Do The Math®

Heinemann
DEDICATED TO TEACHERS™

Teacher Guide

Fraction Fundamentals

Created By

Marilyn Burns

Do The Math®

Fraction Fundamentals

Teacher Guide

Printed in the U.S.A.

ISBN 978-0-545-39438-3

1 2 3 4 5 6 7 8 9 10 XXXX 24 23 22 21 20 19 18 17 16 15

4500000000

About the Program

Do The Math®

Introduction to *Do The Math Now!*

The Lessons

Additional Resources

Program Overview From Marilyn Burns

Do The Math®

Thanks to the *Do The Math* Team

Eunice Hendrix-Martin, teacher
San Marcos School District, Carlsbad, CA

Leo Kostelnik, teacher
Bolinas-Stinson Union School District, Bolinas, CA

Kris Lee, teacher
Park Day School, Oakland, CA

Danielle Ross, teacher
Mill Valley School District, Mill Valley, CA

Mallika Scott, teacher
Lighthouse Community Charter School, Oakland, CA

Maryann Wickett, teacher
San Marcos School District, Carlsbad, CA

Lynne Zolli, teacher (retired)
San Francisco School District, San Francisco, CA

Barbara Bobb, teacher (retired) and editor
Sandwich Public Schools, Sandwich, IL

Thanks to the *Do The Math* Schools

Our thanks to the following school districts, teachers, administrators, and their students for contributing to a summer pilot study or photography.

New York City Schools, NY
Linda Curtis-Bey, Lisa Edmond, Alex Spencer, Robert O'Leary, Julie Matthews, Kimberly Tan, Mary Lou Wainwright

P.S. 20, The Anna Silver School, New York, NY

Pasadena Unified, CA
Dr. Jacqueline Cochran, Joan Morris, Sandra Mims, Jose Guzman, Julie Young, Dennis Silverio, Elsa Aguirre de Tonay, Jeff Bracamonte

Englewood Public School District, NJ

Dear Colleague,

Serena and Gabe are examples of struggling math students I've met during my almost 50 years of teaching.

I showed Serena, a sixth grader, a division problem with four choices for the answer.

$$425 \div 4$$

50 100 200 400

Marilyn: Which of these numbers do you think is closest to the answer? *(I point to the four choices.)*

Serena: *(Thinks for a moment and then asks.)* Can I use paper and pencil?

Marilyn: Try and figure it out in your head.

Serena: *(Thinks again and then muses.)* I know the number has to be smaller than 400 because division makes things smaller. *(Then she lowers her head and begins to "write" with her finger on the desk, setting up the problem as long division to work out the answer.)*

Sadly, there are far too many students like Serena in our math classes, who have learned computational procedures but have not developed the ability to reason numerically in other ways.

I gave Gabe, a seventh grader identified by his teacher as a struggling math student, a fraction addition problem.

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

Marilyn: You don't have to figure out the exact answer to this problem. I'm interested in whether you think the answer is greater than 1 or less than 1.

Gabe: *(Looks at the problem carefully and then responds.)* It's less than 1.

Marilyn: How do you know?

Gabe: I added across the tops and across the bottoms and got three-sevenths, and I know that three-sevenths is less than one.

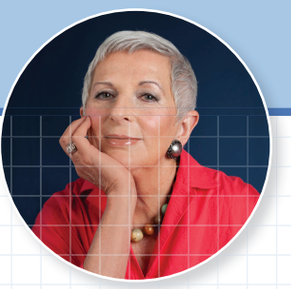
Gabe made one of the most common fraction errors, following a faulty procedure instead of thinking about the numbers at hand. As stated in the *Common Core State Standards for Mathematics,* "Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to . . . deviate from a known procedure to find a shortcut." This lack of understanding prevents Serena, Gabe, and other students like them from developing needed reasoning skills.

I was a middle school math teacher for the first eight years of my teaching career. In all my classes, there were always some students who were woefully ill prepared. They usually had some skill with paper-and-pencil computation, but had learned these procedures by rote and would quickly become lost when presented with a situation that differed even slightly from exactly what they were used to seeing. Math rarely made sense to them. In fact, they didn't even expect math to make sense. Their goal was to "do the page," not to "do the math." They were rarely asked to explain their reasoning, and when they were, they were unable to do so.

