



# GRADE 3 SUPPLEMENT

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## Set A3 Number & Operations: Multi-Digit Addition & Subtraction

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### Skills & Concepts

- ★ fluently add and subtract whole numbers accurately using the standard regrouping algorithms
- ★ solve contextual problems involving addition and subtraction of whole numbers and justify the solutions
- ★ fluently add and subtract whole numbers using the standard regrouping algorithms
- ★ estimate sums and differences to approximate solutions to problems and determine reasonableness of answers
- ★ solve single- and multi-step word problems involving addition and subtraction of whole numbers and verify the solutions
- ★ round whole numbers through 10,000 to the nearest ten, hundred, and thousand

**Bridges in Mathematics Grade 3 Supplement**

**Set A3** Numbers & Operations: Multi-Digit Addition & Subtraction

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*Bridges in Mathematics* is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

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# Set A3 ★ Activity 1



## ACTIVITY

### Introducing the Standard Algorithm for Multi-Digit Addition

#### Overview

Students work in pairs to solve a triple-digit addition story problem. They share their strategies with the entire class while the teacher records each method in the form of a poster. The teacher then presents the standard algorithm and has the whole class practice using it to solve a variety of 3-digit addition problems.

#### Skills & Concepts

- ★ fluently add whole numbers accurately using the standard regrouping algorithm
- ★ solve contextual problems involving adding of whole numbers and justify the solutions
- ★ estimate sums to predict solutions to problems or determine reasonableness of answers
- ★ determine the question(s) to be answered given a problem situation
- ★ represent a problem situation using words, numbers, pictures, physical objects, or symbols

#### You'll need

- ★ Three-Digit Problems (page A3.6, run one copy on a transparency, optional class set on paper)
- ★ Student Math Journals or 1 piece of lined or grid paper per student
- ★ magnetic base ten pieces
- ★ set of base ten pieces for each pair of students
- ★ 3–4 blank overhead transparencies
- ★ 4–5 pieces of 12" × 18" white paper
- ★ marking pens
- ★ a piece of paper to mask portions of the overhead

#### Instructions for Introducing the Standard Algorithm for Multi-Digit Addition

1. Display only the first word problem on the overhead, covering the rest of the transparency with a piece of scratch paper. Read the problem out loud with the class and ask students to restate the question in their own words. Work with their input to underline any information that will help solve the problem. Then ask students to pair-share estimates, and call on a few volunteers to share their thinking with the class.

Set A2 Number & Operations: Multi-Digit Addition & Subtraction Run one copy on a transparency. Optional, run a class set on paper.

Name \_\_\_\_\_ Date \_\_\_\_\_

**Three-Digit Problems**

**1** The Scouts are collecting canned food to donate to the Food Bank in their town. Last Saturday, they collected 175 cans. This Saturday, they collected 168 cans. How many cans have they collected in all?

2. Have students work in pairs to solve the problem. Ask them to record all of their work, along with the solution, in their own journal. Explain that since they are working in pairs, you'd like everyone to record at least two different ways to solve the problem. Remind them that they can use sketches and numbers, and that the base 10 pieces are available as well. Circulate to observe and talk with students as they're working. Pass out blank overheads to at least 3 students, each of whom has used a different strategy, and ask them to copy their work onto the transparency to present to the class.

**Activity 1** Introducing the Standard Algorithm for Multi-Digit Addition (cont.)

3. When most pairs are finished, ask the students you selected to share their solutions and explain their strategies at the overhead. Record each strategy on a separate piece of 12" x 18" drawing paper labeled with the student's name. Ask the contributing students to work with the rest of the class to name their strategies.

Jamal's Front-End Method

$$\begin{array}{r} 175 \\ + 168 \\ \hline \end{array}$$

$100 + 100 = 200$   
 $70 + 60 = 130$   
 $5 + 8 = 13$

$$\begin{array}{r} 200 \\ 130 \\ + 13 \\ \hline 343 \text{ cans} \end{array}$$

Rhonda's Number Line Method

$$\begin{array}{r} 175 \\ + 168 \\ \hline \end{array}$$

$100 + 25 + 25 = 150$   
 $150 + 18 = 168$   
 If you start at 175 and hop up the line 168, you get to 343, so it's 343 cans.

Jenny's Sketch, Add & Count Method

$$\begin{array}{r} 175 \\ + 168 \\ \hline \end{array}$$

$200 + 70 = 270$   
 $270, 280, 290, 300, 310, 320,$   
 $330, 335, 340, 343 \text{ cans}$

Sara's Make a Ten Fact Method

$$\begin{array}{r} 175 \\ + 168 \\ \hline \end{array}$$

Take 5 from 168 to make 175 into 180.

Then you have  $180 + 163$ .

$180 + 160 = 340$   
 $340 + 3 = 343 \text{ cans}$

Darryl's Start with the 1's Method

$$\begin{array}{r} 11 \\ 175 \\ + 168 \\ \hline 343 \text{ cans} \end{array}$$

$5 + 8 = 13$   
 You have to move the 10 in the 13 over to the 10's column.

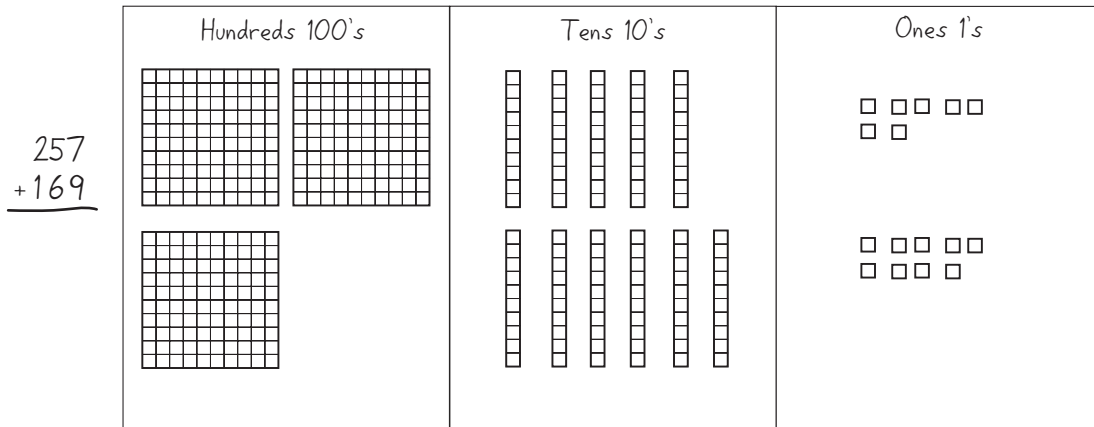
$10 + 70 + 60 = 140$   
 You have to move the 100 in 140 over to the 100's column.

$100 + 100 + 100 = 300$

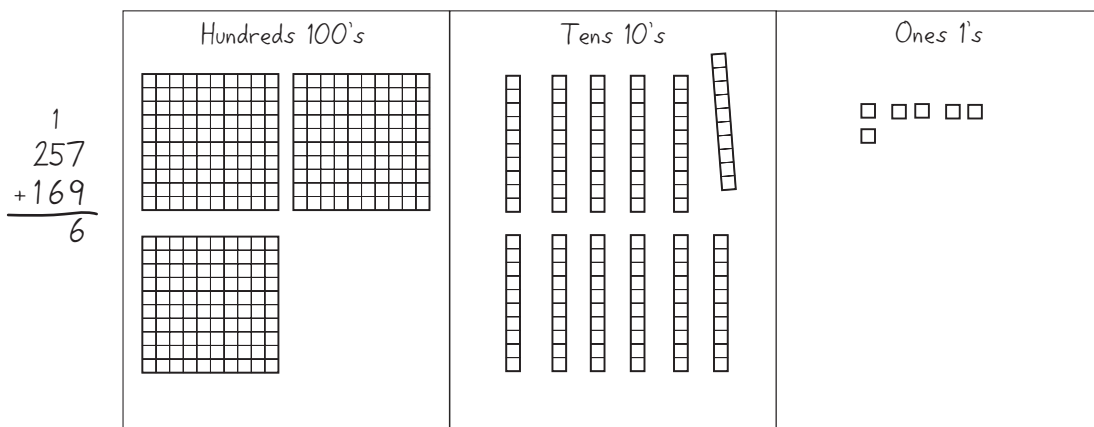
4. Acknowledge everyone's strategies. If none of the students shared the standard algorithm, contribute it to the collection yourself by creating a poster similar to Darryl's above as students watch. Then explain that the class will revisit all of these strategies and possibly others in upcoming sessions. For now, however, you're going to focus on the method that starts with the 1s. This strategy is often called the re-grouping method, and it's used by many adults for solving multi-digit addition problems.

