problems individually, that they need to find a partner to discuss and share with.

Level 4+5: Allow students the opportunity to work in partners. Remind students before starting that they can refer to the anchor charts at the front of the room. All problems should be solved, discussed, and explained. Students will be asked to share and model answers at the end.

Level 3: Students should come back to table to work in small groups. Read modified word problem and students will choose method in order to solve. Teacher can support verbal explanations as necessary.
Level 2: Students should come back to the table to work in small groups. Read modified word problem and teacher will model how to solve using a visual method/proof drawing (boxes, sticks, and circles). Teacher will also support students in a verbal explanation having students repeat in short phrases.

Level 1: Students should come back to the table to work in small groups. Read modified word problem and teacher will model how to solve using a visual method/proof drawing (boxes, sticks, and circles.) Student will then match the equation to the correct total/sum.

Activity #3 – Discuss Completed Problems/Closure (5 minutes)

Whole Class

After most students have completed problems 2-4, reread each problem as a class. Allow one student to model each problem and explain. Today we focused on the Adding Up Method and explaining our method and the steps used to get to our answer. Finally, we had an opportunity to solve word problems either independently, in small groups, or with teacher support. I want you to think about and evaluate yourself on your performance today and the class’s performance. Give me thumb up if we completed our objective. Show me a thumb up/side/down on how well you think you did using the Adding Up Method? Explaining your method? Solving each word problem?

Tomorrow we will continue working with triple digit word problems, but we will be switching our focus to triple digit subtraction.
Word Problems with Unknown Addends

**Activity 2**

**Adding Up to Solve Word Problems**

Solve each word problem. **Show your work.**

1. Mr. Cruz has 750 yards to sell. He sells some and has 278 yards left. How many yards does he sell?
   
   472 yards
   
   **Total**

2. At the end of February there are 692 houses in our town. Some new houses are built in March. At the end of March there are 976 houses. How many houses are built in March?
   
   284 houses
   
   **Total**

3. Delia has 524 rocks in her collection. She gives some to her sister. Now she has 462 rocks. How many rocks did she give away?
   
   62 rocks
   
   **Total**

4. On Saturday, 703 people go to a movie. 174 go in the afternoon. The rest go in the evening. How many people go in the evening?
   
   529 people
   
   **Total**

---

**English Language Learners**

Write **afternoon** and **evening** on the board. Break **afternoon** into **after** and **noon**. Say: **Afternoon** begins after **noon** and ends when it gets dark. **Evening** begins when it gets dark and ends at bedtime.

**BEGINNING**

Show children pictures of activities they may do in the afternoon. Have children say: **afternoon**. Repeat with pictures of evening activities.

**INTERMEDIATE**


**ADVANCED**

Name some times that are in the afternoon? **2: 00 P.M., 4: 00 P.M.** Name some times that are in the evening? **7: 30 P.M.; 8: 00 P.M.**

(See Student Activity book page 277.)
# Adding Up to Solve Word Problems (pg. 277)

**Solve** each word problem.

1. Mr. Cruz has 750 yams to sell.  
   He sells some yams.  
   He has 278 yams left.  
   How many yams does Mr. Cruz sell?

   

2. At the end of February, there are 692 houses.  
   In March, some houses are built.  
   At the end of March, there are 976 houses.  
   How many houses are built in March?

   

3. Delia has 524 rocks in her collection.  
   She gives some rocks to her sister.  
   Now she has 462 rocks.  
   How many rocks did she give to her sister?

   

4. On Saturday, 703 people go to a movie.  
   194 people go in the afternoon.  
   The rest go in the evening.  
   How many people go in the evening?

   


Adding Up to Solve Word Problems (pg. 277)

Solve each word problem.

1. Mr. Cruz has 750 yams to sell.
   He sells some yams.
   He has 278 yams left.
   How many yams does Mr. Cruz sell?

   yams

2. At the end of February, there are 692 houses.
   In March, some houses are built.
   At the end of March, there are 976 houses.
   How many houses are built in March?

   houses

3. Delia has 524 rocks in her collection.
   She gives some rocks to her sister.
   Now she has 462 rocks.
   How many rocks did she give to her sister?

   rocks

4. On Saturday, 703 people go to a movie.
   194 people go in the afternoon.
   The rest go at night.
   How many people go at night?

   people
Adding Up to Solve Word Problems (pg. 277)

Solve each word problem.

1. 750 yams.
   Sell some yams.
   278 yams left.
   How many yams?
   
   □ ______ yams

2. 692 houses.
   Some houses are built.
   976 houses.
   How many houses are built?
   
   □ ______ houses

3. 524 rocks.
   Give some rocks.
   462 rocks.
   How many rocks did she give?
   
   □ ______ rocks

4. 703 people.
   194 people go in the afternoon.
   Some go at night.
   How many go at night?
   
   □ ______ people
Adding Up to Solve Word Problems (pg. 277)

Solve each word problem.

1. $278 + \underline{} = 750$
   $\underline{62}$

2. $692 + \underline{} = 976$
   $\underline{509}$

3. $462 + \underline{} = 524$
   $\underline{284}$

4. $194 + \underline{} = 703$
   $\underline{472}$
Use this Homework page to provide children with more practice with unknown addend problems.

1. Angie has 145 stickers. 35% of the stickers are cat stickers. The rest are dog stickers. How many dog stickers does Angie have?

   394  dog stickers
   ________
   label

2. Bill has 215 coins. 20% of the coins are silver in color. How many coins are not silver in color?

   104  coins
   ________
   label

3. Noah is going to plant 782 seeds. Some of the seeds are flower seeds. 47% of the seeds are vegetable seeds. How many flower seeds will Noah plant?

   205  flower seeds
   ________
   label

4. Heather's dad is reading a book that is 549 pages long. So far, he has read 286 pages. How many pages does he have left to read?

   278  pages
   ________
   label

This Remembering activity is appropriate anytime after today's lesson.

Make a ten to find the total.

1. 7 + 6 = 13

2. 8 + 7 = 15

3. 8 + 9 = 17

Write the time in two different ways.

4. 5:00

5. 8:00

6. 10:00

Add. Use any method.

7. 357 + 585

   942

   Make a new ten? Yes
   Make a new hundred? Yes
   Make a new thousand? No

8. 249 + 751 = 1,000

Make a new ten? Yes
Make a new hundred? Yes
Make a new thousand? Yes

9. Stretch Your Thinking Explain how to solve for an unknown addend.

   Use the Adding Up method. Add to the next ten and hundred, then add to the known sum. The amount that was added up is the unknown addend.

Home or School Activity

Science Connection

Compare Fahrenheit and Celsius Display a dual scale thermometer and explain that it can be used to measure temperature in both customary units and metric units.

Tell children that water boils at 212° Fahrenheit. Then ask children to look at the thermometer to find what that temperature is on the Celsius side of the thermometer. 100° Celsius

Provide children with problems about temperature in which they need to find an unknown addend.
**Homework (pg. 171)**

Solve each word problem. Show your work.

1. Angie has 648 **stickers**.
   254 stickers are cats.
   How many dogs stickers are there?

   

2. Billy has 315 **coins**.
   209 coins are **silver**.
   How many coins are not silver?

   

3. Noah is going to plant 752 **seeds**.
   Some are **flower** seeds.
   547 are **vegetable** seeds.
   How many flower seeds will Noah plant?

   

4. Heather's dad is reading a book 564 **pages** long.
   He has read 286 pages.
   How many pages does he have left to read?
Homework (pg. 171)

Solve each word problem.

1. Angie has 648 stickers.
   254 stickers are cats.
   How many dog stickers are there?

2. Billy has 315 coins.
   209 coins are silver.
   How many coins are not silver?

3. Noah is going to plant 752 seeds.
   Some are flower seeds.
   547 are vegetable seeds.
   How many flower seeds will Noah plant?

4. Heather's dad is reading a book 564 pages long.
   He has read 286 pages.
   How many pages does he have left to read?
**Homework (pg. 171)**

Solve each word problem. Show your work.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1. | **648 stickers.**  
   | **248 cat stickers.**  
   | How many are dog stickers?  |
|   |   |   |
| 2. | **315 coins.**  
   | **209 silver coins.**  
   | How many coins are not silver?  |
|   |   |   |
| 3. | **752 seeds.**  
   | **Some are flower seeds.**  
   | **547 vegetable seeds.**  
   | How many flower seeds?  |
|   |   |   |
| 4. | **564 pages.**  
   | **286 pages.**  
   | How many pages left?  |
Homework (pg. 171)

Solve each word problem.

