

TOUCHMATH[®]

THE ALPHABET OF MATHEMATICS

Since 1975



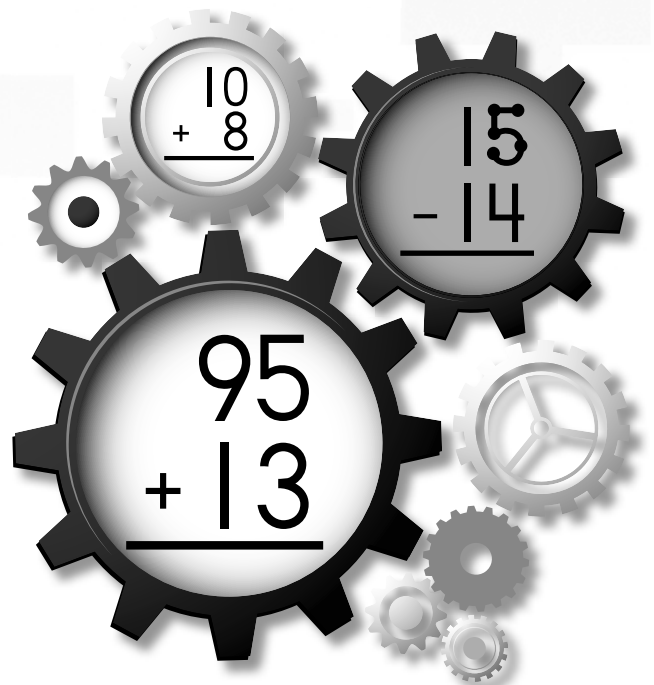
UNIT
2

CLASSIC UPPER GRADES

ADDITION & SUBTRACTION 2

MODULE TITLES

- 1: Counting to 1,000
- 2: Within 20
- 3: Place Value
- 4: Within 100
- 5: Strategies
- 6: Three-Digit Numbers



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Organization

The following paragraphs describe the structure of the curriculum. If you would like more information about TouchMath, our teacher training DVD is available at no charge. Request online at www.touchmath.com/freetraining, or call 1-800-888-9191.

Unit Components

The goals for each unit are defined in the overview of skills. These broad proficiencies often establish the framework for concepts of increasing complexity. The goals are broken down into clear, manageable objectives that list the academic expectations of the students and summarize the module-level objectives. Unit vocabulary and detailed Common Core State Standards complete the unit overview. The unit pre- and post-tests immediately follow with directions for administering, recording results, and using the results to determine each student's educational plan.

Module Guides

The table of contents provides the skeleton of the activities within each module guide. The modules include clusters—subsets of the featured skill. A paragraph overview of the module

- identifies the clusters,
- explains the activities,
- lists the Common Core State Standards by their code,
- specifies objectives in the order of presentation,
- labels basic prerequisites,
- lists vocabulary necessary for skill attainment, and
- suggests readily available materials that would be helpful during the lesson

The lessons in the modules begin with a pretest, which gives basic directions for completion. It is recommended that you give little instruction related to the skill before testing. A record sheet is included for tracking student achievement. This record is found on the third page of each module guide. Instructional strategies follow the pretest, providing ideas for the most effective use of the student activity sheets. Four different formatting conventions reveal which type of strategy is being offered:

Box: Information in this shape is background information for the teacher, explaining the skill and illuminating the purpose and/or value of mastery.

☞: A speech bubble offers what the teacher is to say to the class. Anyone presenting the lesson could use this script.

◆: A diamond bullet suggests action for the teacher. It typically includes directions such as "Write ... on the whiteboard." "Monitor students as they complete the row of problems."

Bold: Directions in bold type suggest actions relating to transitions. These include statements such as "Distribute activity sheets ... to the students." "Activity Sheet ... Directions." "Repeat the activity sheet xx process ..."

The answer keys are imbedded in the instructional strategies for a quick reference while planning or presenting the lesson. Modified directions for the activity sheets are included for use after the detailed, step-by-step process to ensure understanding of the concepts.

A posttest follows the instruction within the module. Refer to the module guide for directions for administering the posttest. You can record results and compare them to the pretest. The module concludes with suggestions for differentiated instruction and real world applications.

