Sixth Grade Math with Confidence
Pilot Test, Unit 15C

Pilot testers, thanks for a great year! **Please make sure to complete the final feedback form after you complete this unit.** It will give you a chance to provide feedback on this unit, provide feedback on the book as a whole, and also include your name for the acknowledgements in the final book.

I can hardly believe that this is the end of the last pilot test! Whether you've been a pilot tester for one year or for seven, thank you for your contributions to making Math with Confidence as effective and user-friendly as possible for all the parents who will use it in the future.

With gratitude,
Kate

Unit 15C: Data and Statistics

Overview

In the final lessons, you and your child will review the major concepts and skills she has learned this year and celebrate completing the book.

Unit 15C Lesson List

Lesson 15.9	Review Fractions, Decimals, and Percentages
Lesson 15.10	Review Ratios and Rates
Lesson 15.11	Review Geometry, the Coordinate Plane, Variables, and Data

Lesson 15.9 – Review Fractions, Decimals, and Percentages

PURPOSE	MATERIALS
• Celebrate what your child has learned about fractions, decimals, and percentages this year • Practice finding fraction, decimal, and percentage equivalents	• Counters
• **What does mean absolute deviation measure?** *How much the data in a data set varies from the mean.*	

In the daily routine of lessons, it can be easy to forget how much progress your child has made since the start of the year. The final three lessons give both you and your child a chance to look back and celebrate how much he has learned.

Warm-up: Celebrate What Your Child Has Learned About Fractions, Decimals, and Percentages

Today, we'll celebrate how much you've learned about fractions, percentages, and decimals this year.

You focused on fractions in Units 2, 4, and 5. You reviewed how to add and subtract fractions, and you learned more about how to multiply and divide fractions. Page through the Unit 2, Unit 4, and Unit 5 workbook pages with your child.

In Units 8 and 14, you reviewed decimals and learned how to multiply and divide decimals. Page through the Unit 8 and Unit 14 workbook pages.

In Unit 12, you learned about percentages. Flip through the Unit 12 workbook pages.

Briefly discuss any concepts that were especially difficult for your child, and remind him how far he has come in his math learning. For example: **You worked really hard to understand fraction division in Unit 7!**

Activity (A): Find Fraction, Decimal, and Percentage Equivalents

Throughout the year, you've learned that we can use fractions, decimals, or percentages to represent part of a whole. Have your child complete the chart.

Fraction	$\frac{48}{100}$	$\frac{3}{100}$	$\frac{99}{100}$	$1\frac{19}{100}$	$1\frac{23}{100}$	$2\frac{1}{100}$
Decimal	0.48	0.03	0.99	1.19	1.23	2.01
Percentage	48%	3%	99%	119%	123%	201%

Activity (B): Play Five in a Row

This game is like Five in a Row. Instead of just placing 2 counter per turn, we'll place 3 counters per turn. Play Five in a Row.

Five in a Row

Materials: Counters of two different colors

Object of the Game: Be the first player to place counters in 5 squares in a row, either horizontally, vertically, or diagonally.

How to Play: On your turn, choose a box. Find the two boxes with the equivalent fraction, decimal, or percentage. For example, if you choose the box ¼, place counters on the boxes with ¼, 25%, and 0.25.

Play then passes to the other player. Continue until one player covers 5 boxes in a row, either horizontally, vertically, or diagonally.

Independent Practice and Review

Have your child complete the Lesson 15.9 Practice and Review workbook pages.

Lesson 15.10 – Review Ratios and Rates

PURPOSE	MATERIALS
• Celebrate what your child has learned about ratios and rates • Solve ratio and rate word problems	• None

- *by the number of values.*
- **What is the median of a data set?** *The middle value when the values are in order from least to greatest.*
- **What is the mode of a data set?** *The value that occurs most frequently.*

Warm-up: Celebrate What Your Child Has Learned About Ratios and Rates

Today, we'll celebrate how much you've learned about ratios and rates.