**Activity 1** Introducing the Standard Algorithm for Multi-Digit Addition (cont.)

5. Model the algorithm step-by-step with magnetic base 10 pieces at the whiteboard. First, record  $257 + 169$  on the board. Ask students to pair-share estimates, and then have several volunteers share their estimates and reasoning with the class. Next, draw and label a 3-column place value frame as shown below, and build both numbers with the magnetic base 10 pieces.



6. Explain that this strategy starts from the back end of the number rather than the front end, with the 1s instead of the 100s. Ask students to add  $7 + 9$  mentally. Next, combine the units to confirm that the total is 16. Trade ten of the units in for a strip and move the strip over to the 10's column. Then record your action in numeric form. Ask students to explain what you've done so far. Why did you trade some of the units for a strip and move it over? Why did you write a 6 in the one's place and then record a 1 over the 5 in the ten's place?



**Students** Every time you get 10 in the 1's place, you have to move it over. It's kind of like when we played that game with 5's, remember? Every time we got 5 units, we had to trade them in for a strip and move it over. This is with tens instead. You can't keep 16 in the 1's column. If you just write down 16 below the line, you'll get an answer that's really big, like 3,116 or something like that. It won't make sense.

7. Ask students to take a careful look at the strips. What quantities do they see in each row? Then have them read the numbers in the ten's column. The digits are 1, 5, and 6. Is that really what's being added? Why or why not?

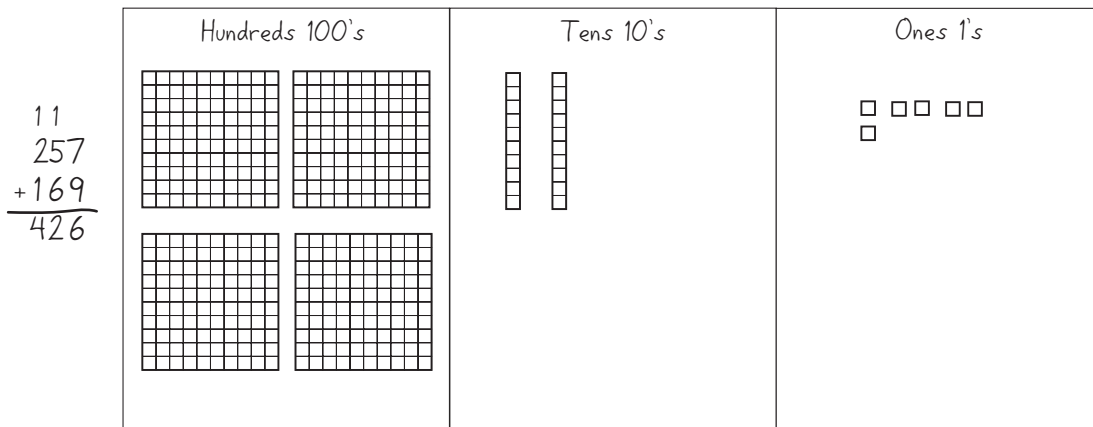
**Activity 1** Introducing the Standard Algorithm for Multi-Digit Addition (cont.)

**Students** It looks like you're adding  $1 + 5 + 6$ , but it's really  $10 + 50 + 60$ .

You can see what you're really adding if you look at the strips.

You can also just tell if you look at where the numbers are. They're in the ten's place. They're tens, not ones.

8. Ask students to add  $10 + 50 + 60$  mentally and report the results. Then combine the strips to confirm that the total is 120, and trade in 10 of the strips for a mat. Move the mat to the 100's column. Explain that the trading you're doing is called regrouping, because you're regrouping 1s into 10s, and 10s into 100s. Record the action, and then add up the hundreds to complete the problem. Does the answer make sense? Why or why not?



9. Erase the problem and remove the pieces from the three-column frame as helpers distribute base 10 pieces to every student pair. Repeat Steps 5 through 8 with the combinations below. Have students model each action with their base 10 pieces as you work with the magnetic pieces at the board and record each step with numbers. Have children estimate a solution to each problem and explain their estimates before using the pieces to find the answer.

$$\begin{array}{r} 126 \\ + 137 \\ \hline \end{array} \qquad \begin{array}{r} 148 \\ + 162 \\ \hline \end{array}$$

10. Then ask students to put their base 10 pieces aside for a few minutes. Repeat Steps 5 through 8 with the combinations below. Explain that you'll work with the base 10 pieces at the board while they record your actions with numbers in their journals. Have a volunteer come up to the board to do the recording while you work with the pieces. Continue to discuss the actions you're taking, in terms of regrouping 1s and 10s.

$$\begin{array}{r} 259 \\ + 261 \\ \hline \end{array} \qquad \begin{array}{r} 108 \\ + 294 \\ \hline \end{array}$$

11. If time remains, display the rest of the Three-Digit Problems overhead. Have students choose and solve one or more of the problems in their journals, using the regrouping strategy you shared today. Circulate as they work to identify students who will probably need more support to develop proficiency with this strategy. Encourage students to use their base 10 pieces if necessary.

**Activity 1** Introducing the Standard Algorithm for Multi-Digit Addition (cont.)

Set A2 Number & Operations: Multi-Digit Addition & Subtraction Run one copy on a transparency. Optional, run a class set on paper.

Name \_\_\_\_\_ Date \_\_\_\_\_

### Three-Digit Problems

**1** The Scouts are collecting canned food to donate to the Food Bank in their town. Last Saturday, they collected 175 cans. This Saturday, they collected 168 cans. How many cans have they collected in all?

Choose and solve one or more of the problems below. Use the regrouping strategy.

**2** The third graders did a play last week. They did one show for the other kids in the school, and one show for their families. 238 people came to the first show. 154 people came to the second show. How many people in all watched the show?

**3** There are 137 kindergartners, 139 first graders, and 153 second graders at Wood Primary School. How many students are there in all?

$$\begin{array}{r} 329 \\ + 217 \\ \hline \end{array}$$

$$\begin{array}{r} 258 \\ + 171 \\ \hline \end{array}$$

$$\begin{array}{r} 105 \\ + 165 \\ \hline \end{array}$$

$$\begin{array}{r} 243 \\ + 158 \\ \hline \end{array}$$

$$\begin{array}{r} 187 \\ + 211 \\ \hline \end{array}$$
**Extension**

- Give each student a copy of Three-Digit Problems and ask them to complete all the problems. Have them work directly on the sheet instead of working in their journals. Give them time to complete any unfinished problems during a seat work period, or have them take the sheet home to complete and bring back to school.

**Note** Save the strategy charts from today for the next activity. Encourage students to use the standard algorithm for addition when applicable as you teach Sessions 3–8 in Unit 5.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## Three-Digit Problems

**1** The Scouts are collecting canned food to donate to the Food Bank in their town. Last Saturday, they collected 175 cans. This Saturday, they collected 168 cans. How many cans have they collected in all?

Choose and solve one or more of the problems below. Use the regrouping strategy.

**2** The third graders did a play last week. They did one show for the other kids in the school, and one show for their families. 238 people came to the first show. 154 people came to the second show. How many people in all watched the show?

