Teacher Toolbox

Resource Sampler

i-Ready® Classroom Mathematics

Grade 4

Engaging Resources to Drive Student Growth
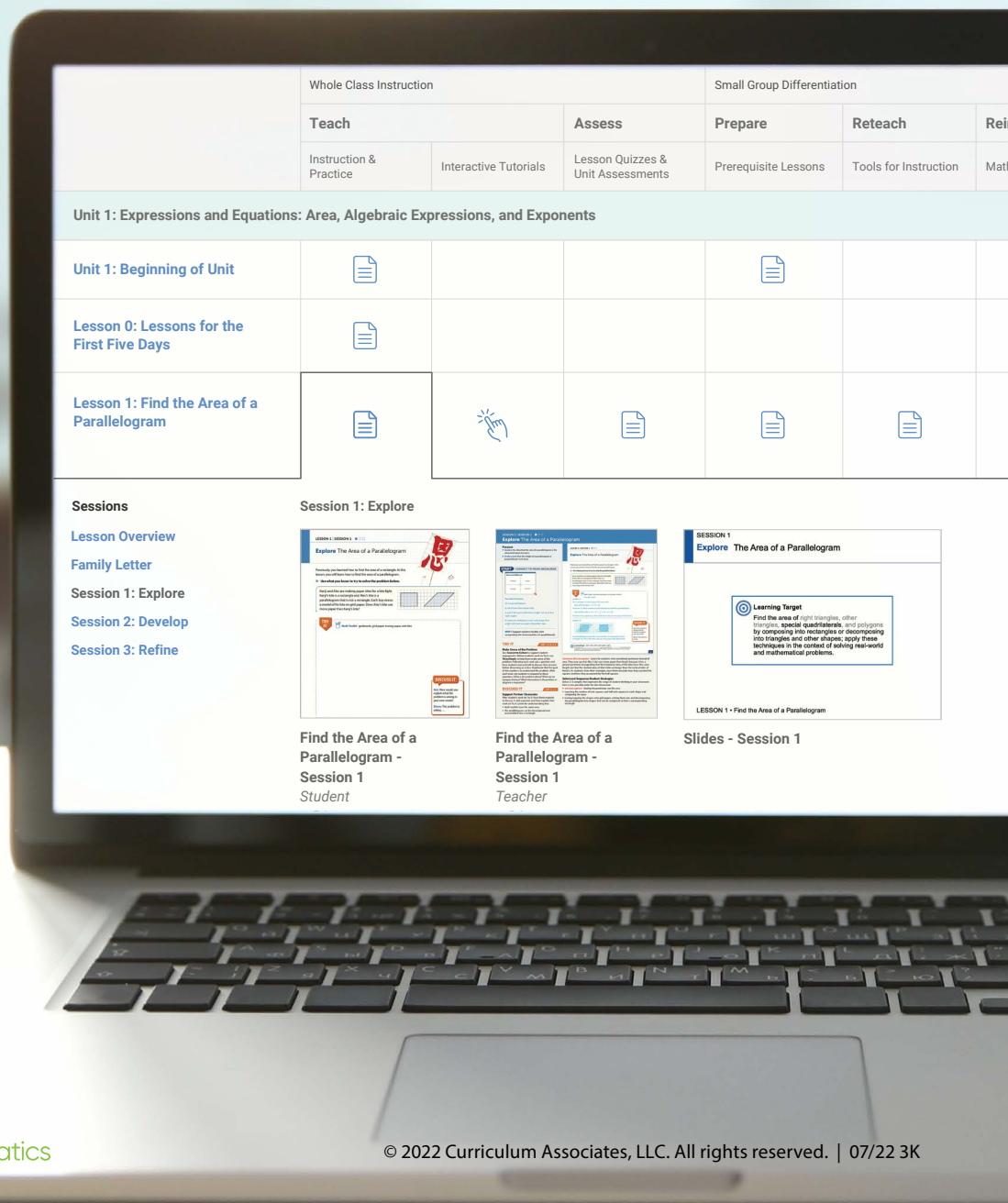
i-Ready Classroom Mathematics includes a wealth of resources to meet the needs of all learners. The Teacher Toolbox resources are accessible through the Teacher Digital Experience via i-ReadyConnect.com.

Easily Access All Grades K–8 Resources on the Teacher Toolbox:

- Activity Sheets E/S
- Assessments *(Lesson Quizzes, Practice Tests, Mid-Unit and Unit Assessments—Forms A and B)* E/S
- Cumulative Practice E/S
- Develop Session Videos
- Digital Math Tools

- Discourse Cards E/S
- Graphic Organizers E/S
- Games *(Unit Level K–8 and Grade Level K–2)* E/S
- Enrichment Activities E/S
- Family Letters E/S
- Fluency and Skills Practice E/S
- Implementation Support

- Interactive Tutorials E/S
- Literacy Connection Activities E/S
- Math Center Activities *(On Level, Below Level, and Above Level)* E/S
- Student Worktext PDFs E/S
- PowerPoint® Slides *(Editable)* E/S

- Prerequisite Lessons E/S
- Professional Learning Videos
- Teacher's Guide PDFs E/S
- Tools for Instruction E/S
- Unit Flow & Progression Videos (closed captioned in English and Spanish)

E/S = Available in English and Spanish

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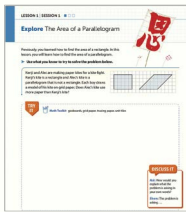
	Whole Class Instruction			Small Group Differentiation		
	Teach		**Assess**	**Prepare**	**Reteach**	**Rei**
	Instruction & Practice	Interactive Tutorials	Lesson Quizzes & Unit Assessments	Prerequisite Lessons	Tools for Instruction	Math
Unit 1: Expressions and Equations: Area, Algebraic Expressions, and Exponents						
Unit 1: Beginning of Unit	📄			📄		
Lesson 0: Lessons for the First Five Days	📄					
Lesson 1: Find the Area of a Parallelogram	📄	👆	📄	📄	📄	
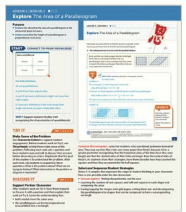
Sessions

Lesson Overview

Family Letter

Session 1: Explore

Session 2: Develop

Session 3: Refine
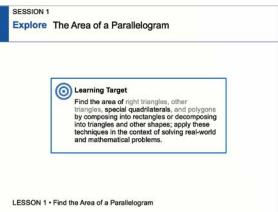
Session 1: Explore

Find the Area of a Parallelogram - Session 1
Student

Find the Area of a Parallelogram - Session 1
Teacher

Slides - Session 1

i-Ready Classroom Mathematics

Table of Contents

This sampler includes some of the lesson- and unit-level resources available on Teacher Toolbox for **Unit 4: Fractions, Decimals, and Measurement: Addition, Subtraction, and Multiplication, Lesson 20: Add and Subtract Fractions.**

Check out the Teacher Digital Experience Walkthrough to see more digital resources!

