



**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 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**

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

#### 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.**

#### Math Talk

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

<u>Weeks</u>	<u>Days</u>
1	7
2	14
3	21
4	28
5	35

<u>Gallons</u>	<u>Quarts</u>
1	4
2	8
3	12
4	16
5	20



**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**

<u>Days</u>	<u>Hours</u>
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



**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.

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