**3** There are 137 kindergartners, 139 first graders, and 153 second graders at Wood Primary School. How many students are there in all?

$$\begin{array}{r}
 329 \\
 + 217 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 258 \\
 + 171 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 105 \\
 + 165 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 243 \\
 + 158 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 187 \\
 + 211 \\
 \hline
 \end{array}$$

# Set A3 ★ Activity 2



## ACTIVITY

### Think before You Add

#### Overview

In this activity, students consider the following questions: Is it always most efficient and effective to use the standard algorithm for multi-digit addition? What kinds of combinations are best solved with the algorithm? What kinds of combinations are better solved using other strategies?

#### Skills & Concepts

- ★ fluently add whole numbers accurately using the standard regrouping algorithm
- ★ estimate sums to predict solutions to problems or determine reasonableness of answers
- ★ identify strategies that can be used to solve a problem, select and use one or more appropriate strategies to solve the problem, and justify the selection
- ★ explain why a specific problem-solving strategy was used to determine a solution

#### You'll need

- ★ Think Before You Add (page A3.10, run one copy on a transparency)
- ★ Addition Strategies (pages A3.11–A3.12, run a class set)
- ★ Addition Strategy Posters (see Advance Preparation)
- ★ Student Math Journals or 1 piece of lined or grid paper per student
- ★ piece of paper to mask parts of the overhead
- ★ overhead pen

.....  
**Advance Preparation** Post the Addition Strategy Posters from Set A3, Activity 1 in a location where all the students can see them easily. If you didn't make a poster for the standard algorithm during Activity 1, make one now and include it in the collection you post.  
 .....

#### Instructions for Think Before You Add

1. Start by reviewing the Addition Strategy Posters with the class. Explain that you're going to revisit these strategies today, and possibly generate some more.
2. Now tell students in a minute, you're going to show them an addition problem at the overhead, and ask them to solve it mentally. Let them know that they can use any of the strategies on the posters, or think of a different method. Then display the first problem on the overhead, keeping the rest covered for now. Ask students to think privately about the problem and raise their hand when they have the answer.

Set A3 Number & Operations: Multi-Digit Addition & Subtraction Blackline

**Think Before You Add**

$$\begin{array}{r}
 1 \quad 25 \\
 + 26 \\
 \hline
 \end{array}$$

3. When most of the students have raised their hands, call on several to share their solutions and explain their strategies to the class. Record each strategy at the overhead as students share, and label them using the names from the posters. Work with input from the class to label any new strategies shared. (You may also want to make posters for these later.)

**Activity 2** Think Before You Add (cont.)

**Ariel** First I tried the regrouping way, but it was too hard to remember the numbers in my head. So I just went 20 and 20 is 40, and then it's 11 more so the answer is 51.

**Beckett** I thought it was pretty easy to start with the ones. I went 5 plus 6 is 11. Put down the 1 and carry a 10. Then 10 and 20 and 20 makes 50, so I got 51.

**Maria** I know 25 and 25 is 50, right? So the answer is 51 because 26 is one more than 25.

Set A3 Number & Operations: Multi-Digit Addition & Subtraction Blackline

**Think Before You Add**

		1		
	$20 + 20 = 40$	25		$25 + 25 = 50$
1	$\begin{array}{r} 25 \\ + 26 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ + 26 \\ \hline 51 \end{array}$		$\begin{array}{r} 50 \\ + 1 \\ \hline 51 \end{array}$
	(Front-End)	(Start with the 1's)		

4. Repeat Steps 2 and 3 with the next two problems on the overhead ( $49 + 35$  and  $64 + 27$ ). Encourage students to debate and discuss the strategies they're choosing. Some may feel that the front-end strategy is easiest for solving the problems in their heads, while others may prefer the standard algorithm.

**Students** It's too hard to keep the numbers in your head with regrouping.

The regrouping way is easy for me!

I think regrouping is easier when you're writing stuff down, because you don't have to write as much. When you do the adding in your head, it's easier to start with the tens, because you don't have to remember what you put down and what you carried over.

5. Show the fourth problem,  $199 + 199$ , and ask students if they can solve it in their heads. Some may say they can't because the numbers are too big. Give them a minute to think about it. Chances are, at least one student will volunteer a strategy that makes use of landmark numbers (i.e., 10, 25, 50, 100) as shown on the chart below. If not, share it yourself. Then work with student input to solve the problem using regrouping and then the front-end method. Which of the three strategies is easiest? Why?

		11		
	$200 + 200 = 400$	199		$100 + 100 = 200$
4	$\begin{array}{r} 199 \\ + 199 \\ \hline \end{array}$	$\begin{array}{r} 199 \\ + 199 \\ \hline 398 \end{array}$		$\begin{array}{r} 200 \\ 180 \\ + 18 \\ \hline 398 \end{array}$
	(Landmark Numbers)	(Regrouping)	(Front End)	

6. Show the last problem,  $967 + 475$ , on the overhead, and ask students if they can work it in their heads. Why or why not? Most students will probably agree that the numbers are too big to tackle the addition mentally. Ask them to pair-share estimates, and then work the problem twice in their journals, once using the regrouping method and once with a front-end strategy. Have them share and compare their work with the people sitting next to them to be sure they have the correct answers. Then talk with the group about both methods. Which seemed easier? Which seemed most efficient? Why?

7. Work with the class to make some generalizations about the different addition strategies they've used to solve the problems on the overhead. Is the standard algorithm always the quickest and easiest? What about the front-end strategy? When does it work best to use a make ten or landmark number strategy? Record some of their thoughts on a piece of chart paper.

**Activity 2** Think Before You Add (cont.)

Which addition strategies work best?

- Regrouping is good for adding 3-digit numbers.
- Front-ending is good for adding 2-digit numbers in your head.
- When you're adding 3-digit numbers, regrouping is faster and easier than front-ending. You don't have to write as much.
- Use rounding if you're adding numbers like  $25 + 26$  or  $199 + 199$ . Then it's really easy to get the answer in your head.
- You don't always have to use the same strategy. Think about what will work the best for the numbers.

8. Hand out a copy of Addition Strategies to each student and give children the rest of the math period to work the problems. If some students still need support in solving multi-digit addition problems, you may want to meet with a small group while the rest of the class works independently.

# Think Before You Add

**1**

$$\begin{array}{r} 25 \\ + 26 \\ \hline \end{array}$$

---

**2**

$$\begin{array}{r} 49 \\ + 35 \\ \hline \end{array}$$

---

**3**

$$\begin{array}{r} 64 \\ + 27 \\ \hline \end{array}$$

---

**4**

$$\begin{array}{r} 199 \\ + 199 \\ \hline \end{array}$$

---

**5**

$$\begin{array}{r} 967 \\ + 475 \\ \hline \end{array}$$

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Addition Strategies page 1 of 2

**1** Use the regrouping strategy to solve each problem. Then solve it a different way. Label your strategy. Circle the strategy that seemed quicker and easier.

	REGROUPING	DIFFERENT
<b>example</b> $\begin{array}{r} 25 \\ + 26 \\ \hline \end{array}$	$\begin{array}{r} & 1 \\ & 25 \\ + & 26 \\ \hline & 51 \end{array}$	$25 + 25 = 50$ $50 + 1 = 51$ Landmark Numbers
<b>a</b> $51 + 29 =$		
<b>b</b> $\begin{array}{r} 198 \\ + 56 \\ \hline \end{array}$		
<b>c</b> $348 + 578 =$		
<b>d</b> $\begin{array}{r} 34 \\ 56 \\ + 29 \\ \hline \end{array}$		

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## Addition Strategies page 2 of 2

**2** Fill in the bubble to show the best estimate for each problem.

<p><b>a</b></p> $\begin{array}{r} 348 \\ + 352 \\ \hline \end{array}$ <p> <input type="radio"/> 600  <input type="radio"/> 650  <input type="radio"/> 700  <input type="radio"/> 750         </p>	<p><b>b</b></p> $\begin{array}{r} 298 \\ + 245 \\ \hline \end{array}$ <p> <input type="radio"/> 350  <input type="radio"/> 400  <input type="radio"/> 450  <input type="radio"/> 500         </p>
<p><b>c</b></p> $\begin{array}{r} 369 \\ + 528 \\ \hline \end{array}$ <p> <input type="radio"/> 750  <input type="radio"/> 800  <input type="radio"/> 850  <input type="radio"/> 900         </p>	<p><b>d</b></p> $\begin{array}{r} 457 \\ 233 \\ + 169 \\ \hline \end{array}$ <p> <input type="radio"/> 750  <input type="radio"/> 800  <input type="radio"/> 850  <input type="radio"/> 900         </p>

**e** Circle the strategy that seems to help most for estimating.

Regrouping

Front-Ending

Using Landmark Numbers

**3** Mrs. Gonzales bought 5 t-shirts at the mall. Each t-shirt cost \$9.99. She also had to pay a \$3.99 tax for all the shirts. How much did she pay altogether? Use the strategy that seems best. Explain how you arrived at your answer and show any work below.

