Module 1

**Counting to One Thousand**

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- Three-Digit Numbers Checkpoint ................................................. T5
- Unit 5 Work Place Log .............................................................. T7
- Work Place Guide 5A Jump-a-Ten ............................................. T8
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- Jump-a-Ten Record Sheet .......................................................... T11

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- Counting Cubes Record Sheet .................................................. 61
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*Page numbers correspond to those in the consumable books.*
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- Comparing & Fact Family Practice ............................................ 111
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Module 1
Counting to One Thousand

Overview
This module helps students imagine, visualize and count the number 1,000. The module begins with an engaging story that helps students understand that 1,000 objects can be represented in many ways, depending on how those objects are organized and arranged. As the module progresses, students build place value understanding as they count and organize numbers up to 1,000 using a variety of manipulatives including craft sticks, base ten area pieces, and Unifix cubes. Through the use of these manipulatives, students have numerous opportunities to create and count bundles of 10 and 100. The module ends with the introduction of a Work Place game in which students practice adding and subtracting by 10 with numbers in the range of 0 to 200.

Planner

<table>
<thead>
<tr>
<th>Session &amp; Work Places</th>
<th>P&amp;I</th>
<th>WP</th>
<th>A</th>
<th>HC</th>
</tr>
</thead>
</table>
| **Session 1** Introducing One Thousand  
To open this unit, students each write and share one thing they already know about 1,000. The teacher then reads *How Much, How Many, How Far, How Heavy, How Long, How Tall Is 1,000?* by Helen Nolan. Next, the students take a unit pre-assessment, and then go out to Work Places as they finish their assessments. | ✮ | ● | ● | ● |
| **Session 2** Pick-Up Sticks  
In this session students build place value understandings to 1,000 as they work together to count a large number of craft sticks. After estimating the total number of craft sticks in six containers, students work in groups to count the sticks and bundle them into 10s and 100s. They then come together to record, compare, and order the number of sticks in each container. Finally, they find the total number of sticks and compare it to their original estimates. | ✮ | ● | | |
| **Session 3** One Thousand Cubes?  
To open the session, students work together to revisit the base ten area pieces, reviewing the fact that there are 10 units in a ten-strip, and 10 ten-strips or 100 units in a mat. Then they arrange and count 10 hundreds pieces (mats) to discover that there are 1,000 units in 10 mats. After this review, students work first in small groups, and then as a whole class, to find out whether or not they still have the number of Unifix cubes that came with the original set: 1,000. | | | ● | |
| **Session 4** Place Value Triple Roll  
In this session, the class plays a variation of the Work Place game Base Ten Triple Spin, in which they build, record, compare, and order numbers to 999. In this version of the game, students build numbers using the bundles of craft sticks created in a previous session, as well as base ten area pieces. | ✮ | ● | | |

**Introducing Work Place 5A Jump-a-Ten**  
Each player sets a marker anywhere on a game board with numbers from 1–200 except on 100. Each player has to choose a different column, but they may start in the same row. Players take turns rolling a die to see how many 10s to move, and flipping a penny to see whether to move forward (heads) or backward (tails). The player whose game marker lands closest to 100 (either under or over) after five turns wins the game.

P&I – Problems & Investigations, WP – Work Place, A – Assessment, HC – Home Connection
# Materials Preparation

Each session includes a complete list of the materials you’ll need to conduct the session, as well as notes about any preparation you’ll need to do in advance. If you would like to prepare materials ahead of time for the entire module, you can use this to-do list.

<table>
<thead>
<tr>
<th>Task</th>
<th>Done</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Copies</strong></td>
<td></td>
</tr>
<tr>
<td>Run copies of Teacher Masters T1–T11 according to the instructions at the top of each master.</td>
<td></td>
</tr>
<tr>
<td>Run display copies of Student Book pages 59-63.</td>
<td></td>
</tr>
<tr>
<td>If students do not have their own Student Books, run a class set of Student Book pages 59–63.</td>
<td></td>
</tr>
<tr>
<td>If students do not have their own Home Connections books, run a class set of the assignments for this module using pages 109–114 in the Home Connections Book.</td>
<td></td>
</tr>
<tr>
<td><strong>Work Place Preparation</strong></td>
<td></td>
</tr>
<tr>
<td>Prepare the materials for Work Place 5A using the lists of materials on the Work Place Guide (Teachers Master T8).</td>
<td></td>
</tr>
<tr>
<td><strong>Charts</strong></td>
<td></td>
</tr>
<tr>
<td>Prepare for Session 5 by drawing two copies of the recording form shown here on the whiteboard or a piece of chart paper.</td>
<td></td>
</tr>
<tr>
<td><strong>Paper Cutting</strong></td>
<td></td>
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<tr>
<td>Cut a piece of butcher paper 20” wide and 50” long. Then fold the piece of paper or use a marker to create a mat of ten 10” × 10” squares.</td>
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</tbody>
</table>

## Additional Resources

Please see this module’s Resources section of the Bridges Educator site for a collection of resources you can use with students to supplement your instruction.
Session 1
Introducing One Thousand

Summary
To open the unit, students each write and share one thing they already know about 1,000. The teacher then reads How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000? by Helen Nolan. This engaging book helps students understand that 1,000 can vary tremendously in appearance, depending on what you are counting and how you arrange it. Next, students take a unit pre-assessment and then go out to Work Places. Finally, the teacher introduces and assigns the Extra Facts Home Connection.

Skills & Concepts
• Read and write numbers to 1,000 represented with numerals and words (2.NBT.3)
• Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add with sums to 1000 and subtract with minuends to 1000 (2.NBT.7)
• Solve money story problems involving dollar bills, quarters, dimes, nickels, pennies (2.MD.8)
• Reason abstractly and quantitatively (2.MP.2)
• Model with mathematics (2.MP.4)

Materials

<table>
<thead>
<tr>
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<th>Classroom Materials</th>
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<tbody>
<tr>
<td>Problems &amp; Investigations</td>
<td>Introducing One Thousand</td>
<td></td>
</tr>
<tr>
<td>• How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000? by Helen Nolan</td>
<td>• 3”x 5” index cards, 1 per student plus a few extra</td>
<td>• chart paper (see Preparation)</td>
</tr>
</tbody>
</table>

Assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Unit 5 Pre-Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM T1–T4 Unit 5 Pre-Assessment</td>
<td>• large base ten area pieces (see Preparation)</td>
</tr>
<tr>
<td></td>
<td>• plastic coins (see Preparation)</td>
</tr>
</tbody>
</table>

Work Places in Use

3D Base Ten Triple Spin (introduced in Unit 3, Module 3, Session 1)
3E Target Twenty (introduced in Unit 3, Module 3, Session 5)
4A Estimate & Measure Inches (introduced in Unit 4, Module 1, Session 5)
4B Measuring in Yards (introduced in Unit 4, Module 2, Session 2)
4C Measure & Compare (introduced in Unit 4, Module 2, Session 4)
4D Climb the Beanstalk (introduced in Unit 4, Module 2, Session 5)

Home Connection

HC 109–110 Extra Facts

Vocabulary
An asterisk [*] identifies those words for which Word Resource Cards are available. distance height* hundred length* measure thousand weight*

Preparation
• Prepare several containers each of large base ten area pieces and plastic coins for students who want to use one or both of these tools during the pre-assessment.
• Post a piece of chart paper in your discussion area or clear some space on a nearby whiteboard.
Problems & Investigations

Introducing One Thousand

1. Open the session by explaining that you are starting a new unit of study about place value, 3-digit numbers, and 1,000.
   - Write the number 1,000 and the words one thousand on the board.
   - Give students a minute to pair-share some of the things they already know about 1,000.

2. Then give each student an index card and ask them to use words or numbers to show one thing they already know about 1,000. Ask them to use just one side of the card if possible.
   - Explain that in a minute, they will each bring their card to the discussion circle to read to the rest of the class.
   - If some students finish before others, encourage them to write a second or third fact about 1,000 on their cards.
   - As soon as students get started, take a few moments to write something that you know about 1,000 on a card as well.

3. When most students are finished writing, have them join you in the discussion area with their index cards in hand, and seat themselves in a circle.
   - Explain that you're going to do a read-around, where each person in the circle will take a turn to read what he or she has written about 1,000 to the rest of the class.
   - Start by reading your own card to the class, demonstrating the use of a loud, clear voice so everyone can hear clearly.
   - Have the student sitting next to you in the circle read his or her card to the class, and then continue around the circle until everyone has had a turn.
   - Ask students who have written more than one thing about 1,000 to read just one of their statements, preferably one that no one else has mentioned.

4. Next, collect the cards, and let the group know that you will return them at the end of the unit, when you will ask students to write something on the backs of their cards that they have learned about 1,000.