- Look at the last problem. Subtract the ones; write the difference. Subtract the tens; write the difference. Subtract the hundreds, write the difference. Read the equation: $968 - 25 = 943$. Notice that we are using the **relationship** between addition and subtraction again.

Complete the rest of the problems on this page. Compare the solutions in the last row. The word problem is two steps. Read and solve it. Fill in the bubble.

Independent Practice

- Add or subtract. Compare. Write $<$, $=$, or $>$ in the **oval**. Read and solve the word problem. Fill in the bubble.

Instruction: activity sheet 165¹

- ◆ Have base ten blocks available to demonstrate regrouping when adding/subtracting two-digit numbers from three-digit numbers.
- ◆ Write a few examples on the whiteboard to review addition and subtraction of two two-digit numbers before introducing three-digit numbers (e.g., $45 + 18$ and $63 - 18$, $53 + 29$ and $82 - 29$, and $357 + 28$ and $385 - 28$). Make certain that the ones and tens are the only places regrouped.
- You have added and subtracted two-digit numbers with regrouping. We used the base ten blocks to do this in Module 4. Let's review the process. I will write the steps on the whiteboard as we solve the first example together. Please take out a pencil and a piece of paper to use.

Raise your hand if you remember how to regroup.²

Step 1: Write the problem.

Please write the first example, $45 + 18$, on your paper. Be sure to line up the ones and the tens. Draw an arrow above the ones as a reminder to start there. Draw a small box above the tens column.

Step 2: Add the ones, regrouping 10 ones for a ten if necessary.

Add $8 + 5$, and say the sum to your partner. Write the 3 in the ones column and the 1 in the box in the tens column.

Step 3: Add the tens.

Now add the tens column. Say the sum to your partner, and write the answer at the bottom of the tens column.

Step 4: Say the problem and the solution.

Let's read it together: $45 + 18 = 63$.

Review these steps with me:

Step 1: Write the problem.

Step 2: Add the ones, regrouping 10 ones for a ten if necessary.

Step 3: Add the tens.

Step 4: Say the problem and the solution.

Basic Background

¹Before tackling three-digit numbers, review what students already know. Moving from the familiar to the unfamiliar builds confidence in learning more complex topics.

Differentiated Directions

²Ask the students who remember the process to be a partner with someone who does not.

- Do the next addition problem, $53 + 29$, with your partner, following these steps.

Stand up and shake your partner's hand when you are sure you have the correct solution. Share your solution with a pair of students near you. The correct answer is 82.¹

Now let's do the first subtraction problem, $63 - 18$, together. As we do it, think about how this process is different from the process for addition. Again, I will write the steps as we do them.

Step 1: Write the problem.

Is this step the same or different from the addition process? It is both the same and different. We line up the ones and tens, and we use an arrow to show where to start. Instead of a box at the top of the tens column, however, we use a line.

Step 2: Subtract the ones, regrouping a ten to make 10 ones if necessary.

Look at the ones. Do we have enough to take away 8 from 3? No. Explain what we need to do. Yes, cross out the number in the tens place, write one number less on the line, and write a small 1 beside the 3 in the ones column. Now subtract 8 from 13, and write the difference.

Step 3: Subtract the tens.

Write the difference.

Step 4: Say the problem and the solution.

Let's read it together: $63 - 18 = 45$.

Look at this problem again. Some students might find 55 as the solution. How would they get that solution? Yes, they would subtract 3 from 8, which is the wrong order.

Review the steps with me again.

Step 1: Write the problem.

Step 2: Subtract the ones, regrouping a ten to make 10 ones if necessary.

Step 3: Subtract the tens.

Step 4: Say the problem and the solution.

Use these steps with your partner to solve the second subtraction problem on the whiteboard, $82 - 29$. The solution is 53.²

Select one of the four examples I have on the board, and write a word problem to go with it.

You have demonstrated that you can add and subtract two-digit numbers. Now we are going to use these steps to work problems that have a three-digit number and a two-digit number.