# Set A3 ★ Activity 3



## ACTIVITY

### Introducing the Standard Algorithm for Multi-Digit Subtraction

#### Overview

Students work in pairs to solve a triple-digit subtraction story problem. They share their strategies with the entire class while the teacher records each method in the form of a poster. The teacher then presents the standard algorithm and has the whole class practice using it to solve a variety of 3-digit subtraction problems.

#### Skills & Concepts

- ★ fluently subtract whole numbers accurately using the standard regrouping algorithm
- ★ solve contextual problems involving subtraction and justify the solutions
- ★ estimate differences to predict solutions to problems or determine reasonableness of answers
- ★ determine the question(s) to be answered given a problem situation
- ★ represent a problem situation using words, numbers, pictures, physical objects, or symbols

#### You'll need

- ★ More three-Digit Problems (page A3.18, run one copy on a transparency, optional class set on copy paper)
- ★ More Three-digit Problems (page A3.18, class set, optional)
- ★ Student Math Journals or 1 piece of lined or grid paper per student
- ★ magnetic base ten pieces
- ★ set of base ten pieces for each pair of students
- ★ 4–5 blank overhead transparencies
- ★ 5–6 pieces of 12" × 18" white drawing or construction paper
- ★ marking pens
- ★ a piece of paper to mask portions of the overhead

#### Instructions for Introducing the Standard Algorithm for Multi-Digit Subtraction

1. Display only the first word problem on the overhead, covering the rest of the transparency with a piece of scratch paper. Read the problem out loud with the class and ask students to restate the question in their own words. Work with their input to underline any information that will help solve the problem. Then ask students to pair-share estimates, and call on a few volunteers to share their thinking with the class.

Set A3 Number & Operations: Multi-Digit Addition & Subtraction Blackline	
Name _____	Date _____
<b>More Three-Digit Problems</b>	
1 Lexi's book has 327 pages. She has read 118 pages so far. How many pages does she have left to read?	

2. Have students work in pairs to solve the problem. Ask them to record all of their work, along with the solution, in their own journal. Explain that since they are working in pairs, you'd like everyone to record at least two different ways to solve the problem. Remind them that they can use sketches and numbers, and that the base 10 pieces are available as well. Circulate to observe and talk with students as they're working. Pass out blank overheads to at least 4 students, each of whom has used a different strategy, and ask them to copy their work onto the transparency to present to the class.

**Activity 3** Introducing the Standard Algorithm for Multi-Digit Subtraction (cont.)

3. When most pairs are finished, ask the students you selected to share their solutions and explain their strategies at the overhead. Record each strategy on a separate piece of 12" x 18" drawing paper labeled with the student's name. Ask the contributing students to work with the rest of the class to name their strategies.

David's Same Difference Method

$$\begin{array}{r} 327 \\ -118 \\ \hline \end{array}$$

Add 2 to each number to make the problem easier.

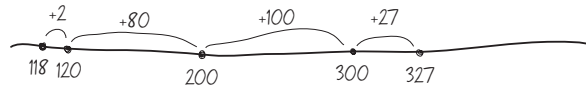
$$327 + 2 = 329$$

$$118 + 2 = 120$$

$$\begin{array}{r} 329 \\ -120 \\ \hline 209 \text{ pages} \end{array}$$

Lupe's Number Line Method

$$\begin{array}{r} 327 \\ -118 \\ \hline \end{array}$$



$$2 + 80 + 100 = 182$$

$$\begin{array}{r} 182 \\ +27 \\ \hline 209 \text{ pages} \end{array}$$

Jason's Sketch, Cross-Out &amp; Count Method

$$\begin{array}{r} 327 \\ -118 \\ \hline \end{array}$$



1. Sketch 327.
2. Cross out 100.
3. Cross out a 10.
4. Split up the other 10 into 1's and cross out 8 of them.
5. Count what's left. 209 pages.

Ryan's Negative Number Method

$$\begin{array}{r} 327 \\ -118 \\ \hline \end{array}$$

$$300 - 100 = 200$$

$$20 - 10 = 10$$

$$7 - 8 = -1$$

$$200 + 10 - 1 = 209 \text{ pages}$$

Shari's Start with the 1's Method

$$\begin{array}{r} 1 \\ 3\cancel{2}7 \\ -118 \\ \hline 209 \text{ pages} \end{array}$$

If you don't use negative numbers, you can't do  $7 - 8$ . Move a 10 over from the 10's column and split it into 1's. Now you have 17 there.

$$17 - 8 = 9$$

$$10 - 10 = 0$$

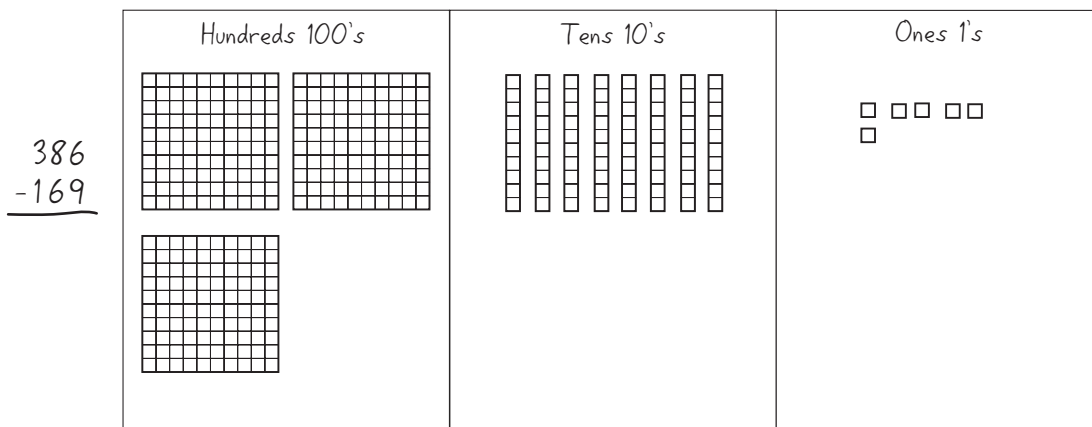
$$300 - 100 = 200$$

$$200 + 9 = 209 \text{ pages}$$

4. Acknowledge everyone's strategies. If none of the students shared the standard algorithm, contribute it to the collection yourself by creating a poster similar to Shari's above as students watch. Then explain that the class will revisit all of these strategies and possibly others in upcoming sessions. For now, however, you're going to focus on the method that starts with the 1s. This strategy is often called the regrouping method, and it's used by many adults for solving multi-digit subtraction problems.