1. $254 + \underline{\hspace{1cm}} = 648$  
   $394$

2. $209 + \underline{\hspace{1cm}} = 315$  
   $205$

3. $547 + \underline{\hspace{1cm}} = 752$  
   $278$

4. $286 + \underline{\hspace{1cm}} = 564$  
   $106$
Lesson #2 Reflection:

The original math lesson of this unit was modified for my sheltered classroom. I want my students to know and understand how to solve addition word problems using the Adding Up Method (which I feel is a very difficult method), but I want my students to be exposed to another method in case this works for them. I also want them to be able to explain the steps they followed to solve the problem, and ask good questions. I also feel that it is important for students to be able to work, interact, and discuss in small groups.

The modifications in this lesson include visuals, amplified teacher modeled explanations/questions, gestures, graphic organizers, sentences/questions starters, word splash with key vocabulary terms, and modified text according to language level. I also encourage students to evaluate and justify each other allowing them more interaction in a supportive learning environment. All of these modifications are critical to ELLs. It allows them to participate in discussion, and demonstrate understanding of concepts and skills taught in the lesson.

All of these modifications will allow any level students to be successful in solving addition word problems.
Lesson 3
Content-Based Instruction Unit for ELLs

Content Standards – Lesson #3

1. Students will be able to and explain their method and subtract three digit numbers from the hundred numbers through 1,000.
2. Students will be able to apply and suggest different methods to solve the subtraction word problems.
3. Students will be able to compare and contrast different subtraction methods used to solve subtraction equations.

Language Standards – Lesson #3

1. Students will be able to listen to the teacher and/or student model an explanation and then orally discuss and apply the method in small groups.
2. In small groups, students will be able to read, discuss, listen, and solve subtraction word problems.
3. In a whole group and small group, students will listen, discuss, and argue different methods used to solve subtraction equations.
### Three Digit Addition and Subtraction Word Problems

**Lesson Three by: Jessica Kamens**

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students will be able to explain their method and subtract three digit numbers through 1,000.</td>
<td>1. Students will be able to listen to the teacher and/or student model an explanation and then orally discuss and apply their own method in small groups.</td>
</tr>
<tr>
<td>2. Students will be able to apply and suggest different methods to solve subtraction word problems.</td>
<td>2. In small groups, students will be able to read, discuss, listen, and solve subtraction word problems.</td>
</tr>
<tr>
<td>3. Students will be able to compare and contrast different subtraction methods used to solve subtraction equations.</td>
<td>3. In a whole group and small group, students will listen, discuss, and justify different methods used to solve subtraction equations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain/Topic</th>
<th>Fluent Bridging Level 5</th>
<th>Expanding Fluency Level 4</th>
<th>Speech Emerging Level 3</th>
<th>Early Production Level 2</th>
<th>Preproduction Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Listening/Speaking – Explaining/Choosing Methods</strong></td>
<td>Students will explain the method modeled and share their chosen method by leading a discussion in small groups.</td>
<td>Students will explain the method modeled and share their chosen method by fully participating in a discussion in small groups.</td>
<td>Students will explain the method modeled and share their chosen method by selecting from a list of three methods and participating in a discussion in small groups using sentence starters provided by the teacher.</td>
<td>Students will explain the method modeled and share their chosen method by selecting from two methods and participating in a discussion in small groups using short phrase responses (1-2 words).</td>
<td></td>
</tr>
<tr>
<td><strong>Reading/Speaking/ Listening/Writing – Word Problems</strong></td>
<td>In small groups and independently, students will solve subtraction problems using a student chosen method, a verbal explanation in complete sentences, and a written equation.</td>
<td>In small groups and independently, students will solve subtraction problems using a student chosen method, a verbal explanation in short phrases, and a written equation.</td>
<td>In small groups, students will solve subtraction problems using a modified text, a student chosen method, teacher supported verbal explanation, and written equation.</td>
<td>In small groups, students will solve subtraction problems with a modified text by matching the equation to answers, either orally or pointing, as well as a teacher modeled/student repeated verbal explanation.</td>
<td></td>
</tr>
<tr>
<td><strong>Listening/Speaking – Discussing Methods</strong></td>
<td>Students will actively listen and lead a discussion about different methods in order to</td>
<td>Students will actively listen and participate in a discussion about different methods in order to</td>
<td>Students will actively listen and participate in a discussion about different methods in order to</td>
<td>Students will actively listen and participate in a discussion about different methods in order to</td>
<td></td>
</tr>
<tr>
<td>Function</td>
<td>Situation</td>
<td>Knowledge Structure</td>
<td>Expressions</td>
<td>Words</td>
<td>Grammar</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Explain</td>
<td>Methods used to solve subtraction problems.</td>
<td>Principle</td>
<td>1. I would use the ________ method because _________.</td>
<td>1. a. Proof drawing, math mountain, ungroup first, expanded, adding up</td>
<td>Consequential conjunctions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. b. It's the best strategy for me, I can ungroup to make a 10 tens or 10 ones, I understand this strategy best</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. I am looking for the _________.</td>
<td>2. Unknown addend, unknown partner</td>
<td>Nouns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. When I ungroup a _____, I have <em><strong><strong>,</strong></strong></em>.</td>
<td>3. a. hundred, ten, thousand</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sequence/Principle</td>
<td>3. When I ungroup a _____, I have <em><strong><strong>,</strong></strong></em>.</td>
<td>3. b. ten</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. c. ones, tens, hundreds</td>
<td></td>
</tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Apply/Solve</td>
<td>Subtraction word problems.</td>
<td>Sequence/Principle</td>
<td>First, I <em><strong><strong>1</strong></strong></em>.</td>
<td>1. wrote equation, made a proof drawing, boxes, sticks, circles</td>
<td>Sentence time relators (Time order words)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Next, I <em><strong><strong>2</strong></strong></em>.</td>
<td>2. Counted, ones, tens, hundreds, subtracted, ungrouped, crossed out</td>
<td>Past tense using ______ed words</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Then, I <em><strong><strong>3</strong></strong></em>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>After that, I <em><strong><strong>4</strong></strong></em>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Finally, I <em><strong><strong>5</strong></strong></em>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compare/Contrast</td>
<td>Different subtraction</td>
<td>Description</td>
<td>1. A method to solve a subtraction</td>
<td>1. Proof drawing, math mountain,</td>
<td>Nouns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| methods | problem is ______.  
2. A difference between the two methods is ___________.  
3. A similarity between the two methods is ___________. | ungroup first, expanded, adding up  
2. Different place, different addend/partner, adding up instead of subtracting, the numbers  
3. The equations, the math mountains, I can solve them the same | Articles  
To be verb - is |
Three Digit Addition and Subtraction Word Problems

Lesson 3

Common Core Standards:
Mathematical Content – CC.2.OA.1, CC.2.NBT.7, CC.2.NBT.9

Duration: 60 minutes

Vocabulary: erasers, school cafeteria, guitar, points, basketball, ungroup

Materials:
• Mathboards
• Highlighters/pencils
• Student Activity pg. 281 (modified page for Levels 1-3)

Grouping: Whole class, small group, individual

Math Background: Since the beginning of the year, students have been exposed to a number of different strategies/methods (All Totals, Proof Drawing, Make-A-Ten, New Groups Below, New Groups Above, Ungroup First Method, Expanded Method) in order to solve addition and subtraction equations. We began the year adding and subtracting single digit, continued to build to double digit, and are finally solving triple digit addition and subtraction equations.

Assessment:
As students are working observe-

• Discussions and explanations among groups
• Participation in whole class discussions
• Correct answers with labels
• Homework pg. 173

Instructional Procedures:

Activity#1 – Discuss Subtraction Problems (5-7 minutes)

Whole Class/Small Group

Teacher/advanced student reads aloud the first word problem on student page 281/teacher page 644 (Activity6-9). Then, have the class read the problem aloud again as a chorus (altogether). The teacher should then model acting out the problem for the students.
Teacher models acting out:

"I, the teacher, have 200 erasers. (shows students an eraser, so they make the connection of what an eraser is) I give 152 of them away. (pretend that you are giving out erasers to the students) How many erasers do I have left over?"

Allow students time to act out the same problem with a partner. Students should then take out their highlighters and highlighter the numbers along with the question. Ask students to discuss and write an equation and math mountain with their partner and allow one volunteer to write an equation that shows the problem situation and one volunteer to draw a Math Mountain that shows the situation on the board. Students should check their answers and fix any mistakes.

<table>
<thead>
<tr>
<th>Equation</th>
<th>Math Mountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 - 152</td>
<td>200</td>
</tr>
<tr>
<td>or 200 - 152 = ___</td>
<td>152</td>
</tr>
</tbody>
</table>

Discuss the problem with the class:

Allow students time to turn and discuss in small groups each question then share responses as a whole group.