5. Now hold up the book by Helen Nolan and read the title with the class. Have students read it again, slowly, as you list each of the quantifying questions on the board or chart paper.
   - Then take a few minutes to discuss each of the questions.
     - How much?  How heavy?
     - How many?  How long?
     - How far?  How tall?
   - When people ask how much or how many or how tall, what sorts of things are they referring to?
   - How would each of these be measured? What kinds of tools, units, or strategies might people use to determine how much, or how many, or how far, or how heavy?

   Teacher  Let's start with "How much?" What does that mean? When people ask how much, what might they be talking about?
Students  How much means how much you have, like how much money you have in the bank.
Or how much time until lunch?
Or maybe, how much milk do you have left?
Teacher  Yes. How much means we want to know the quantity of something we have—maybe how much money in the bank, which we would measure in dollars and cents. Or, how much time we have until lunch. How would we measure that?
Students  With a clock.
Teacher  What about “How many?” What does that mean?
Students  It’s the number of something you have, like how many brothers or sisters do you have?
Or how many pencils do you have in your desk?
It’s something you have to count to find out, like how many kids are at your table.
Teacher  OK, so if you ask how many, you’re asking for a number, aren’t you? What about how far? What does “far” mean, and how would you find out?
Students  It’s how far away something is, like how far is it to the store?
Or how far do we have to run today?
Teacher  How do people find out how far away one thing is from another?
Students  They measure!
They use a ruler or one of those tape measures.
You can use inches or feet, or yards if it’s a long ways.
If it’s really a long way, you need miles, like how far is it to get to my grandma’s house.

After examining the title and cover of the book, read and discuss How Much, How Many, How Far, How Heavy, How Long, How Tall Is 1,000? with the class.

- Let students know that they will be counting and measuring 1,000 in many different ways over the next few weeks, as well as learning more about the numbers between 100 and 999.

Note
Save students’ index cards until Module 3, Session 5, when they will take the unit post-assessment. At that time, you can ask them to write something they have learned about 1,000 during the unit on the back of the card, and contrast it with what they wrote today as a way of informally measuring their own growth.
**Assessment**

**Unit 5 Pre-Assessment**

7 Have students return to their tables or desks to take the Unit 5 Pre-Assessment. Briefly review what a pre-assessment is and describe how you’d like students to work on the pre-assessment they will complete today. Remind students that a pre-assessment is a way for them to see what they will be learning in the next month or so. It is also a tool that helps you do a better job of teaching, because students’ responses to the problems on the pre-assessment will help you learn about what they already know and what they still need to learn. For these reasons, there will be some problems on the pre-assessment that they will probably not be sure how to solve, and that’s all right.

Explain that you would like students to do the following thing as they work on the pre-assessment:

- Work independently.
- Raise your hand if you have a question.
- Try to answer all the problems, even those you don’t fully understand.
- Explain how they solved a problem when the directions ask you to. You can use pictures, numbers, and words in your explanations.

8 Use the display copy of the Unit 5 Pre-Assessment Teacher Master to review the pre-assessment with the class.

- Display your copy of the pre-assessment and give each student a copy.
- Read each problem out loud, and clarify as needed.
- Show students the containers of base ten area pieces and plastic coins you prepared, and let them know how and where to access these tools if they need to use them during the assessment.
- Here are some things to be aware of as you review each of the problems with the class:
  - Students will have to examine the sequences of numbers in problem 1 carefully to know whether to count by 10s or 100s as they fill in the blanks.
  - In problem 3, students need to fill in all the empty boxes in the table. Review the table headings and confirm with students that there is enough information in each row to fill in the boxes that are empty right now.
  - Be sure students understand that in problems 6 and 7, they are to choose one combination to solve, and show all of their work in the large space below the row of choices. Talk with students about finding and solving the combination that is most appropriate for them right now.
  - In problems 10 and 11, students need to figure out the amount of money that is described, select the correct way to write that amount using the cents sign, dollar sign, or the decimal point.

9 Invite students to spend the rest of the session working on the pre-assessment, and let them know that they can go to Work Places and work quietly if they finish early.

- While students work independently, circulate to observe how they work, and answer questions as needed. You might want to make note of students who appear to be having difficulty with one or more of the different types of problems on the assessment, so you can provide more targeted support as you teach the sessions in this unit.
• If you notice that a very capable student has selected one of the easier combinations to solve in problem 6 or 7, you can ask them to try one of the more challenging problems as well. Likewise, if you find that a struggling student has chosen one of the more challenging combinations in either of those problems, compliment them on their efforts, and ask them to solve one of the easier combinations as well.
• If some students aren’t able to complete the pre-assessment during this session, give them additional time tomorrow during seatwork or Work Places. None of the items on the assessment are intended to be timed.

Note
See the Grade 2 Assessment Guide for scoring and intervention suggestions.

Work Places
10 As students finish the assessment, have them turn in their papers, get their Work Place folders, and choose a Work Place to use quietly.
11 Close the session.
   • Have students clean up and put away the Work Place bins.
   • Take a few minutes to discuss the Unit 5 Pre-Assessment. Invite volunteers to talk about some problems that seemed easy to them, as well as some that seemed challenging or downright difficult right now.
   • Remind students that they will take a post-assessment again in a few weeks, and when they do, the kinds of problems that seemed hard today may seem easier.

Home Connection
12 Introduce and assign the Extra Facts Home Connection, which provides more practice with the following skills:
   • Solve one-step addition and subtraction story problems with sums and minuends to 100 involving situations of adding to, putting together, and taking from with unknowns in all positions (2.OA.1)
   • Fluently add and subtract with sums and minuends to 100 (2.NBT.5)
   • Add with sums to 1,000 (2.NBT.7)
Session 2
Pick-Up Sticks

Summary
In this session students build place value understandings to 1,000 as they work together to count a large number of craft sticks. After estimating the total number of craft sticks in six containers, students work in groups to count the sticks and bundle them into 10s and 100s. They then come together to record, compare, and order the number of sticks in each container. Finally, they find the total number of sticks and compare it to their original estimates. At the end of the session, students return to Work Places.

Skills & Concepts
- Demonstrate an understanding that the digits in a 3-digit number represent amounts of hundreds, tens, and ones (2.NBT.1)
- Skip-count by 10s and 100s up to 1,000 (2.NBT.2)
- Read and write numbers to 1,000 using base ten numerals and expanded notation (2.NBT.3)
- Compare pairs of 3-digit numbers, based on an understanding of what the digits in their hundreds, tens, and ones places represent and use >, =, and < symbols to record comparisons of two 3-digit numbers (2.NBT.4)
- Order numbers from 0 to 1,000 (supports 2.NBT)
- Add with sums to 1,000 using strategies that involve adding hundreds to hundreds, tens to tens, and ones to ones (2.NBT.7)
- Use concrete models or drawings to add with sums to 1,000 (2.NBT.7)
- Add with sums to 1,000 using strategies that involve composing a hundred or a ten (regrouping) (2.NBT.7)
- Model with mathematics (2.MP.4)
- Attend to precision (2.MP.6)

Materials

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<tbody>
<tr>
<td>Problems &amp; Investigations</td>
<td>Pick-Up Sticks</td>
<td></td>
</tr>
<tr>
<td>SB 60*</td>
<td>• about 1,000 craft sticks (see Preparation)</td>
<td>• 6 plastic containers or baskets (see Preparation)</td>
</tr>
<tr>
<td>Pick-Up Sticks Record Sheet</td>
<td>• rubber bands, 100 or more</td>
<td>• three 3” × 5” index cards (see Preparation)</td>
</tr>
<tr>
<td>• chart paper (see Preparation)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Work Places in Use
- 3D Base Ten Triple Spin (introduced in Unit 3, Module 3, Session 1)
- 3E Target Twenty (introduced in Unit 3, Module 3, Session 5)
- 4A Estimate & Measure Inches (introduced in Unit 4, Module 1, Session 1)
- 4B Measuring in Yards (introduced in Unit 4, Module 2, Session 2)
- 4C Measure & Compare (introduced in Unit 4, Module 2, Session 4)
- 4D Climb the Beanstalk (introduced in Unit 4, Module 2, Session 5)

HC – Home Connection, SB – Student Book, TM – Teacher Master

Copy instructions are located at the top of each teacher master.

Preparation
- Divide the craft sticks into six baskets or plastic containers, varying the number in each.
- Label one of the three index cards 100s, one of the cards 10s, and the third card 1s.
- Label a piece of chart paper as shown here and post it in your discussion area. Or, if you have a whiteboard in the discussion area, write the question there instead.