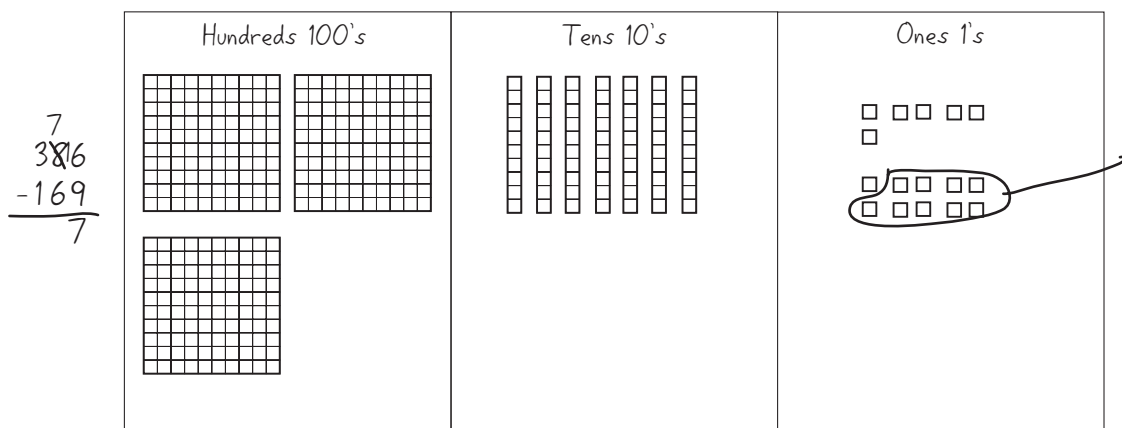
**Activity 3** Introducing the Standard Algorithm for Multi-Digit Subtraction (cont.)

5. Model the algorithm step-by-step with magnetic base 10 pieces at the whiteboard. First, record  $386 - 169$  on the board. Ask students to pair-share estimates, and then have several volunteers share their estimates and reasoning with the class. Next, draw and label a 3-column place value frame as shown below, and build 386 with the magnetic base 10 pieces.



6. Explain that this strategy starts from the back end of the number rather than the front end, with the 1s instead of the 100s. Ask students to consider the answer to  $6 - 9$ . Some may say it's not possible to subtract 9 from 6. Others may volunteer an answer of negative 3, and some may believe the answer is 3. If negative numbers come up in the discussion, explain that this strategy doesn't permit the use of negative numbers. If some students are convinced that the answer is 3, have students each hold up 6 fingers. Is it possible to subtract 9 from this collection?

7. As students watch, move one of the strips over to the 1's column and exchange it for ten 1s to create a collection of 16. Ask students to compute the answer to  $16 - 9$  mentally, and then remove 9 of the units to confirm their answer. Record your action in numeric form. Ask students to explain what you've done so far. Why did you move a strip over and exchange it for ten 1s? Why did you change 6 to 16? Why did you cross out the 8 and write a 7 above that number?

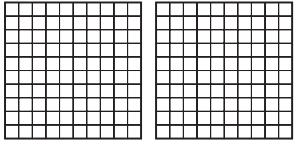

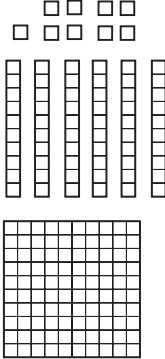


**Students** You took one of the strips and put it into 1s because you didn't have enough. You can't do  $6 - 9$  with this way, so you had to get more 1s in the 1's place. You got 10 more, so that was 16, and then you took 9 away. That left 7. The 8 got crossed out because you took one of the strips and turned it into 1s.

**Activity 3** Introducing the Standard Algorithm for Multi-Digit Subtraction (cont.)

**Students** Writing the little 1 by the 6 makes it into 16. It's like moving a strip over. We still have 7 strips, so we can take away 6 of them.

8. Work with input from the class to remove 6 strips and a mat from the collection. Record each action as you go. Then ask students if the process and the answer make sense. Why or why not?

	Hundreds 100's	Tens 10's	Ones 1's
$\begin{array}{r} 7 \\ 3\cancel{8}6 \\ -169 \\ \hline 217 \end{array}$			

9. Erase the problem and remove the pieces from the three-column frame as helpers distribute base 10 pieces to every student pair. Repeat Steps 5 through 8 with the combinations below. Have students model each action with their base 10 pieces as you work with the magnetic pieces at the board and record each step with numbers. Have children estimate a solution to each problem and explain their estimates before using the pieces to find the answer.

$$\begin{array}{r} 324 \\ - 137 \\ \hline \end{array}$$

$$\begin{array}{r} 215 \\ - 148 \\ \hline \end{array}$$

$$\begin{array}{r} 203 \\ - 76 \\ \hline \end{array}$$

10. Then ask students to put their base 10 pieces aside for a few minutes. Repeat Steps 5 through 8 with the combinations below. Explain that you'll work with the base 10 pieces at the board while they record your actions with numbers in their journals. Have a volunteer come up to the board to do the recording while you work with the pieces. Continue to discuss the actions you're taking, in terms of regrouping 1s and 10s.

$$\begin{array}{r} 300 \\ - 137 \\ \hline \end{array}$$

$$\begin{array}{r} 305 \\ - 84 \\ \hline \end{array}$$

11. If time remains, display the rest of the More Three-Digit Problems overhead. Have students choose and solve one or more of the problems in their journals, using the regrouping strategy you shared today. Circulate as they work to identify students who will probably need more support to develop proficiency with this strategy. Encourage students to use their base 10 pieces if necessary.

**Activity 3** Introducing the Standard Algorithm for Multi-Digit Subtraction (cont.)

Set A3 Number & Operations: Multi-Digit Addition & Subtraction Blackline

Name \_\_\_\_\_ Date \_\_\_\_\_

**More Three-Digit Problems**

**1** Lexi's book has 327 pages. She has read 118 pages so far. How many pages does she have left to read?

Choose and solve one or more of the problems below. Use the regrouping strategy.

**2** King School is having a Read-a-Thon. The kids in Mr. Bell's class set a goal of 350 books. They still have to read 184 books to reach their goal. How many books have they read so far?

**3** There were 123 books on the shelf. Some kids got books off the shelf to read. Now there are 77 books on the shelf. How many books did the kids take?

$$\begin{array}{r} 333 \\ - 218 \\ \hline \end{array}$$

$$\begin{array}{r} 239 \\ - 171 \\ \hline \end{array}$$

$$\begin{array}{r} 304 \\ - 165 \\ \hline \end{array}$$

$$\begin{array}{r} 400 \\ - 278 \\ \hline \end{array}$$

$$\begin{array}{r} 422 \\ - 273 \\ \hline \end{array}$$
**Extension**

- Give each student a copy of Three-Digit Problems and ask them to complete all the problems. Have them work directly on the sheet instead of working in their journals. Give them time to complete any unfinished problems during a seat work period, or have them take the sheet home to complete and bring back to school.

***Note** Save the strategy charts from today for the next activity. Encourage students to use the standard algorithm for subtraction when applicable as you teach Sessions 15–17 in Unit 5.*

**INDEPENDENT WORKSHEETS**

See Set A3 Independent Worksheets 1–3 for more practice using the standard algorithm to solve multi-digit addition and subtraction problems.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## More Three-Digit Problems

**1** Lexi's book has 327 pages. She has read 118 pages so far. How many pages does she have left to read?

Choose and solve one or more of the problems below. Use the regrouping strategy.

**2** King School is having a Read-a-Thon. The kids in Mr. Bell's class set a goal of 350 books. They still have to read 184 books to reach their goal. How many books have they read so far?

**3** There were 123 books on the shelf. Some kids got books off the shelf to read. Now there are 77 books on the shelf. How many books did the kids take?

$$\begin{array}{r} 333 \\ - 218 \\ \hline \end{array}$$

$$\begin{array}{r} 239 \\ - 171 \\ \hline \end{array}$$

$$\begin{array}{r} 304 \\ - 165 \\ \hline \end{array}$$

$$\begin{array}{r} 400 \\ - 278 \\ \hline \end{array}$$

$$\begin{array}{r} 422 \\ - 273 \\ \hline \end{array}$$

# Set A3 ★ Activity 4



## ACTIVITY

### Think Before You Subtract

#### Overview

In this activity, students consider the following questions: Is it always most efficient and effective to use the standard algorithm for multi-digit subtraction? What kinds of combinations are best solved with the algorithm? What kinds of combinations are better solved using other strategies?

