8•9 Progress Check 8

Objective To assess students' progress on mathematical content through the end of Unit 8.

1 Assessing Progress

materials

Progress Check 8 is a cumulative assessment of concepts and skills taught in Unit 8 and in previous units.

See the Appendix for a complete list of Grade 4 Goals.

- ☐ Study Link 8•8
- ☐ Assessment Masters (*Assessment Handbook,* pp. 189–194)
- ☐ slate; centimeter ruler; scissors

CONTENT ASSESSED	LESSON(S)	ASSESSMENT ITEMS: SELF	ASSESSMENT ITEMS: ORAL/SLATE	ASSESSMENT ITEMS: WRITTEN PART A	ASSESSMENT ITEMS: WRITTEN PART B
Rename tenths and hundredths as decimals. [Number and Numeration Goal 5]	8•1, 8•2, 8•4		4		
Order fractions. [Number and Numeration Goal 6]	8•1–8•4		2		
Use manipulatives, mental arithmetic, and calculators to add and subtract fractions. [Operations and Computation Goal 5]	8•1, 8•3, 8•6, 8•8	1		8–11	
Use scaling to model multiplication and division. [Operations and Computation Goal 7]	8•4, 8•5, 8•7, 8•8	2	3		17, 18
Predict the outcomes of experiments; express the probability of an event as a fraction. [Data and Chance Goal 4]	8•1–8•8	3		12, 13	
Measure length to the nearest centimeter. [Measurement and Reference Frames Goal 1]	8•1, 8•2 8•4, 8•6, 8•7				14–18
Describe and use strategies to measure the perimeters of polygons. [Measurement and Reference Frames Goal 2]	8•1, 8•2, 8•4, 8•5, 8•7	4	1	1, 2, 5	14–16
Describe and use strategies to find the areas of polygons. [Measurement and Reference Frames Goal 2]	8•3–8•8	5, 6	1	3–7	14–16

2 Building Background for Unit 9

materials

Math Boxes 8•9 previews and practices skills for Unit 9.

The **Unit 9 Family Letter** introduces families to Unit 9 topics and terms.

- ☐ *Math Journal 1,* p. 247
- ☐ Study Link Masters (*Math Masters,* pp. 274–277)

Additional Information

See *Assessment Handbook,* pages 110–117 for additional assessment information.
For assessment checklists, see pages 274–277.

Technology

Assessment Management System
Progress Check 8
See the **iTLG.**

Getting Started

Math Message • Self Assessment

Complete the Self Assessment (Assessment Handbook, *page 189*).

Study Link 8•9 Follow-Up

Have small groups compare answers. Ask volunteers to make additional comparison statements.

1 Assessing Progress

Math Message Follow-Up

INDEPENDENT ACTIVITY

(Self Assessment, *Assessment Handbook,* p. 189)

The Self Assessment offers students the opportunity to reflect upon their progress.

Oral and Slate Assessments

WHOLE-CLASS ACTIVITY

Problems 1 and 4 provide summative information and can be used for grading purposes. Problems 2 and 3 provide formative information that can be useful in planning future instruction.

Oral Assessment

1. Have students explain the differences between *area* and *perimeter*.
2. Write groups of fractions on the board. Have students order the fractions and explain how they did so. *Suggestions:*
   - $\frac{1}{4}, \frac{3}{4}, \frac{5}{8}, \frac{1}{16}, \frac{1}{8}$ $\quad \frac{1}{16}, \frac{1}{8}, \frac{1}{4}, \frac{5}{8}, \frac{3}{4}$
   - $\frac{1}{2}, \frac{15}{16}, \frac{2}{3}, \frac{2}{9}, \frac{1}{3}$ $\quad \frac{2}{9}, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, \frac{15}{16}$

Slate Assessment

3. Pose problems that require students to interpret a scale. *Suggestions:* If $\frac{1}{2}$ inch on a map represents 30 miles, then
   - 1 inch represents 60 miles.
   - $\frac{1}{4}$ inch represents 15 miles.
   - 2 inches represent 120 miles.
   - $1\frac{3}{4}$ inches represent 105 miles.
4. Write fractions with denominators of 10 or 100 on the board and have students write the equivalent decimals. Then write decimals on the board and ask students to write a fraction equivalent for each. Do not insist that fractions be in simplest form. *Suggestions:*
   - $\frac{6}{10}$ 0.6
   - 0.3 $\frac{3}{10}$
   - 0.86 $\frac{86}{100}$
   - $\frac{53}{100}$ 0.53
   - $\frac{40}{100}$ 0.40
   - 0.50 $\frac{50}{100}$

Assessment Master

Name Date Time

LESSON 8•9 **Self Assessment** Progress Check 8

Think about each skill listed below. Assess your own progress by checking the most appropriate box.