We created *Do The Math* to meet the needs of the thousands of middle and high school students who, like Serena and Gabe, need to develop essential math understanding and skills. We decided that the best support we could provide these students would be to focus on multiplication, division, and fractions—topics that are critical foundations for the students' continued math success with algebra.

So here it is, a yearlong course for middle and high school students who need math support in addition to their regular math classes. *Do The Math* is filled with the same kinds of scaffolded and paced lessons, games, and activities that have been the mainstay of the success of *Do The Math*.

I'm pleased to present this support for finally building a foundation of essential math understanding and skills that all students need and deserve.



Marilyn Burns is one of today's most highly respected and trusted mathematics educators. She is the founder of Math Solutions, an organization dedicated to the improvement of math instruction in our nation's schools. Over the course of almost 50 years, Marilyn has worked with students and teachers in classrooms across the country.

Marilyn's experiences have given her a unique insight into how to help students overcome the stumbling blocks that prevent them from being successful with mathematics. In collaboration with Scholastic, Marilyn and a team of Math Solutions master classroom teachers developed *Do The Math*, an intervention program that provides teachers with the tools and support they need to help students turn these stumbling blocks into building blocks of mathematical success.

FROM MARILYN BURNS

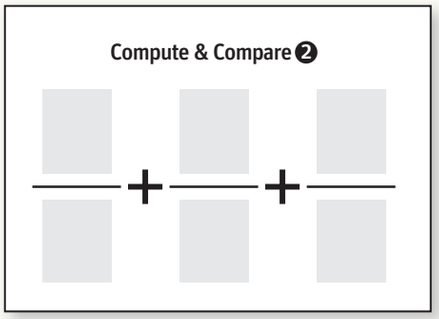
UNIT 10

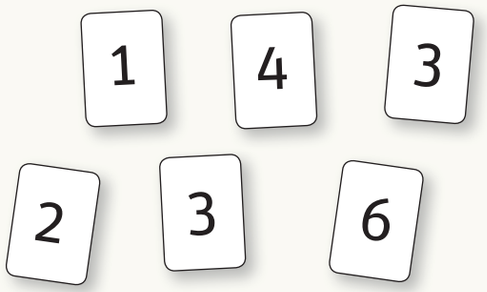
Lessons 6–10

Using Sequences of Equivalent Fractions to Add and Subtract

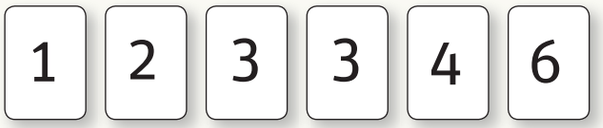
Dear Colleague,

Students now play *Compute & Compare* using a new deck of cards which contains the numbers 1, 2, 3, 4, and 6. These numbers present the students with new computing challenges. They again rename fractions with sequences of equivalent fractions as needed, and they also use the skills they learned earlier for comparing fractions to determine which team has the greatest sum.





At all times, students are encouraged to compute mentally and resort to using paper and pencil only when a problem is too complex to solve in their heads. Note that the games can get complicated as some combinations of numbers produce multiple possible problems. For example, when playing the three-addend version, the following cards result in five possible problems, with the first producing the greatest sum:



$$\frac{1}{2}+\frac{3}{6}+\frac{3}{4}=1\frac{3}{4}$$

$$\frac{1}{3}+\frac{2}{3}+\frac{4}{6}=1\frac{4}{6} \text{ or } 1\frac{2}{3}$$

$$\frac{1}{3}+\frac{2}{6}+\frac{3}{4}=1\frac{5}{12}$$

$$\frac{1}{4}+\frac{2}{3}+\frac{3}{6}=1\frac{5}{12}$$

$$\frac{1}{6}+\frac{2}{3}+\frac{3}{4}=1\frac{7}{12}$$

It's fine if students do not identify all five problems. What's important is that the problems they identify follow the rules and that students practice adding fractions.