#### Skills & Concepts

- ★ fluently subtract whole numbers accurately using the standard regrouping algorithm
- ★ estimate differences to predict solutions to problems or determine reasonableness of answers
- ★ identify strategies that can be used to solve a problem, select and use one or more appropriate strategies to solve the problem, and justify the selection
- ★ explain why a specific problem-solving strategy was used to determine a solution

#### You'll need

- ★ Think Before You Subtract (page A3.22, run one copy on a transparency)
- ★ Subtraction Strategies (pages A3.23 and A3.24, run a class set)
- ★ Subtraction Strategy Posters (see Advance Preparation)
- ★ Student Math Journals
- ★ piece of paper to mask parts of the overhead
- ★ overhead pen

.....  
**Advance Preparation** Post the Subtraction Strategy Posters from Set A3, Activity 3 in a location where all the students can see them easily. If you didn't make a poster for the standard algorithm during Set A3, Activity 3, make one now and include it in the collection you post.  
 .....

#### Instructions for Think Before You Subtract

1. Start by reviewing the Subtraction Strategy Posters with the class. Explain that you're going to revisit these strategies today, and possibly generate some more.
2. Now tell students in a minute, you're going to show them a subtraction problem at the overhead, and ask them to solve it mentally. Let them know that they can use any of the strategies on the posters, or think of a different method. Then display the first problem on the overhead, keeping the rest covered for now. Ask students to think privately about the problem and raise their hand when they have the answer.

Set A3 Number & Operations: Multi-Digit Addition & Subtraction Blackline

**Think Before You Subtract**

$$\begin{array}{r}
 1 \quad 62 \\
 - \quad 29 \\
 \hline
 \end{array}$$

3. When most of the students have raised their hands, call on several to share their solutions and explain their strategies to the class. Record each strategy at the overhead as students share, and label them using the names from the posters. Work with input from the class to label any new strategies shared. (You may also want to make posters for these later.)

**Activity 4** Think Before You Subtract (cont.)

**Alexi** First I tried the regrouping way, but it was too hard to remember the numbers in my head. Then I saw if I added 1 to each number, it made the problem really easy.  $63 - 30$  is 33.

**Macgregor** The negative number way is the easiest for me. Just do  $60 - 20$  is 40, then  $2 - 9$  is negative 7.  $40 - 7$  is 33.

**Shanda** First I took the 20 away. That left 42, but  $42 - 9$  is too hard, so I took away 2 first. That left 40, and  $40 - 7$  is 33.

Set A3 Number & Operations: Multi-Digit Addition & Subtraction Blackline

**Think Before You Subtract**

$\begin{array}{r} 62 \\ - 29 \\ \hline \end{array}$	$62 + 1 = 63$ $29 + 1 = 30$ $63 - 30 = 33$ (Same Difference)	$60 - 20 = 40$ $2 - 9 = -7$ $40 - 7 = 33$ (Negative Numbers)
	$62 - 20 = 42$ $42 - 2 = 40$ $40 - 7 = 33$ (One Piece at a Time)	

4. Repeat Steps 2 and 3 with the next two problems on the overhead ( $70 - 35$  and  $85 - 27$ ). Encourage students to debate and discuss the strategies they're choosing. Chances are, most will use methods that start from the front end, though a few may use regrouping.

**Students** On  $70 - 35$ , I just remembered that  $35 + 35$  makes 70, so the answer is 35.

I did the number line in my head for that one. First you go up 5, and then 30 more to get up to 70, so the answer is 35.

I got stuck on  $85 - 27$  for a minute, but then I saw I could make it easier by adding 3 to each number. If you do that, it's just  $88 - 30$ , and that's 58.

I did regrouping on that one. I just moved over a 10 in my mind, so I got  $15 - 7$  over in the 1's column. Then  $70 - 20$  is 50, so the answer is 58.

I think it's way too hard to remember the numbers in your head like you have to do with regrouping. I used negative numbers.  $80 - 20$  is 60 and  $5 - 7$  is negative 2.  $60 - 2$  is 58.

5. Show the fourth problem,  $202 - 148$ , and ask students if they can solve it in their heads. Give them a minute to think about it, and then call on volunteers to share their thinking with the class. Chances are, at least a few students will use the same difference strategy, or perhaps the number line method. Some may use landmark numbers, in that  $202 - 48$  is very close to  $200 - 50$ . After at least 2 different strategies have been shared, work with student input to solve the problem using regrouping. Which of the strategies seems easiest? Why?

$\begin{array}{r} 202 \\ - 148 \\ \hline \end{array}$	$202 + 2 = 204$ $148 + 2 = 150$ $204 - 150 = 54$ (Same Difference)	$2 + 50 + 2 = 54$ (Number Line)
	Hop 2 to get to 150. Then hop 50 and 2 more to get to 202.	$2 + 50 + 2 = 54$ (Number Line)
	$\begin{array}{r} 1\ 9 \\ \cancel{20} \cancel{2} \\ - 148 \\ \hline 54 \end{array}$	$\begin{array}{r} 1\ 9 \\ \cancel{20} \cancel{2} \\ - 148 \\ \hline 54 \end{array}$ (Regrouping)

6. Show the last problem,  $2,503 - 1,765$ , on the overhead, and ask students if they can work it in their heads. Why or why not? Some students may think that it's too big to tackle mentally, while others may be eager to try. Ask them to pair-share estimates, and then work the problem twice in their journals, once using the regrouping method and once with a different strategy of their choosing. Have them share

**Activity 4** Think Before You Subtract (cont.)

and compare their work with the people sitting next to them to be sure they have the correct answers. Then talk with the group about both methods. Which seemed easier? Which seemed most efficient? Why?

7. Work with the class to make some generalizations about the different addition strategies they've used to solve the problems on the overhead. Is the standard algorithm always the quickest and easiest? What about the same differences strategy? When does it work best to use a number line strategy? Record some of their thoughts on a piece of chart paper.

Which subtraction strategies work best?

- Regrouping is good for subtracting 3- and 4-digit numbers.
- Regrouping is a lot of work sometimes. You should check to see if there's a faster way.
- Sometimes the number line strategy is easier, if the numbers aren't really, really big.
- Look to see if you can change both of the numbers to make the problem easier. If the bottom number is close to 20, 30, 40, or any other tens number, it might work.
- The negative number strategy is fast and easy even with big numbers if you understand it but you have to be careful.
- You don't always have to use the same strategy. Think about what will work best for the numbers.

8. Hand out a copy of Subtraction Strategies to each student and give children the rest of the math period to work the problems. If some students still need support in solving multi-digit addition problems, you may want to meet with a small group while the rest of the class works independently.

**Note** Ask students to either use the standard algorithm for subtraction during Bridges Unit 5, Session 19, or generate and justify more efficient and effective alternatives. When you conduct the Unit 5 Post-Assessment during Session 20, tell students very explicitly that you expect them to solve problems 1-4 using two different methods, one of which must be the standard algorithm.

With minor changes to the instructions, Support Activities 7–8, 11, and 14–15 at the back of the Number Corner Blacklines can be used to help students who need more time to develop proficiency with the standard algorithms for addition and subtraction.

**INDEPENDENT WORKSHEET**

Use Set A3 Independent Worksheets 1–3 to provide students with more practice using the standard algorithm to solve multi-digit addition and subtraction problems.

# Think Before You Subtract

**1**

$$\begin{array}{r} 62 \\ - 29 \\ \hline \end{array}$$

---

**2**

$$\begin{array}{r} 70 \\ - 35 \\ \hline \end{array}$$

---

**3**

$$\begin{array}{r} 85 \\ - 27 \\ \hline \end{array}$$

---

**4**

$$\begin{array}{r} 202 \\ - 148 \\ \hline \end{array}$$

---

**5**

$$\begin{array}{r} 2,503 \\ - 1,765 \\ \hline \end{array}$$



NAME \_\_\_\_\_

DATE \_\_\_\_\_

## Subtraction Strategies page 2 of 2

**2** Fill in the bubble to show the best estimate for each problem.

<b>a</b> $\begin{array}{r} 63 \\ - 28 \\ \hline \end{array}$	<input type="radio"/> 30 <input type="radio"/> 35 <input type="radio"/> 40 <input type="radio"/> 45	<b>b</b> $\begin{array}{r} 303 \\ - 245 \\ \hline \end{array}$	<input type="radio"/> 50 <input type="radio"/> 60 <input type="radio"/> 75 <input type="radio"/> 100
---	--	---	---

**c** What strategy or strategies are you using to make your estimates?.

**3** For each problem below, underline the information you need to solve the problem. Then solve it. Use the strategy that works best for you.

