

Classroom Mathematics

California

Teacher Toolbox

Resource Sampler



GRADE

4

by  i-Ready

Engaging Resources to Drive Student Growth

The Teacher Toolbox for *Classroom Mathematics California* is an important part of your digital experience and companion to your Teacher's Guide, as it houses many of the resources you need to deliver effective core mathematics instruction. You'll see references to specific Teacher Toolbox resources throughout the Teacher's Guide, pointing you to materials you can use for whole class instruction and small group differentiation. 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 
- Assessments (Lesson Quizzes, Assessment Notes Recording Sheet, and Unit Assessments—Forms A and B) 
- Centers Library 
- Cumulative Practice 
- Digital Math Tools
- Graphic Organizers 
- Games (Unit Level for Grades K–8 and Grade Level for Grades K–2) 
- Enrichment Activities 
- Family Letters 
- Fluency and Skills Practice 
- Implementation Support
- Interactive Tutorials 
- Literacy Connection Activities 
- Learning Activities (On Level, Below Level, and Above Level) 
- Student Worktext PDFs 
- PowerPoint® Slides 
- Teacher's Guide PDFs 
- Tools for Instruction 
- Unit Flow & Progression Videos (closed captioned in English and Spanish)

 = Available in English and Spanish

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Grade 4 Teacher Toolbox Shown