Skills	I can do this on my own and explain how to do it.	I can do this on my own.	I can do this if I get help or look at an example.
1. Add and subtract fractions.			
2. Make a scale drawing.			
3. Determine the probability of an event.			
4. Find the perimeter of a polygon.			
5. Count squares and fractions of squares to find the area of a polygon.			
6. Use a formula to find the area of a rectangle, parallelogram, and triangle.			

***Assessment Handbook,* p. 189**

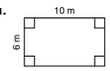
Assessment Master

Name Date Time

LESSON 8•9 **Written Assessment** Progress Check 8

Part A

Find the perimeter of each polygon.

1. 

Number model: 6 + 6 + 10 + 10 = 32

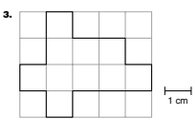
Perimeter = 32 m

2. 

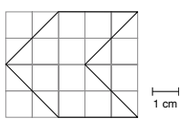
Number model: 8 + 4 + 3 + 3 + 5 + 7 = 30

Perimeter = 30 m

Find the area of each polygon.

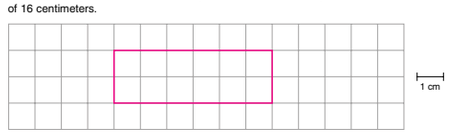
3. 

Area = 10 square centimeters

4. 

Area = 12 square centimeters

5. Draw a rectangle with an area of 12 square centimeters and a perimeter of 16 centimeters.



***Assessment Handbook,* p. 190**

Assessment Master

Name Date Time

LESSON 8•9 **Written Assessment** *continued*

6. Mrs. Lopez wants to tile her kitchen floor. The room is 10 feet wide and 12 feet long. How many 1-square-foot tiles does she need to cover the floor?

120 tiles

7. Suppose Mrs. Lopez chooses smaller tiles that are only 6 inches on each side. How many 6-inch tiles would she need to cover her kitchen floor?

480 tiles

Explain the strategy you used to solve the problem.

Sample answer: Since there are 4 of the 6-inch tiles in a 1-square-foot tile, then there are 120 * 4 = 480 tiles.

Add or subtract.

8. $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$ 9. $\frac{7}{9} = \frac{4}{9} + \frac{1}{3}$ 10. $\frac{8}{10} - \frac{5}{10} = \frac{3}{10}$ 11. $\frac{2}{10} = \frac{7}{10} - \frac{1}{2}$

12. If you spin the spinner 600 times, how many times would you expect it to land

on blue? 300

on green? 150

on orange? 75

on white? 75

13. A jar contains 12 blue blocks, 5 red blocks, 6 orange blocks, and 2 green blocks.

You put your hand in the jar and, without looking, pull out a block. About what fraction of the time would you expect to get a red block?

$\frac{5}{25}$ or $\frac{1}{5}$

***Assessment Handbook,* p. 191**

Written Assessment

INDEPENDENT ACTIVITY

(*Assessment Handbook,* pp. 190–192)

Part A Recognizing Student Achievement

Problems 1–13 provide summative information and may be used for grading purposes.

Problem(s)	Description
1, 2	Find the perimeter of a polygon.
3, 4	Find the area of a polygon drawn on a grid.
5	Draw a rectangle with a given area and perimeter.
6, 7	Solve number stories involving area.
8–11	Add and subtract fractions.
12	Predict the outcomes of a spinner experiment.
13	Express the probability of a block-drawing event as a fraction.

Part B Informing Instruction

Problems 14–18 provide formative information that can be useful in planning future instruction.

Problem(s)	Description
14–16	Use formulas to find the area of a rectangle, parallelogram, and triangle.
17, 18	Use a scale to draw rectangles with given dimensions.

Assessment Master

Name Date Time

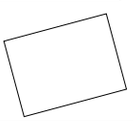
LESSON 8•9 **Written Assessment** *continued*

Part B

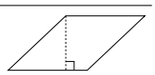
Formulas		
Rectangle	Parallelogram	Triangle
Area = base * height	Area = base * height	Area = $\frac{1}{2}$ * (base * height)

Complete. Measure each with a centimeter ruler.

14. base = 4 cm, height = 3 cm, perimeter = 14 cm, Area = 12 cm²



15. base = 3 cm, height = 2 cm, perimeter = 12 cm, Area = 6 cm²

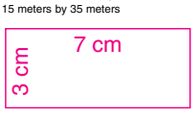


16. base = 3 cm, height = 2 cm, perimeter = 8 cm, Area = 3 cm²

In each problem below, a scale and the lengths of the sides of a rectangle are given. Make a scale drawing of each rectangle.