**a** Lara has 153 baseball cards. How many more baseball cards does she need to have 218 baseball cards in all?

**b** Juan had 235 pennies. He gave some to his little sister. Now he has 149 pennies left. How many pennies did he give to his sister?

# Set A3 ★ Activity 5



## ACTIVITY

### Round & Add

#### Overview

Round & Add teaches students how to round to the nearest thousand and provides practice with adding multi-digit numbers. The teacher plays the game with the whole class, and may then make it available to students to play in pairs during Work Places.

#### Skills & Concepts

- ★ round whole numbers through 10,000 to the nearest thousand
- ★ fluently add whole numbers accurately using the standard regrouping algorithm
- ★ estimate sums to predict solutions to problems or determine reasonableness of answers

#### You'll need

- ★ Open Number Line (page A3.28, run 1 copy on a transparency)
- ★ a blank transparency
- ★ 4 dice, 2 marked 0–5 and 2 marked 4–9
- ★ overhead pens in black, red, and blue
- ★ Student Math Journals or 1 piece of lined or grid paper per student

#### Instructions for Round & Add

In the game of Round & Add, two teams (or two players) take turns rolling four dice, arranging the four digits, and rounding the resulting number to the nearest thousand. Each number is recorded on a number line marked in multiples of 1000, and the multiple to which the number rounds circled in one team's color. Once a multiple has been claimed, it can't be used again. When all the multiples of 1000 have been claimed, players use the rounded numbers to predict who will win, and then add their actual scores to confirm their predictions.

1. Place the Open Number Line on display at the overhead. Note with students that there are no numbers posted at either end, so you're free to set up the line any way you want. Then label the dot at the far left with a 0 and the dot at the far right with 10,000. Next, ask students for suggestions about how to label the 9 marks in between. This question may spark some interesting discussion, but students will likely agree after a few minutes that because there are 9 evenly spaced marks, they should be labeled with consecutive multiples to 1,000. After you have labeled all the points as shown below, place a blank transparency over the sheet to prevent the ink from smearing.
2. Explain that you're going to play a game similar to Round Ball Hundreds today. You will play as the red team, and have the class play as the blue team. The teams will take turns rolling 4 dice, arranging the digits, and rounding the number to the nearest 1000. Both teams will add their numbers at the end of the game, and the team with the higher score will win.
3. Write the number 5,687 at the board. Tell students that to round a 4-digit number to the nearest thousand, they have to look at the digit in the hundreds place. If the digit indicates a number less than 500, the 4-digit number rounds down. If it's 500 or more, the number rounds up. Does this number round up

**Activity 5** Round & Add (cont.)

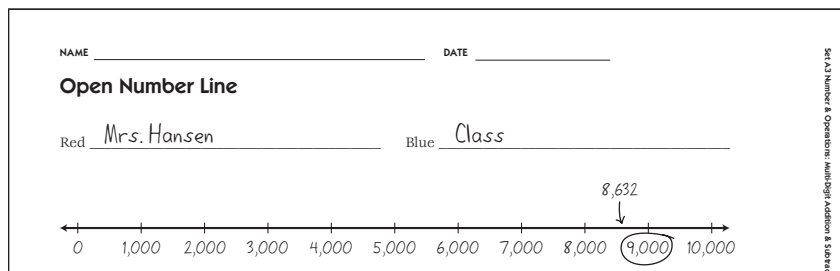
to 6,000 or down to 5,000? Have students pair-share their thinking. Then invite volunteers to share their reasoning with the class.

**Students** *5,687 is closer to 6,000.*

*Yep, there's a 6 in the hundreds place, so it rounds up.*

*687 is way bigger than 500, so this number goes up, not down.*

4. Repeat Step 3 with several other numbers if necessary. Then begin the game by asking a volunteer to roll all of the dice for you. Record the four numbers at the board. If you get a 10, record it as a 0. Share your thinking about how to arrange these digits to form the number that will round to the highest multiple of 1000. Once you've made a decision, record the number where it belongs on the number line, and then circle the multiple to 1000 to which it rounds. Be sure to mark your results in red and the class's results in blue so that you can tell the difference as the game proceeds.



5. Now have a volunteer roll for the class and write the 4 digits on the whiteboard. If the class rolls a 10, have the volunteer record it as a 0. Ask students to talk in small groups about how they want to arrange the 4 digits. Remind them that they'll need to arrange the digits to form a number that rounds to a multiple different from the multiple you've just claimed. Then have them discuss their options as a class. When they've decided, mark the number on the line and circle the multiple to which it rounds.

6. Continue taking turns until all the multiples have been claimed by one team or the other. If either you or the class rolls 4 digits that cannot be arranged to form a number that rounds to an unclaimed multiple of 1000, the turn is lost. Either team can decide to use just 3 of the dice whenever the players decide they want to claim the 0.

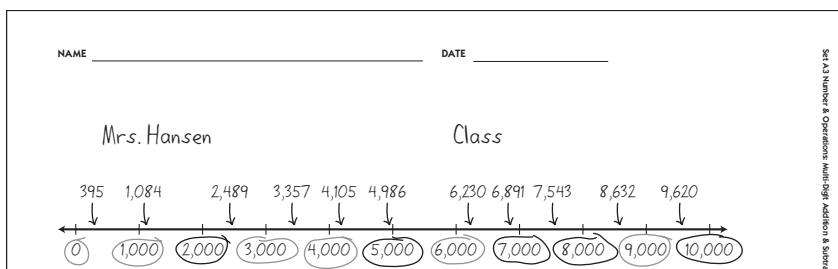
7. After all the multiples on the line have been circled, have students predict which team will have the higher score. Is it necessary to add up all the numbers actually rolled by each team to make an accurate prediction? Why or why not?

**Students** *I think we'll win because we got three of the highest numbers.*

*You got to circle six of the numbers, but one of them was the zero.*

*If you just add  $7 + 8 + 10$  that's 25. It's like 25,000. That's higher than your top three numbers put together because  $4 + 6$  is 10. Then add 9 and you only get 19, for 19,000.*

## Activity 5 Round &amp; Add (cont.)



**Teacher** Do you think it's possible to make a pretty accurate prediction without actually adding all the numbers we rolled?

**Students** Sure!

*It's way easier to add up numbers like 2,000 and 5,000 than those other numbers.*

**Teacher** Would you bet your next recess on your prediction?

**Students** No way! Let's add up the numbers to be sure!

8. Ask students to take out their journals. Explain that you're going to have half of them add your actual scores and half of them add theirs to be sure of the winner. Which addition strategy will work best in this situation—regrouping, front-ending, using landmark numbers, or some other method? Why?

**Students** Can we use our calculators?

*If we can't use calculators, we should use regrouping. Those numbers are way too big for front-ending.*

9. Have them go to work and compare their answers with neighbors to check for accuracy. The team with the higher actual score wins.

### Extensions

- Play the game again another day with your class. Give students each a copy of the Open Number Line and have them record at their desks as you do so at the overhead.
- Introduce a slightly different version in which the team that is able to get its actual and rounded totals to match most closely wins. This version encourages students to pay very close attention to how they arrange the 4 digits they roll each time. For instance, 4, 2, 1, and 9 can be arranged to form a variety of 4-digit numbers, including 9,421 and 9,124. Both round to 9,000 but in this version of the game 9,124 is the better choice because it's closer to 9,000. This is an advantage when the goal is to have the total of the rounded numbers match the total of the actual numbers as closely as possible.
- Place paper copies of page A3.32, colored pencils, and dice in a tub and make the game available to students to play during Work Places.



### INDEPENDENT WORKSHEET

Use Set A3 Independent Worksheet 4 to provide students with more practice rounding and estimating.