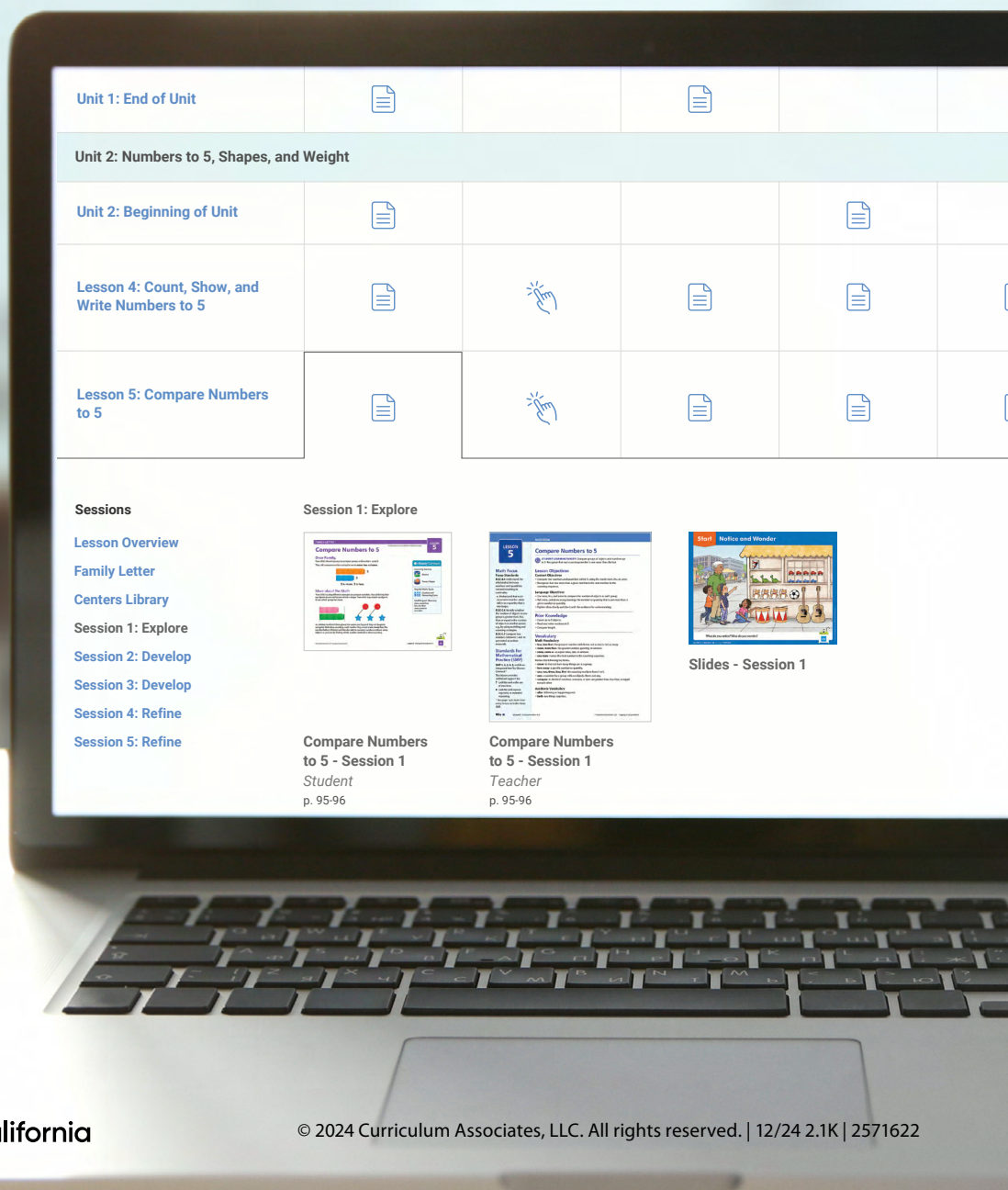


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Check out the Teacher Digital Experience Walkthrough to see more digital resources!

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



Program Implementation Support

A wealth of resources to help California educators implement *Classroom Mathematics California* as a core program, including digital versions of support found in your Teacher's Guide, plus Try–Discuss–Connect instructional framework details, pacing and correlations resources, Digital Math Tools, Data Talk Displays, and more

Program

Classroom California ...

Subject

Math

Grade

K

1

2

3

4

5

6

7

8

Classroom Resources

Classroom Resources (Spanish)

Assessment Practice

Program Implementation

Whole Class Instruction			Small Group Differentiation			
Teach		Assess	Prepare	Reteach	Reinforce	Extend
Instruction & Practice	Interactive Tutorials	Lesson Quizzes & Unit Assessments	Prerequisite Lessons	Tools for Instruction	Math Center Activities	Enrichment Activities

Unit 1: Whole Numbers: Place Value, Comparison, Addition, and Subtraction

Teaching and Learning Resources

- Digital Math Tools and Supporting Videos
- **Discourse Cards and Discourse Cube** ^{E/S}
- **Activity Sheet Resources** ^{E/S}
- Graphic Organizer Resources ^{E/S}



Discourse Card Example Shown

Activity Sheet

Multiple Terms

Name _____

Word	In My Own Words	Example

21

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Activity Sheet Example Shown

^{E/S} = Available in English and Spanish

Implementation Support

- **UDL Process Toolkit**
- Integrating Prerequisites into Grade-Level Instruction
- Student Handbook ^{E/S}
- Multilingual Glossary
- Bilingual Glossary
- Spanish Glossary
- Academic Vocabulary Glossary ^{E/S}
- **Data Science Resources**
- Manipulative Lists
- Digital Resource Correlations
- Comprehension Check Correlations
- Spiral Review and Cumulative Practice Correlations
- Try-Discuss-Connect Framework Resources ^{E/S}
- Positive Learning Habits

UDL PROCESS TOOLKIT FOR CLASSROOM MATHEMATICS CALIFORNIA
UDL PROCESS PLANNER • GRADE 7 EXAMPLE

UDL Process Planner

Grade 7 Example

Math focus: Identify the constant of proportionality from a description of a proportional relationship. Use proportional reasoning to solve ratio problems.

Instructional component and its purpose:
The Exit Ticket asks students to write and show how to solve a word problem involving a multi-step proportional relationship and share what they know. It lets the teacher identify and address a common error: writing the reciprocal for the constant of proportionality.

