



On Core Lessons for Common Core Math



Using the Whiteboard

Use the table of contents to go to specific sections of the lesson, or, tap **Next** to go to the first section of the lesson.

Teaching the Math

Discuss the *Essential Question* with the students: How can you use regrouping to multiply?

Common Core Standards for Mathematical Content

CC.4.NBT.5

Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Common Core Standards for Mathematical Practice












CC.K–12.MP.5

Use appropriate tools strategically.

CC.K–12.MP.7

Look for and make use of structure.

Navigating the *SMART Notebook* file

	Home	Return to the Main Menu.		Example	View a sample problem.
	Teacher Notes	Open the Teacher Notes PDF.		Answer	Show the correct answer to a problem.
	Previous	Go to the previous page.		Try Another	Generate another problem for extra practice.
	Next	Go to the next page.		SMART Response Question	Indicates the question is compatible with a <i>SMART Response</i> interactive Response system.
	Action Arrow	Reveal hidden content.			
	Try This	Reveal additional problems. Tap again to return to the previous page.		Workspace	Reveal additional content for the activity. Tap again to return to the previous page.

Tips

Clear or reset the screen

To reset the screen, tap **Edit > Reset Page** or tap the **Reset Page** button if it is on the toolbar.

Add tools and functions to your *SMART Notebook* toolbar or floating palette

Tap the **Customize** button in the toolbar or floating palette, and then drag the tool to the toolbar or floating palette.

**Using the Whiteboard**

- Pull out the Problem tab and read the problem to the students.
- Change the **Pen** color to blue.
- Read the number sentence and guide a volunteer to use the **Pen** to complete the estimate.
- Tap the first **Action Arrow**. Read and discuss the parts of Step 1.
- Ask students to solve the problem.
- If available, have students use their *SMART Response* remotes to answer.
- If installed, click the *SMART Response* tab, and then start the question to begin voting.
- A volunteer may use the **Pen** to show his or her work.
- Tap the second **Action Arrow**. Read and discuss the parts of Step 2.
- Guide a volunteer to use the **Pen** to write the answer on the blank line.
- Tap the third **Action Arrow** and repeat the previous two steps for Step 3.

Teaching the Math

Ask: Why do you estimate before you multiply? *I estimate so I will know what is a reasonable answer.*

Ask: Explain how you know if the estimate will be less than or greater than the actual product. *Since one factor is rounded up and the other stayed the same, the estimate will be greater than the exact product.*

Answer Key

Possible Estimate: $3 \times 600 = 1,800$

3×7 ones = **21** ones.

3×6 tens = **18** tens.

3×5 hundreds = **15** hundreds.

So, Alley Spring produces **1,701** gallons of water in 3 weeks.

**Using the Whiteboard**

- Read the problem to students. Direct students' attention to the information in the table.
- Tap **Math Talk** to reveal a discussion question.
- Tap the first **Action Arrow**. Read the step to students.
- Guide a volunteer to use the **Pen** to write the estimate on the blank lines.
- Tap the second **Action Arrow** to the right. Read the step to students.
- Guide a volunteer to use the **Pen** to write the estimate on the blank lines.
- Tap the third **Action Arrow** below. Read the direction to students.
- Guide a volunteer to use the **Pen** to write and add the estimates in the blue boxes and the answer the last question about Package C on the blank line.

Teaching the Math

These are multistep problems. Before solving the problems, give students an opportunity to share their answers to the Math Talk question.

Math Talk

Ask: Explain how you know you can use an estimate. **Possible explanation:** the question uses the word “about,” which tells you that an exact answer is not needed.

Ask: Why couldn't you just multiply $4 \times \$700$ to estimate the total for Package C? **Possible answer:** the estimated total would be much greater because 2 of the 4 people are children and the price for children is much less than it is for adults.

Ask: Why don't you need to regroup when you multiply 2×700 ? **Possible answer:** 14 hundreds is the same as 1 thousand 4 hundreds. So, I can just write the 14 in the answer.

Ask: How do you label the answer? **I label the answer with a dollar sign in front of the estimate.**

Ask: How is estimating with dollar amounts different from estimating with whole numbers? **Possible answer:** I need to write a dollar sign in front of the estimate.

Answer Key

$$2 \times \$700 \text{ ones} = \$1,400$$

$$2 \times \$400 \text{ ones} = \$1,000$$

$$\$1,400 + \$1,000 = \$2,400$$

**Using the Whiteboard**

- Read the problem to the students.
- Tap the first **Action Arrow**. Read the problem to the students.
- Guide a volunteer to use the **Pen** to work out the problems in the blue boxes.
- Tap the second **Action Arrow**. Read the problem to the students.
- Guide a volunteer to use the **Pen** to work out the problems in the blue boxes.
- Tap the third **Action Arrow**. Read the directions to the students.
- Guide a volunteer to use the **Pen** to write the answers in the blue box and on the blank lines.
- Tap **Math Talk** to reveal a discussion question.