Explore all Grades K–8 resources in your demo account. Review the Teacher Digital Experience Walkthrough to see how.
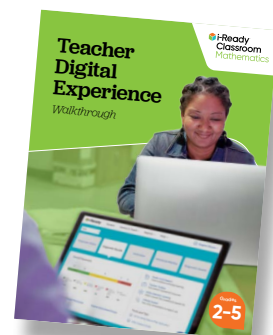
Lesson-Level Resources

Lesson 20: Add and Subtract Fractions

Additional Practice

Differentiation

Assessment

FLUENCY AND SKILLS PRACTICE | Name: _____

LESSON 20

Adding Fractions

Write the missing numbers in the boxes to make each addition problem true.

1 $\dfrac{1}{6} + \dfrac{4}{6} = \dfrac{\boxed{}}{6}$

2 $\dfrac{1}{8} + \dfrac{4}{8} = \dfrac{\boxed{}}{\boxed{}}$

3 $\dfrac{1}{10} + \dfrac{4}{10} = \dfrac{\boxed{}}{\boxed{}}$

4 $\dfrac{4}{12} + \dfrac{\boxed{}}{\boxed{}} = \dfrac{7}{12}$

5 $\dfrac{4}{6} + \dfrac{\boxed{}}{\boxed{}} = \dfrac{7}{6}$

6 $\dfrac{4}{3} + \dfrac{\boxed{}}{\boxed{}} = \dfrac{7}{3}$

7 $\dfrac{\boxed{}}{\boxed{}} + \dfrac{2}{4} = \dfrac{5}{4}$

8 $\dfrac{\boxed{}}{\boxed{}} + \dfrac{2}{10} = \dfrac{5}{10}$

9 $\dfrac{\boxed{}}{\boxed{}} + \dfrac{2}{8} = \dfrac{5}{8}$

10 $\dfrac{\boxed{}}{6} + \dfrac{2}{6} = \dfrac{\boxed{}}{6}$

11 $\dfrac{\boxed{}}{5} + \dfrac{1}{5} = \dfrac{\boxed{}}{5}$

12 $\dfrac{4}{10} + \dfrac{\boxed{}}{10} = \dfrac{\boxed{}}{10}$

13 Write a number from 1–12 in each box so that the addition problem is true.

$$\dfrac{\boxed{}}{12} + \dfrac{5}{\boxed{}} = \dfrac{\boxed{}}{12}$$

GRADE 4 • LESSON 20

Subtracting Fractions

Solve each problem.

1 Sammy has $\frac{4}{5}$ of his art project left to paint. He paints $\frac{2}{5}$ of the project. What fraction of the project is left to paint?

2 Marianne has $\frac{6}{8}$ of a yard of green ribbon. She uses $\frac{3}{8}$ of a yard for a craft project. How much green ribbon is left?

3 Yuna plans to run 1 mile. She has run $\frac{7}{10}$ of a mile so far. What fraction of a mile does she have left to run?

4 Alex and Brady are helping to pack books into a box. Together they pack $\frac{7}{12}$ of the books. Alex packs $\frac{4}{12}$ of the books. What fraction of the books does Brady pack?

Subtracting Fractions *continued*

5 On Monday, Adam walks $\frac{3}{10}$ of a mile to the store and then $\frac{4}{10}$ of a mile to the park. How far does he walk in all?

6 Javier has $\frac{7}{8}$ of a cup of flour. He uses $\frac{3}{8}$ of a cup in a recipe. How much flour does Javier have left?

7 Shawna practices piano for $\frac{4}{6}$ of an hour and takes a break. Shawna then practices for $\frac{2}{6}$ of an hour more. How long does Shawna practice in all?

8 Kailee has finished $\frac{4}{5}$ of her math homework so far. What fraction of her math homework does she have left to finish?

9 Explain one way to check your work to problem 2.

GRADE 4 ● LESSON 20

FLUENCY AND SKILLS PRACTICE | Name: _____

LESSON 20

Decomposing Fractions

Find three ways to decompose each fraction into a sum of other fractions with the same denominator.

1 $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} +$ _____

$\frac{3}{4} = \frac{2}{4} +$ _____

$\frac{3}{4} = \frac{1}{4} +$ _____

2 $\frac{7}{8} = \frac{6}{8} +$ _____

$\frac{7}{8} = \frac{5}{8} +$ _____

$\frac{7}{8} = \frac{4}{8} +$ _____

3 $\frac{6}{5} =$ _____ $+ \frac{3}{5}$

$\frac{6}{5} = \frac{2}{5} +$ _____ $+$ _____

$\frac{6}{5} = \frac{2}{5} + \frac{2}{5} +$ _____ $+$ _____

4 $\frac{5}{6} =$ _____ $+ \frac{3}{6}$

$\frac{5}{6} = \frac{1}{6} +$ _____ $+$ _____

$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} +$ _____ $+$ _____ $+$ _____

5 $\frac{9}{12} =$ _____ $+ \frac{5}{12}$

$\frac{9}{12} = \frac{3}{12} + \frac{3}{12} +$ _____ $+$ _____ $+$ _____

$\frac{9}{12} =$ _____ $+$ _____ $+$ _____

6 $\frac{8}{10} =$ _____ $+ \frac{4}{10}$

$\frac{8}{10} = \frac{2}{10} + \frac{3}{10} +$ _____ $+$ _____ $+$ _____

$\frac{8}{10} =$ _____ $+$ _____ $+$ _____

7 Describe your strategy for finding the missing numbers.

GRADE 4 ● LESSON 20

Tools for Instruction

Add and Subtract Fractions

Objective Add and subtract fractions using number lines.	**Materials** plastic page protector, dry erase marker, **Blank Number Line** (page 3)

Students have previously used fraction models to add and subtract fractions with like denominators. Adding and subtracting fractions can sometimes be difficult for students because they do not have a strong understanding of fractions in general. This activity will have students solving problems involving fractions by having them add and subtract fractions on number lines. This will prepare students for solving problems involving fractions with unlike denominators.