- What are you looking for in the problem? An unknown addend/partner
- How do you know that's what you need to find? The Math mountain shows us; the problem tells us
- Do you add or subtract to find the unknown addend/partner? Subtract Why? You know the total and one addend/partner. You need to find the other addend/partner. You can subtract to find it. When you add the 2 addends/partners, you find the total. When you know the total and one addend, you can subtract to find the other addend.
- What are some ways you subtract?

Level 4+5: In small groups, students will be participating in a discussion about the questions above. Level 5 students should be group leaders.

Level 3: In small groups, students will be participating in a discussion about the questions above using sentence starters provided by the teacher for support.

- I am looking for___________________.
- I know I need to find the missing addend/partner because___________________.
- I have to subtract because___________________.

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Level 2: Students should come back to the table to work in small groups. The teacher will support the discussion regarding the questions, encouraging students to use 1-2 word short phrases.

Level 1: Students should come back to the table to work in small groups. The teacher will support the discussion regarding the questions by modeling answers and encouraging students to repeat short phrases provided by the teacher.

Activity #2 – Make Sense of Problems (10-15 Minutes)

Whole Class/Small Group

Use a different method. Encourage children to suggest as many ways as possible. Record the different methods on an anchor chart so students can refer to them throughout the lesson and for future lessons. Next to each method, provide a visual example. (See below)

<table>
<thead>
<tr>
<th>Boxes, Sticks, and Circles</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 – 152</td>
</tr>
<tr>
<td>Ungroup 1 hundred to make 10 tens.</td>
</tr>
<tr>
<td>200</td>
</tr>
<tr>
<td>100 +</td>
</tr>
<tr>
<td>90 + 10</td>
</tr>
<tr>
<td>= 48</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ungroup First Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 – 152</td>
</tr>
<tr>
<td>19 10</td>
</tr>
<tr>
<td>20 0</td>
</tr>
<tr>
<td>= 48</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>1 16 10</td>
</tr>
<tr>
<td>2 0 0</td>
</tr>
<tr>
<td>= 48</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expanded Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 = 200 + 0 + 0 = 200 + 0 + 0</td>
</tr>
<tr>
<td>100 = 100 + 50 + 2 = 100 + 50 + 2</td>
</tr>
<tr>
<td>40 + 8 = 48</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adding Up Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>152 + [ ] = 200</td>
</tr>
<tr>
<td>152 + 8 is 160</td>
</tr>
<tr>
<td>160 + 40 is 200</td>
</tr>
<tr>
<td>48</td>
</tr>
</tbody>
</table>
Invite several advanced children to solve the first problem at the board while the rest of the children solve it at their seats. Tell children they can use any of the methods but the teacher needs to make sure each method is represented at the board. Have children at the board model an explanation of their work. Teacher may assist in guiding questions if necessary.

- Examples of student math talk:
  - **Teacher** - Lila, can you explain how you used boxes, sticks, and circles to ungroup 200 in order to subtract 152?
    **Student** - I took 1 hundred and ungrouped it to 10 tens. Then I took 1 ten and ungrouped it to 10 ones. And I did the same in my problem.
  - **Teacher** - Please show us your ungrouping in your problem.
    **Student** - Here I crossed out the 2 hundreds and wrote 1 hundred. I knew 1 hundred is 9 tens and 10 ones, so I crossed out the 0 tens and 0 ones. Then I wrote the 9 tens and 10 ones above the zeros I crossed out.
  - **Teacher** - Does the value of the number change when you ungroup?
    **Student** - No. It's the same number.
  - **Teacher** - Now how did you subtract 152?
    **Student** - I crossed out 1 hundred. I crossed out 5 tens. I crossed out 2 ones. That leaves 4 tens and 8 ones. I did it in my drawing and in my problem. I like to subtract left to right just like I read.

Allow students time to explain their work with a partner. Remind students they just saw 3-4 models of good explanations and we have been discussing what makes a good explanation over the past few days. Also, as a good listener, you can assist your partner by asking good questions, which is also something we have been practicing.

**Level 4+5:** Allow students the opportunity to work in partners. Level 5 students should be leading the discussion, while Level 4 students should be actively participating. Students should be viewed critiquing and asking good questions in complete sentences.

**Level 3:** Students should come back to the table to work in small groups. Reread modified word problem and students will explain using teacher guided sentence starters. Students should be viewed giving their group members a thumb up or down and a short phrase and/or good question.

I would use the method ___________ because ________________.

First, I ________________.

Next, I ________________.

Then, I ________________.

After that, I ________________.
Finally, I ________________.

Level 2: Students should come back to the table to work in small groups. Reread the modified word problem and the teacher will model again how to solve using a visual method/proof drawing method (box=100, stick = 10, circle=1). The students will use 1-2 word phrases in order to explain their method. Students should be viewed giving their group members a thumb up or down providing feedback for the explanation.

Level 1: Students should come back to the table to work in small groups. Reread the modified word problem and the teacher will model again how to solve using a visual method/proof drawing method (box=100, stick = 10, circle=1). The students will repeat short phrases in order to explain their method. Students should be viewed giving their group members a thumb up or down providing feedback for the explanation.

Activity #3 – Discuss Good Explanations (5-7 Minutes)

Whole Class/Small Group

Follow a similar procedure for the second word problem on student page 281/teacher page 647 (activity 6-9).

Problem 2:

The school cafeteria has 500 apples. Some of them are served with lunch. After lunch, there are 239 apples left. How many apples does the cafeteria serve?

Allow students time to act out the same problem with a partner. Teacher should be circulating and frequently checking in with the lower language students. Give 1-2 students an opportunity to act/model the second problem out to the class. Have the class act the problem out together as the teacher reads it aloud. Students should then take out their highlighters and highlighter the numbers along with the question.

Ask children to discuss the problem with their partner and then write an equation and draw a Math Mountain for the problem situation with their partner. Ask two volunteers to come to the board, allow one volunteer to write an equation that shows the problem situation and one volunteer to draw a Math Mountain that shows the situation. Students should check their answers and fix and mistakes.

<table>
<thead>
<tr>
<th>Equation</th>
<th>Math Mountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 0 0 - 2 3 9</td>
<td>or 5 0 0 - ____ = 2 3 9</td>
</tr>
<tr>
<td>500</td>
<td>239</td>
</tr>
</tbody>
</table>

Draw your equation and Math Mountain from Problem 1 on the board if they have been erased. Students do not need to record math Problem 1 again.
Problem 1:

A teacher buys 200 erasers for his students. He gives 152 of them away. How many erasers does he have left over?

<table>
<thead>
<tr>
<th>Equation</th>
<th>Math Mountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 - 152</td>
<td>200</td>
</tr>
<tr>
<td>200 - 152</td>
<td>152</td>
</tr>
</tbody>
</table>

Activity #4 – Compare and Contrast (10-15 minutes)

Whole Group

Ask children to compare the situation equations and Math Mountains from Problems 1 and 2. *Create a venn diagram on the board. This is a great organizer and visual for students.* Be sure children understand that these problems can both be solved by subtracting.

*Ask students some guiding questions in order to compare and contrast the two word problems. Provide them an opportunity to turn and discuss each question.*

Do the situation equations look the same for the first two problems? No. What is different in each one? The unknown number is in a different place for each one. *(This is the most important point to get across)* Do the Math Mountains look the same? Yes, except for the numbers. *(Also important to note)*

How can you solve Problem 2? The same way you solved Problem 1, by subtracting to find the unknown addend.

**Venn Diagram Example:**

Problem 1

- Different
  - Equations
    - *Unknown added/partner different place
  - Numbers
  - Different question

Problem 2

- Different
  - Equations
    - *Unknown added/partner different place
  - Math Mountain
  - Subtract
  - Numbers
  - Different question
Level 4+5: In small groups, students will be participating in a discussion about the questions above. Level 5 students should be group leaders.

Level 3: In small groups, students will be participating in a discussion about the questions above using sentence starters provided by the teacher for support.

- One thing that is different ____________________.
- One thing that is the same ____________________.
- I know this because ________________________.

Level 2: Students should come back to the table to work in small groups. The teacher will support the discussion regarding the questions, encouraging students to use 1-2 word short phrases.

Level 1: Students should come back to the table to work in small groups. The teacher will support the discussion regarding the questions by modeling answers and encouraging students to repeat short phrases provided by the teacher.