Vocabulary
An asterisk [*] identifies those words for which Word Resource Cards are available.

compare*
digit*
equal*
greater than* hundreds*
less than* ones*
place value*
tens*
Problems & Investigations

Pick-Up Sticks

1. Have students join you in the discussion area and seat themselves in a circle. Explain that they will do an activity together today that will help them learn more about 100s, 10s, and 1s, and then they’ll go out to Work Places.

2. Place the six containers of craft sticks in the center of the circle. Ask students to estimate how many sticks there are in all the containers put together.
   - Record their estimates on the chart paper or board.

3. Then explain that the class will use these sticks to play a game in a few days, but today you need the students to help you count them.
   - Provide directions for counting the sticks:
     » Students will work in groups of 4–6.
     » They will count the sticks by creating groups of 10s and 100s.
     » Each student will work to count out sets of 10 sticks and use a rubber band to bundle each set.
     » Every time the group collects 10 groups of 10, they’ll use a rubber band to bundle those together to make a set of 100.

4. Have students return to their tables or desks and locate the Pick-Up Sticks Record Sheet in their Student Books as you place a copy on display.
   - Review the instructions at the top of the sheet with the class.
   Be sure students understand that they need to put their name and date on the sheet and estimate how many sticks are in their container before they start counting. They will complete the rest of the sheet after all the groups have counted their sticks and the class meets back at the discussion circle.

   Let students know that it is OK to dump the sticks out on the table to get a better view. They may even want to pull off a benchmark of 10, but the idea is to record a quick estimate and get to work counting the sticks.

5. Give each group a container of sticks and a generous handful of rubber bands, and have them go to work.
Circulate to provide guidance as needed. Encourage students to count carefully and work together. Look for all groups to have sticks laid out in bundles of 100s and 10s, with any extra 1s in a row to the side before calling students back to the discussion circle.

**SUPPORT** This activity provides a good opportunity to reinforce the fact that ten 10s is equal to 100. Invite students to count out their groups of ten 10s to verify that it does take 10 bundles to equal 100.

6 When all groups are finished, ask a helper at each table to carefully place the bundles and single sticks back in the container. Have groups return to the discussion circle with their container of sticks, pencils, and Student Books.

7 Set the three index cards you’ve prepared in the middle of the circle. Tell the class that you are going to look at the collections by 1s and work together to count how many sticks there are in each container.

8 Invite a helper from one of the groups to set the bundles and single sticks from his or her container under the appropriate labels.
   - Ask students to count the sticks silently and give the thumbs-up sign when they’ve determined the total.
   - Then invite volunteers to share and explain their answers.

9 Have students record the number for Group 1 in the appropriate location on their record sheets.

10 Repeat steps 8–9 until each group has had a turn and all the sticks are on display in the center of the circle.
   - Have each group lay their sticks in a row below the previous group’s so that each set is visible on the floor.

11 Then work with students to compare and order the totals by completing items 3 and 4 on the Pick-Up Sticks Record Sheet.

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**Math Practices in Action**

2 MP.4

In this session, students are collaborating to model with mathematics. Here, they are using sticks and bundles of sticks to model the groupings in our base ten number system. This helps them develop a deep understanding of place value and strategies for adding and subtracting multi-digit numbers.

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(Student A) It’s 178 because there’s 1 hundred, 7 tens, and 8 ones.

(Student B) I knew there was 100. Then I went 10, 20, 30, 40, 50, 60, 70. That made 170. Then I counted 8 of the 1s, so that made 178.
Support Review how to form and use the greater than, less than, and equal symbols during this part of the session.

Next, have students determine how many sticks there are in all by combining groups and regrouping as needed.

Before students start regrouping the sticks to find the total, ask whether they want to start with the 100s or the 1s. They will likely choose to start with the 100s. While it might seem to us as adults that this strategy is lacking a bit in efficiency, it is just as powerful as starting with the 1s, in the sense that it helps students understand that in adding 3-digit numbers, one adds 100s and 100s, 10s and 10s, 1s and 1s, and sometimes it is necessary to regroup 10s or 100s in the process.

Once the total has been determined, ask students how it compares with their original estimates. Then have students use the information to complete the rest of the sheet.

Note
Save the labeled index cards for use in the next session. Save the craft sticks, still bundled into 100s, 10s, and 1s, in one of the containers for use in Session 4.

Work Places

Invite students to spend the rest of the session doing Work Places.

Close the session.
- Have students clean up and put away the Work Place bins.
- Save the labeled index cards for use in Session 3 and the bundled sticks for use in Session 4.
- Invite students to give suggestions for other ways the class could work to count all the sticks.
Session 3
One Thousand Cubes?

Summary
In this session, the teacher and students work together to revisit the base ten area pieces, reviewing the fact that there are 10 units in a ten-strip, and 10 ten-strips or 100 units in a mat. Then they arrange and count 10 hundreds pieces (mats) to discover that there are 1,000 units in 10 mats. After this review, students work first in small groups, and then as a whole class, to find out whether or not they still have the number of Unifix cubes that came with the original set: 1,000. Finally, the teacher introduces and assigns the Comparing & Fact Family Practice Home Connection.

Skills & Concepts
- Demonstrate an understanding that the digits in a 3-digit number represent amounts of hundreds, tens, and ones (2.NBT.1)
- Skip-count by 10s and 100s up to 1,000 (2.NBT.2)
- Read and write numbers to 1,000 using numerals, words, and expanded notation (2.NBT.3)
- Add with sums to 1,000 using strategies that involve adding hundreds to hundreds, tens to tens, and ones to ones (2.NBT.7)
- Use concrete models or drawings to add with sums to 1,000 (2.NBT.7)
- Add with sums to 1,000 using strategies that involve composing a hundred or a ten (regrouping) (2.NBT.7)
- Construct viable arguments and critique the reasoning of others (2.MP.3)
- Attend to precision (2.MP.6)

Materials

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<td>One Thousand Cubes?</td>
<td></td>
</tr>
<tr>
<td>SB 61*</td>
<td>Counting Cubes Record Sheet</td>
<td>• large base ten area pieces (10 ones pieces, 10 tens pieces, 10 hundreds pieces)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• butcher paper (see Preparation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 3 labeled 3&quot; × 5&quot; index cards from Session 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 6 baskets or other containers</td>
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<tr>
<td></td>
<td></td>
<td>• Unifix cubes in a tub (all the cubes in your set, or about 1,000)</td>
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<tr>
<td></td>
<td></td>
<td>• student whiteboards, markers &amp; erasers (class set)</td>
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<tr>
<td></td>
<td></td>
<td>• chart paper (see Preparation)</td>
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</tbody>
</table>

Home Connection

<table>
<thead>
<tr>
<th>HC 111–112</th>
<th>Comparing &amp; Fact Family Practice</th>
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</table>

Vocabulary
An asterisk [*] identifies those words for which Word Resource Cards are available.
compare* digit* equal* greater than* hundreds* less than* ones* place value* tens*

Preparation
- Post a piece of chart paper in your discussion area or make space on the whiteboard for recording each group’s cube counts later in the session.
- Cut a piece of butcher paper 20" × 50". Then fold the piece of paper or use a marker to create a mat of ten 10" × 10" squares.
• Place the butcher paper mat and the three labeled index cards, along with the base ten area pieces, the tub of Unifix cubes, and the six baskets within easy reach of your discussion area.

Problems & Investigations

One Thousand Cubes?

1 Have students join you in the discussion area and seat themselves in a circle. Explain that they will do some more counting activities today to help them continue to learn about 100s, 10s, and 1s, and then they’ll go out to Work Places.

2 Place the butcher paper mat you prepared in the middle of the circle. As students watch and count with you, place a single base ten ones piece in each square.

3 Remove the units from the butcher paper and line them up. Then place one of the tens pieces next to the line of ones, and ask students to share observations, first in pairs and then as a whole group.

Students That green one is one of those strips with 10. It’s the same as 10 of the little squares. There are 10 little squares on that strip.
4 Now propose to place one ten-strip in each square of the butcher paper mat. Ask students if you do this, how many units will be on the mat in all? How do they know?

Students There are 10 big boxes on that paper, so you’ll have 10 strips. Every strip is the same as 10 of the little squares, so there will be 100 in all.

5 Next, have them count by 10s with you as you set one ten-strip in each square of the butcher paper mat.

- Stop periodically to confirm how many ten-strips there are on the mat, and what their equivalent is in small square units.

Teacher Let’s stop for a moment. How many ten-strips do we have on our mat so far?

Students Five! It’s half full. You have 5 ten-strips on there.

Teacher How many small unit squares are there in those 5 ten-strips?

Students Fifty! Five 10s is 50.

- When you have placed a strip in each of the boxes, confirm with the class that 10 ten-strips are equivalent to 100 units.