In Unit 5, you studied ratios. You learned that ratios compare two quantities with the same units. With your child, flip through the Unit 5 workbook pages.

In Unit 13, you studied rates. You learned that rates are a special type of ratio that compares two quantities with different units, like unit rate and speed. With your child, flip through the Unit 13 workbook pages.

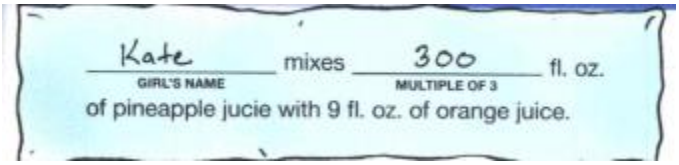
Activity (A): Fill in the Blanks to Create Silly Ratio and Rate Word Problems

In this warm-up, you will prepare Part A for use later in the lesson. Keep the Lesson Activities page hidden from your child as you complete this warm-up.

Have you ever played the game Mad Libs? *Answers will vary.* **In this game, people suggest words to complete the blanks in a story. They don't know what the story is about, so the story often ends up pretty silly.**

I'm going to ask you to tell me some words, and I'll write your answers in the blanks in the word problems. We'll solve the problems later in the lesson.

First, tell me the name of a person. *Sample answer: Kate.* Write the name in the first blank in the first word problem in part B. **Next, tell me a number that is a multiple of 3.** *Sample answer: 300.* Write the number the next blank.



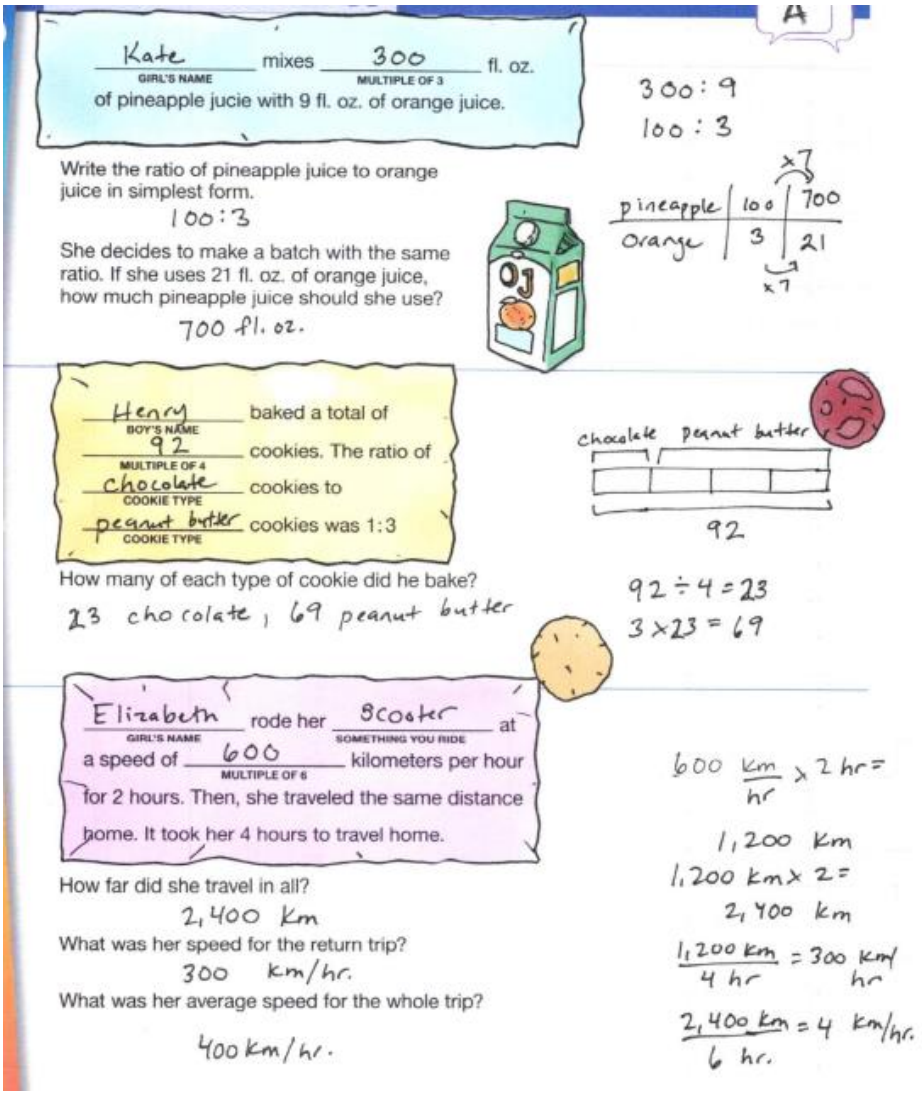
Caption: Sample completed problem.