Students' strengths, experiences, and needs related to the math focus:

Strengths:

- SMP 4 – Students have previous experience modeling the constant of proportionality from word problems, diagrams, and xy tables.
- Students have real-world experiences they can use to create the context of their word problem.

Experiences:

- Students use proportional relationships in real life (e.g., doubling a recipe, budgeting for shopping).

Needs:

- Students may forget the second step in their answer.
- Need conceptual, not procedural, understanding of what a proportional relationship is.

1–3 Potential barriers to Engagement, Representation, Action & Expression:

- Students' responses are expected to be written, in English, and in complete sentences, with minimal time. Potential barrier to Expression.
- Students may struggle to quickly generate novel problem context independently. Potential barrier to Engagement and Expression.
- Teacher planning: Unable to see all students' Exit Tickets (i.e., Exit Tickets are in student books, which are taken home).

Relevant supports to leverage:

1–2 Embedded supports:

- Use a Collect and Display chart to capture a variety of models and sentence structures
- Students get to create their own relevant and interesting problem contexts.
- Students can use a graphing calculator to make tables, solve problems, and check work.

1–3 Additional support opportunities:

- Before students start, brainstorm a list of contexts that use proportions.
- Offer choice of response method: type, write in students' home language, draw a picture to model the problem and solution.
- Provide ample time and allow those who do not finish to turn it in the next day. Have children write their Exit Ticket response on a sheet of paper, sticky note, or whiteboard for the teacher to collect.

Unit: 1
Lesson: 5
Session: 3

☐ Explore
☐ Develop
☒ Refine

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Grade 7 UDL Process Toolkit Shown

DATA INVESTIGATION | FOOD FOR THOUGHT
UNIT 2

STEP 3 SIMPLIFY

Time Span Totals Table (optional)

Time Span Totals	1 PM TO 4 PM		12 PM TO 3 PM		11 AM TO 2 PM					
	Total \$	Total Items	Total \$	Total Items	Total \$	Total Items				
	Tacos		Wraps		Burgers		Sandwiches			

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Grade 4 Data Investigation Example Shown

Lesson-Level Resources

Lesson 20: Add and Subtract Fractions

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Adding Fractions

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

$$1 \quad \frac{1}{6} + \frac{4}{6} = \frac{\boxed{}}{6}$$

$$2 \quad \frac{1}{8} + \frac{4}{8} = \frac{\boxed{}}{\boxed{}}$$

$$3 \quad \frac{1}{10} + \frac{4}{10} = \frac{\boxed{}}{\boxed{}}$$

$$4 \quad \frac{4}{12} + \frac{\boxed{}}{\boxed{}} = \frac{7}{12}$$

$$5 \quad \frac{4}{6} + \frac{\boxed{}}{\boxed{}} = \frac{7}{6}$$

$$6 \quad \frac{4}{3} + \frac{\boxed{}}{\boxed{}} = \frac{7}{3}$$

$$7 \quad \frac{\boxed{}}{\boxed{}} + \frac{2}{4} = \frac{5}{4}$$

$$8 \quad \frac{\boxed{}}{\boxed{}} + \frac{2}{10} = \frac{5}{10}$$

$$9 \quad \frac{\boxed{}}{\boxed{}} + \frac{2}{8} = \frac{5}{8}$$

$$10 \quad \frac{\boxed{}}{6} + \frac{2}{6} = \frac{\boxed{}}{6}$$

$$11 \quad \frac{\boxed{}}{5} + \frac{1}{5} = \frac{\boxed{}}{5}$$

$$12 \quad \frac{4}{10} + \frac{\boxed{}}{10} = \frac{\boxed{}}{10}$$

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

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



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.