Step by Step   15–20 minutes

1 Add using a number line.

- Provide the student with a copy of **Blank Number Line** (page 3) in a plastic page protector and a dry erase marker.
- Say: *Izzy and Holden are painting a mural. Izzy paints $\frac{3}{10}$ of the mural, and Holden paints $\frac{5}{10}$ of the mural. How much of the mural have they painted in all?* Tell the student that they will model solving this problem using a number line.
- Have the student identify that the addition problem $\frac{3}{10} + \frac{5}{10}$ can be used to solve this problem.
- Discuss with the student that the two addends have 10 as the denominator. Have the student label the number line by tenths.
- Point out that the student must start at $\frac{3}{10}$ on the number line and make five jumps to the right. Then have the student identify the sum to solve the problem. ($\frac{8}{10}$ of the mural)

Support English Learners The student may have difficulty identifying the directions *right* and *left*. Have the student label the ends of the number line *right* and *left* until they feel comfortable without the labels.

2 Subtract using a number line.

- Tell the student that they will model solving another problem using a number line. Say: *A recipe calls for $\frac{6}{8}$ of a cup of flour. You have $\frac{1}{8}$ of a cup of flour. How much more flour do you need?*
- Have the student identify that the subtraction problem $\frac{6}{8} - \frac{1}{8} = ?$ can be used to solve this problem.
- Ask: *How can you use the number line to solve?* (Sample answer: Divide the number line into eighths. Start at $\frac{6}{8}$. Jump one space to the left.)
- Have the student use their process to find the difference to solve the problem. ($\frac{5}{8}$ of a cup of flour)

3 Solve problems using a number line.

- Have the student solve more problems using the number line.
- Say: *You read $\frac{8}{12}$ of a book last week. This week, you read $\frac{3}{12}$ of the book. How much of the book did you read in all?* ($\frac{11}{12}$ of the book)
- Say: *You had 1 batch of cookies. Your family ate $\frac{8}{10}$ of the batch. How much of the batch is left?* ($\frac{2}{10}$ of the batch)

Tools for Instruction

Check for Understanding

Provide the following problem for the student to solve using the number line: *A recipe calls for $\frac{2}{3}$ of a cup of milk and $\frac{2}{3}$ of a cup of water. How much liquid is needed in all?* ($\frac{4}{3}$ cups)

For the student who struggles, use the table below to help pinpoint where extra help may be needed.

If you observe…	the student may…	Then try…
the student subtracts,	have interpreted the situation as a comparison.	having the student act out the problem to identify that it requires addition.
the student struggles to label the number line,	not understand that the denominator tells how many parts one whole is divided into.	pointing out that both fractions have 3 as their denominator, so the number line should show thirds.
the student does not know how many jumps to make,	not understand the meanings of the parts of fractions.	modeling several fractions on a number line.

Tools for Instruction

i-Ready Classroom Mathematics

Name_____

Blank Number Line

CENTER ACTIVITY ●●

Name:

LESSON 20

Different Ways to Show Sums

What You Need

- number cube (1–6)
- 15 game markers in one color
- 15 game markers in a different color
- Game Board

What You Do

1. Take turns. Roll the number cube. Find the fraction sum next to that toss in the table.

2. Find one expression on the **Game Board** that has that sum. Your partner checks your expression.

3. If you are correct, place your game marker on that expression. If you are not correct or if there are no uncovered expressions with that sum, your turn ends.

4. Continue until all the expressions on the **Game Board** have been covered.

5. The player with the greater number of game markers on the **Game Board** wins.

Toss	Sum
1	$\frac{9}{8}$
2	$\frac{5}{6}$
3	$\frac{3}{8}$
4	$\frac{4}{6}$
5	$\frac{8}{6}$
6	$\frac{7}{8}$

✔ **Check Understanding**

Use twelfths to write three different addition expressions that equal $\frac{5}{12}$.

→ **Go Further**

Write two addition expressions using sixths that equal $\frac{8}{6}$ and are NOT on the **Game Board.** Exchange papers with your partner to check.

GRADE 4 • LESSON 20 **Page 1 of 2**

CENTER ACTIVITY ●●
LESSON 20

Partner A: _____

Partner B: _____

Different Ways to Show Sums Game Board

$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{5}{6}$	$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{2}{8} + \frac{3}{8} + \frac{4}{8}$	$\frac{2}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
$\frac{4}{6} + \frac{2}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{4}{8} + \frac{3}{8}$	$\frac{2}{6} + \frac{3}{6}$	$\frac{4}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$	$\frac{2}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$
$\frac{2}{8} + \frac{2}{8} + \frac{3}{8}$	$\frac{3}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{3}{8}$	$\frac{3}{6} + \frac{5}{6}$	$\frac{1}{6} + \frac{2}{6} + \frac{1}{6}$
$\frac{3}{8} + \frac{3}{8} + \frac{3}{8}$	$\frac{2}{6} + \frac{2}{6} + \frac{1}{6}$	$\frac{1}{8} + \frac{2}{8}$	$\frac{2}{6} + \frac{2}{6}$	$\frac{1}{8} + \frac{2}{8} + \frac{1}{8} + \frac{2}{8} + \frac{1}{8}$
$\frac{1}{6} + \frac{2}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{4}{8} + \frac{3}{8} + \frac{1}{8} + \frac{1}{8}$	$\frac{2}{6} + \frac{2}{6} + \frac{4}{6}$	$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{2}{8} + \frac{1}{8}$

I can combine or break apart addends to find different expressions for a sum.
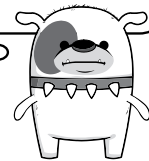
GRADE 4 ● LESSON 20   **Page 2 of 2**

CENTER ACTIVITY ●●●

LESSON 20

Name:

Different Ways to Show Sums

What You Need

- number cube (1–6)
- 15 game markers in one color
- 15 game markers in a different color
- Game Board

What You Do

1. Take turns. Roll the number cube. Find the fraction sum next to that toss in the table.

2. Find one expression on the **Game Board** that has that sum. Your partner checks your expression.

3. If you are correct, place your game marker on that expression. If you are not correct or if there are no uncovered expressions with that sum, your turn ends.