Activity #5 – Solve and Discuss Word Problems 3+4 (20 minutes)

Small Groups or Individual

Have children work in helping partners to solve word problems 3 + 4 on student page 281/teacher page 644 (Activity 6-9).

Students will continue a similar process as done in the previous activities (read, act out, record the equation and math mountain, solve, and explain). Encourage students to highlight the numbers and questions. Then, discuss vocabulary before allowing students to begin working - guitar, points, basketball, ungroup.

Allow students time to complete word problems 3+4 in small groups or individually. Remind students if they complete problems individually, that they need to find a partner to discuss and share with.

Level 4+5: Allow students the opportunity to work in partners. Remind students before starting that they can refer to anchor charts (previously created) hanging in the room. All problems should be read, acted out, solved, and explained. Students will be asked to share and model answers on the board.

Level 3: Students should come to the back table to work in small groups. Read modified word problems and students will choose a method in order to solve. Teacher can support verbal explanations with sentence starters.
Level 2: Students should come to the back table to work in small groups. Read modified word problems and teacher will model how to solve using a visual method/proof drawing (boxes =100, sticks = 10, circles =1). Students may then choose from a list of 3 methods to solve the problem. Teacher will also support students in a verbal explanation having students repeat in short phrases.

Level 1: Students should come back to the table to work in small groups. Read modified word problems and teacher will model how to solve using a visual method/proof drawing (boxes =100, sticks = 10, circles =1). Students may then choose from 2 methods to solve the problem. Students will then match the equation to the correct difference.

When the answers are determined, have several children solve the problems at the board modeling different method and explaining why they chose that method. Ask children compare the solutions on the board and ask “good” questions of the solvers. Students should evaluate problems with a thumb up or down. Students should fix their mistakes.

Using the solve and discuss structure (used in previous lessons), invite one or two advanced children to the board to explain their solution methods. As always, explanations need to include hundreds, tens, and ones language. Children match their drawings (made with boxes, sticks, and circles) to numeric problem. Encourage the class to compare the solution methods and ask questions.

Children can point out how different solutions lead to the same answer. For the Expanded and Ungrouping First Methods, the top is rewritten because it does not have enough of either tens or ones. For the Adding Up method, the top number does not need to be rewritten, but new tens and ones are made when they are added up.

Activity #6 – Discuss Completed Problems/Closure (5 minutes)

Whole Class

Today we focused on using different subtraction methods and comparing and contrasting different subtraction methods. We learned that there is no right or wrong method to use as long as it works for you. We had a number of opportunities for you to work in groups and justify for your method. We also discussed and reviewed how to explain your subtraction method. Finally, we had an opportunity to solve word problems either independently, in small groups, or with teacher support. I want you to think about and evaluate yourself on your performance today and the class’s performance. Give me thumb up if we completed our objective. Show me a thumb up/side/down on how well you think you did explaining your method? Asking good questions? Solving each word problem?

Tomorrow we will continue working with addition and subtraction word problems, but we will dig deeper and notice the different language used between the two problems in order to help you to recognize whether you need to add or subtract.
ACTIVITY 1

Solve Subtraction Problems

1. A teacher buys 200 erasers for his students. He gives 152 of them away. How many erasers does he have left over?

2. The school cafeteria has 500 apples. Some of them are served with lunch. After lunch, there are 239 apples left. How many apples does the cafeteria serve?

3. Terence sells guitars. She has 500 guitars. She sells 359. How many guitars does she have left?

4. Jorge is on a basketball team. He scores 181 points one year. He scores some points in a second year, too. He scores a total of 400 points over the two years. How many points does he score the second year?

MP.4 Model with Mathematics Write an Equation Read aloud, or ask a volunteer to read aloud, the first problem on Student Activity Book page 281. Ask volunteers to write an equation that shows the problem situation and draw a Math Mountain that shows the situation.
Discuss Subtraction Problems (pg. 281)

**Solve** each word problem. Use any method. Make a proof drawing.

<table>
<thead>
<tr>
<th>1. A teacher buys 200 erasers. He gives 152 away. How many erasers are left over?</th>
<th>2. The cafeteria has 500 apples. Some are served at lunch. After lunch, there are 239 apples. How many apples were served?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Teresa has 600 guitars. She sells 359. How many guitars does she have left?</th>
<th>4. Jorge scores 181 points in one year. He scores some points in year two. He scores a total of 400 points. How many points does he score in year two?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Discuss Subtraction Problems (pg. 281)

Solve each word problem. Use any method. Make a proof drawing.

<table>
<thead>
<tr>
<th>1. A teacher buys 200 erasers.</th>
<th>2. The cafeteria has 500 apples.</th>
</tr>
</thead>
<tbody>
<tr>
<td>He gives 152 away.</td>
<td>Some are served at lunch.</td>
</tr>
<tr>
<td>How many erasers are left?</td>
<td>After lunch, there are 239 apples.</td>
</tr>
<tr>
<td></td>
<td>How many apples were served?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Teresa has 600 guitars.</th>
<th>4. Jorge scores 181 points in one year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>She sells 359.</td>
<td>He scores some points in year two.</td>
</tr>
<tr>
<td>How many guitars does she have left?</td>
<td>He scores a total of 400 points.</td>
</tr>
<tr>
<td></td>
<td>How many points does he score in year two?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>erasers</th>
<th>apples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>guitars</th>
<th>points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discuss Subtraction Problems (pg. 281)

Solve each word problem. Use any method. Make a proof drawing.

1. 200 erasers.
   152 given away.
   How many are left?

2. 500 apples.
   Some are served.
   239 apples.
   How many apples were served?

3. 600 guitars.
   Sells 359.
   How many are left?

4. 181 points.
   Some points.
   400 total points.
   How many points in year two?
Discuss Subtraction Problems (pg. 281)

Solve each word problem. Use any method. Make a proof drawing.

1. \[2000 - 152 = 241\]

2. \[5000 - 239 = 48\]

3. \[6000 - 359 = 261\]

4. \[4000 - 181 = 219\]
Homework and School Connection

Family Letter Have children take home the Family Letter on Student Activity Book page 279. This letter explains how the concept of subtracting 3-digit numbers is developed in Math Expressions. It gives parents and guardians a better understanding of the learning that goes on in math class and creates a bridge between school and home. A Spanish translation of this letter is on the following page in the Student Activity Book.
Solve each word problem. Use your favorite method. Make a proof drawing.

1. Ricardo has 100 olives.
   He eats 43 of them.
   How many olives does he have left?

2. Dawn has 1,000 pennies in a jar.
   She gives some to her sister.
   Now she has 432 left.
   How many does Dawn give to her sister?

3. Tory has 500 hockey sticks.
   She sells 353.
   How many hockey sticks does she have left?

4. Randy has collected 400 magnets in two years.
   He collected 125 magnets the first year.
   How many magnets did he collect the second year?
### Homework (pg. 173)

**Solve** each word problem. Use your favorite method. Make a proof drawing.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ricardo has 100 <strong>olives</strong>. He eats 43 of them. How many olives does he have left?</td>
<td>2. Dawn has 1,000 <strong>pennies</strong> in a jar. She gives some to her sister. Now she has 432 left. How many does Dawn give to her sister?</td>
</tr>
<tr>
<td>olives</td>
<td>pennies</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Tory has 500 <strong>hockey sticks</strong>. She sells 353. How many hockey sticks does she have left?</td>
<td>4. Randy has collected 400 <strong>magnets</strong> in two years. He <strong>collected</strong> 125 magnets the first year. How many magnets did he collect the second year?</td>
</tr>
<tr>
<td>hockey sticks</td>
<td>magnets</td>
</tr>
</tbody>
</table>
## Homework (pg. 173)

**Solve** each word problem. Use your favorite method. Make a proof drawing.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1. | 100 **olives**.  
EAT 43.  
How many are left? | 2. | 1,000 **pennies**.  
Gives some to sister.  
432 pennies.  
How many does she give? |
|   |   |
| 3. | 500 **hockey sticks**.  
Sells 353.  
How many are left? | 4. | 400 **magnets** total.  
125 magnets year one.  
How many magnets in year two? |
|   |   |
|   |   |   |   |
Homework (pg. 173)

Solve each word problem. Use your favorite method. Make a proof drawing.

1. \[ \begin{array}{c}
1 & 0 & 0 \\
- & 4 & 3 \\
\hline
5 & 6 & 8
\end{array} \]

2. \[ \begin{array}{c}
1 & 0 & 0 & 0 \\
- & 4 & 3 & 2 \\
\hline
5 & 7
\end{array} \]

3. \[ \begin{array}{c}
5 & 0 & 0 \\
- & 3 & 5 & 3 \\
\hline
2 & 7 & 5
\end{array} \]

4. \[ \begin{array}{c}
4 & 0 & 0 \\
- & 1 & 2 & 5 \\
\hline
1 & 4 & 7
\end{array} \]
Lesson #3 Reflection:

The original math lesson of this unit was modified for my sheltered classroom.