Decomposing Fractions

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

1 $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \underline{\hspace{2cm}}$

$$\frac{3}{4} = \frac{2}{4} + \underline{\hspace{2cm}}$$

$$\frac{3}{4} = \frac{1}{4} + \underline{\hspace{2cm}}$$

2 $\frac{7}{8} = \frac{6}{8} + \underline{\hspace{2cm}}$

$$\frac{7}{8} = \frac{5}{8} + \underline{\hspace{2cm}}$$

$$\frac{7}{8} = \frac{4}{8} + \underline{\hspace{2cm}}$$

3 $\frac{6}{5} = \underline{\hspace{2cm}} + \frac{3}{5}$

$$\frac{6}{5} = \frac{2}{5} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$\frac{6}{5} = \frac{2}{5} + \frac{2}{5} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

4 $\frac{5}{6} = \underline{\hspace{2cm}} + \frac{3}{6}$

$$\frac{5}{6} = \frac{1}{6} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

5 $\frac{9}{12} = \underline{\hspace{2cm}} + \frac{5}{12}$

$$\frac{9}{12} = \frac{3}{12} + \frac{3}{12} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$\frac{9}{12} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

6 $\frac{8}{10} = \underline{\hspace{2cm}} + \frac{4}{10}$

$$\frac{8}{10} = \frac{2}{10} + \frac{3}{10} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$\frac{8}{10} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

7 Describe your strategy for finding the missing numbers.

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.

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?*
- Have the student use their process to find the difference to solve the problem.

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?*
- Say: *You had 1 batch of cookies. Your family ate $\frac{8}{10}$ of the batch. How much of the batch is left?*

Tools for Instruction

Check for Understanding

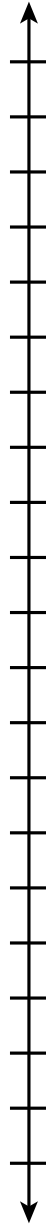
Provide the following problem for the student to solve using the number line: *A recipe calls for $\frac{2}{3}$ of a cup of milk and $\frac{2}{3}$ of a cup of water. How much liquid is needed in all?*

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

Name _____

Blank Number Line



Make a Whole!

What You Need

- Fraction Cards
- Recording Sheet

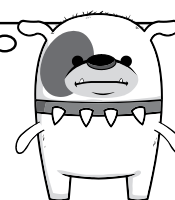
What You Do

1. Shuffle the **Fraction Cards** and place them facedown in a pile.
2. The first partner picks a **Fraction Card** and finds a way to put the fraction together. The second partner finds another way to put the fraction together using a different combination of fractions. Take turns to find different ways to put the fraction together.
3. Continue until one partner cannot find a new way to put the fraction together on his or her turn. The other partner shades one part of his or her whole circle on the **Recording Sheet**.
4. The first player to shade his or her whole circle on the **Recording Sheet** wins.
5. Shuffle the cards and play again.

How many ways can I put together fifths to make $\frac{3}{5}$?

$$\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$\frac{3}{5} = \frac{2}{5} + \frac{1}{5}$$



Check Understanding

Tell three different ways to put together eighths to make $\frac{5}{8}$.



Go Further

Place the **Fraction Cards** facedown in a pile. Pick a card but do not show it to your partner. Say a way to put together the fraction on the card. Your partner tells the fraction on your card.



CENTER ACTIVITY ●●

LESSON 20

Partner A:

Partner B:

Fraction Cards



$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$	$\frac{2}{6}$	$\frac{3}{6}$	$\frac{4}{6}$
$\frac{5}{6}$	$\frac{6}{6}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{5}{8}$
$\frac{6}{8}$	$\frac{7}{8}$	$\frac{8}{8}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$
$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{10}{10}$