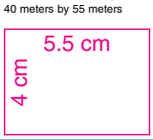
17. Scale: 1 cm represents 5 meters

Dimensions of rectangle:
15 meters by 35 meters



18. Scale: 1 cm represents 10 meters

Dimensions of rectangle:
40 meters by 55 meters



***Assessment Handbook,* p. 192**

Open Response

INDEPENDENT ACTIVITY

(*Assessment Handbook,* pp. 193 and 194)

Comparing Areas

Portfolio Ideas

The open response item requires students to apply concepts and skills from Unit 8 to solve a multistep problem. See *Assessment Handbook,* pages 113–117 for rubrics and students' work samples for this problem.

2 Building Background for Unit 9

Math Boxes 8•9

INDEPENDENT ACTIVITY

(*Math Journal 2,* p. 247)

MATH

Mixed Practice This Math Boxes page previews Unit 9 content.

Study Link 8•9: Unit 9 Family Letter

INDEPENDENT ACTIVITY

(*Math Masters,* pp. 274–277)

Home Connection The Unit 9 Family Letter provides parents and guardians with information and activities related to Unit 9 topics.

Assessment Master

Name Date Time

LESSON 8•9 **Open Response** *continued* Progress Check 8

Comparing Areas

1. Arrange shapes A–D in order of their area. (You may not measure with a ruler.) List the letters of the shapes from largest to smallest. If some shapes have the same area, write the letters next to each other and circle them.

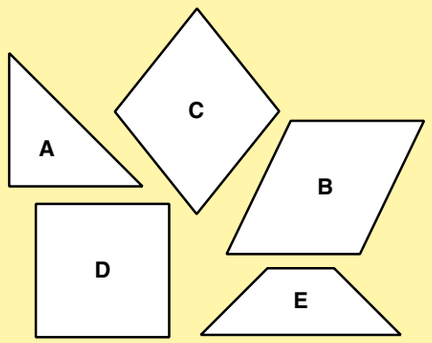
2. Explain the steps you followed to figure out the order of each of the shapes. You may draw pictures to illustrate your steps.

See the *Assessment Handbook* for rubrics and students' work samples.

Try This

3. Compare shapes A and E. Tell which has the larger area. Explain how you compared the shapes.

***Assessment Handbook,* p. 194**



Shapes A–E from *Assessment Handbook,* page 193

Study Link Masters

Name Date Time

STUDY LINK 8•9 **Unit 9: Family Letter**

Fractions, Decimals, and Percents

In Unit 9, we will be studying percents and their uses in everyday situations. Your child should begin finding examples of percents in newspapers and magazines, on food packages, on clothing labels, and so on, and bring them to class. They will be used to illustrate a variety of percent applications.

As we study percents, your child will learn equivalent values for percents, fractions, and decimals. For example, 50% is equivalent to the fraction $\frac{1}{2}$ and to the decimal 0.5. The class will develop the understanding that **percent** always refers to a **part out of 100.**

Converting "easy" fractions, such as $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, and $\frac{3}{4}$, to decimal and percent equivalents should become automatic for your child. Such fractions are common in percent situations and are helpful with more difficult fractions, decimals, and percents. To help memorize the "easy" fraction/percent equivalencies, your child will play *Fraction/Percent Concentration.*

"Easy" Fractions	Decimals	Percents
$\frac{1}{2}$	0.50	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{2}{5}$	0.40	40%
$\frac{7}{10}$	0.70	70%
$\frac{2}{2}$	1.00	100%

Throughout the unit, your child will use a calculator to convert fractions to percents and will learn how to use the percent key [%] to calculate discounts, sale prices, and percents of discount.

As part of the World Tour, your child will explore population data, such as literacy rates and percents of people who live in rural and urban areas.

Finally, the class will begin to apply the multiplication and division algorithms to problems that contain decimals. The approach used in *Everyday Mathematics* is straightforward: Students solve the problems as if the numbers were whole numbers. Then they estimate the answers to help them locate the decimal point in the exact answer. In this unit, we begin with fairly simple problems. Your child will solve more difficult problems in *Fifth* and *Sixth Grade Everyday Mathematics.*

Please keep this Family Letter for reference as your child works through Unit 9.

***Math Masters,* pp. 274–277**

Student Page

Date Time

LESSON 8•9 **Math Boxes**

1. A store is giving a 50% discount on all merchandise. Find the discounted prices.

Regular price	Discounted price
$53.00	$26.50
$0.96	$0.48
$111.10	$55.55
$75.50	$37.75

SRB 38, 39

2. Shade more than $\frac{70}{100}$ but less than $\frac{9}{10}$ of the grid.

Sample answer:

SRB 27

3. Multiply. Use a paper-and-pencil algorithm.

a. 482 × 6 = 2,892 b. 75 × 84 = 6,300 c. 36 × 58 = 2,088

SRB 18, 19

4. Divide. Use a paper-and-pencil algorithm.

a. 853 / 7 = $121\frac{6}{7}$ b. 7,342 ÷ 5 = $1{,}468\frac{2}{5}$ c. $\frac{385}{12}$ = $32\frac{1}{12}$

SRB 22, 23

***Math Journal 2,* p. 247**