PLANNER

	LESSON 6	LESSON 7
Lesson Summary	**Students use sequences to find common denominators as they play the two-addend version of *Compute & Compare* with number cards 1, 2, 3, 4, and 6.**	**Students practice adding fractions as they play the three-addend version of *Compute & Compare* with the numbers 1, 2, 3, 4, and 6.**
Objectives	• Add fractions with unlike denominators. • Rename fractions in simplest form. • Rename improper fractions as mixed numbers. • Communicate ideas with key math vocabulary: *improper fraction, lowest terms, mixed number, sequence,* and *simplest form*.	• Identify and generate equivalent fractions. • Add fractions with unlike denominators. • Rename fractions in simplest form. • Communicate ideas with key math vocabulary: *denominator, equivalent,* and *sequence*.
Materials Ⓢ = Student Bag	• ***WorkSpace*** pages 116, 120, and 121 • ***Compute & Compare*** **Cards B** Ⓢ	• ***WorkSpace*** pages 116 and 122–125 • ***Compute & Compare*** **Cards B** Ⓢ
Built-in Differentiation	Having students **communicate** how they solve fraction sums encourages them to express their understanding of math concepts and practice **mathematical language**.	Having students **work cooperatively** encourages mathematical communication.

Interactive Whiteboard Tools
contains all hands-on manipulatives and *WorkSpace* pages for Unit 10, Lessons 6–10.

	LESSON 8	LESSON 9	LESSON 10 Assess
	Students write a sequence of fractions equivalent to $\frac{1}{6}$ and practice using sequences of equivalent fractions to add and subtract fractions.	**Students write a sequence of fractions equivalent to $\frac{3}{8}$ and practice using sequences of equivalent fractions to add and subtract fractions.**	**Students demonstrate understanding of the objectives of Lessons 6–9 by completing a *WorkSpace* page independently.**
	• Identify and generate equivalent fractions. • Add and subtract fractions with unlike denominators. • Rename fractions in simplest form. • Make estimates for sums and differences of fractions with unlike denominators. • Communicate ideas with key math vocabulary: *estimate, lowest terms, sequence,* and *simplest form.*	• Identify and generate equivalent fractions. • Add and subtract fractions with unlike denominators. • Rename fractions in simplest form. • Make estimates for sums and differences of fractions with unlike denominators. • Communicate ideas with key math vocabulary: *estimate, lowest terms, mixed number, sequence,* and *simplest form.*	• Identify and generate equivalent fractions. • Add and subtract fractions with unlike denominators. • Rename fractions in simplest form. • Make estimates for sums and differences of fractions with unlike denominators. • Communicate ideas with key math vocabulary: *estimate, lowest terms,* and *sequence.*
	• ***WorkSpace*** pages 116 and 126 • ***Equivalent Fractions Sequences*** **chart**	• ***WorkSpace*** pages 116, 127, and 128 • ***Equivalent Fractions Sequences*** **chart** • ***Compute & Compare*** **Cards B** Ⓢ	• ***WorkSpace*** pages 129–131 • ***Compute & Compare*** **Cards B** Ⓢ • **Additional Practice**
	Using the *Equivalent Fractions Sequences* chart, a **visual organizer**, encourages students to use patterns to find equivalent fractions.	The **routine** of making an estimate, solving the problem, and then comparing the answer to the estimate encourages students to judge the reasonableness of the answer.	Assessing with **visual models and symbolic representations** that students have used allows them to demonstrate their understanding without having to approach the material in an unfamiliar context.

***TeacherSpace*™ CD-ROM**
contains Unit Assessments, Additional Practice pages, and other reproducibles to support teaching these lessons.

UNIT 10

Lessons 6–10

Using Sequences of Equivalent Fractions to Add & Subtract

LESSON 6 Adding two fractions with unlike denominators

Lesson Summary

Students use sequences to find common denominators as they play the two-addend version of *Compute & Compare* with number cards 1, 2, 3, 4, and 6.

Objectives

- Add fractions with unlike denominators.
- Rename fractions in simplest form.
- Rename improper fractions as mixed numbers.
- Communicate ideas with key math vocabulary: *improper fraction, lowest terms, mixed number, sequence,* and *simplest form.*

Materials

- ***WorkSpace*** pages 116, 120, and 121 Ⓢ = Student Bag
- ***Compute & Compare* Cards B** Ⓢ

Interactive Whiteboard Tools

WorkSpace pages and manipulatives for Lesson 6 are provided on the *Interactive Whiteboard Tools* CD-ROM.