Fill in the blanks for the rest of the word problems in the same way. Keep the page hidden while you complete the blanks so that your child doesn't know the context for each problem.

Once you've completed all the blanks, show your child the page and read the completed word problems together.

Activity (A): Solve Ratio and Rate Word Problems

Now, let's solve the silly ratio and rate word problems we created. Have your child solve each problem.



Sample answers. Your child should use the numbers he chose to complete the problems.

Independent Practice and Review

Have your child complete the Lesson 15.10 Practice and Review workbook pages.

Lesson 15.11 – Review Geometry, the Coordinate Plane, Variables, and Data

PURPOSE	MATERIALS
• Celebrate what your child has learned about geometry, the coordinate plane, variables, and data • Review variables and expressions	• Colored pencils or markers, optional

- **What five numbers are in the five-number summary for a data set?** *The minimum, lower quartile (Q1), middle quartile (Q2), upper quartile (Q3), and maximum.*
- **What does interquartile range measure?** *The range for the middle 50% of the values in a data set.*

Warm-up: Celebrate What Your Child Has Learned About Geometry, the Coordinate Plane, Variables, and Data

Today, we'll celebrate how much you've learned about geometry, the coordinate plane, variables, and data.

In Unit 3, you learned how to find the area of triangles and parallelograms. In Units 10 and 11, you studied volume and learned how to find surface area. With your child, flip through the Unit 3, Unit 10, and Unit 11 workbook pages.

In Unit 6, you learned about positive and negative numbers and learned how to plot points in all four quadrants on the coordinate plane. Page through the Unit 6 workbook pages.

In Unit 9, you learned about variables, expressions, and equations. Page through the Unit 9 workbook pages.

Last, in this unit, you learned how to use summary statistics to describe the center and spread for a data set. Page through the workbook pages for Lessons 16.1 – 16.8.