4. Your partner names another expression with the same sum that is NOT on the **Game Board.**

5. Continue until all the expressions on the **Game Board** have been covered.

6. The player with the greater number of game markers on the **Game Board** wins.

Toss	Sum
1	$\frac{9}{8}$
2	$\frac{5}{6}$
3	$\frac{3}{8}$
4	$\frac{4}{6}$
5	$\frac{8}{6}$
6	$\frac{7}{8}$

✔ **Check Understanding**

Use twelfths to write four different addition expressions that equal $\frac{5}{12}$.

→ **Go Further**

Write all the expressions you can think of to find the sum of $\frac{6}{8}$. Exchange papers with your partner to check.

CENTER ACTIVITY ●●●
LESSON 20

Partner A:

Partner B:

Different Ways to Show Sums Game Board

$\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{5}{6}$	$\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}$	$\frac{2}{8}+\frac{3}{8}+\frac{4}{8}$	$\frac{2}{6}+\frac{1}{6}+\frac{1}{6}$	$\frac{2}{8}+\frac{2}{8}+\frac{5}{8}$
$\frac{4}{6}+\frac{2}{6}+\frac{1}{6}+\frac{1}{6}$	$\frac{4}{8}+\frac{3}{8}$	$\frac{2}{6}+\frac{3}{6}$	$\frac{4}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}$	$\frac{2}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}$
$\frac{2}{8}+\frac{2}{8}+\frac{3}{8}$	$\frac{3}{6}+\frac{1}{6}+\frac{1}{6}$	$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{3}{8}$	$\frac{3}{6}+\frac{5}{6}$	$\frac{1}{6}+\frac{2}{6}+\frac{1}{6}$
$\frac{3}{8}+\frac{3}{8}+\frac{3}{8}$	$\frac{2}{6}+\frac{2}{6}+\frac{1}{6}$	$\frac{1}{8}+\frac{2}{8}$	$\frac{2}{6}+\frac{2}{6}$	$\frac{1}{8}+\frac{2}{8}+\frac{1}{8}+\frac{2}{8}+\frac{1}{8}$
$\frac{1}{6}+\frac{2}{6}+\frac{1}{6}+\frac{1}{6}$	$\frac{4}{8}+\frac{3}{8}+\frac{1}{8}+\frac{1}{8}$	$\frac{2}{6}+\frac{2}{6}+\frac{4}{6}$	$\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}$	$\frac{2}{8}+\frac{1}{8}$

> I can combine and break apart addends to find different expressions for a sum.

GRADE 4 ● LESSON 20   **Page 2 of 2**

CENTER ACTIVITY ●

LESSON 20

Name:

Below Level shown here.

Different Ways to Show Sums

What You Need

- number cube (1–6)
- fraction strips
- 15 game markers in one color
- 15 game markers in a different color
- Game Board

What You Do

1. Take turns. Roll the number cube. Find the fraction sum next to that toss in the table.

2. Use fraction strips to find one expression on the **Game Board** equal to that sum.

3. Your partner checks your work. If you are correct, place your game marker on that expression. If you are not correct or if there are no uncovered expressions with that sum, your turn ends.

4. Continue until all the expressions on the **Game Board** have been covered.

5. The player with the greater number of game markers on the **Game Board** wins.

Toss	Sum
1	$\frac{6}{8}$
2	$\frac{5}{6}$
3	$\frac{3}{8}$
4	$\frac{4}{6}$
5	$\frac{3}{6}$
6	$\frac{7}{8}$

✔ **Check Understanding**

Use twelfths to write two different addition expressions that equal $\frac{5}{12}$.

→ **Go Further**

Write an addition expression using eighths that equals $\frac{7}{8}$ and is NOT on the **Game Board**. Exchange papers with your partner to check.

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CENTER ACTIVITY ●

LESSON 20

Partner A: _____

Partner B: _____

Different Ways to Show Sums Game Board

$\frac{1}{8} + \frac{3}{8} + \frac{2}{8}$	$\frac{1}{6} + \frac{2}{6}$	$\frac{3}{8} + \frac{3}{8}$	$\frac{2}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
$\frac{1}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{4}{8} + \frac{3}{8}$	$\frac{2}{6} + \frac{3}{6}$	$\frac{2}{8} + \frac{2}{8} + \frac{2}{8}$	$\frac{1}{6} + \frac{4}{6}$
$\frac{2}{8} + \frac{2}{8} + \frac{3}{8}$	$\frac{3}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{2}{8} + \frac{4}{8}$	$\frac{1}{8} + \frac{3}{8} + \frac{3}{8}$	$\frac{1}{6} + \frac{2}{6} + \frac{1}{6}$
$\frac{2}{6} + \frac{1}{6}$	$\frac{2}{6} + \frac{2}{6} + \frac{1}{6}$	$\frac{1}{8} + \frac{2}{8}$	$\frac{2}{6} + \frac{2}{6}$	$\frac{1}{8} + \frac{2}{8} + \frac{4}{8}$
$\frac{2}{8} + \frac{5}{8}$	$\frac{5}{8} + \frac{1}{8}$	$\frac{4}{8} + \frac{1}{8} + \frac{1}{8}$	$\frac{1}{6} + \frac{3}{6}$	$\frac{2}{8} + \frac{1}{8}$

I can combine and break apart addends to find different expressions for a sum.

GRADE 4 ● LESSON 20   **Page 2 of 2**
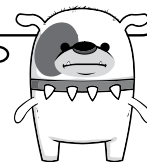
ENRICHMENT ACTIVITY

LESSON 20

Name:

Addition Grids

Your Challenge

In the addition grid below, the sum of each **row**, **column**, and **diagonal** is 2. Fill in the missing numbers to complete the grid.