6 Place the strips of tens side-by-side to form a square. Then place one of the base ten hundreds pieces next to the set of strips, and ask students to share observations, first in pairs and then as a whole group.

Students Ten of those strips is the same as a hundreds piece. There are 100 little squares on the big red square.

Teacher But you didn’t count them! How do you know for sure?

Students Because if you count the strips by 10s, you get 100. You can see that there are 10 rows of 10 on the red one. Ten 10s is 100!
Repeat steps 4 and 5, placing one mat in each square on the butcher paper this time.

- Before you set the mats on the butcher paper, ask students to share, first in pairs and then as a whole class, their thinking about the number of units there will be on the butcher paper when every square is filled.
- Have students count with you by 100s as you place the mats on the butcher paper.
- Discuss the fact that 10 hundreds is equivalent to 1,000 units.
- Remove the mats from the butcher paper by 1s as the class counts backward by hundreds from 1,000 back to 0.

**CHALLENGE** Before you remove the mats from the paper, ask students to discuss and confirm the number of strips, or tens, represented by 10 mats (10 hundreds is equal to 100 tens, or 1,000 ones).

Put the butcher paper mat aside for now and show students the tub of Unifix cubes. Explain that there were exactly 1,000 cubes when the tub was new and that you want to find out how many there are now.

- Dump all the cubes out in the middle of the discussion circle and ask students to examine the pile quietly for a few moments. Does it look like there could possibly be 1,000 cubes in the pile?
- As students watch, connect 10 of the cubes and set the ten-train next to the pile. Is this a helpful benchmark? By looking at a quantity of 10, does it help students estimate how many there are in the pile?
- Now ask students to consider whether or not a benchmark of 100 might be more helpful in estimating the total number of cubes in the pile.
- Then have ten students each make a train of 10 cubes and set the trains side-by-side near the pile.

- Count the trains with the class by 10s to confirm that there are 100.
- Have students reflect on the display. Which of the benchmarks, 10 or 100, seems more useful in trying to estimate the total number of cubes in the pile? Why?
• Have students indicate by show of hands whether they believe there are less than 1,000 cubes in all, more than 1,000 cubes, or exactly 1,000 cubes.

9 Have several helpers put all the cubes back in the tub and then dump the cubes into six baskets or other containers as the class watches.

The number of cubes should vary somewhat from one basket to the next.

10 Next, explain to students that they will work in groups to count the cubes to find out how many there are in all.

• Students will work in groups of 4–6 and each group will count the cubes in one of the baskets you just prepared.
• Each student will count out sets of 10 cubes and snap them together to make trains of 10. Each time the group makes ten trains of 10, they will place those trains side-by-side to make 100.
• Then each group will count their cubes by 100s, 10s, and 1s to find the total.
• Finally, each group will place all their trains and loose cubes back in their basket and return to the discussion circle with their basket.

11 Then have students return to their tables or desks and locate the Counting Cubes Record Sheet in their Student Books as you place a copy on display.

• Review the instructions with the class.
• Be sure students understand that they need to put their name and date on the sheet and estimate how many cubes are in their container before they start counting.
• Once they have determined their total, each student in the group needs to record the number in four different ways: as a number; in words; in 100s, 10s, and 1s, and in expanded notation. Use your copy of the Counting Cubes Record Sheet to model each of these recording methods.

**Teacher** Let’s pretend that I worked with my group and we found out there were 178 cubes in our basket. How would I write that as a number?

**Student A** 178—just write a 1 and a 7 and an 8.

**Teacher** Now I have to write it in words. Here I go—one hundred seventy-eight. Next, it says I have to write this number in 100s, 10s, and 1s. How many 100s are there in 178? Right, 1 hundred. How many 10s are there in 178? Yep, there are 7 tens. And how many 1s are there in 178? Yes, there are 8 ones.

**Teacher** Now the last thing I have to do is write the number in expanded notation. Those fancy words mean I need to write out 178 as an addition statement: 100 + 70 + 8.

---

**Counting Cubes Record Sheet**

1. Estimate how many cubes are in the container at your table.

   I think there are _____ cubes in the container.

2. How many cubes were there in your container? Write the answer in four different ways below.

   a. Number 178
   b. Words One hundred seventy-eight
   c. Hundreds, Tens and Ones 1 hundred, 7 tens, 8 ones
   d. Expanded notation 100 + 70 + 8
• Explain that groups will most likely finish counting and recording at different times, so when they’re finished, they need to work on the problem at the bottom of the page, which involves writing different equations for 1,000. Explain this task as needed and leave your work on display for students to refer to as they complete their own sheets.

12 Give each group a container of cubes and have them go to work.
• Let students know that it is OK to dump the cubes out on the table to get a better view. They may even want to pull off a benchmark of 10, but the idea is to record a quick estimate and get to work counting the cubes.

13 When all the groups have finished counting their cubes and recording the results, ask them to carefully place all their ten-trains and loose cubes back in their baskets and join you in the discussion area.
• Have one student from each group bring the completed Counting Cubes Record Sheet with them.
• Have each student bring a whiteboard, pen, and eraser.

14 Then call on one member of each group to read from their Student Book page, the number their group counted and recorded in 100s, 10s, and 1s.
• Record each number on chart paper while students do so on their whiteboards.

   Teacher Now that we’ve counted all the cubes in our classroom, we can find out the total and whether or not we still have 1,000 in our collection. I’m going to call on one person from each group to tell us how many cubes their group counted. We’ll all write the six numbers on our boards and then see if we can figure the total. Here’s the trick, though. Each person is going to read their number in 100s, 10s, and 1s. That is, if my group got 178 cubes, I would read that number as 1 hundred, 7 tens, and 8 ones. Let’s give it a try. James, would you please tell us how many cubes your group counted?

   Student A We got 2 hundreds, 1 ten, and 3 ones.

   Teacher Two hundreds, 1 ten, and 3 ones… tell the person next to you what number we’ll need to write. OK, let’s write it down. We’ll need to write pretty small to leave enough room to get all six numbers on our boards.

   213
   173
   162
   184
   138
   127

15 Now ask students to share, first in pairs and then as a whole group, whether they think the total will be less than 1,000, more than 1,000, or exactly 1,000, and why.
While this is not a request to find the exact total, it is an invitation to make a reasonable estimate, based on the information available. Give students at least a minute to discuss the question in pairs before you call on volunteers to share their thinking with the class. You will likely have a few students who add the numbers to get the total, but listen in for students who are adding the 100s and considering how many more 100s might be made with the 10s, or students who are doing some type of informal rounding to estimate the total.

**Teacher**  Let’s see a show of hands. How many of you think our total will be less than 1,000? More than 1,000? Exactly 1,000? Interesting. Lots of you seem to think that we’ll have more than 1,000. Who’d like to share their thinking with the class?

**Student A**  We looked at the 100s. Can I come show on the board? See, there’s 200, then 300, 400, 500, 600, 700. But then there’s lots more 10s. We think if you add them all on, it’ll be more than 1,000.

**Teacher**  OK, so they looked at the 100s first and then thought about the 100s. Did someone have a different way to think about the total?

**Student B**  We pretended that the numbers were easier, like we turned 213 into 200, and 173 and 184 into 200 because they’re kind of close. So that was 600, and then we said 138 and 127 was about 150, and with 162 that’s maybe a little more than 300. Six hundred and 300 is only 900, so we think it’s going to be less than 1,000.

Next, work with students to find the exact total by setting out all the cubes in the middle of the discussion circle.

- Lay out the butcher paper mat along with the three labeled index cards.
- Invite one group at a time to set any groups of 100 they have on the mat, and place their extra 10s and 1s below their respective labels.
- Work with help from students to regroup the 10s and 1s and add any hundreds that result.
- Count the total by 100s, 10s, and 1s with the class and record the total on the board as students do so on their whiteboards.
- Is the total less than, greater than, or exactly 1,000? Work with input from the class to write an inequality statement on the board. If the total is not exactly 1,000, work with students to find the difference.
We're missing 3 cubes!

17 Close the session.
- Have students help clean up and put away the materials.
- Ask students to share some of the equations to make 1,000 they wrote on their Student Book pages.

Home Connection

18 Introduce and assign the Comparing & Fact Family Practice Home Connection, which provides more practice with the following skills:
- Fluently add and subtract with sums and minuends to 20 using mental strategies (2.OA.2)
- Demonstrate an understanding that the digits in a 3-digit number represent amounts of hundreds, tens, and ones (2.NBT.1)
- Skip-count by 10s and 100s up to 1,000 (2.NBT.2)
- Read and write numbers to 1,000 using base ten numerals (2.NBT.3)
- Compare pairs of 3-digit numbers, based on an understanding of what the digits in their hundreds, tens, and ones places represent and use >, =, and < symbols to record comparisons of two 3-digit numbers (2.NBT.4)
Session 4
Place Value Triple Roll

Summary
In this session, the class plays a variation of the Work Place game Base Ten Triple Spin. In this version of the game, students build numbers using the bundles of craft sticks created in a previous session as well as base ten area pieces. At the end of the session, students return to Work Places.