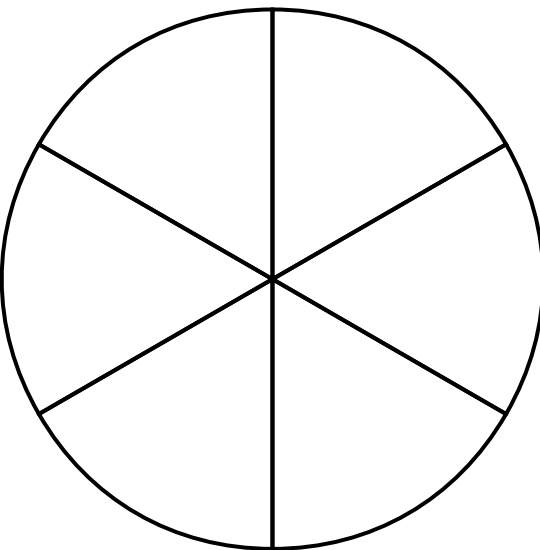
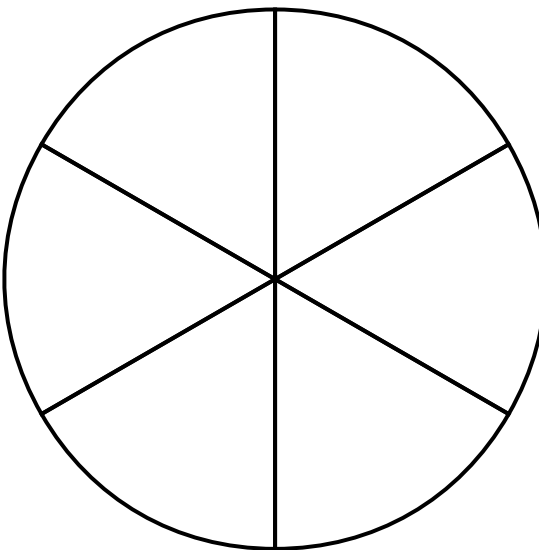
CENTER ACTIVITY ●●

LESSON 20

Partner A:

Partner B:

Recording Sheet

Partner A	Partner B
	



Below Level shown
here. Above Level also
available.

Make a Whole!

What You Need

- 1 set of fraction tiles
- Fraction Cards
- Recording Sheet

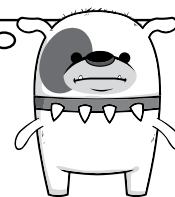
What You Do

1. Shuffle the **Fraction Cards** and place them facedown in a pile.
2. The first partner picks a **Fraction Card** and uses fraction tiles to find a way to put the fraction together. The second partner finds another way to put the fraction together using a different combination of fraction tiles. Take turns to find different ways to put the fraction together.
3. Continue until a partner cannot find a new way to put the fraction together on his or her turn. The other partner shades one part of his or her whole circle on the **Recording Sheet**.
4. The first player to shade his or her whole circle on the **Recording Sheet** wins.
5. Shuffle the cards and play again.

How many ways can I put
together fifths to make $\frac{3}{5}$?

$$\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$\frac{3}{5} = \frac{2}{5} + \frac{1}{5}$$



Check Understanding

Tell three different ways to put together sixths to make $\frac{4}{6}$.



Go Further

Place the **Fraction Cards** facedown in a pile. Pick a card but do not show it to your partner. Say a way to put together the fraction on the card. Your partner tells the fraction on your card.



CENTER ACTIVITY ●

LESSON 20

Partner A:

Partner B:

Fraction Cards



$$\frac{2}{4}$$

$$\frac{2}{6}$$

$$\frac{2}{8}$$

$$\frac{2}{10}$$

$$\frac{3}{4}$$

$$\frac{3}{6}$$

$$\frac{3}{8}$$

$$\frac{3}{10}$$

$$\frac{4}{4}$$

$$\frac{4}{6}$$

$$\frac{4}{8}$$

$$\frac{6}{10}$$

$$\frac{5}{6}$$

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

$$\frac{5}{10}$$

$$\frac{6}{6}$$

$$\frac{6}{8}$$

$$\frac{6}{10}$$

$$\frac{7}{8}$$

$$\frac{7}{10}$$

$$\frac{8}{8}$$

$$\frac{8}{10}$$

$$\frac{9}{10}$$

$$\frac{10}{10}$$



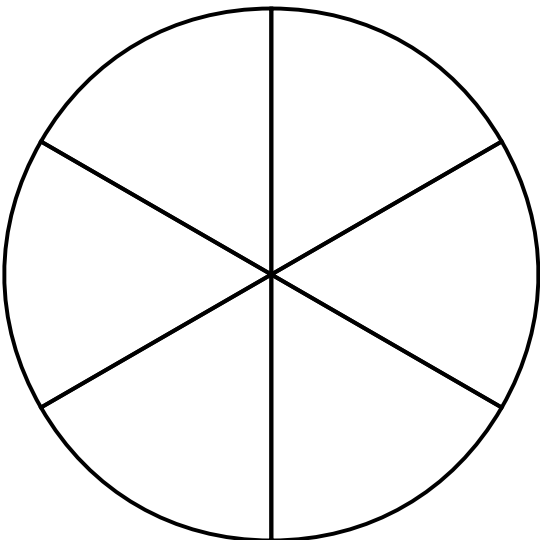
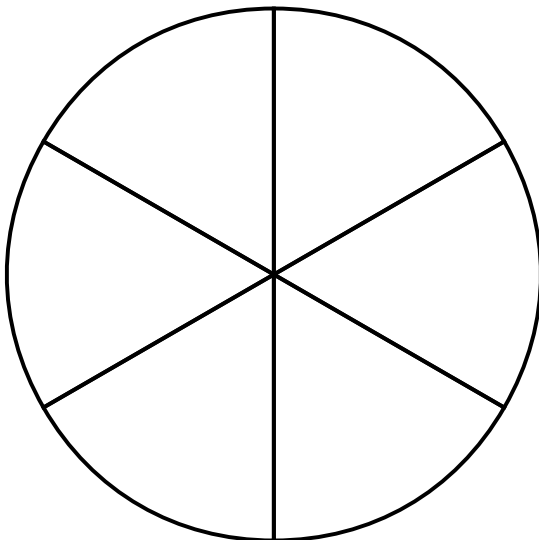
CENTER ACTIVITY ●

LESSON 20

Partner A:

Partner B:

Recording Sheet

Partner A	Partner B
	



ENRICHMENT ACTIVITY

Name: _____

LESSON 20

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.

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



ENRICHMENT ACTIVITY

Name: _____

LESSON 20

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. What is the total fraction of the bracelet that Nobu makes on Saturday and Sunday? Show your work.

Solution _____

- 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?

- Ⓐ $\frac{9}{10}$
Ⓑ $\frac{5}{10}$
Ⓒ $\frac{9}{20}$
Ⓓ $\frac{1}{10}$



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

Fractions

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

$\frac{4}{12}$

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

$\frac{1}{12}$

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

$\frac{3}{12}$

$\frac{5}{12}$

$\frac{2}{12}$

- 5 Find $\frac{5}{6} - \frac{3}{6}$. Show your work.

Solution _____

Add and Subtract Fractions

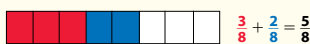
Dear Family,

This week your child is learning how to add and subtract fractions with like denominators.

Fractions with the same number below the line have like denominators.

like denominators: $\frac{1}{4}$ and $\frac{3}{4}$ unlike denominators: $\frac{1}{2}$ and $\frac{3}{4}$

To find the sum of fractions with like denominators, understand that you are adding like units. Just as 3 apples plus 2 apples is 5 apples, 3 eighths plus 2 eighths is 5 eighths. Similarly, when you take away, or subtract, 2 eighths from 5 eighths, you have 3 eighths left.



You can also use a number line to understand adding and subtracting like fractions.



Remember that the denominator names units the same way that names units.

So, when you add two fractions with like denominators, the sum tells how many of those units you have.