	$\frac{12}{12}$	$\frac{5}{12}$
$\frac{11}{12}$		$\frac{9}{12}$

GRADE 4 ● LESSON 20   **Page 1 of 2**

ENRICHMENT ACTIVITY

LESSON 20

Name: _____

Addition Grids *continued*

Make your own addition grid by filling in all the squares in the grid below so that the sum of each **row** and **column** is 2. (The diagonals will have a different sum.) Then, draw a blank grid on another sheet of paper, fill in four of the squares of your puzzle, and share with a friend.

$\frac{8}{15}$		
	$\frac{5}{15}$	

LESSON 20 • QUIZ

Name:

Solve the problems.

1 Nobu is making a bracelet with 8 equal sections. He makes $\frac{4}{8}$ of the bracelet on Saturday and $\frac{2}{8}$ of the bracelet on Sunday. Which model can be used to find the total fraction of the bracelet that Nobu makes on Saturday and Sunday? Choose all the correct answers.

Ⓐ

$$0 \quad \frac{1}{8} \quad \frac{2}{8} \quad \frac{3}{8} \quad \frac{4}{8} \quad \frac{5}{8} \quad \frac{6}{8} \quad \frac{7}{8} \quad 1$$

Ⓑ

$$0 \quad \frac{1}{8} \quad \frac{2}{8} \quad \frac{3}{8} \quad \frac{4}{8} \quad \frac{5}{8} \quad \frac{6}{8} \quad \frac{7}{8} \quad 1$$

Ⓒ

Ⓓ

Ⓔ
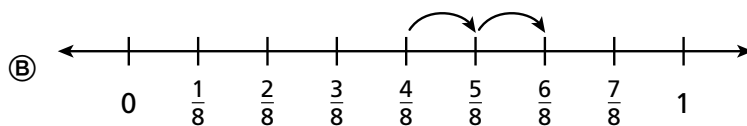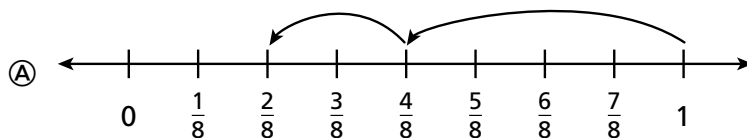
2 In a science class, students spend $\frac{2}{10}$ of the time reading and $\frac{7}{10}$ of the time doing an experiment. They spend the rest of the time cleaning up.
What fraction of science class time do students spend cleaning?

Ⓐ $\frac{9}{10}$

Ⓑ $\frac{5}{10}$

Ⓒ $\frac{9}{20}$

Ⓓ $\frac{1}{10}$

GRADE 4 • LESSON 20 • Add and Subtract Fractions

Page 1 of 2

LESSON 20 • QUIZ | Name:

3 Is $\frac{4}{10} + \frac{3}{10}$ equivalent to $\frac{9}{10} - \frac{3}{10}$? Explain your answer.

_____

_____

_____

4 Draw a line from each equation to the missing fraction to show how to decompose $\frac{7}{12}$ three different ways.

Equations

a. $\frac{7}{12} = \frac{2}{12} + \boxed{} + \frac{2}{12}$

b. $\frac{4}{12} + \boxed{} + \frac{1}{12} = \frac{7}{12}$

c. $\boxed{} + \frac{4}{12} + \frac{2}{12} = \frac{7}{12}$

Fractions

$\frac{4}{12}$

$\frac{1}{12}$

$\frac{3}{12}$

$\frac{5}{12}$

$\frac{2}{12}$

5 Find $\frac{5}{6} - \frac{3}{6}$.

Use a number line or an area model to show your thinking.

Solution _____

GRADE 4 • LESSON 20 • Add and Subtract Fractions   **Page 2 of 2**

i-Ready Classroom Mathematics | 21

Unit-Level Resources

**Unit 4: Fractions, Decimals, and Measurement:
Addition, Subtraction, and Multiplication**

GAME
UNIT 4

Name: _____

Fraction Sums

What you need: *Fraction Sums* Recording Sheet,
2 number cubes (1–6)

3
4

Directions

- Players each choose a denominator
  from the list on the Recording Sheet.
  Players write their numbers in the
  Denominator Choice column of the
  Recording Sheet.

- Player A rolls the number cubes and
  makes two fractions using the
  numbers rolled as the numerators
  along with the chosen denominator.

- Player A writes and solves an addition
  equation with the two fractions as the
  addends on the Recording Sheet.

- Player B takes a turn following the same steps
  as Player A.

- Players compare the two fraction sums. The
  player with the greater sum wins the round.

- In each round, players choose a denominator
  that they have not used yet. The player with
  more wins after 5 rounds wins the game.

Name: *Maya*

Fraction Sums Recording Sheet

Denominators
2 3 ~~4~~ 6 8

Denominators
2 3 4 6 ~~8~~

Maya
Player A Name

Denominator Choice	Equation
1. *4*	$\frac{3}{4} + \frac{4}{4} = \frac{7}{4}$
2.	

Isaac
Player B Name

Denominator Choice	Equation
1. *8*	$\frac{4}{8} + \frac{6}{8} = \frac{10}{8}$
2.	
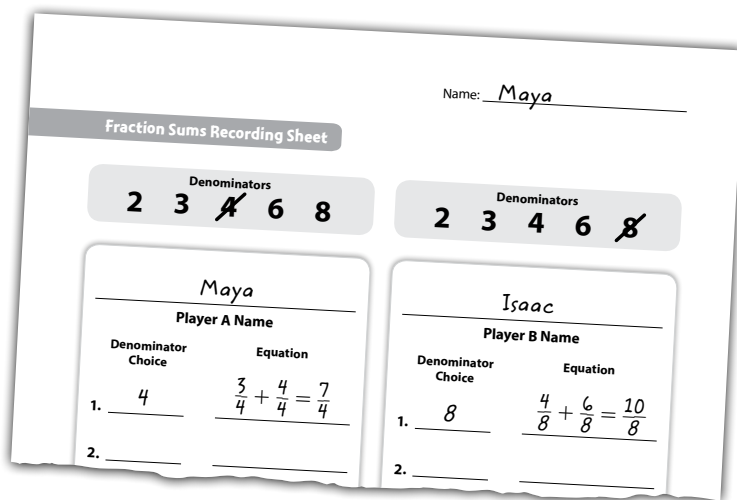
I chose fourths.
$\frac{3}{4} + \frac{4}{4} = \frac{7}{4}$
That's the same
as $\frac{14}{8}$. I win this
round because $\frac{14}{8}$ is
greater than your
sum of $\frac{10}{8}$.