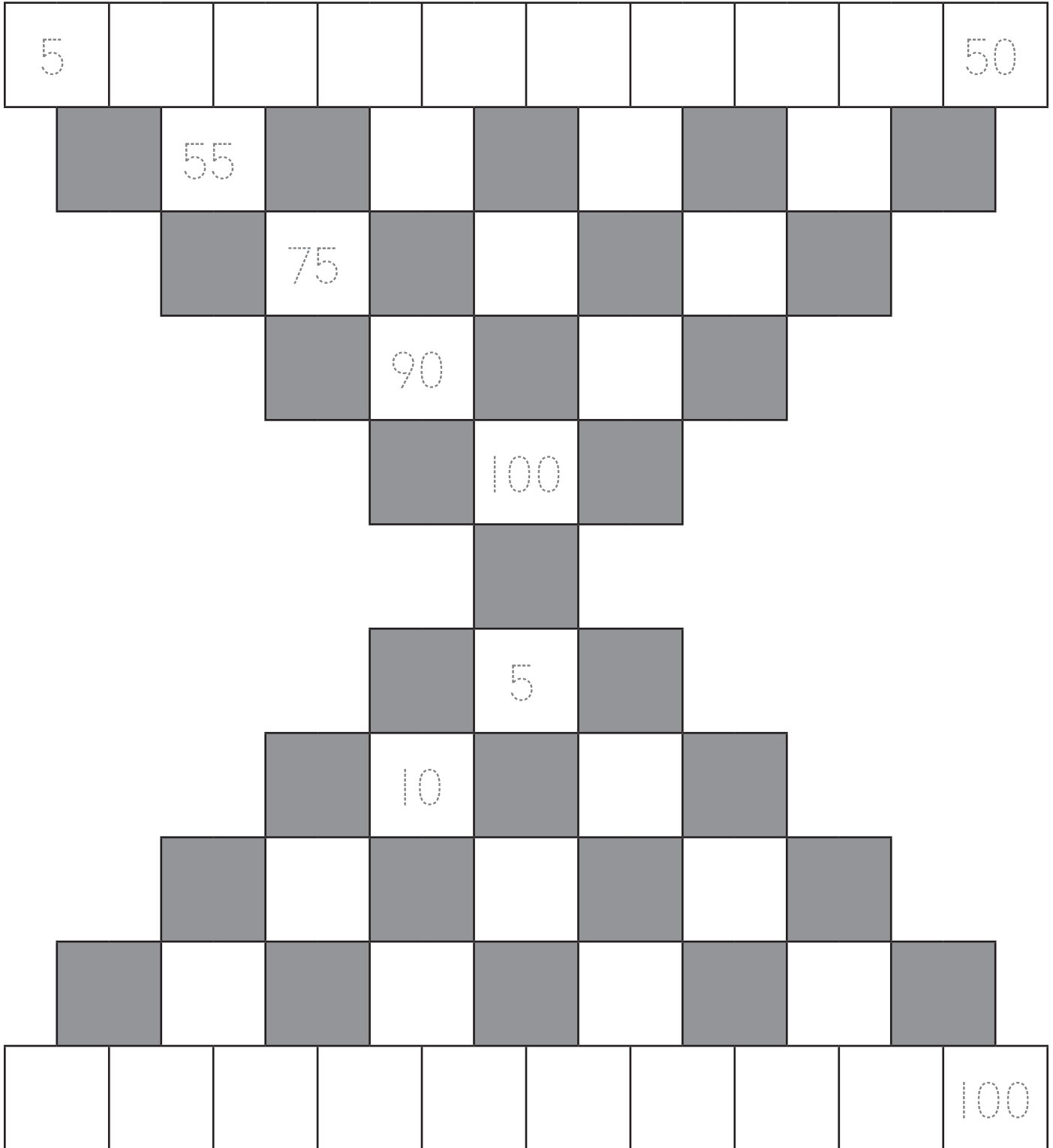
Look at the third addition problem on the whiteboard, $357 + 28$. Step 1 is the same as with two-digit problems. Write the problem on your paper, drawing an arrow above the ones and a box above the tens. Write H above the hundreds, T above the tens, and O above the ones.

Differentiated Directions

¹If students are not successful with the steps in the algorithm, use the blocks to demonstrate the problem. If they continue to struggle, remediate.

Differentiated Directions

²Encourage students to use other strategies such as finding the missing addend or drawing pictures to demonstrate the problem.