When you subtract two fractions with like denominators, the difference tells how many of those units you have.

Invite your child to share what they know about adding and subtracting fractions by doing the following activity together.



Learning Games



Cupcake



Cloud Machine

Math Tools



Number Line



Fraction Models



ACTIVITY ADDING AND SUBTRACTING FRACTIONS

Do this activity with your child to add and subtract fractions.

Materials bowl, measuring cup, ingredients shown in the recipe

Follow the recipe below to make a creamy cracker spread or veggie dip.

Creamy Spread

Ingredients

$\frac{5}{8}$ cup cream cheese
 $\frac{2}{8}$ cup sour cream
 herbs

crackers or veggies

Directions

Mix the cream cheese, sour cream, and herbs together in a medium bowl. Serve immediately with crackers or sliced fresh veggies. Enjoy!



After you have made the spread, ask your child questions such as these:

1. What fraction of a cup is the total amount of spread?
2. If you spread $\frac{1}{8}$ of a cup on crackers or veggies, how much spread is left?

Make up a simple recipe using fractions for someone else in the family to make!

Answers: 1. $\frac{7}{8}$ cup; 2. $\frac{6}{8}$ cup



SESSION 1

Explore

Adding and Subtracting Fractions

**Learning Targets**

- Add fractions with the same denominator.
- Subtract fractions with the same denominator.
- Write a fraction as a sum in more than one way.

LESSON 20 • Add and Subtract Fractions

Start

Same and Different

$$\frac{1}{12} + \frac{11}{12}$$

1

A	B
C	D

$$\frac{12}{12}$$

$$\frac{6}{12} + \frac{6}{12}$$

Unit-Level Resources

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

Unit Game	<u>27</u>
Literacy Connection	<u>29</u>
Mid-Unit Assessment (Form A)	<u>33</u>
Unit Assessment (Form A)	<u>38</u>



GAME

UNIT 4

Name: _____

Fraction Sums

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



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
2	3 4 6 8

Maya

Player A Name

Denominator Choice	Equation
1. <u>4</u>	$\frac{3}{4} + \frac{4}{4} = \frac{7}{4}$
2. _____	_____

Isaac

Player B Name

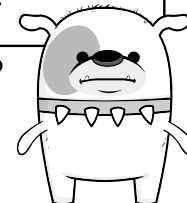
Denominator Choice	Equation
1. <u>8</u>	$\frac{4}{8} + \frac{6}{8} = \frac{10}{8}$
2. _____	_____

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 $\frac{10}{8}$.





GAME

UNIT 4

Name: _____

Fraction Sums Recording Sheet

Denominators

2 3 4 6 8

Denominators

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. _____

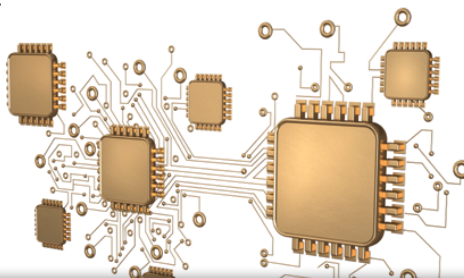
Final Score Player B

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: 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.

$$\underline{\hspace{2cm}} = \frac{6}{8}$$

- 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: 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: 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

Form A shown here. Digital Comprehension Checks and Form B are also available.

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?