I want my students to know and understand how to solve subtraction word problems using a variety of methods. I feel that it is important for students to be exposed to different methods/strategies and be able to choose the one that works best for them. There are many different kinds of learners and students at this age recognize that and are able to decide on their own what works best for them. I also want my students to be able to explain the steps they used in order to solve the problem as well as be able to ask another student good questions. I know this is a skill that was introduced and reinforced using addition word problems, but I want them to notice it is also applicable with subtraction as well. I also feel that it is important for students to be able to work, interact, and discuss in small groups, whether it be teacher supported or in their L1.

The modifications in this lesson include visuals, amplified teacher modeled explanations/questions, gestures, graphic organizers, sentences/questions starters, and modified text according to language level. I also encourage students to evaluate and justify each other allowing them more interaction in a supportive learning environment. Students are also asked to evaluate themselves and others by showing a thumbs up/side/down. All of these modifications are critical to ELLs. It allows them to participate in discussion, and demonstrate understanding of concepts and skills taught in the lesson.

All of these modifications will allow any level students to be successful in solving addition word problems.
Checklists
# Three Digit Addition and Subtraction Word Problems

## Grammar and Functions Checklist

<table>
<thead>
<tr>
<th>Grammar</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consequential Conjunctions</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Nouns</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Wh-questions</td>
<td>1</td>
</tr>
<tr>
<td>Sentence time relators</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Past tense -ed words</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Action Verbs</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Articles</td>
<td>3</td>
</tr>
<tr>
<td>To be verb - is</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Functions</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Discuss</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Apply/Solve</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Ask Questions</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Compare and Contrast</td>
<td>3</td>
</tr>
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<td>3</td>
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</tbody>
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Original Lessons
3-Digit Addition

Lesson Focus
Explain the methods used to solve addition problems and discuss good explanations and questions.

Vocabulary
- Add All Totals
- New Groups Below
- New Groups Above
- Description

Common Core
Mathematical Practice
CC.K-12 MP.3, CC.K-12 MP.6
Mathematical Content
CC.2.NBT.7, CC.2.NBT.9

The Day at a Glance

Teaching the Lesson
Math Background for this lesson is included on pp. 583EE-583FF and p. 583JJ.

Activity Focus
Activity 1: Discuss the methods used to solve addition word problems. Discuss good explanations and good questions. Generate methods for adding two 3-digit numbers.
Activity 2: Practice addition with 3-digit numbers.

Materials
- Student Activity Book pp. 269-272 (includes Family Letter)
- MathBoard materials
- Whiteboard

Differentiated Instruction
Materials
- Activity Cards 6-6 • The Muffin Stand (TRB M60)
- MathBoard materials • Student Activity Book p. 275 • Math Journals
- Soar to Success Math Intervention • MegaMath
- Destination Math®
- RTI Tier 1 • Tier 2 • Tier 3

Homework and Spiral Review
Materials
- Homework and Remembering pp. 167-168

Quick Practice 5 Minutes
Add or Subtract 10
Goal: Mentally add 10 or mentally subtract 10 from any given 3-digit number.

Write these exercises on the board. A Student Leader points to each exercise, waits a moment, and then gives the class signal for children to say the answer.

127 + 10 = 137
456 + 10 = 466
392 + 10 = 402
291 - 10 = 281
304 - 10 = 294
199 - 10 = 189

(See Unit 6 Lesson 4 Activity 2.)
Count by 100s from 100 to 1,000
(See Unit 6 Lesson 1, but use 100s from 100 to 1,000.)

Digital Resources
Use these digital resources along with your eSAB and eTE to support your students' learning experiences.

Language after Listening to the Teacher Model, Students Will
1. orally discuss explanations in small groups.
2.a. in small groups, orally evaluate good explanations and questions as modeled throughout the lesson.
3.a. in small groups, students will read, discuss, and
**ACTIVITY 1**

**Solve and Explain Word Problems**

**Solve and Discuss**

Solve each word problem. Be ready to explain what you did.

1. Milo makes a display of plant and fish fossils for the library. He puts in 478 plant fossils. He puts in 67 fish fossils. How many fossils are in the display?

2. The nature club plants some pine and birch trees. They plant 246 birch trees. Then they plant 283 pine trees. How many trees does the club plant in all?

3. There are 818 ducks entered in the Rubber Duck River Race. Then 182 more are added. How many ducks are in the race now?

4. There are 189 children at Camp Sunshine. There are 375 children at Camp Bluebird. How many children are there at the two camps?

---

**Learning Community—Best Practices**

The purpose of this lesson is to help children focus their attention on good questions and good explanations as they use what they already know about addition to add larger numbers.
Discuss Good Questions

MP3 Critique the Reasoning of Others

Be sure children understand what a “good” question might be. Ask them to suggest sample “good” questions. Encourage any children who are explaining their solutions to justify the methods they used if other children challenge them.

See below for sample “good thinker questions” and appropriate justifications for this solution.

Good Thinker Questions and Justifications

Q: How did you know you were supposed to add?
A: I read the word problem. It was about a collection of plant fossils and fish fossils. To find the total number of fossils, I had to add.

Q: Why did you put the 7 under the 8?
A: I put it there because it is 7 ones and the 8 is really 8 ones, so they should be in the same place.

Q: 7 + 8 is 15. What happened to the 10 in 15? I see only 5.
A: I had 7 ones plus 8 ones, which made 15 ones, which is 10 ones and 5 ones. I wrote the new ten in the tens column.

Q: What do the 1s on the line mean?
A: That means there’s 1 new group of ten and 1 new group of a hundred.

Q: Where did the new group of a hundred come from?
A: 7 tens + 6 tens + 1 ten is really 14 tens, or 1 hundred and 4 tens.

Q: Where did you write your new hundred?
A: I wrote it on the line in the hundreds place.

English Language Learners

Write fossils on the board. Display examples or pictures of plant, fish, and other animal fossils. Say: Fossils are the hardened remains or marks of a plant or animal that died long ago.

BEGINNING

Say: This is a plant fossil. This is a fish fossil. Ask children to repeat.

INTERMEDIATE

Discuss the features of a plant fossil. Ask: What is this? a plant fossil. Discuss the features of a fish fossil. Ask: What is this? a fish fossil.

ADVANCED

Have children compare the examples of fossils. Ask: What is a fossil? A fossil is the hardened remains or marks of a plant or animal that died long ago.

(See Student Activity Book page 271.)

Teaching Notes

Watch For! Listen for children who are not using hundreds, tens, and ones language. Encourage them to use proper math language to ask their questions and justify their methods. Explain that using the proper math terms makes it easier for everyone to understand what they mean.

Monitoring Errors

The Solve and Discuss structure allows you to watch children as they solve problems. It is vital for you to monitor errors children are making and correct and discuss them immediately in the whole class, in a small group, or individually. Equally important is to monitor homework and independent class work. It is not helpful for children to practice errors.

Activity continued
Teaching the Lesson

**Teaching Notes**

**Watch For!** Look for children who do not align the ones properly when they write the total for the ones. Look at the proof drawing to make sure they add ones to ones.

**Math Background** Some children may prefer to do Show All Totals starting from the ones, though more students start from the left.

\[
\begin{align*}
295 & \\
+ & 47 \\
\hline
12 & \\
130 & \\
200 & \\
342 &
\end{align*}
\]

The Make-a-Ten method helps children see how the drawings show the new groupings:

- 9 tens + 4 tens became 10 tens + 3 tens = 130.
- 7 ones + 5 ones became 10 ones + 2 ones = 12.

Many children may mentally use the Make-a-Ten method.

---

**Discuss Good Explanations**

Discuss how a good explanation uses hundreds, tens, and ones language and addresses the problem with both numbers and a drawing.

**MP.6 Attend to Precision Explain a Method** Be sure that your more advanced children are modeling good explanations such as the ones below and on the next page. Expand children’s explanations as necessary, and have children help other children make full explanations.