Skills & Concepts
- Demonstrate an understanding that the digits in a 3-digit number represent amounts of hundreds, tens, and ones (2.NBT.1)
- Skip-count by 10s and 100s (2.NBT.2)
- Read & write numbers to 1,000 using numerals and expanded notation (2.NBT.3)
- Compare pairs of 3-digit numbers, based on an understanding of what the digits in their hundreds, tens, and ones places represent and use >, =, and < symbols to record comparisons of two 3-digit numbers (2.NBT.4)
- Order numbers from 0 to 1,000 (supports 2.NBT)
- Reason abstractly and quantitatively (2.MP.2)
- Model with mathematics (2.MP.4)

Materials

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<td>Problems &amp; Investigations</td>
<td>Place Value Triple Roll</td>
<td></td>
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<tr>
<td>SB 62–63*</td>
<td>Place Value Triple Roll Record Sheet</td>
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</table>

- large base ten area pieces (9 hundreds pieces, 9 tens pieces, and 9 ones pieces)
- 1 die numbered 4–9
- 1 more/less die
- bundled craft sticks (from Unit 5, Module 1, Session 2, see Preparation)
- 2 cafeteria trays (see Preparation)
- six 3" × 5" index cards (see Preparation)
- blue masking tape (see Preparation)
- two 3” × 5” construction paper rectangles, one red and the other blue
- |

Work Places in Use

- 3D Base Ten Triple Spin (introduced in Unit 3, Module 3, Session 1)
- 3E Target Twenty (introduced in Unit 3, Module 3, Session 5)
- 4A Estimate & Measure Inches (introduced in Unit 4, Module 1, Session 5)
- 4B Measuring in Yards (introduced in Unit 4, Module 2, Session 2)
- 4C Measure & Compare (introduced in Unit 4, Module 2, Session 4)
- 4D Climb the Beanstalk (introduced in Unit 4, Module 2, Session 5)

HC – Home Connection, SB – Student Book, TM – Teacher Master
Copy instructions are located at the top of each teacher master.

Preparation
- Use the six index cards to prepare 100s, 10s, and 1s labels (two of each).
- Using the bundled craft sticks from Session 2, set 9 bundles of 100, 9 bundles of 10, and 9 single sticks on one of the cafeteria trays. Set the large base ten area pieces on the other tray.
- Divide the floor area in the middle of your discussion circle in half with a 4-foot length of blue masking tape. (You can use regular masking tape if you don’t have blue tape, but you’ll need to remove it at the end of the day.)
Problems & Investigations

Place Value Triple Roll

Have students join you in the discussion area and bring their Student Books and pencils with them.

- Explain that you’re going to play a game today that is similar to Base Ten Triple Spin using the sticks they counted and bundled a couple of sessions back, as well as the large base ten area pieces.

Briefly summarize the game.

- In a minute, you will divide the class into two teams.
- You will roll a more/less die to determine whether the teams will play for more or less in each round.
- Teams will take turns rolling a die numbered 4–9 and deciding if the number rolled will represent the 100s, 10s or 1s digit in the number they are building.
- Each team will roll three times to create a 3-digit number.
- The two numbers will be compared and the winner of the round determined.
- The class will play three rounds of the game. The team that wins two out of the three rounds wins the game.

Then lay out a set of 100s, 10s, and 1s index cards, one set on either side of the blue tape line. Display the two cafeteria trays and ask students to share observations about the materials on the trays.

This exchange should be informal. Students should note that one tray has large base ten area pieces while the other has bundles of craft sticks. Both tools can be used to represent 3-digit numbers. If a student does not mention the relationship between the pieces (mats and large bundles both show 100s, strips and small bundles both show 10s, etc.), hold up corresponding modeling tools and ask students to compare them.

Divide the group into two teams, the Reds and the Blues, and use the colored construction paper to show which side of the blue tape each team will use to build their number.

Have students find the Place Value Triple Roll Record Sheet in their Student Books as you display a copy and ask students to label the sheet with their name and date.

- Ask one volunteer from each team to roll the 4–9 die to see which team will go first and give that team their choice of using the bundled sticks or the large base ten area pieces during the game.

Begin the round by rolling the more/less die to determine whether teams are playing for more or less in Round 1. Have students circle whether they’re playing for more or less in Round 1, as you do so on your copy of the record sheet.

Select a member of the first team to roll the 4–9 die and report the number rolled. Ask the team to decide whether they want to take that number in 100s, 10s, or 1s.

Give teams time to discuss this question after each roll. Their choice will be influenced by whether the teams are playing for more or less. Remind them that each team will get three rolls. They have to take one of the numbers they roll in 100s, one in 10s, and one in 1s. They
can take them in any order, but they can’t change their minds once they’ve made a decision for any given roll.

- Have a member of the first team use sticks or pieces to set out the designated number of 100s, 10s, or 1s on their side of the blue line.
- Then have the other team take their turn.
- Have the teams continue to take turns rolling and building until each team has taken three rolls.

**Red**

100s

10s

1s

**Blue**

100s

10s

1s

---

**Student A** Oh no! I told you we should have taken the 6 in 1s instead of 100s just in case we rolled a higher number later. Now the Reds won!

**Student B** They would have won anyway because they got two 8s. The highest number we could have made was 865, and they got 885.

8 Record the results for both teams on your copy of the record sheet as students do so on theirs. Then work with students to compare the teams’ scores at the bottom of the Round 1 box.

---

**Math Practices in Action 2.MP.2**

The symbolic notation invites students to reason abstractly, while the base ten pieces and craft sticks facilitate quantitative reasoning. As they become more comfortable using both modes of reasoning, students will move between them as needed when solving problems.
Remind students to draw boxes to show 100s, lines to show 10s, and dots to show 1s for both teams, regardless of the fact that one team is using base ten area pieces while the other is using craft sticks. Let them know that the order in which they write the scores doesn’t matter as long as they place a sign between the two that shows the correct relationship.

Then place the sticks and pieces back on their trays and play two more rounds of the game. Have students use the second page of the Place Value Triple Roll Record Sheet to record the results of the third round. Remember to roll the more/less die at the beginning of each new round so students know whether they’re playing for more or less.

At the end of the third round, have students read each of numbers the two teams built during the game as you record them on the board. Then have them list the numbers in order from least to most on the record sheet.

**Support** Once you have listed the six scores on the board, work with students to find the smallest number on the list and then have them record that number on their sheets. Cross out that number and then work with students to find the next smallest number on the list and record it on their sheets. Continue until you’re down to the last two or three numbers, and challenge students to work on their own to finish listing them on their sheets in order.

**Challenge** Ask students to complete the last section of the Place Value Triple Roll Record Sheet in their Student Books. In this section, they are asked to record and then add the three scores for each team, finally rolling the more/less die to determine the overall winner of the game.

### Work Places

11 Invite students to spend the rest of the session doing Work Places.

12 Close the session.

13 Have students clean up and put away the Work Place bins.
   - Ask students to compare and contrast the game played in this session with Base Ten Triple Spin. Do the strategies used in the Work Place apply to the game played in class? Why or why not?
Session 5
Introducing Work Place 5A Jump-a-Ten

Summary
After a short counting warm-up, the teacher introduces a new Work Place that provides practice with adding and subtracting 10s from numbers between 1 and 200. Students then take a checkpoint assessment that looks at their current skills with place value counting and computation. As they finish, students get their folders and go out to Work Places, including the one introduced today. Finally, the teacher introduces and assigns the Large Numbers Home Connection.

Skills & Concepts
- Count within 1,000, starting and ending with any given pair of numbers (2.NBT.2)
- Skip-count by 10s within 1,000 (2.NBT.2)
- Read & write numbers within 1,000 represented with numerals (2.NBT.3)
- Compare pairs of 3-digit numbers (2.NBT.4)
- Mentally add 10 to any 3-digit number between 100 and 900 (2.NBT.8)
- Attend to precision (2.MP.6)
- Look for and make use of structure (2.MP.7)

Materials

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<tr>
<td>Work Places</td>
<td>Introducing Work Place 5A Jump-a-Ten</td>
<td>1 die numbered 1–6, 1 yellow game marker, red game markers, 1 per student, a penny (or a real one), students’ Work Place pocket folders (see Preparation)</td>
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Assessment
Three-Digit Numbers Checkpoint

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Home Connection

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<td>HC 113–114 Large Numbers</td>
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Vocabulary
An asterisk [*] identifies those words for which Word Resource Cards are available.