(A) $\frac{1}{6}$

(B) $\frac{5}{12}$

(C) $\frac{5}{6}$

(D) $\frac{7}{12}$

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

Equations

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

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

c. $\square + \frac{3}{8} + \frac{3}{8} =$

Fractions

$\frac{5}{8}$

$\frac{4}{8}$

$\frac{3}{8}$

$\frac{2}{8}$

$\frac{1}{8}$



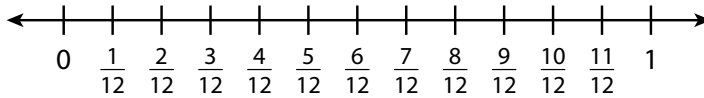
UNIT 4 • MID-UNIT ASSESSMENT 1

Name: _____

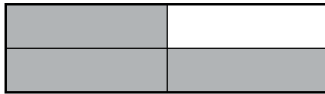
FORM A continued

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

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



- Ⓐ $\frac{6}{12} - \frac{1}{12}$
- Ⓑ $\frac{5}{12} + \frac{2}{12}$
- Ⓒ $\frac{11}{12} - \frac{5}{12}$
- Ⓓ $\frac{4}{12} + \frac{5}{12}$
- 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

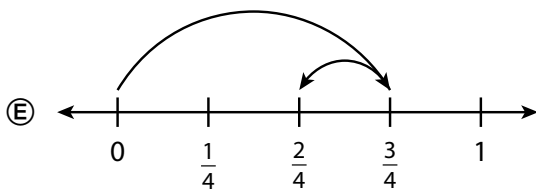
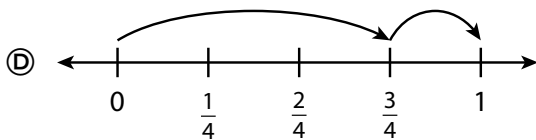
- 6** Decide if each comparison is true.

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

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

- 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.





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.

$$\frac{2}{5} = \frac{2 \times 4}{5 \times \boxed{4}} = \frac{\boxed{8}}{\boxed{20}}$$

- 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

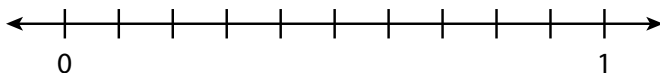
Name: _____

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.

**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

Name: _____

FORM A

Form A shown here. Digital Comprehension Checks and Form B are also available.

Solve the problems.

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

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

- 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?

- (A) $\frac{7}{16}$ (B) $\frac{1}{8}$
(C) $\frac{7}{8}$ (D) $\frac{9}{16}$

- 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 _____



UNIT 4 • UNIT ASSESSMENT

Name: _____

FORM A continued

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

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

- 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

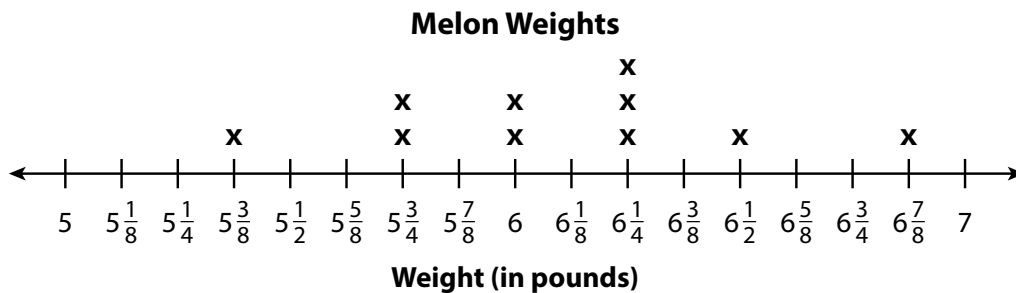
Name: _____

FORM A continued

- 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.

- (A) $\frac{5}{10} + \frac{2}{10}$
 (B) $\frac{59}{10} + \frac{2}{10}$
 (C) $\frac{59}{100} + \frac{2}{10}$
 (D) $\frac{59}{100} + \frac{2}{100}$
 (E) $\frac{59}{100} + \frac{20}{100}$

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



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

- (A) 1 pound
 (B) $1\frac{1}{8}$ pounds
 (C) $1\frac{4}{8}$ pounds
 (D) 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.

•	•	•	•	•	•
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

- 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?
- Ⓐ 75 centimeters Ⓑ 150 centimeters
- Ⓒ 275 centimeters Ⓓ 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 _____

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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