**Good Explanation for Show All Totals Method**

1. First, I made a proof drawing, using boxes, sticks, and circles.
2. Then I counted my hundreds. I had 2 hundreds plus 1 hundred, which made 2 hundreds. So I wrote 200 above the boxes and I wrote 200 in my problem.
3. Next, I counted my tens. I saw that I had more than 10 tens, so I drew a loop around ten of the sticks in my proof drawing to show the new hundred. Then I wrote 100 above the 10 sticks and 30 below the 3 extra sticks. Then in my problem, I added 9 tens (or 90) plus 4 tens (or 40), which gave me 13 tens or 130. So I wrote 130 under the 200.
4. Then I counted my ones. I drew a loop around 10 circles in my proof drawing to show the new ten. Then I wrote 10 above the 10 circles and 2 above the 2 extra circles. Then I did the ones in my problem. I added 5 ones and 7 ones, which gave me 12 ones. So I wrote 12 under the 130.
5. Then I added: 200 + 130 + 12 = 342.
6. Finally, I checked to see that my proof drawing showed 3 hundreds, 4 tens, and 2 ones just like the numbers did. The two answers from the two methods were the same.

**Repeat steps #1-3 for each problem**
1. First, I made a proof drawing using boxes, sticks, and circles.

2. Then I counted my ones. I had 5 ones plus 7 ones, which made 12 ones. In my proof drawing, I drew a loop around 10 circles. Then in the numbers I wrote 1 on the line in the tens column (or above the tens). I had 2 extra ones so I wrote 2 in the ones place. I can see that 5 ones plus 7 ones make 12—1 ten and 2 ones.

3. Next, I counted my tens. I had 9 tens plus 4 tens, and a new ten from adding the ones. I added 9 tens, 4 tens, and 1 ten, which made 14 tens. In my proof drawing, I made a loop around 10 of the tens to show the new hundred and labeled it 100. Then I wrote 30 next to the 3 extra tens. In the numbers, I wrote the number 4 for 4 tens. On the line in the hundreds column (or above the hundreds), I wrote a 1 for the new hundred. I can see that 9 tens plus 4 tens is 13 tens, plus 1 more ten is 14 tens, or 90 + 40 + 10 is 140.

4. Then I counted my hundreds. I had 2 hundreds plus 1 new hundred, which made 3 hundreds. I wrote 3 in the hundreds column.

5. Finally, I checked to see that my proof drawing showed 3 hundreds, 4 tens, and 2 ones just like the numbers did. The two answers from the two methods were the same. I can see my new hundred in my drawing (point to looped 10 tens) and in my problem (point to the new 1 written in the hundreds column) and my new ten in my drawing (point to the looped 10 ones) and in my problem (point to the new 1 ten in the tens column).
## Intervention

**for students having difficulty**

Tier 2

### Use Place Value

**Activity Card 5-6**

<table>
<thead>
<tr>
<th>Number</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>123</td>
</tr>
<tr>
<td>4 5 6</td>
<td>456</td>
</tr>
<tr>
<td>7 8 9</td>
<td>789</td>
</tr>
</tbody>
</table>

1. **Take notes.** Copy and paste the equations in the first two rows.
2. **Work Together.** Use your answers in the first two rows to solve the equations in the last row.

---

### Muffins for Sale

**Activity Card 6-6**

<table>
<thead>
<tr>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>$1.00</td>
</tr>
<tr>
<td>Medium</td>
<td>$1.50</td>
</tr>
<tr>
<td>Large</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

1. **Work Together.** Use the problems on the page to find the price. Write your answer in the box.
2. **Make a proof drawing.** Check your work.
3. **Answer the question.** Make a proof drawing for each problem.
4. **Write a word problem using the information in the table.**
5. **Trade word problems with another pair.** Solve each other’s problem.

---

### Challenge

**for students seeking a challenge**

### Extend the Muffin Activity

**Activity Card 6-4**

1. **Work Together.** Solve the problems on the page.
2. **Check your work.
3. **Use the idea.** Make a proof drawing for each problem.
4. **List all of the different combinations if you use two muffins.**
5. **Write a word problem.** Describe how you found all of the different combinations.

---

### Activity Notes

Children will add single-digit numbers and then add related decade numbers. They will then use the pattern and their understanding of place value to add related hundreds numbers. If children need a visual model, encourage them to make drawings or use base ten blocks to model each exercise.

---

### Math Writing Prompt

**Draw a Picture** Make a proof drawing to show how to find 450 + 250. Explain your drawing.

---

### Software Support

**Warm-Up 10.41**

Add Three-Digit Numbers with Regrouping

---

**MegaMath**

Software Support

Country Countdown: Block Busters, Level W

---

**Destination Math**

Software Support

Course II: Module 2: Unit 1: Session 2
Estimating and Finding Sums less than 1,000
Home and School Connection

Family Letter  Have children take home the Family Letter on Student Activity Book page 269. This letter explains how the concepts of 3-digit addition are developed in Math Expressions. It gives parents and guardians a better understanding of the learning that goes on in math class and creates a bridge between school and home. A Spanish translation of this letter is on the following page in the Student Activity Book.
The Day at a Glance

Teaching the Lesson

**MATH BACKGROUND** for this lesson is included on pp. 583EE-583FF and p. 583II.

**ACTIVITY FOCUS**

**Activity 1** Apply the Adding Up method to exercises with 3-digit numbers.

**Activity 2** Use the Adding Up method to solve word problems with unknown addends.

**MATERIALS**

- Student Activity Book pp. 277-278
- MathBoard materials
- Quick Quiz 2 (Assessment Guide)
- Fluency Check 16 (Assessment Guide)
- Whiteboard

Differentiated Instruction

**MATERIALS**

- Activity Cards 6-8
- MathBoard materials
- Index cards
- Math Journals
- Soar to Success Math Intervention
- MegaMath
- Destination Math®
- Tier 1 • Tier 2 • Tier 3

Homework and Spiral Review

**MATERIALS**

- Homework and Remembering pp. 171-172

**QUICK PRACTICE** 5 MINUTES

**Goal** Mentally add 10 or mentally subtract 10 from any given 3-digit number.

Write these exercises on the board. A Student Leader points to each exercise, waits a moment, and then gives the class signal for children to say the answer:

- 198 + 10 = 208
- 426 + 10 = 436
- 395 + 10 = 405
- 578 - 10 = 568
- 109 - 10 = 99
- 305 - 10 = 295

(See Unit 6 Lesson 4 Activity 2.)

**Count by 100s from 100 to 1,000**

(See Unit 6 Lesson 1 but use 100s from 100 to 1,000.)

**DAILY ROUTINES**

- Math Mountains for 100 or 2-Digit Numbers
- Money Routine

Digital Resources

Use these digital resources along with your eSAB and eTE to support your students' learning experiences.
Add Up to Find an Unknown Addend

> **Adding Up Method**

On the board, write the problem shown below. Have a volunteer read it aloud to the class.

**Main School has 734 children.**
156 children walk to school.
The rest take the bus.
How many children take the bus?

- What kind of problem is this? unknown addend problem
- What is a way to show this problem? write an equation, draw a Math Mountain

Ask children to come to the board to show the problem.

\[ 156 + \square = 734 \]

**MP.8 Use Repeated Reasoning** Review the Adding Up method that children learned in Unit 4 for finding unknown addends.

- Who can tell me how we add up to find an unknown addend? We add to the next ten and then add to the total. Or, we add to the next ten, add to the next hundred, and then add to the total.

Have several children work at the board to find the unknown addend using the Adding Up method, while the rest of the children work at their seats. Have children share their solutions.

<table>
<thead>
<tr>
<th>156 + \square = 734</th>
<th>156 + \square = 734</th>
<th>734</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 4 is 160</td>
<td>+ 4 is 160</td>
<td></td>
</tr>
<tr>
<td>+ 40 is 200</td>
<td>+ 40 is 200</td>
<td></td>
</tr>
<tr>
<td>+ 534 is 734</td>
<td>+ 500 is 700</td>
<td></td>
</tr>
<tr>
<td>578</td>
<td>534</td>
<td>734</td>
</tr>
<tr>
<td></td>
<td></td>
<td>578</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>156 + 4 is 160 + 40 is 200 + 534 is 734 = 578</th>
<th>156 + 4 is 160 + 40 is 200 + 500 is 700 + 34 is 734 = 578</th>
<th>734</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>578</td>
</tr>
</tbody>
</table>
**ACTIVITY 2**

**Word Problems with Unknown Addends**

**Adding Up to Solve Word Problems**

Solve each word problem. Show your work.

1. Mr. Cruz has 750 yards to sell. He sells some and has 278 yards left. How many yards does he sell?

   472 yds

2. At the end of February there are 692 houses in our town. Some new houses are built in March. At the end of March there are 976 houses. How many houses are built in March?

   284 houses

3. Delta has 529 rocks in her collection. She gives some to her sister. Now she has 462 rocks. How many rocks did she give away?