- compare*
- digit*
- equal*
- greater than*
- hundreds*
- less than*
- ones*
- place value*
- tens*

*Run 2 copies of this page for display.
**Preparation**

- Remove the Unit 3 Work Place Log from the front of each student’s Work Place pocket folder, and move the Unit 4 Work Place Log from the back to the front of each folder. Then staple a copy of the Unit 5 Work Place Log at all four corners to the back of each student’s Work Place pocket folder. This will allow students to keep track of the number of times they have visited the Unit 4 Work Places that will remain in use during Unit 5, and also track their progress through the new Work Places as they’re introduced in Unit 5.
- In today’s session, you’ll introduce Work Place 5A Jump-a-Ten. Before this session, you should review the Work Place Guide and Work Place Instructions and assemble the bin for Work Place 5A (which replaces Work Place 3D Base Ten Triple Spin), using the materials listed. The Work Place Guide also includes detailed instructions for playing the game and suggestions for differentiating the game to meet students’ needs.
- Draw two copies of the recording form shown here on the whiteboard or a piece of chart paper.

![Recording Form](image)

- Prepare a container of large base ten area pieces to set at each table or cluster of desks for students who want to use them during the checkpoint assessment.

---

**Work Places**

**Introducing Work Place 5A Jump-a-Ten**

1. To open the session, explain that you’re going to do a counting warm-up and then teach the students how to play a new Work Place game. After that, students will take a short written assessment and go out to Work Places as they finish.

2. Show students that you have stapled a copy of the Unit 5 Work Place Log Teacher Master to the back of each of their Work Place folders, and moved the Unit 4 Log to the front of their folders.

   Explain that you will be introducing five new Work Places, all listed on the Unit 5 Work Place Log, individually over the next several weeks. This means that students will continue to use some of the most recently introduced Work Places from Unit 4 for awhile, and will need to be able to see both sets listed in order to track how many times they have gone to each. Let them know that when they have used all the Unit 4 Work Places for the last time, you will remove the Unit 4 Work Place Log from the front of their folders, and move the Unit 5 Work Place Log from the back to the front of everyone’s folder.

3. Then display a copy of the Jump-a-Ten Game Board Student Book page as students find the corresponding page in their books.

   - Ask students to think, pair, and share some of their observations. Can they find and describe any patterns?
4 Next, use the chart to have students practice counting by 10s off the decade.
   • Ask students to point to the 7 on their charts as you circle the number on your copy.
   • Have them count forward by 10s, pointing to each number on their chart while you circle the numbers on your copy of the chart.
   • When you reach 197, ask students what would come next in the sequence. Then have them share observations about the numbers you have circled.

   Students It would be 207 next because that’s 10 more.
   All those numbers have 7s at the end.
   It goes 7, 17, 27, 37, and when it gets to 107, it starts all over again, like 117, 127, 137, and on and on.
   If we had more numbers on our chart, it would start over again at 207, then 307, and up and up.

5 Place a new copy of the Jump-a-Ten Game Board Student Book page on display and explain that you are going to use it to introduce the new Work Place game, Jump-a-Ten.

6 Briefly summarize the game before playing against the class.
   Each player sets a marker anywhere on a game board with numbers from 1 to 200 except on 100. Each player has to choose a different column, but they may start in the same row. Players take turns rolling a die to see how many 10s to move, and flipping a penny to see whether to move forward (heads) or backward (tails). The player whose game marker lands closest to 100 (either under or over) after five turns wins the game.

7 Play one game of Jump-a-Ten against the class, using the Work Place Instructions 5A Jump-a-Ten Teacher Master as needed.
   • Choose the yellow game marker for yourself and give each student a red marker.

   Teacher I’m going to put my marker on 105 to start. Then I’ll toss the die and the penny at the same time. Let’s see. I got heads and 4. If I jump my marker forward 4 tens, where will I land?
   (Gives students a moment to think and respond.) Here I go. Please count with me.
   Students One hundred fifteen, 125, 135, 145. You landed on 145. It’s our turn.

   • Choose a volunteer to decide where to place the red marker for the class and have him or her place a marker on the displayed chart.
   • Have students each place their marker on that number on their own charts.
   • Then ask a second volunteer to toss the penny and the die for the class, and a third to move the marker on your displayed copy of the Jump-a-Ten Game Board as all the students move their markers on their own charts and count forward or backward by 10s.
   • Record the starting numbers and the results on the board for both teams.
   • Then ask students to determine which team landed closest to 100 and circle the winning team on the board.
Students  We won! We landed on 89 at the end, and you're only on 85. Eighty-nine is closer to 100 because it's only 11 away. Eighty-five is 15 away. We won! I was worried when we got all the way back to 9, but then we got heads, so we didn't have to lose a turn.

8 Play the game a second time with the class using the Jump-a-Ten Game Board Student Book page.

- This time, let the class be first to place their marker and take their turn. You might give them a minute or two to share ideas, first in pairs and then as a whole group about where place to place their marker. What happens if a player places his or her marker on a number less than 60 or greater than 140? Is there any advantage to placing one's marker in a particular column? If so, which one, and why?

- While playing the game:
  - Talk with students about how far each team's marker is from 100 after each turn, and engage students in predicting throughout the game which team will win and why.
  - Look for an opportunity to model what happens when you can't complete a move. For example, if you are on 172 and toss a 3 and heads, you cannot complete your move and must stay at 172. If this situation does not occur during game play, ask students to consider a similar situation before concluding your introduction to the game.
  - Offer students the option of using two dice numbered 1-6 instead of one on their last turn and take the option yourself if possible.
Assessment

Three-Digit Numbers Checkpoint

9 Once students understand how to play Jump-a-Ten, give them a few moments to stretch. Then reconvene the class and explain that they are each going to complete an assessment and then go out to Work Places.

- Let students know that the problems on this assessment are very similar to the ones they’ve been doing in class over the past few days. Their responses will give you some idea of how well they are able to read, write, count, compare, and add numbers to 1,000.

10 Give each student a copy of the Three-Digit Numbers Checkpoint Teacher Master and place a copy on display.

- Review and clarify the tasks as needed.
- Let students know that they will be able to use base ten area pieces to help with the problems if they want.
- Here are some other things to be aware of as you review each of the problems with the class:
  » Be sure students understand that they need to write the number that is greater on the line beside 2a, and in 2b, they need to explain their choice by using numbers, sketches, or words. It is not adequate to explain the choice by restating that the number they chose is greater. They have to explain how they know the number is greater.
  » In problem 7, they need to do the addition and then compare the sums for two different pairs of addition combinations.

11 Then do the practice problem at the top of the first page together. This problem requires students to count a collection of base ten area pieces and express the total in three different forms:

- Hundreds, Tens, and Ones (1 hundred, 2 tens, 4 ones)
- Expanded Notation (100 + 20 + 4)
- Numeric (124)

12 When the students understand what to do, let them go to work.

- Have a helper place a container of large base ten area pieces at each table or cluster of desks so those students who want to use the pieces to help solve some of the problems can access them easily.
- Circulate as students work to assist, including rereading or explaining problems as needed.

Note
See the Grade 2 Assessment Guide for scoring and intervention suggestions.
Work Places

13 As students finish their assessments, have them double-check their work before they turn it in, and then get their folders and find Work Places to do quietly without disturbing others.

14 Close the session.
   - Have students clean up and put away the Work Place bins.
   - Remind them that they will be able to play the new game, Jump-a-Ten, during Work Places for several weeks to come.
   - Ask students to pair-share how they felt about the assessment, and have a couple of volunteers share their thoughts and feelings with the class.

Home Connection

15 Introduce and assign the Large Numbers Home Connection, which provides more practice with the following skills:
   - Demonstrate an understanding that the digits in a 3-digit number represent amounts of hundreds, tens, and ones (2.NBT.1)
   - Skip-count by 10s and 100s within 1,000 (2.NBT.2)
   - Read and write numbers to 1,000 represent with numerals, words, and in expanded form (2.NBT.3)
   - Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add with sums to 1,000 (2.NBT.7)
1 Count by 10s or 100s to fill in the missing numbers.

   a  25, 35, _____, _____, 65, _____, 85, 105, 125
   b  138, 148, ______, 168, _____, _____, 198, _____, _____
   c  46, 146, 246, _____, _____, _____, 646, _____, _____
   d  _____, 113, 213, _____, _____, 513, _____, 713, _____

2 Count the base ten pieces and write the number under each set. Then write the symbol in the circle to compare the two sets: <, =, or >.