What number is five more than forty? _____

What number is five more than seventy-five? _____

$$\begin{array}{r} 7 \\ + 1 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ + 7 \\ \hline \end{array}$$

$2 + 6 = \underline{\quad}$

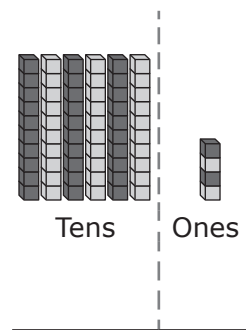
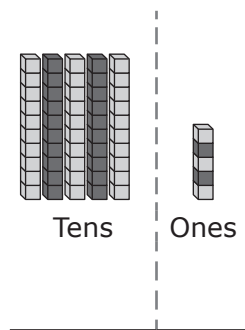
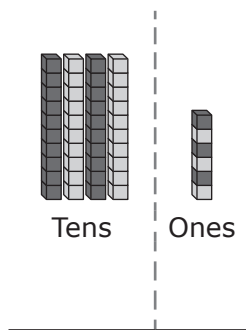
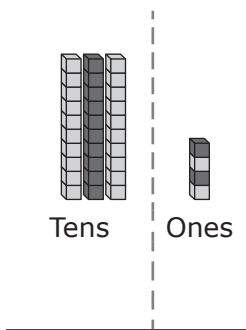
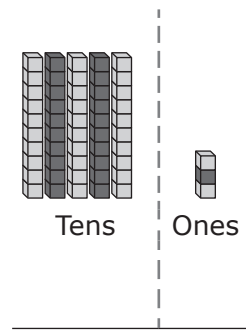
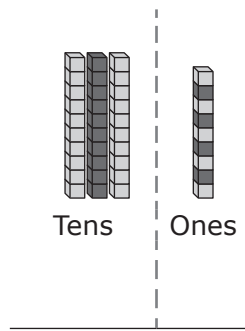
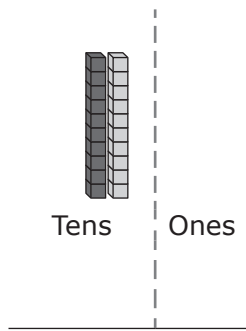
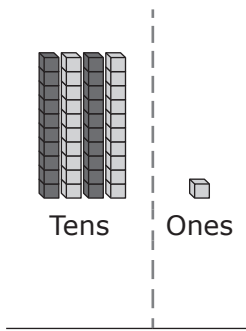
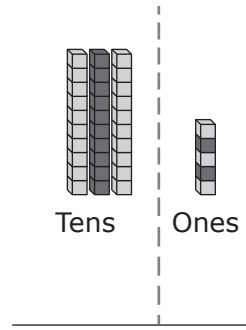
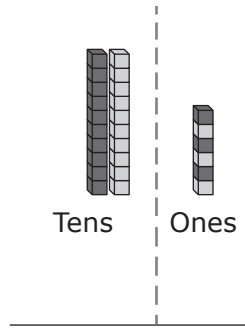
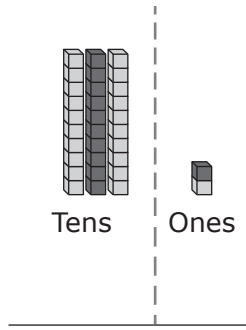
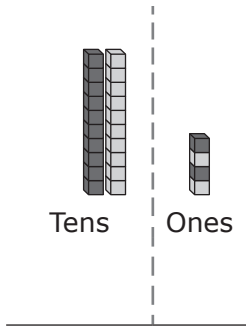
$5 + 6 = \underline{\quad}$

$2 + 7 = \underline{\quad}$

$6 + 5 = \underline{\quad}$

$3 + 7 = \underline{\quad}$

$6 + 4 = \underline{\quad}$



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There are 34 catfish in the pond.

There are 52 bass in the pond.

To find how many fish are in the pond altogether, I _____.

add subtract

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There are 252 fourth-graders in the school. 45 of them entered the school spelling bee. There are 263 fifth-graders in the school. 46 of them entered the spelling bee. How many fourth-graders did not enter the spelling bee?

_____ fourth-graders

How many fifth-graders did not enter the spelling bee? _____ fifth-graders