   62 rocks

4. On Saturday, 703 people go to a movie. 194 go in the afternoon. The rest go in the evening. How many people go in the evening?

   509 people

---

**English Language Learners**

Write **afternoon** and **evening** on the board. Break afternoon into **after** and **noon**. Say: **Afternoon** begins after **noon** and ends when it gets dark. **Evening** begins when it gets dark and ends at bedtime.

**BEGINNING**

Show children pictures of activities they may do in the afternoon. Have children say: **afternoon**. Repeat with pictures of evening activities.

**INTERMEDIATE**

Ask: What do you do in the **afternoon**? What do you do in the **evening**? **Answers will vary.**

**ADVANCED**

Name some times that are in the **afternoon**? 2:00 P.M., 4:00 P.M. Name some times that are in the **evening**? 7:30 P.M.; 8:00 P.M.

(See Student Activity book page 277.)

---

**Activity continued ➤**
**Intervention**

For students having difficulty

Tier 2

---

**On Level**

For students having success

Tier 1

---

**Challenge**

For students seeking a challenge

---

**Activity Notes**

Each pair needs MathBoard materials. In this activity, children will use the Adding Up method to find an unknown addend in an equation. Have children check each other's work.

Extend the activity by having children write their own unknown addend problem, and have their partners find the unknown addend.

---

**Math Writing Prompt**

**Draw a Picture** Draw a proof drawing to show how to find the unknown addend in the equation 258 + □ = 525.

---

**Software Support**

**Warm-Up 10.41**

Add Three-Digit Numbers with Regrouping

**MegaMath**

**Country Countdown:**

Block Busters, Level W

**Destination Math®**

**Course II:** Module 2: Unit 1:

Session 2

Estimating and Finding Sums less than 1,000
6-8 Homework

**GOAL: Additional Practice**

Use this Homework page to provide children with more practice with unknown addend problems.

**Homework**

Solve each word problem. Show your work.

1. Angie has 649 stickers. 265 of the stickers are cat stickers. The rest are dog stickers. How many dog stickers does Angie have?

   394 dog stickers

   label

2. Billy has 315 coins, 263 of the coins are silver in color. How many coins are not silver in color?

   106 coins

   label

3. Noah is going to plant 752 seeds. Some of the seeds are flower seeds. 547 of the seeds are vegetable seeds. How many flower seeds will Noah plant?

   205 flower seeds

   label

4. Heather’s dad is reading a book that is 594 pages long. So far, he has read 286 pages. How many pages does he have left to read?

   278 pages

   label

---

**Remembering**

This Remembering activity is appropriate anytime after today’s lesson.

**Remembering**

Make a ten to find the total.

1. \( 7 + 6 = \) 13
2. \( 8 + 7 = \) 15
3. \( 3 + 9 = \) 12

Write the time in two different ways.

4. \( 5:00 \)
5. 8:00
6. 10:00

Add. Use any method.

7. \( 357 + 585 = \) 942
8. \( 249 + 751 = 1,000 \)

Make a new ten? Yes
Make a new hundred? Yes
Make a new thousand? Yes

9. Stretch Your Thinking Explain how to solve for an unknown addend.

   Use the Adding Up method. Add to the next ten and hundred, then add to the known sum. The amount that was added up is the unknown addend.

---

**Home or School Activity**

**Science Connection**

**Compare Fahrenheit and Celsius** Display a dual scale thermometer and explain that it can be used to measure temperature in both customary units and metric units.

Tell children that water boils at 212°F Fahrenheit. Then ask children to look at the thermometer to find what that temperature is on the Celsius side of the thermometer. 100°C Celsius

Provide children with problems about temperature in which they need to find an unknown addend.

---

642 | UNIT 6 | Lesson 8
UNIT 6  
LESSON 9

Subtract from Hundreds Numbers

LESSON FOCUS  
- Subtract 3-digit numbers from hundreds numbers through 1,000.

VOCABULARY  
unigroup

COMMON CORE  
Mathematical Practice  
CC.K-12.MP.1, CC.K-12.MP.3, CC.K-12.MP.4,  
CC.K-12.MP.6  
Mathematical Content  
CC.2.OA.1, CC.2.NBT.7, CC.2.NBT.9

The Day at a Glance

Teaching the Lesson

MATH BACKGROUND for this lesson is included on pp. S83GG–S83JJ.

ACTIVITY FOCUS
Activity 1 Solve word problems involving subtracting from hundreds.
Activity 2 Subtract 2- and 3-digit numbers from 1,000.

MATERIALS
- Student Activity Book pp. 279–282 (includes Family Letter)  
- MathBoard materials
  - Whiteboard

Differentiated Instruction

MATERIALS
  - Activity Cards 6-9  
  - Base ten blocks  
  - Secret Code Cards  
  - Symbol Cards (TRB M50)  
  - Math Journals
  - Soar to Success Math Intervention  
  - MegaMath  
  - Destination Math®

RHI
  - Tier 1  
  - Tier 2  
  - Tier 3

Homework and Spiral Review

MATERIALS
  - Homework and Remembering pp. 173–174

DIGITAL RESOURCES
Use these digital resources along with your eSAP and eTE to support your students' learning experiences.

Quick Practice 5 Minutes

Add Over the Hundred
Goal Break apart an addend to add over the hundred.
Write these exercises on the board. A Student Leader points to each exercise, waits a moment, and then gives the class signal for children to say the answer.

198 + 4 = 202  
495 + 5 = 500  
395 + 8 = 403

598 + 7 = 605  
499 + 6 = 505  
395 + 6 = 401

(See Unit 6 Lesson 2 Activity 1.)

Count by 10s from 500 to 600
(See Unit 6 Lesson 1, but use 10s from 500 to 600.)

DAILY ROUTINES
Math Mountains for 100 or 2-Digit Numbers  
(See p. xxxv.)
Money Routine  
(See p. xxxi.)
ACTIVITY 1

Solve Subtraction Problems

Discuss Subtraction Problems

Solve each word problem. Use any method. Make a proof drawing.

1. A teacher buys 200 erasers for his students. He gives 152 of them away. How many erasers does he have left over?

2. The school cafeteria has 500 apples. Some of them are served with lunch. After lunch, there are 239 apples left. How many apples does the cafeteria serve?

3. Teresa sells guitars. She has 600 guitars. She sells 359. How many guitars does she have left?

4. Jorge is on a basketball team. He scores 181 points one year. He scores some points in a second year, too. He scores a total of 400 points over the two years. How many points does he score the second year?

Discuss Subtraction Problems

MP4 Model with Mathematics

Write an Equation

Read aloud, or ask a volunteer to read aloud, the first problem on Student Activity Book page 281. Ask volunteers to write an equation that shows the problem situation and draw a Math Mountain that shows the situation.
Discus the problem with the class.

- What are you looking for in the problem? **an unknown addend**
- How do you know that's what you need to find? **The Math Mountain shows us; the problem tells us.**
- Do you add or subtract to find the unknown addend? **subtract** Why? You know the total and one addend. You need to find the other addend. You can subtract to find it. When you add the 2 addends, you find the total. When you know the total and one addend, you can subtract to find the other addend.
- What are some ways you subtract?

**MP.1 Make Sense of Problems Use a Different Method** Encourage children to suggest as many ways as possible. See the next page for sample methods.

Invite several children to solve the problem at the board while the rest of the children solve it at their seats. Tell children they can use any of the methods but be sure each method is represented at the board.

Have children at the board explain their work.

**Lilia, can you explain how you used boxes, sticks, and circles to ungroup 200 in order to subtract 152?**

**Lilia:** I took 1 hundred and ungrouped it to 10 tens. Then I took 1 ten and ungrouped it to 10 ones. And I did the same in my problem.

Please show us your ungrouping in your problem.

**Lilia:** Here I crossed out the 2 hundreds and wrote 1 hundred. I knew 1 hundred is 9 tens and 10 ones, so I crossed out the 0 tens and 0 ones. Then I wrote the 9 tens and 10 ones above the zeros I crossed out.

Very good. Does the value of the number change when you ungroup?

**Lilia:** No. It's the same number.

Yes. Now how did you subtract 152?

**Lilia:** I crossed out 1 hundred. I crossed out 5 tens. I crossed out 2 ones. That leaves 4 tens and 8 ones. I did it in my drawing and in my problem. I like to subtract left to right just like I read.

![Diagram](image)

| 1910 |
| 200 |
| -152 |
| 48  |

Activity continued
Teaching Note

Language and Vocabulary: The word ungroup is helpful to children for subtraction by giving them a visual of the concept that a number is being "unwrapped." Children may encounter the word regroup since some programs use the term regroup for both addition and subtraction. Let them know that regroup means ungroup, and it can also mean group in addition.