3 Fill in the empty boxes in the table below.

<table>
<thead>
<tr>
<th>Number</th>
<th>Number Name in Words</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>438</td>
<td>Four hundred thirty-eight</td>
<td>400 + 30 + 8</td>
</tr>
<tr>
<td>759</td>
<td>Two hundred eighty-five</td>
<td>300 + 6</td>
</tr>
<tr>
<td>815</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
4 Find each sum.

\[
\begin{align*}
450 & + 10 & 316 & + 10 & 10 & + 907 & 348 & + 100 & 100 & + 415 & 706 & + 100 \\
\end{align*}
\]

5 Find each difference.

\[
\begin{align*}
336 & - 10 & 513 & - 10 & 702 & - 10 & 331 & - 100 & 916 & - 100 & 707 & - 100 \\
\end{align*}
\]

6 Choose one of the subtraction problems below. Pick the one that seems best for you—not too hard and not too easy. Use numbers, labeled sketches, or words to solve the problem. Show all your work.

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

7 Choose one of the addition problems below. Pick the one that seems best for you—not too hard and not too easy. Use numbers, labeled sketches, or words to solve the problem. Show all your work.

\[
\begin{align*}
15 & + 8 & 35 & + 26 & 46 & + 27 & 134 & + 39 & 148 & + 225 \\
\end{align*}
\]
8  Yusef and Matt are going to the school store. This picture shows how much money each boy has to spend.

![Image of Yusef and Matt's hands with coins]

a  How much money does Yusef have in his hand? _______ ¢

b  How much money does Matt have in his hand? _______ ¢

c  How much more money does Yusef have than Matt? Use numbers, labeled sketches, or words to solve the problem. Show your work.

9  Here are Cora’s hands. She has 2 dimes and a nickel in the hand that is closed.

![Image of Cora's hands with coins]

a  How much money does Cora have in her open hand? _______ ¢

b  How much money does Cora have in both hands all together? Use numbers, labeled sketches, or words to solve the problem. Show your work.

Cora has _______ ¢ in both hands.

(continued on next page)
10 Max has 3 dimes, 2 nickels, and 1 penny in his pocket. How much money does Max have? Fill in the bubble to show.

- $41.00
- $4.10
- 41¢
- 4.1¢

11 Mr. Black has 5 dollar bills, 4 dimes, and 4 nickels in his pocket. How much money does Mr. Black have in his pocket? Fill in the bubble to show.

- $560
- $5.60
- $0.560
- 56¢
### Three-Digit Numbers Checkpoint page 1 of 2

1. Fill in the charts below to describe each set of base ten pieces.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Hundreds, Tens and Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart1.png" alt="" /></td>
<td>_____ Hundreds, _____ Tens, _____ Ones</td>
</tr>
<tr>
<td></td>
<td><strong>Expanded Form</strong></td>
</tr>
<tr>
<td></td>
<td>_____ + _____ + _____ = ________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>a</th>
<th>Hundreds, Tens and Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart2.png" alt="" /></td>
<td>_____ Hundreds, _____ Tens, _____ Ones</td>
</tr>
<tr>
<td></td>
<td><strong>Expanded Form</strong></td>
</tr>
<tr>
<td></td>
<td>_____ + _____ + _____ = ________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b</th>
<th>Hundreds, Tens and Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart3.png" alt="" /></td>
<td>_____ Hundreds, _____ Tens, _____ Ones</td>
</tr>
<tr>
<td></td>
<td><strong>Expanded Form</strong></td>
</tr>
<tr>
<td></td>
<td>_____ + _____ + _____ = ________</td>
</tr>
</tbody>
</table>

2. Which number is greater, 313 or 331?

   a. _____ is greater.

   b. How do you know? Use numbers, sketches or words to explain your answer.
3 Count by 10s to fill in the missing numbers.

a  12, 22, 32, _____, _____, 62, _____, _____, 92, _____, _____, 122

b  114, 124, 134, _____, _____, _____, 174, _____, _____, _____

c  157, 167, 177, _____, _____, 207, _____, _____, 237, _____, 257, _____

4 Which number has the same value as the expanded form? Fill in the bubble to show.

a  400 + 20 + 5
   □  4,025
   □  425
   □  245
   □  524

b  500 + 10 + 3
   □  503
   □  5,013
   □  500,103
   □  513

C  600 + 8
   □  608
   □  68
   □  6,080
   □  6,008

5 James has three digit cards. Help him arrange the cards to make the smallest 3-digit number possible.

6 Add the numbers in each pair of problems and then write the correct symbol in the circle to compare the sums. Use less than <, equal to =, or greater than >.

   500  400  300  400
  + 30  + 90  + 80  + 10
  + 1  + 9  + 7  + 8
Unit 5 Work Place Log

5A Jump-a-Ten

5B Close to 25¢

5C Beat You to $1.00

5D Three Spins to Win

5E Jump-a-Hundred

Personal Practice

Computer Activity

Work with the Teacher
Work Place Guide 5A Jump-a-Ten

Summary
Each player sets a marker anywhere on a game board with numbers from 1–200 except on 100. Each player has to choose a different column, but they may start in the same row. Players take turns rolling a die to see how many tens to move, and flipping a penny to see whether to move forward (heads) or backward (tails). The player whose game marker lands closest to 100 (either under or over) after five turns wins the game.

Skills & Concepts
- Count within 1000, starting and ending with any given pair of numbers (2.NBT.2)
- Skip-count by 10s within 1000 (2.NBT.2)
- Read & write numbers within 1000 represented with numerals (2.NBT.3)
- Compare pairs of 3-digit numbers (2.NBT.4)
- Mentally add 10 to any 3-digit number between 100 and 200 (2.NBT.8)

Materials

<table>
<thead>
<tr>
<th>Copies</th>
<th>Kit Materials</th>
<th>Classroom Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM T8</td>
<td>• 3 Jump-a-Ten Game Boards</td>
<td></td>
</tr>
<tr>
<td>TM T9–10</td>
<td>• 6 dice numbered 1–6</td>
<td></td>
</tr>
<tr>
<td>TM T11</td>
<td>• 3 red and 3 yellow game markers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 3 plastic pennies (or real ones)</td>
<td></td>
</tr>
</tbody>
</table>

Assessment & Differentiation
Here are some quick observational assessments you can make as students begin to play this game on their own. Use the results to differentiate as needed.

<table>
<thead>
<tr>
<th>If you see that…</th>
<th>Differentiate</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are having difficulty knowing where to move their marker after rolling the die and flipping the penny.</td>
<td>SUPPORT. Students having difficulty knowing where to move their marker may be lacking in skill at counting by 10s off the decade (e.g., 6, 16, 26, 36, and so on). Consider pulling a small group of students who are struggling to play the game with you. Have the group play as a team against you, but have each student use the Jump-a-Ten Game Board in their Student Books. When it is your turn, model counting by 10s off the decade aloud. When it is the group’s turn, let them count each jump of 10 one-by-one as you record the resulting numbers. Do this until they become confident that each time they advance the marker forward by 10, they land in the same column, but down one row, and each time they move backward by 10, they land in the same column, but up one row.</td>
<td>Students in the small group decide to place their marker on 75 to start. You record 75 on the whiteboard. On their first turn, they roll a 4 and get heads when they flip the penny. Have them count on 10 from 75, advancing their markers ahead one square each time, until they land on 85. Record 85 on the board for them. Have them repeat this action 3 more times, as you record the results: 75, 85, 95, 105, 115. Discuss the numbers on which they’ve landed. What do they notice? Do they see any patterns? Before too long, at least one student in the group will discover that each move of 10 can be accomplished by simply moving the marker down a row, rather than making 10 hops of 1. When this discovery is made, talk with students about how and why it works.</td>
</tr>
<tr>
<td>Students are playing the game with confidence and ease, and might benefit from a challenge.</td>
<td>CHALLENGE. Invite students to develop and test strategies for winning the game.</td>
<td>Players working at this level may want to investigate the effects of starting first or second, marker placement (is it better to start as near as possible to 100 or farther away; what happens if you place your marker on a number less than 50 or greater than 150), and so on.</td>
</tr>
</tbody>
</table>
## Work Place Instructions 5A Jump-a-Ten

1. Each player needs a pencil and a game marker. Players share a record sheet, a Jump-a-Ten Game Board, and a die numbered 1–6.

2. Each player rolls the die to determine who goes first. The player with the higher number starts and gets to choose which color game marker to use—red or yellow.

3. Players place their game markers anywhere on the Jump-a-Ten Game Board except on the number 100, each player in a different column.
   - It’s OK to start in the same row. For example, 133 and 136 are OK starting places; 128 and 108 are not.

4. Players each record their starting number on the record sheet under their marker color.

5. Players take turns rolling the die and flipping the penny. The die tells how many 10s to jump. The penny indicates whether to jump forward (heads) or backward (tails).