GRADE 4 • UNIT 4   **Page 1 of 2**

GAME

UNIT 4

Name: _____

Fraction Sums Recording Sheet

Denominators						**Denominators**				
2	**3**	**4**	**6**	**8**		**2**	**3**	**4**	**6**	**8**

_____

Player A Name

Denominator Choice	Equation
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Final Score Player A [_____]

_____

Player B Name

Denominator Choice	Equation
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Final Score Player B [_____]

Gold

by Carl Gelb

1   People have valued gold for thousands of years. Because of the metal's durability, gold ornaments, statues, and jewelry look as brilliant today as when the artists of ancient Egypt and other cultures crafted them thousands of years ago. Gold is one of nature's true wonders.

2   **Properties:** Gold is an element. It cannot be broken down into simpler substances. Gold is also very malleable, which means it is easily flattened into a thin sheet. Gold is also ductile, which means it can be pulled into a wire. For these reasons, gold is useful in making jewelry. One ounce of gold can become 187 square feet of gold leaf or one mile of gold wire. Gold also conducts heat and electricity very well.

3   **Alloys:** Pure gold is very soft. Because it's so soft, gold is often mixed with other metals to make a mixture, or alloy, that is stronger than gold alone. Adding silver, copper, and zinc to gold produces the color we associate with jewelry.

4   **Today's Uses:** In the past, gold was mainly used for jewelry, statues, and other decorations. But today we use gold for more than just its beauty. It is an excellent conductor of electricity. This means that electricity flows through it easily. As a conductor, gold coats electrical parts inside our cell phones and computers. It helps speed the flow of electricity. Thin films of gold also reflect radiation on satellites, the sun visors of space suits, and the windows of skyscrapers. Gold's uses are many and important!

Computer Microchips ▶

LITERACY CONNECTION

UNIT 4

Name:
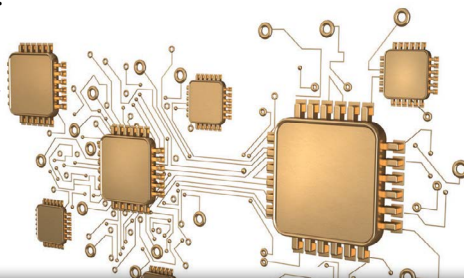
Literacy Connection: Science

"Gold": Fractions

Solve each problem. Show your work.

1 A jewelry maker buys a bar of pure gold. She needs $\frac{6}{8}$ of an ounce of pure gold to make a piece of jewelry. Unfortunately, she does not have any measuring tools that measure in eighths. What is a fraction equivalent to $\frac{6}{8}$? Use a model to show a fraction that is equivalent to $\frac{6}{8}$. Label the model.

_____ $= \frac{6}{8}$

2 A jewelry company makes equal-sized alloy bars to sell to local jewelry makers. Each alloy bar contains $\frac{4}{10}$ of an ounce of pure gold, $\frac{3}{5}$ of an ounce of silver, and $\frac{2}{3}$ of an ounce of zinc. Which metal is used the most in the alloy?

_____ is the metal used the most in the alloy bars.

LITERACY CONNECTION

UNIT 4

Name: _____

Literacy Connection: Science *continued*

3 Quinn is making an alloy of gold and silver. She mixes $\frac{6}{10}$ of an ounce of gold and $\frac{4}{10}$ of an ounce of silver to make the alloy. She uses $\frac{3}{10}$ of an ounce of the alloy to make a necklace. How many ounces of the alloy does Quinn have after making the necklace?

Quinn has _____ of an ounce of the alloy.

4 In one day, a cell phone maker uses $\frac{2}{8}$ of an ounce of gold for all the conductors in the phones it makes. It also uses $\frac{1}{8}$ of an ounce of gold for all the electrical coils in the phones. How much gold does the factory use each day to make cell phones?

The factory uses _____ of an ounce of gold each day.

LITERACY CONNECTION

UNIT 4

Name: _____

Literacy Connection: Science *continued*

5 A jewelry store has 12 golden nuggets to use to make jewelry. They use 3 golden nuggets to make earrings, 4 golden nuggets to make rings, and the rest of the golden nuggets to make bracelets. What fraction of golden nuggets does the jewelry store use to make the bracelets?

The store uses _____ of the gold nuggets to make bracelets.

UNIT 4 • MID-UNIT ASSESSMENT 1 | Name:

FORM A

Solve the problems.

1 In art class, Luke spends $\frac{2}{6}$ of the time drawing and $\frac{3}{6}$ of the time painting. He spends the rest of the time working with clay. What fraction of art class time does Luke spend working with clay?

Ⓐ $\frac{1}{6}$

Ⓑ $\frac{5}{12}$

Ⓒ $\frac{5}{6}$

Ⓓ $\frac{7}{12}$

2 Draw a line from each equation to the missing fraction to show how to decompose $\frac{7}{8}$ three different ways.

Equations

a. $\frac{7}{8} = \frac{2}{8} + \boxed{} + \frac{2}{8}$

b. $\frac{3}{8} + \boxed{} + \frac{2}{8} = \frac{7}{8}$

c. $\boxed{} + \frac{3}{8} + \frac{3}{8} = \frac{7}{8}$

Fractions

$\frac{5}{8}$

$\frac{4}{8}$

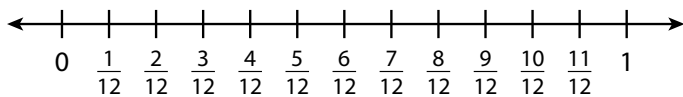$\frac{3}{8}$

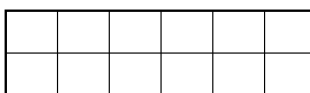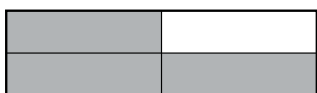$\frac{2}{8}$

$\frac{1}{8}$

UNIT 4 • MID-UNIT ASSESSMENT 1 | Name:

FORM A continued

3 Which expression has a value of $\frac{7}{12}$?

Use the number line below to help you choose your answer.