NAME \_\_\_\_\_ DATE \_\_\_\_\_

# Open Number Line

Red \_\_\_\_\_ Blue \_\_\_\_\_



NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Set A3 ★ Independent Worksheet 1



## INDEPENDENT WORKSHEET

### Third Grade Puzzlers

Use regrouping to solve all the problems on this sheet and the next two. Show your work for each problem.

**1** Five of the third grade classes are planning to attend a play performance. The five different classes have 34, 29, 31, 26 and 27 students in them. Each play performance can hold up to 140 students. Will all students fit into one performance, or will they need to attend two performances?

**2** Carlos, a third grader, owns 61 baseball cards. At lunchtime, he traded 36 of his cards for 1 card featuring Cal Ripkin Jr. How many cards does he have now?

**3** The third grade robotics team has 179 points. In order to place in the top 3 teams, they'll need a score of 325 or more. How many more points do they need to earn in order to rank in the top 3?

(Continued on the back.)

**Independent Worksheet 1** Third Grade Puzzlers (cont.)

**4** Rewrite each of the problems below in vertical form. Then use regrouping to solve the problems. Show all your work.

<b>example</b> $561 + 258 =$ $\begin{array}{r} 1 \\ 561 \\ + 258 \\ \hline 819 \end{array}$	<b>a</b> $3451 + 387 =$
<b>b</b> $4801 - 779 =$	<b>c</b> $29 + 41 + 44 + 86 =$
<b>d</b> $72 - 47 =$	

**5** The 3<sup>rd</sup> grade classes are collecting cans to raise money for a field trip to the zoo. This chart shows how many cans each class has collected so far.

Class	Number of Cans
Mrs. Haber's class	362 cans
Mr. Field's class	429 cans
Mrs. Jones' class	297 cans
Mr. Zigler's class	456 cans

**a** Mrs. Jones' class really wants to win. How many more cans do they need in order to tie with the 3<sup>rd</sup> place team? Show your work.

**b** How many more cans does Mrs. Jones' class need to collect in order to be in first place right now? Show your work.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## Set A3 ★ Independent Worksheet 2



### INDEPENDENT WORKSHEET

#### In These United States

Use regrouping to solve all the problems on this sheet and the next. Show your work for each one.

**1** Texas, the second largest state, has 254 counties. In contrast, California, the third largest state, only has 58 counties. How many counties do they have altogether? Show your work below.

**2** Solve the following problems. Show your work.

<p><b>a</b> <math display="block">\begin{array}{r} 923 \\ - 397 \\ \hline \end{array}</math></p>	<p><b>b</b> <math>43 - 29 =</math></p>	<p><b>c</b> <math>26 + 97 =</math></p>
<p><b>d</b> <math display="block">\begin{array}{r} 426 \\ + 267 \\ \hline \end{array}</math></p>	<p><b>e</b> <math>86 - 18 =</math></p>	<p><b>f</b> <math>407 - 72 =</math></p>

(Continued on the back.)

**Independent Worksheet 2** In These United States (cont.)

**3** The Astrodome in Houston, Texas, holds 62,439 football fans. Find two or more Texas towns whose entire populations could attend a football game together. How many seats would be left over? Show your work.

Town	Population
Deer Park	28,993
Del Rio	36,020
Eagle Pass	25,571
El Campo	10,884
Gainesville	16,569
Groves	15,006
Hereford	14,472
Iowa Park	6,175
Jasper	7,531
Kingsville	24,740

**CHALLENGE ICON**

**4** In 2005, the United States population was 296,410,404. Texas had the second highest population in the U.S. with 22,859,968 people. How many people in the U.S. did *not* live in Texas?

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Set A3 ★ Independent Worksheet 3



## INDEPENDENT WORKSHEET

### Skill Practice

1 Use regrouping to solve all the problems on this sheet and the next. Show your work.

<p><b>a</b> What is the sum of 529, 6, and 34?</p>	
<p><b>b</b> <math>42,921 - 24,473 =</math></p>	<p><b>c</b> <math>472 + 329 =</math></p>
<p><b>d</b> <math display="block">\begin{array}{r} 921 \\ - 756 \\ \hline \end{array}</math></p>	<p><b>e</b> <math>9 + 41 + 34 + 16 =</math></p>

2 Sara is only allowed to spend 5 hours a week watching television. Look at the chart to see how much she has used so far this week. How much time does she have left to watch television this weekend?

Day	Time
Monday	45 minutes
Tuesday	60 minutes
Wednesday	90 minutes
Thursday	45 minutes
Friday	30 minutes

(Continued on the back.)

### Independent Worksheet 3 Skill Practice (cont.)

**3** Brendan needs to mail a 12-page letter to his friend in Texas. It costs \$1.38 to mail all 12 sheets together. A 6-page letter costs 68¢ to mail. A 4-page letter costs 45¢ to mail. Envelopes cost 3¢ each. What is the least expensive way to mail his 12 pages?

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Set A3 ★ Independent Worksheet 4



## INDEPENDENT WORKSHEET

### Kilometers & Miles

**1** What is 6,780 rounded to the nearest thousand? Fill in the bubble to show.

- 5,000                       6,000                       7,000                       8,000

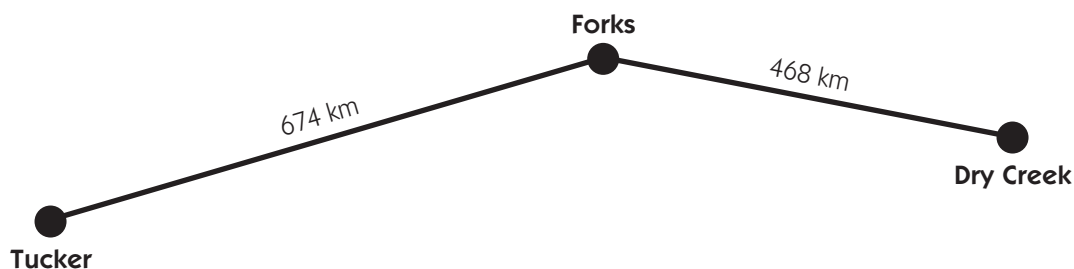
**2** What is 4,438 rounded to the nearest thousand? Fill in the bubble to show.

- 4,000                       5,000                       7,000                       8,000

**3** It is 4,991 kilometers from Vancouver, BC, to Montreal. What is 4,991 rounded to the nearest thousand?

- 4,000                       5,000                       41,000                       49,000

**4** People in Canada measure long distances in kilometers instead of miles. Tera and her family drove from Tucker to Dry Creek last weekend. About how many kilometers did they drive? Fill in the bubble to show the best estimate.



- 1,050 kilometers                       1,100 kilometers                       1,150 kilometers

**5** It is 1,164 kilometers from Vancouver, BC to Edmonton. What is 1,164 rounded to the nearest thousand? Fill in the answer below.

1,164 kilometers rounded to the nearest thousand is \_\_\_\_\_.

(Continued on back.)

**Independent Worksheet 4** Kilometers & Miles (cont.)

**6** A kilometer is shorter than a mile. One kilometer is about half a mile.

**a** If Tera walks 2 kilometers a day, how many kilometers does she walk in one week (7 days)? Show your work.

**b** About how many miles does Tera walk in a week? Use numbers, words, and/or sketches to explain your answer.

**c** Tera's mom runs 4 kilometers a day. About how many miles does she run in a week? Use numbers, words, and/or sketches to explain your answer.

**7** Tera and her family are driving 200 kilometers to the beach. They have 80 kilometers left to go.

**a** Circle the equations you could use to find out how far they have already driven.

$$200 - \square = 80 \quad 80 - 20 = \square \quad 200 - 100 = \square \quad 200 - 80 = \square$$

**b** How many kilometers have they already driven?

**8** The family stopped at a fruit stand on their way to the beach. They got 5 kilograms of apples and 2 kilograms of berries. A kilogram is about the same as 2 pounds.

**a** About how many pounds of apples did the family get? Fill in the bubble to show.

5 pounds       8 pounds       10 pounds       20 pounds

**b** About how many pounds of berries did the family get? \_\_\_\_\_