Language Development

Key Math Vocabulary

ENGLISH	SPANISH
improper fraction	*fracción impropia*
lowest terms	mínima expresión
mixed number	*número mixto*
sequence	*secuencia*
simplest form	fracción simplificada

Academic Vocabulary

ENGLISH	SPANISH
common denominator	*denominador común*
compare	*comparar*
compute	*computar*
unit fraction	*fracción unitaria*

WHOLE GROUP

STEP 1 Demonstrate one team's turn of a fractions game.

❶ Introduce the lesson.

💬 ***Today we'll play* Compute & Compare *again, but with a new deck of number cards. This deck has the numbers 1, 2, 3, 4, and 6.***

❷ Write Team 1's numbers.

💬 ***Lets play a practice game with the new numbers. Let's suppose that Team 1 turns over cards 1, 3, 3, and 4.***

Write the numbers on the board.

Team 1

1 3 3 4

❸ Model how to place the team's numbers.

💬 ***Each fraction must be less than 1, so I can't make $\frac{4}{3}$, $\frac{3}{1}$, $\frac{4}{1}$, or $\frac{3}{3}$. The only possible fractions are $\frac{3}{4}$ and $\frac{1}{3}$.***

Draw a *Compute & Compare* frame, enter the numbers, and write the problem.

Team 1

1 3 3 4

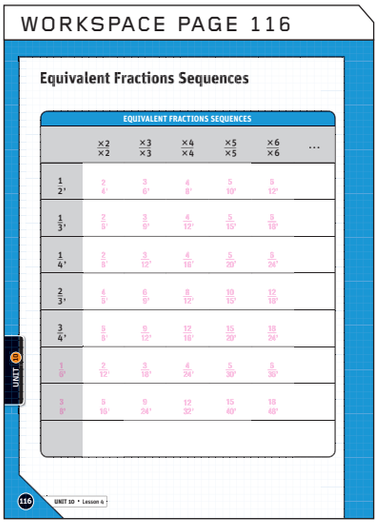
$$\frac{\boxed{3}}{\boxed{4}} + \frac{\boxed{1}}{\boxed{3}}$$

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

❹ Model finding a common denominator.

💬 ***To add, we need to have a common denominator. We can use our sequences of equivalent fractions to get a common denominator. First I'll list the sequence of fractions equivalent to $\frac{3}{4}$.***

Have students turn to *WorkSpace* page 116.


WORKSPACE PAGE 116

Equivalent Fractions Sequences

EQUIVALENT FRACTIONS SEQUENCES

	×2 ×2	×3 ×3	×4 ×4	×5 ×5	×6 ×6	…
$\frac{1}{2}$,	$\frac{2}{4}$,	$\frac{3}{6}$,	$\frac{4}{8}$,	$\frac{5}{10}$,	$\frac{6}{12}$,	
$\frac{1}{3}$,	$\frac{2}{6}$,	$\frac{3}{9}$,	$\frac{4}{12}$,	$\frac{5}{15}$,	$\frac{6}{18}$,	
$\frac{1}{4}$,	$\frac{2}{8}$,	$\frac{3}{12}$,	$\frac{4}{16}$,	$\frac{5}{20}$,	$\frac{6}{24}$,	
$\frac{2}{3}$,	$\frac{4}{6}$,	$\frac{6}{9}$,	$\frac{8}{12}$,	$\frac{10}{15}$,	$\frac{12}{18}$,	
$\frac{3}{4}$,	$\frac{6}{8}$,	$\frac{9}{12}$,	$\frac{12}{16}$,	$\frac{15}{20}$,	$\frac{18}{24}$,	
$\frac{1}{8}$,	$\frac{2}{12}$,	$\frac{3}{18}$,	$\frac{4}{24}$,	$\frac{5}{30}$,	$\frac{6}{36}$,	
$\frac{3}{6}$,	$\frac{6}{12}$,	$\frac{9}{18}$,	$\frac{12}{24}$,	$\frac{15}{30}$,	$\frac{18}{36}$,	

UNIT 10

116 UNIT 10 • Lesson 6

Choose a student to read the sequence, beginning with $\frac{3}{4}$. Write the sequence on the board. Repeat for the sequence for $\frac{1}{3}$.