0   $\frac{1}{12}$ $\frac{2}{12}$ $\frac{3}{12}$ $\frac{4}{12}$ $\frac{5}{12}$ $\frac{6}{12}$ $\frac{7}{12}$ $\frac{8}{12}$ $\frac{9}{12}$ $\frac{10}{12}$ $\frac{11}{12}$ 1

Ⓐ $\frac{6}{12} - \frac{1}{12}$

Ⓑ $\frac{5}{12} + \frac{2}{12}$

Ⓒ $\frac{11}{12} - \frac{5}{12}$

Ⓓ $\frac{4}{12} + \frac{5}{12}$

4 The shaded model shows $\frac{3}{4}$. Describe how to shade the other model to show a fraction equivalent to $\frac{3}{4}$. Then name the equivalent fraction.

Solution _____

_____

_____

5 Rocco needs $\frac{2}{8}$ of a cup of shredded cheese for a recipe. He only has a $\frac{1}{4}$-cup measuring cup, a $\frac{1}{3}$-cup measuring cup, and a $\frac{1}{2}$-cup measuring cup. Which should he use and why?

Solution _____

_____
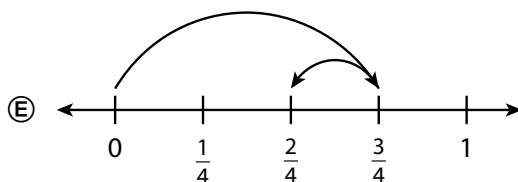
_____

UNIT 4 • MID-UNIT ASSESSMENT 1 | Name:

FORM A continued

6 Decide if each comparison is true.

Choose *True* or *False* for each comparison.

	True	False
$\frac{3}{5} > \frac{5}{10}$	Ⓐ	Ⓑ
$\frac{1}{8} > \frac{1}{4}$	Ⓒ	Ⓓ
$\frac{4}{12} = \frac{1}{3}$	Ⓔ	Ⓕ
$\frac{4}{5} > \frac{9}{10}$	Ⓖ	Ⓗ
$\frac{5}{8} < \frac{3}{4}$	Ⓘ	Ⓙ

7 Riley has $\frac{3}{4}$ of a yard of lace. She cuts off $\frac{1}{4}$ of a yard to decorate her scrapbook.

Which models can be used to find the total fraction of a yard of lace that

Riley has left? Choose all the correct answers.

Ⓐ

Ⓑ

Ⓒ

Ⓓ

Ⓔ

GRADE 4 • **UNIT 4** • Mid-Unit Assessment 1 | **Form A**   **Page 3 of 5**

i-Ready Classroom Mathematics | 31
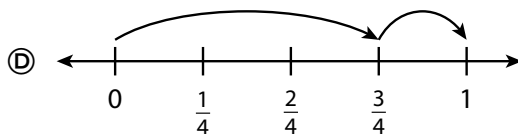
UNIT 4 • MID-UNIT ASSESSMENT 1 | Name: _____

FORM A continued

8 Sadir rides his bike $\frac{8}{12}$ of a mile to the park and $\frac{3}{4}$ of a mile to the library.

Which statement correctly describes a way to compare $\frac{8}{12}$ and $\frac{3}{4}$?

Ⓐ $8 > 3$, so $\frac{8}{12} > \frac{3}{4}$

Ⓑ $\frac{3}{4} = \frac{9}{12}$, so $\frac{8}{12} < \frac{3}{4}$

Ⓒ $\frac{8}{12} = \frac{2}{3}$ and $2 < 3$, so $\frac{8}{12} < \frac{3}{4}$

Ⓓ $\frac{8}{12} > \frac{1}{2}$ and $\frac{3}{4} < \frac{1}{2}$, so $\frac{8}{12} > \frac{3}{4}$

9 Fill in the missing numbers to find an equivalent fraction to $\frac{2}{5}$.

Write the answers in the boxes.

$$\frac{2}{5} = \frac{2 \times 4}{5 \times \boxed{}} = \frac{\boxed{}}{\boxed{}}$$

10 Draw and label a model to find the value of $\frac{2}{6} + \frac{3}{6}$. Then write and solve an equation that matches the model.

Solution _____

UNIT 4 • MID-UNIT ASSESSMENT 1 | Name: _____

FORM A continued

11 Compare $\frac{4}{10}$ and $\frac{3}{5}$.

Part A

Place the points $\frac{4}{10}$ and $\frac{3}{5}$ on the number line.

←——+——+——+——+——+——+——+——+——+——+——→
    0   1
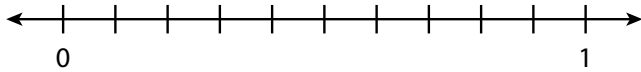
Part B

Write a comparison for $\frac{4}{10}$ and $\frac{3}{5}$. Explain how you found your answer.

Solution _____

_____

12 Find $\frac{7}{8} - \frac{4}{8}$.

Use a number line or an area model to show your thinking.

Solution _____

UNIT 4 • UNIT ASSESSMENT

FORM A

Name: _____

Solve the problems.

1 Decide if each comparison is true.
Choose *True* or *False* for each comparison.

	True	False
$\frac{2}{10} = \frac{4}{5}$	Ⓐ	Ⓑ
$\frac{4}{6} > \frac{1}{2}$	Ⓒ	Ⓓ
$\frac{3}{4} < \frac{3}{12}$	Ⓔ	Ⓕ
$\frac{3}{8} < \frac{3}{4}$	Ⓖ	Ⓗ
$\frac{5}{12} > \frac{2}{6}$	Ⓘ	Ⓙ

2 In cooking class, Louis spends $\frac{3}{8}$ of the time making bread and $\frac{4}{8}$ of the time making soup. He spends the rest of the time cooking chicken. What fraction of cooking class does he cook chicken?

Ⓐ $\frac{7}{16}$ Ⓑ $\frac{1}{8}$

Ⓒ $\frac{7}{8}$ Ⓓ $\frac{9}{16}$

3 Draw and label a model to find the value of $\frac{5}{12} + \frac{2}{12}$. Then write and solve an equation that matches the model.

