On Core Lessons
for Common Core Math

HOUGHTON MIFFLIN HARCOURT

Promethean

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 students: How can you use patterns to write number pairs for measurement units?

Common Core Standards for Mathematical Content

CC.4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

Common Core Standards for Mathematical Practice

CC.K–12.MP.2 Reason abstractly and quantitatively.

CC.K–12.MP.3 Construct viable arguments and critique the reasoning of others.

Navigating the *SMART Notebook* file

	Home	Return to the Main Menu.	**Example**	**Example**	View a sample problem.
	Teacher Notes	Open the Teacher Notes PDF.	**Answer**	**Answer**	Show the correct answer to a problem.
	Previous	Go to the previous page.	**Try Another!**	**Try Another**	Generate another problem for extra practice.
	Next	Go to the next page.		**SMART Response Question**	Indicates the question is compatible with a *SMART Response* 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

- Discuss the problem with students.
- Tap the first **Action Arrow** to reveal the first part of the problem.
- Ask a student to use the **Pen** to answer the question.
- Repeat these steps with the second **Action Arrow.**
- Tap the third **Action Arrow.**
- Tap **Think** to reveal helpful text.
- Ask another student to use the **Pen** to label the columns.
- Tap **Math Talk** to reveal a discussion question.
- Tap the **Try This** button and ask students to use the **Pen** to answer the questions in the space provided.

Teaching the Math

Read through the problem with students. Explain that they will be analyzing the pattern in this table to determine what lables to include in each column.

Ask: What units of time have a relationship of 1 to 7? Possible answer: days and weeks

Ask: What is represented by the number pair 4 and 28? Possible answer: there are 28 days in 4 weeks.

Use **Math Talk** to focus on students' understanding of the relationship between the numbers in number pairs.

Answer Key

List the number pairs.

1 and 7, 2 and 14, 3 and 21, 4 and 28, 5 and 35

Describe the relationship between the numbers in each pair.

Possible description: the second number in each pair is 7 times as great as the first number in each pair.

Weeks	Days
1	7
2	14
3	21
4	28
5	35

Try This

List the number pairs.

1 and 4, 2 and 8, 3 and 12, 4 and 16, 5 and 20

Describe the relationship between the numbers in each pair.

Possible description: the second number in each pair is 4 times as great as the first number in each pair. Possible labels are given.

Gallons	Quarts
1	4
2	8
3	12
4	16
5	20

Math Talk

Yes; possible explanation: you can change the order of the numbers if you also change the order of the column labels.

Using the Whiteboard
- Discuss the problem with students.
- Tap **Think** to reveal helpful text.
- Have a volunteer use the **Eraser** to reveal the labels.

Teaching the Math   The problem connects to the learning model.

Answer Key

Days	Hours
1	24
2	48
3	72
4	96
5	120

Using the Whiteboard

- Discuss the problem with students.
- Ask a volunteer to use the **Pen** to label the columns.
- Tap **Try Another!** to reveal a new problem.
- 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 student may also write in the answer using the **Pen.**
- Tap **Try Another!** to reveal a new direction line and problem.
- Ask a volunteer to use the **Pen** to label the columns.

Teaching the Math

Common Errors

Error Students may reverse the column labels for a table.

Example In the first problem, students label the left column "Seconds" and the right column "Minutes."

Springboard to Learning Ask students to use the data from one row of the table in a sentence starter such as the following: There are ____ in ____. Have them check the reasonableness of the sentence to be sure they labeled the columns correctly.

Answer Key

Each table shows a pattern for two units of time. Label the columns of the table.

Possible answer is given.

Minutes	Seconds
1	60
2	120
3	180
4	240
5	300

Years	Months
1	12
2	24
3	36
4	48
5	60

The table shows a pattern for two metric units of length. Label the columns of the table.

Possible answer is given.

Centimeters	Millimeters
1	10
2	20
3	30
4	40
5	50

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Using the Whiteboard

- Discuss the problem with students.
- Have a volunteer use the **Pen** to answer the question on the blank lines.

Answer Key

Possible answer: *Kilograms* and *Grams*; possible explanation: 1 kilogram is 1,000 times as much as 1 gram.

Using the Whiteboard
- Discuss the problem with students.
- Have a volunteer use the **Pen** to answer the question in the space provided.

Teaching the Math
This problem requires students to identify the correct relationship between numbers. It also requires students to critique the reasoning of others.

Answer Key
Both answers make sense; possible explanation: 1 meter is 1,000 times as long as 1 millimeter. 1 liter is 1,000 times as much as 1 milliliter. The number pairs in the table show the relationship between meters and millimeters and also liters and milliliters.

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 reveal the correct answer.

Teaching the Math

Test Prep Coach
In the Test Prep exercise, if students selected:

A) They chose units of time instead of units of length.
C) or **D)** They do not understand the relationship between yards, feet, and inches.

Answer Key   B) Feet, Inches

Using the Whiteboard

- Read aloud the *Essential Question*: How can you use patterns to write number pairs for measurement units?
- Instruct a volunteer to use the **Pen** to write his or her answer.
- Pull out the Answer tab to reveal a possible answer.

Answer Key

Essential Question

Possible answer: I can make a table with one column for each unit in the pair. I can list the measurements that have the same relationship in the column by units. Then I label each column with the name for that unit.