Team 1

1 3 3 4

$$\frac{\boxed{3}}{\boxed{4}} + \frac{\boxed{1}}{\boxed{3}}$$

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

$$\frac{3}{4}, \frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20}, \frac{18}{24}, \ldots$$

$$\frac{1}{3}, \frac{2}{6}, \frac{3}{9}, \frac{4}{12}, \frac{5}{15}, \frac{6}{18}, \ldots$$

💬 ***We can rename the fractions with the denominator 12.***

❺ Demonstrate renaming and adding the fractions.

💬 ***Now I'll rename each fraction and rewrite the problem with common denominators.***

Erase the sequences on the board, rewrite the problem, and solve it.

Team 1

1 3 3 4

$$\frac{\boxed{3}}{\boxed{4}} + \frac{\boxed{1}}{\boxed{3}}$$

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

$$\frac{9}{12} + \frac{4}{12} = \frac{13}{12}$$

💬 ***$\frac{13}{12}$ is an improper fraction. I know that $\frac{12}{12}$ is equal to 1, so $\frac{13}{12}$ is $1\frac{1}{12}$. I know that $\frac{1}{12}$ is in simplest form because it's a unit fraction, and all unit fractions are in lowest terms.***

Write the mixed number on the board.

Team 1

1 3 3 4

$$\frac{\boxed{3}}{\boxed{4}} + \frac{\boxed{1}}{\boxed{3}}$$

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

$$\frac{9}{12} + \frac{4}{12} = \frac{13}{12} = 1\frac{1}{12}$$

CONTINUE

STEP 2 Guide students to play a turn.

❶ Record three possible outcomes.

💬 ***Suppose Team 2 turns over the cards 1, 2, 3, and 4. Let's think about what pairs of fractions Team 2 can make.***

Write the numbers on the board under *Team 2* and draw a *Compare & Compute* frame. Have students think, pair, share. As students suggest problems, record them. Suggest any problems that students don't report so that you have all three possibilities.

Team 1	Team 2
1 3 3 4	1 2 3 4
$\frac{3}{4} + \frac{1}{3}$	$\frac{\square}{\square} + \frac{\square}{\square}$
$\frac{3}{4} + \frac{1}{3} =$	$\frac{1}{2} + \frac{3}{4} =$
$\frac{9}{12} + \frac{4}{12} = \frac{13}{12} = 1\frac{1}{12}$	$\frac{1}{3} + \frac{2}{4} =$
	$\frac{1}{4} + \frac{2}{3} =$

❷ Students choose the fractions to use.

Have students think, pair, share about which problem produces the greatest sum. ($\frac{1}{2} + \frac{3}{4}$) Encourage students to add mentally.

SUPPORTING INSTRUCTION

When demonstrating turns of *Compute & Compare*, each pair of students should have a copy of the board and a deck of cards. (You can print extra copies of all *Compute & Compare* boards from the *TeacherSpace*™ CD-ROM.) Have them take the cards from the deck to match the numbers you write on the board. Manipulating the cards helps them consider the possibilities.

❸ Students solve the problem.

Have students think, pair, share to figure the sum of $\frac{1}{2} + \frac{3}{4}$. Encourage them to figure out the sum mentally. Ask students to share their thinking about how they solved the problem mentally.

SUPPORTING INSTRUCTION

Accept all ways that students suggest. Here are some possible ways they may offer. If no one suggests breaking apart the $\frac{1}{2}$ or the $\frac{3}{4}$, model the thinking for them.

- ***I can take $\frac{1}{4}$ from $\frac{1}{2}$ and add it on to $\frac{3}{4}$ to get one whole. Then I have $\frac{1}{4}$ left. The sum is $1\frac{1}{4}$.***
- ***I know that $\frac{3}{4}$ is $\frac{1}{2}$ plus $\frac{1}{4}$. I can take the $\frac{1}{2}$ from the $\frac{3}{4}$ and add it to $\frac{1}{2}$ to get one whole. Then I have $\frac{1}{4}$ left, so the sum is $1\frac{1}{4}$.***
- ***I know that $\frac{1}{2}$ equals $\frac{2}{4}$ so there are $\frac{5}{4}$ in all. $\frac{4}{4}$ is 1, so the sum is $1\frac{1}{4}$.***

Erase the problems not chosen, enter the numbers in the *Compute & Compare* frame, and write the answer.