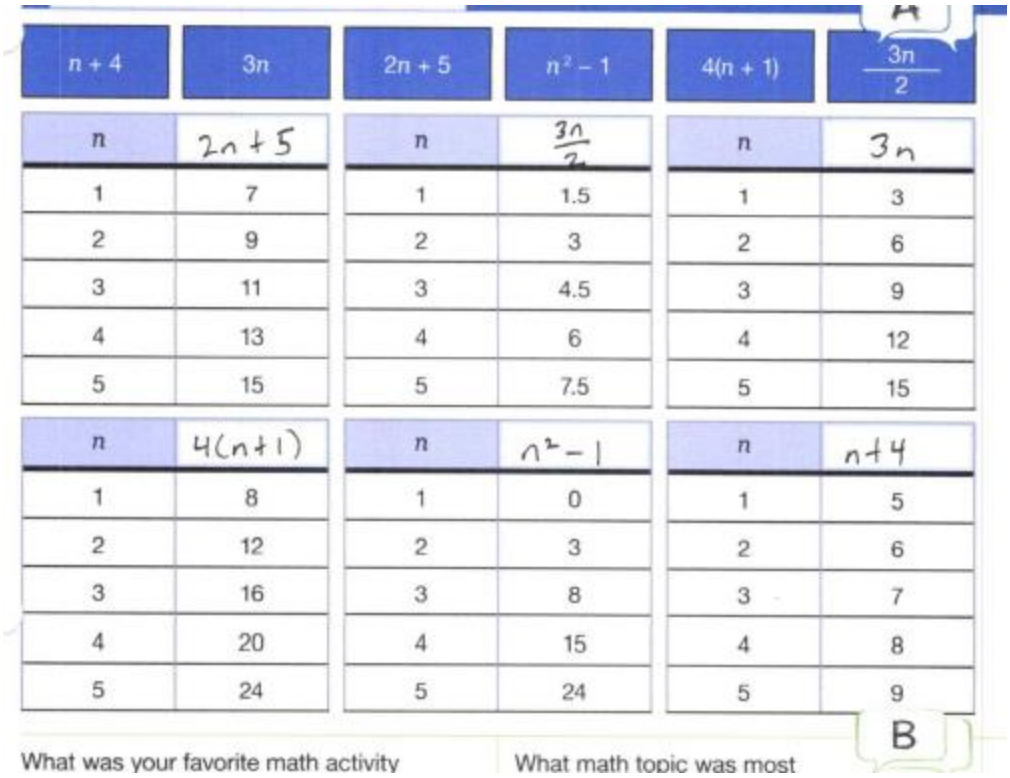
Activity (A): Match Expressions to Number Charts

This year, you learned how to evaluate expressions for different values of a variable. These charts show the results you get when you evaluate each expression for n equals 1, 2, 3, 4, and 5.

The first expression is n plus 4. If you evaluate the expression for *n* equals 1, what do you get? *5.* **For *n* equals 2?** *6.* **For n equals 3?** *7.* **For n equals 4?** *8.* **For n equals 5?** *9.*

Which chart matches these results? *The chart in the bottom right corner.* Have your child write $n + 4$ in the blank.

Repeat with the rest of the charts.



$n+4$	$3n$	$2n+5$	n^2-1	$4(n+1)$	$\frac{3n}{2}$

A

n	$2n+5$
1	7
2	9
3	11
4	13
5	15

n	$\frac{3n}{2}$
1	1.5
2	3
3	4.5
4	6
5	7.5

n	$3n$
1	3
2	6
3	9
4	12
5	15

n	$4(n+1)$
1	8
2	12
3	16
4	20
5	24

n	n^2-1
1	0
2	3
3	8
4	15
5	24

n	$n+4$
1	5
2	6
3	7
4	8
5	9

B

What was your favorite math activity

What math topic was most

Activity (B): Reflect on the Year

Read aloud the reflection questions in part B. Discuss each question and have your child answer each question in a sentence.

Independent Practice and Review

Have your child complete the Lesson 15.11 Practice and Review workbook pages.

Unit 15 Checkpoint

What to Expect at the End of Unit 15

By the end of Unit 15, most children will be able to do the following:

- Find the mean, median, and mode for a data set and understand that these statistics describe the center of the data set.
- Find the range, mean absolute deviation, quartiles, and interquartile range for a data set and understand that these statistics describe the spread of the data set. Some children will still have trouble finding quartiles, especially when there are an even number of values in the data set.
- Create and interpret dot plots, histograms, and box plots.
- Describe the shape of a data set as right-skewed, left-skewed, or symmetric and use words like gap, peak, and outlier to describe its features.
- Use statistics to analyze data, compare two data sets, and draw conclusions about their centers and spread.

Congratulations!

Congratulations on finishing *Sixth Grade Math with Confidence*! Give yourself a pat on the back for all that you've taught your child this year.

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Thanks for all your feedback and encouragement throughout the year. These books wouldn't be the same without you!

With gratitude,
Kate