Boxes, Sticks, and Circles

Ungroup 1 hundred to make 10 tens.
Ungroup 1 ten to make 10 ones.

\[
\begin{align*}
200 & \quad \text{Ungroup } 200 \\
-152 & \quad \text{to make 10 tens.}
\end{align*}
\]

\[
\begin{align*}
200 & \quad \text{Ungroup } 200 \\
-152 & \quad \text{to make 10 ones.}
\end{align*}
\]

\[
\begin{align*}
100 & \quad + \\
90 & \quad + 10
\end{align*}
\]

Ungroup First Method

\[
\begin{align*}
200 & \quad \text{Ungroup } 200 \\
-152 & \quad \text{to make 10 tens.}
\end{align*}
\]

\[
\begin{align*}
1910 & \quad \text{or}
\
200 & \quad \text{Ungroup } 200 \\
-152 & \quad \text{to make 10 ones.}
\end{align*}
\]

\[
\begin{align*}
-152 & \quad \text{to make 10 ones.}
\end{align*}
\]

\[
\begin{align*}
100 & \quad + \\
90 & \quad + 10
\end{align*}
\]

Expanded Method

\[
\begin{align*}
200 & = 200 + 0 + 0 = 200 + 0 + 0 \\
-152 & = 100 + 50 + 2 = 100 + 50 + 2
\end{align*}
\]

\[
\begin{align*}
40 + 8 & = 48
\end{align*}
\]

Adding Up Method

\[
\begin{align*}
152 + & = 200 \\
152 + 8 & \text{is } 160 \\
160 + 40 & \text{is } 200
\end{align*}
\]

\[
\begin{align*}
48
\end{align*}
\]

Secret Code Cards

\[
\begin{align*}
200 & \quad \rightarrow \\
-152 & \quad \rightarrow
\end{align*}
\]

\[
\begin{align*}
100 & \quad 90 \\
-100 & \quad 50 \\
40 & \quad 8
\end{align*}
\]

= 48
Follow a similar procedure for the second problem on Student Activity Book page 281.

Problem 2
The school cafeteria has 500 apples. Some of them are served with lunch. After lunch, there are 239 apples left. How many apples does the cafeteria serve?

MP.4 Model with Mathematics Write an Equation Ask children to write an equation and draw a Math Mountain for the problem situation.

$$\begin{array}{c|c}
500 & 500 \\
\hline
239 \quad \text{or} \quad 500 - \square = 239 & 239 \quad \square
\end{array}$$

Draw your equation and Math Mountain from Problem 1 on the board if they have been erased.

Problem 1
A teacher buys 200 erasers for his students. He gives 152 of them away. How many erasers does he have left over?

$$\begin{array}{c|c}
200 & 200 \\
\hline
-152 \quad \text{or} \quad 200 - 152 = \square & 152 \quad \square
\end{array}$$

MP.3 Construct a Viable Argument Compare Representations Ask children to compare the situation equations and Math Mountains from Problems 1 and 2.

Be sure children understand that these problems can both be solved by subtracting.

- Do the situation equations look the same for the first two problems? **no**
- What is different in each one? **The unknown number is in a different place for each one.**
- Do the Math Mountains look the same? **Yes, except for the numbers**
- How can you solve Problem 2? **The same way you solved Problem 1, by subtracting to find an unknown addend**

Activity continued
Learning Community—Best Practices

Building Concepts: Math Expressions did subtraction to 200 earlier, and not just to 100 as many programs do, to give children experience with ungrouping 100 to make 10 tens as well as ungrouping 1 ten to make 10 ones. This makes the step to 3-digit subtraction much simpler for children. The only new thing they need to learn is subtracting the hundreds, which is easy.

COMMON CORE

Mathematical Practice
CC.K-12.MP.1
Mathematical Content
CC.2.NBT.7, CC.2.NBT.9

30 MINUTES
Focus Subtract 2- and 3-digit numbers from 1,000.
Materials Student Activity Book page 282, MathBoard materials

#5 Solve and Discuss

WHOLE CLASS

Have several children solve the remaining problems on Student Activity Book page 281 at the board while the class solves them at their seats.

When the answers are determined, children compare the solutions on the board and ask questions of the solvers.

Using the Solve and Discuss structure, invite one or two children to the board to explain their solution methods. As always, explanations need to include hundreds, tens, and ones language. Children match their drawings (made with boxes, sticks, and circles) to the numeric problem. Encourage the class to compare the solution methods and ask questions.

Children can point out how the different solutions lead to the same answer. For the Expanded and Ungrouping First methods, the top number is rewritten because it does not have enough of either tens or ones. For the Adding Up method, the top number does not need to be rewritten, but new tens and ones are made when they are added up.

Remind children to draw a “magnifying glass” around the top number to show how it can be opened up to reveal the hundreds, tens, and ones.

Subtracting from 1,000

Activity 2

Introduce Quick Picture for 1,000

WHOLE CLASS

Write 10 hundreds on the left side of the board and 1,000 on the right side of the board while children write both on their MathBoards. Then draw 10 hundreds beneath the label.

- We have a way to draw a Quick Picture for 10 hundreds: draw 10 boxes. We need a way to draw a Quick Picture for 1,000. We will draw a tall rectangle to show 1,000.
Activity Notes Each pair needs base ten blocks and Secret Code Cards 1–9 and 100–900. In this activity, children make a subtraction exercise in which ones are being subtracted from a hundreds number using Secret Code Cards. Check that children's models match the Secret Code Cards. Children model the regrouping from hundreds to tens and ones with base ten blocks.

Extend the activity by having children draw proof drawings to show how they solved the problems.

Math Writing Prompt
Draw a Picture Jen drew boxes, sticks, and circles to find the answer for 200 – 140 and 200 – 143. For which exercise did Jen use more steps to find the answer? Draw a picture to explain.

Software Support
Warm-Up 11.32
Subtract Three-Digit Numbers Without Regrouping

On Level
Activity Notes Each pair needs two sets of Secret Code Cards 1–900. In this activity, children use Secret Code Cards to form a hundreds number and a 3-digit difference. Point out that the 3-digit number is the answer. They need to find the unknown number.

Extend the activity by having children make their own Math Mountain cards with the same numbers.

Math Writing Prompt
Use Two Strategies Solve 400 – 253 = ___. Use two different methods and show your work. Which method do you like better? Tell why.

Software Support
Country Countdown: Block Busters, Level Y

Challenge
Activity Notes Each pair needs three sets of Secret Code Cards 1–900 and two minus signs (TRB M50). In this activity, each child makes two 3-digit numbers from Secret Code Cards. They subtract the lesser number from the greater number. Check that students subtract the lesser number from the greater number. The child with the greater difference will score a point.

Math Writing Prompt
Compare and Contrast Explain how regrouping with thousands is like regrouping with hundreds. How could you use that understanding to subtract 2,300 – 945?

Software Support
MegaMath

Destination Math®

Software Support
Course II: Module 2: Unit 1: Session 4
Estimating and Finding Differences within 1,000

Subtract from Hundreds Numbers 651
Use this Homework page to provide children with more practice with solving 3-digit subtraction word problems.

Solve the word problems. Use your favorite method. Make a proof drawing.

1. Rodrigo likes olives. He has 100 olives. He eats 13 of them. How many olives does he have left?

   13 olives

2. Down has 1,000 pennies in her penny jar. She gives some to her sister. Now she has 432 left. How many pennies does Down give to her sister?

   568 pennies

3. Tony sells hockey sticks to teams in her city. She has 500 and sells 353. How many hockey sticks does she have left to sell?

   147 hockey sticks

4. Randy collects magnets. Over two years he collects 400 magnets. He collects 125 magnets the first year. How many does he collect the second year?

   275 magnets

5. Draw hands on each clock to show the time.

   4:10

   1:30

   10:45

   11:15

Solve the word problem.

6. The school has 537 children. 359 of the children had lunch. How many children still need to have lunch?

   178 children

7. Stretch Your Thinking: How is subtracting from a 3-digit number different from subtracting from a 2-digit number?

   Possible answer: When you subtract from a 3-digit number, you can ungroup hundreds and tens. When you subtract from a 2-digit number, you can only ungroup tens.

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Home and School Connection

Family Letter: Have children take home the Family Letter on Student Activity Book page 279. This letter explains how the concept of subtracting 3-digit numbers is developed in Math Expressions. It gives parents and guardians a better understanding of the learning that goes on in math class and creates a bridge between school and home. A Spanish translation of this letter is on the following page in the Student Activity Book.