Team 1	Team 2
1 3 3 4	1 2 3 4
$\frac{3}{4} + \frac{1}{3}$	$\frac{1}{2} + \frac{3}{4}$
$\frac{3}{4} + \frac{1}{3} =$	$\frac{1}{2} + \frac{3}{4} = 1\frac{1}{4}$
$\frac{9}{12} + \frac{4}{12} = \frac{13}{12} = 1\frac{1}{12}$	

PARTNERS

STEP 3 Students solve the problems of a second sample game.

❶ Present a turn for Team 1.

Write the numbers 6, 3, 2, and 4 for Team 1 on the board.

Have students work with their partners to identify the possible pairs of fractions. ($\frac{3}{6} + \frac{2}{4}$, $\frac{2}{6} + \frac{3}{4}$, and $\frac{4}{6} + \frac{2}{3}$) Select the pair with the greatest sum ($\frac{4}{6} + \frac{2}{3}$), and compute the answer ($1\frac{1}{3}$). Record the equation on the board.

Team 1

6 3 2 4

$$\frac{4}{6} + \frac{2}{3} = \frac{4}{3} = 1\frac{1}{3}$$

❷ Present a turn for Team 2.

Write the numbers 2, 3, 3, and 4 for Team 2 on the board.

Have students work with their partners to identify the only possible pair of fractions. ($\frac{2}{3} + \frac{3}{4}$). Have students refer to *WorkSpace* page 116 to identify a common denominator. Record the equation on the board.

Team 1

6 3 2 4

$$\frac{4}{6} + \frac{2}{3} = \frac{4}{3} = 1\frac{1}{3}$$

Team 2

2 3 3 4

$$\frac{2}{3} + \frac{3}{4} = \frac{8}{12} + \frac{9}{12} = \frac{17}{12} = 1\frac{5}{12}$$

The greatest sum wins in this version of the game. Who won?

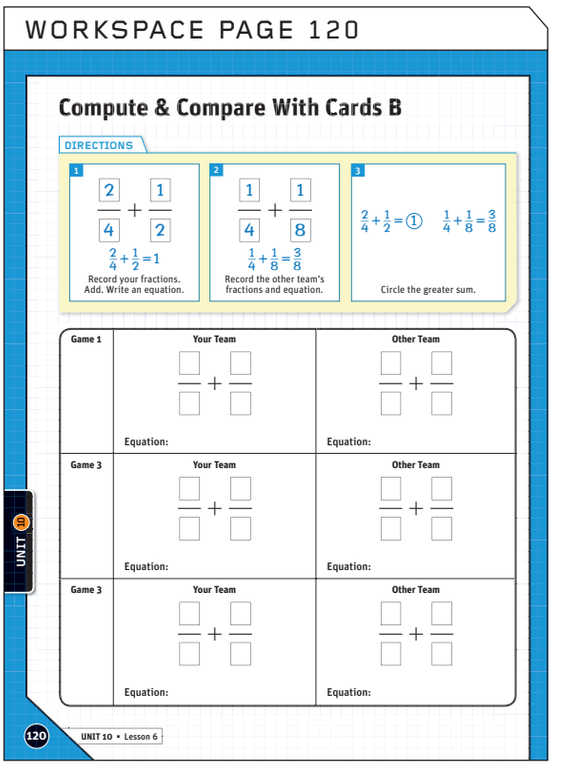
Have students think, pair, share to determine which is greater: $1\frac{1}{3}$ or $1\frac{5}{12}$. Then choose a student to state the winning team and explain. (Team 2 because $\frac{1}{3} = \frac{4}{12}$ and $\frac{5}{12}$ is greater than $\frac{4}{12}$, so $1\frac{5}{12} > 1\frac{1}{3}$.)

PARTNERS

STEP 4 Students play the game.

❶ Teams play *Compute & Compare*.

Have teams (of two students) play the game, recording their fractions and equations on *WorkSpace* page 120. Have students play as many games as time allows. There is an extra recording sheet on *WorkSpace* page 121.