Teaching the Math

These are multistep problems. Before solving the problems, give students an opportunity to share their answers to the Math Talk question.

Math Talk

Ask: Explain why you need an exact answer. *Possible explanation: the question asks how much more, which is an exact answer.*

Refer students to the estimates on the previous page.

Ask: Why is the \$2,400 estimate for Package C greater than the \$2,366 actual price for Package C? *I rounded \$699 and \$484 up.*

Common Errors

Error Students may write the regrouped number in the wrong location.

Example

$$\begin{array}{r} 1 \\ 619 \\ \times 2 \\ \hline 8 \end{array}$$

Springboard to Learning Emphasize that a regrouped number is written over the place immediately to the left of the place that is being multiplied. Have students draw lines to help them keep the places aligned.

$$\begin{array}{r} 1 \\ 619 \\ \times 2 \\ \hline 8 \end{array}$$

Answer Key

Package A			Package C		
Adults	Children	Total Cost	Adults	Children	Total Cost
\$1,299	\$619	\$2,598	\$699	\$484	\$1,398
$\times 2$	$\times 2$	$+ \$1,238$	$\times 2$	$\times 2$	$+ \$968$
\$2,598	\$1,238	\$3,836	\$1,398	\$968	\$2,366
$\begin{array}{r} \$3,836 \\ - \$2,366 \\ \hline \$1,470 \end{array}$			<p>So, Package A would cost \$1,470 more than Package C.</p>		

**Using the Whiteboard**

- Discuss the steps of the problem with students. Then read the directions.
- Guide a volunteer to use the **Pen** to write the answer on the blank lines.

Teaching the Math

This problem connects to the learning model. Have students explain their thinking as they answer the question.

Answer Key

Possible answer: Multiply 6×4 ones = 24 ones, regroup 24 ones as 2 tens 4 ones.

**Using the Whiteboard**

- Read the directions and the problem to the students.
- Guide a volunteer to use the **Pen** to write an estimate, work out the problem in the workspace, and then write the answer on the blank line.
- Tap **Try Another!** to reveal a new problem.
- Repeat previous steps to solve the remaining problems.

Teaching the Math

Encourage students to explain the method they are using as they work out each problem.

Answer Key

Possible estimates are given.

Estimate: \$24,000

$$\begin{array}{r} \$3,316 \\ \times \quad 8 \\ \hline \$26,528 \end{array}$$

Estimate: \$24,000

$$\begin{array}{r} \$4,123 \\ \times \quad 6 \\ \hline \$24,738 \end{array}$$

Estimate: \$72,000

$$\begin{array}{r} \$9,042 \\ \times \quad 8 \\ \hline \$72,336 \end{array}$$



Using the Whiteboard

- Read the directions and problem to students. Discuss the information on the table.
- Guide a volunteer to use the **Pen** to solve the problem in the workspace and then write the answer on the blank line.

Teaching the Math

Have students discuss how to decide when to estimate or when to find an exact answer.

Answer Key

Possible answer: about 300,000 more people



Using the Whiteboard

- Read the problem to the students.
- Guide a volunteer to use the **Pen** to write the answer on the blank lines.

Teaching the Math

This problem requires students to use higher order thinking to decide if Joe's conclusion is correct.

Answer Key

No. Possible explanation: When there are regrouped thousands, the product of a 4-digit number and a 1-digit number can have 5 digits.

**Using the Whiteboard**

- Read the question to the students.
- Ask students to solve the problem.
- If available, have students use their *SMART Response* remotes to answer.
- If installed, click the *SMART Response* tab, and then start the question to begin voting.
- Students may also use the **Pen** to circle the answer.
- Tap **Answer** to view the correct answer.

Teaching the Math**Test Prep Coach**

Test Prep Coach helps teachers to identify common errors that students can make.

In Exercise 20, if students selected:

- B)** They reversed the tens and the hundreds.
- C)** They mixed up the digits in the ones, tens, and hundreds places.
- D)** They added wrong in the thousands.

Answer Key

A) 24,610

**Using the Whiteboard**

- Read aloud the *Essential Question* to the students: How can you use regrouping to multiply?
- Have a volunteer drag the **Pen** to write his or her answer on the whiteboard.
- Pull out the Answer tab to reveal the answer.

Answer Key

Essential Question: Possible answer: I start at the right. First, I multiply the ones, then the tens, then the hundreds, and finally the thousands. I regroup when the product in any place is 10 or more. I record the regrouped number in the column above the next greater place.

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