Solution _____

UNIT 4 • UNIT ASSESSMENT | Name: _____

FORM A continued

4 Marla finds an equivalent fraction for $\frac{9}{12}$. The equivalent fraction's denominator is 4. Which statement correctly describes how she finds the equivalent fraction?

Ⓐ Add the same number to 9 and 12.

Ⓑ Subtract the same number from 9 and 12.

Ⓒ Multiply 9 and 12 by the same whole number.

Ⓓ Divide 9 and 12 by the same whole number.

5 Complete the equation to show how to find the sum of $\frac{60}{100}$ and $\frac{3}{10}$. Write your answers in the boxes.

$$\frac{60}{100} + \frac{\boxed{}}{100} = \frac{\boxed{}}{\boxed{}}$$

6 Lucas has one $10 bill and two $5 bills. He spends $5.40 on lunch and $6.30 on a T-shirt. How much money does Lucas have left? Show your work.

Solution _____

GRADE 4 • UNIT 4 • Unit Assessment | **Form A**

◆**i-Ready Classroom** Mathematics | 35

Name: _____

7 Write $\frac{8}{100}$ as a decimal. Record your answer on the grid. Then fill in the bubbles.

8 Carolyn's hair growth was 2.1 centimeters since her last haircut. Delia's hair growth was 2.03 centimeters.

Carolyn uses this place value chart to help her compare the growth.

	Ones	.	Tenths	Hundredths
Carolyn's hair growth (cm)	2	.	1	
Delia's hair growth (cm)	2	.	0	3

Part A

Compare the hair growth of Carolyn and Delia using $>$, $<$, or $=$. Use the place value chart to explain your answer.

_____

_____

_____

_____

Part B

Since her last haircut, Breanna's hair growth was more than Delia's, but less than Carolyn's. How many centimeters could Breanna's hair have grown? Show your work.

_____ centimeters
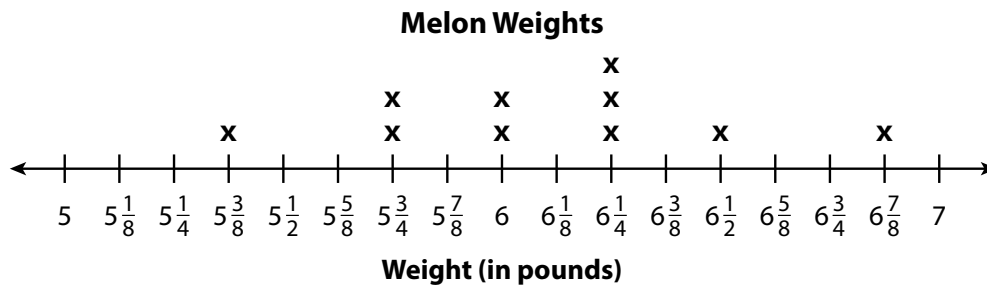
UNIT 4 • UNIT ASSESSMENT

FORM A continued

Name: _____

9 Flora plants roses in $\frac{59}{100}$ of her garden and daisies in $\frac{2}{10}$ of her garden.

Which expressions show how to find the total fraction of the garden in which

Flora plants roses and daisies? Choose all the correct answers.

Ⓐ $\frac{5}{10} + \frac{2}{10}$

Ⓑ $\frac{59}{10} + \frac{2}{10}$

Ⓒ $\frac{59}{100} + \frac{2}{10}$

Ⓓ $\frac{59}{100} + \frac{2}{100}$

Ⓔ $\frac{59}{100} + \frac{20}{100}$

10 The line plot below shows the weights of melons on display at a county fair.

Melon Weights

Weight (in pounds)

What is the difference in weight between the heaviest and lightest melons?

Ⓐ   1 pound

Ⓑ $1\frac{1}{8}$ pounds

Ⓒ $1\frac{4}{8}$ pounds

Ⓓ   2 pounds

UNIT 4 • UNIT ASSESSMENT   Name:

FORM A continued

11 Which fraction and decimal pair is equivalent?

Ⓐ $\frac{5}{100}$ and 0.5

Ⓑ $\frac{61}{100}$ and 6.1

Ⓒ $\frac{9}{10}$ and 0.9

Ⓓ $\frac{3}{10}$ and 0.03

12 Which equations are true? Choose all the correct answers.

Ⓐ $3\frac{3}{12} - 2\frac{2}{12} = 1\frac{1}{12}$

Ⓑ $6\frac{5}{8} - 2\frac{1}{8} = 4\frac{4}{8}$

Ⓒ $6\frac{2}{5} + 3\frac{1}{5} = 9\frac{3}{10}$

Ⓓ $1\frac{30}{100} + 2\frac{16}{100} = 3\frac{46}{100}$

Ⓔ $4\frac{3}{6} - 2\frac{2}{6} = 2\frac{5}{6}$

13 Lucy spends $1\frac{3}{4}$ hours riding her bike on Tuesday. She spends $2\frac{3}{4}$ hours riding her bike on Wednesday. Lucy says the total time she rides her bike on Tuesday and Wednesday is between 3 hours and 4 hours.
Is she correct? Explain.

_____

_____

_____

_____

_____

UNIT 4 • UNIT ASSESSMENT | Name: _____

FORM A continued

14 Tyler plays mini golf for $3\frac{1}{3}$ hours. During this time, he plays on 4 courses. Each course takes the same amount of time. How long, in minutes, does Tyler play on each course? Record your answer on the grid. Then fill in the bubbles.

15 Mia feeds her puppy $\frac{5}{6}$ of a cup of food 3 times each day. Write and solve a multiplication equation that Mia can use to find the total amount of food she feeds her puppy each day.

Mia feeds her puppy _____ cups of food each day.

16 Mr. Lee has a rope. The total length of the rope is 5 meters. He cuts off 350 centimeters of rope to use in his garden and another 75 centimeters to hang a bird feeder. What is the length in centimeters of the rope he has left?

(A) 75 centimeters   (B) 150 centimeters

(C) 275 centimeters   (D) 425 centimeters

17 An artist needs to mix at least 2,000 milliliters of paint to make a color. They use $1\frac{1}{4}$ liters of white paint, $\frac{1}{2}$ of a liter of blue paint, and 700 milliliters of green paint to make the color. Does the artist mix enough paint? Show your work.

Solution _____

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