SUPPORTING INSTRUCTION

Observe students as they play. Remind them that if needed, they may use their *Equivalent Fractions Sequences* chart to help them compare the teams' scores to determine the winner. Provide guidance as needed.

STOP

Game Rules for Compute & Compare

HOW TO PLAY

What you need

- *Compute & Compare* Cards A
- *Compute & Compare* Board 1, *WorkSpace* page 106
- *WorkSpace* page 107

➤ **A team can't have more than two cards with the same number.**

➤ **A team can't make an improper fraction or a fraction equal to 1.**

1

Team A 2 2 1 4 **Team B** 1 4 1 8

Each team turns over four cards.

2

Team A $\frac{2}{4} + \frac{1}{2}$ **Team B** $\frac{1}{4} + \frac{1}{8}$

Each team places the cards on the board.

3

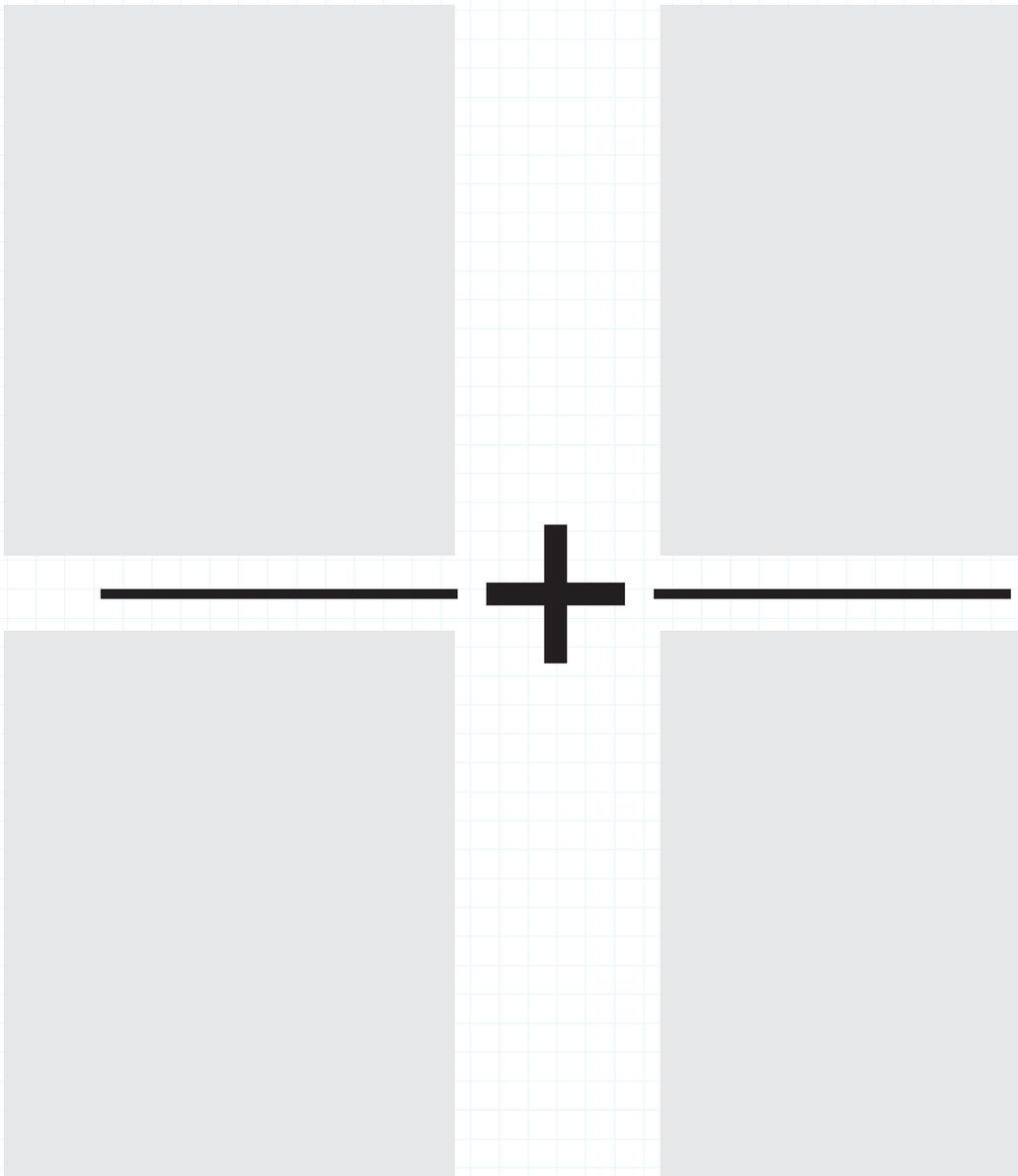
Team A $\frac{2}{4} + \frac{1}{2} = \textcircled{1}$ **Team B** $\frac{1}{4} + \frac{1}{8} = \frac{3}{8}$