6. Players each record the number they land on after every turn. If a player can’t make a jump exactly because the marker will land off the board, he or she misses that turn.
   - For instance, if the player’s marker is on 27 and she rolls a 5 and gets tails, she cannot take 5 jumps of 10 backward, and must wait until her next turn.

7. Players have the option of using two dice numbered 1–6 instead of one die on their last turn.

8. The player closest to 100 after five turns is the winner. Players circle the winner of each game (red or yellow).

(continued on next page)
Work Place Instructions 5A Jump-a-Ten

I won because 89 is only 11 away from 100, and 85 is 15 away from 100. I was worried that I might lose a turn when I got down to 9, but the penny landed on heads, so I got to move up.

9 Players play four games to complete one record sheet, and then play another four games so each player has a sheet to place in his or her Work Place Folder.
### Jump-a-Ten Record Sheet

<table>
<thead>
<tr>
<th></th>
<th>Game 1</th>
<th></th>
<th>Game 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yellow</td>
<td>Red</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Starting Number</td>
<td></td>
<td></td>
<td>Starting Number</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Game 3</th>
<th></th>
<th>Game 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yellow</td>
<td>Red</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Starting Number</td>
<td></td>
<td></td>
<td>Starting Number</td>
<td></td>
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<tr>
<td>1</td>
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<tr>
<td>5</td>
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<td>5</td>
<td></td>
</tr>
</tbody>
</table>
Pick-Up Sticks Record Sheet

1. Estimate how many sticks are in the container at your table.

I think there are _______ sticks in the container.

2. How many sticks did each group actually count? Record the numbers on the lines below.

   Group 1
   Group 2
   Group 3
   Group 4
   Group 5
   Group 6

3. Write a greater than >, less than <, or equal sign = in each of the circles above to compare the numbers.

4. Write the numbers of sticks in order from least to greatest on the lines below.

   least   ,   ,   ,   ,   ,   greatest

5. How many sticks are there in all? _______

6. Write the total on each of the lines below. Then write a greater than >, less than < or equal sign = in each circle to compare the numbers.

   750   999   1,040
Counting Cubes Record Sheet

1. Estimate how many cubes are in the container at your table.

I think there are ______ cubes in the container.

2. How many cubes were there in your container? Write the answer in four different ways below.
   a. Number _________
   b. Words ____________________________________________________
   c. Hundreds, Tens and Ones _____________________________________
   d. Expanded notation __________________________________________

Thinking About 1,000

3. 999 + 1 and 500 + 500 are two different ways to make 1,000. Write some other ways to make 1,000 in the space below. You can use addition or subtraction; even multiplication if you like. You can also use more than two addends.
### Place Value Triple Roll Record Sheet

**Round 1**

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
<th>Blue team total</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
<th>Red team total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the greater than >, less than <, or equal sign = to compare scores.

![Comparison Symbol]

**Round 2**

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
<th>Blue team total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
<th>Red team total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Use the greater than >, less than <, or equal sign = to compare scores.

![Comparison Symbol]

(continued on next page)
**Round 3** Are you playing for more or less?

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
<th>Blue team total</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
<th>Red team total</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Use the greater than >, less than <, or equal sign = to compare scores.

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

Put the 6 scores in order from least to greatest.

<table>
<thead>
<tr>
<th>least</th>
<th>greatest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

**CHALLENGE** Add the three scores for each team below. Then roll a more/less die to see who wins the entire game. Circle the winning team.

**Blue Team**

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
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</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
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<table>
<thead>
<tr>
<th>Total</th>
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**Red Team**

<table>
<thead>
<tr>
<th>100s</th>
<th>10s</th>
<th>1s</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
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<table>
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<tr>
<th>Total</th>
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### Session 5

#### Jump-a-Ten Game Board

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
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### Extra Facts page 1 of 2

1. **Find the sum.**

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<th>44</th>
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<td>+24</td>
<td>+38</td>
<td>+7</td>
<td>+17</td>
<td>+16</td>
</tr>
</tbody>
</table>

   | 370 | 120 | 890 | 360 | 340 | 430 | 125 |
   | +8  | +6  | +4  | +15 | +50 | +27 | +25 |

2. **Use pictures, numbers, and/or words to find the sum in each box. Show all your work.**

   **a** 36 + 55

   **b** 129 + 133

3. **Find the difference.**

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<tr>
<th>86</th>
<th>39</th>
<th>48</th>
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</tbody>
</table>

4. **Use pictures, numbers, and/or words to find the difference. Show all your work.**

   51 − 26 =
Sometimes story problems give you more facts than you need to solve the problem. In each problem below, cross out the fact you don’t need. Then solve the problem. Show your work.

5  Nick has 3 cats. He had 12 fish. He gave 4 of the fish to his friend. How many fish does he have left?

Nick has _______ fish left.

6  Lin’s big sister is 15. She listened to 8 songs on her music player in the morning. She listened to 9 more songs that night. How many songs did she listen to in all?

Lin’s big sister listened to _______ songs in all.

7  Amber made 9 cupcakes. Then she made 12 more cupcakes. It took 2 cups of sugar to make the frosting. How many cupcakes did she make in all?

Amber made _______ cupcakes in all.

8  **CHALLENGE**  The Green Dragon had 250 gold pieces. He is 18 feet tall. He is mad because the trolls took 60 of his gold pieces. How many gold pieces does he have left?

The Green Dragon has _______ gold pieces left.
1 Count to find out which set of base ten pieces in each pair is greater and which is less. Write numbers and signs to show.

< less than = equal to > greater than

ex

124 < 213

a

b

2 Read the numbers in the box. Then write them in order on the lines from least to greatest.

261   107   67   113   204

__________________________  __________________________
least                          greatest

(continued on next page)
3 Match each Unifix train to its fact family triangle. Then write two addition and two subtraction sentences to match. Write them under the train.

**Example (ex)**

- Train: 
  
  - Addition: $4 + 9 = 13$  
  - Subtraction: $9 + 4 = 13$
  
  - Train: 
    
  - Addition: $13 - 4 = 9$  
  - Subtraction: $13 - 9 = 4$

**Part a**

- Train: 
  
  - Addition: $\_ + \_ = \_$(Fill in the blanks)
  - Subtraction: $\_ - \_ = \_$(Fill in the blanks)

**Part b**

- Train: 
  
  - Addition: $\_ + \_ = \_$(Fill in the blanks)
  - Subtraction: $\_ - \_ = \_$(Fill in the blanks)

**Part c**

- Train: 
  
  - Addition: $\_ + \_ = \_$(Fill in the blanks)
  - Subtraction: $\_ - \_ = \_$(Fill in the blanks)

**Part d**

- Train: 
  
  - Addition: $\_ + \_ = \_$(Fill in the blanks)
  - Subtraction: $\_ - \_ = \_$(Fill in the blanks)
Large Numbers page 1 of 2

1 Trace the numerals and the words.

1 one 2 two 3 three
4 four 5 five 6 six
7 seven 8 eight 9 nine
10 ten 20 twenty
30 thirty 40 forty
50 fifty 60 sixty
70 seventy 80 eighty
90 ninety 100 one hundred

2 Label each set of base ten pieces with the correct number name.

ex

[a]

b

(c)

one hundred thirty-two

(continued on next page)
3. Read each number. Then write it in expanded form.

- **example**: three hundred twenty-nine
  
  \[329 = 300 + 20 + 9\]

- **a**: four hundred thirty-eight
  
  \[438 = 400 + 30 + 8\]

- **b**: two hundred sixteen
  
  \[216 = 200 + 10 + 6\]

- **c**: five hundred seventy-three
  
  \[573 = 500 + 70 + 3\]

- **d**: one hundred ninety-eight
  
  \[198 = 100 + 90 + 8\]

- **e**: six hundred three
  
  \[603 = 600 + 3\]

- **f**: nine hundred sixty-seven
  
  \[967 = 900 + 60 + 7\]

- **g**: eight hundred seventeen
  
  \[817 = 800 + 10 + 7\]

4. Find the sum.

- \[300 + 60 + 5 = \underline{365}\]
- \[500 + 40 + 5 = \underline{545}\]
- \[200 + 10 + 6 = \underline{216}\]
- \[400 + 90 + 9 = \underline{499}\]
- \[100 + 10 + 8 = \underline{118}\]
- \[600 + 7 = \underline{607}\]

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5. Circle one.

- **a**: The 4 in 574 is in the
  
  - ones place
  - tens place
  - hundreds place

- **b**: The 4 in 493 is in the
  
  - ones place
  - tens place
  - hundreds place

- **c**: The 4 in 114 is in the
  
  - ones place
  - tens place
  - hundreds place

- **d**: The 4 in 5,348 is in the
  
  - ones place
  - tens place
  - hundreds place