Add the fractions and write equations.
Circle the greater answer.

➤ **The winner is the team with the greater sum.**

UNIT 10

Compute & Compare 1



Compute & Compare With Cards A

DIRECTIONS

1

$\frac{2}{4} + \frac{1}{2}$

$\frac{2}{4} + \frac{1}{2} = 1$

Record your fractions. Add. Write an equation.

2

$\frac{1}{4} + \frac{1}{8}$

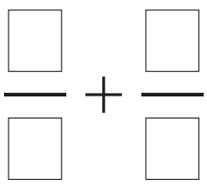
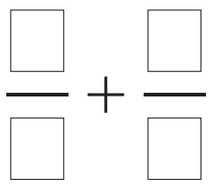
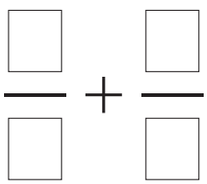
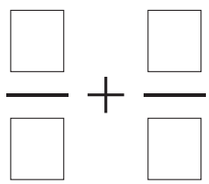
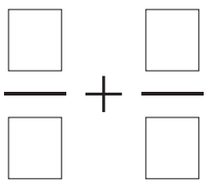
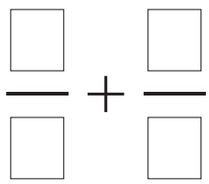
$\frac{1}{4} + \frac{1}{8} = \frac{3}{8}$

Record the other team's fractions and equation.

3

$\frac{2}{4} + \frac{1}{2} = \textcircled{1}$ $\quad \frac{1}{4} + \frac{1}{8} = \frac{3}{8}$

Circle the greater sum.

Game 1	**Your Team**  Equation:	**Other Team**  Equation:
Game 2	**Your Team**  Equation:	**Other Team**  Equation:
Game 3	**Your Team**  Equation:	**Other Team**  Equation:

Compute & Compare With Cards A

DIRECTIONS

1 $\frac{2}{4} + \frac{1}{2}$

$\frac{2}{4} + \frac{1}{2} = 1$

Record your fractions. Add. Write an equation.

2 $\frac{1}{4} + \frac{1}{8}$

$\frac{1}{4} + \frac{1}{8} = \frac{3}{8}$

Record the other team's fractions and equation.

3 $\frac{2}{4} + \frac{1}{2} = 1$ $\frac{1}{4} + \frac{1}{8} = \left(\frac{3}{8}\right)$

Circle the lesser sum.

Game 1	**Your Team** $\frac{\square}{\square} + \frac{\square}{\square}$ Equation:	**Other Team** $\frac{\square}{\square} + \frac{\square}{\square}$ Equation:
Game 2	**Your Team** $\frac{\square}{\square} + \frac{\square}{\square}$ Equation:	**Other Team** $\frac{\square}{\square} + \frac{\square}{\square}$ Equation:
Game 3	**Your Team** $\frac{\square}{\square} + \frac{\square}{\square}$ Equation:	**Other Team** $\frac{\square}{\square} + \frac{\square}{\square}$ Equation:

Objectives Tracker (Units 6–7)

➤ **Record the number of items a student answered correctly for each objective in the boxes below. For more information about these objectives, see Tracking Student Progress on the last page of each unit.**

B = Beginning-of-Unit Assessment

E = End-of-Unit Assessment

OBJECTIVES / STUDENT NAMES																
UNIT 6	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**
Name and model fractions. (Items 1-2)	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2
Identify and generate equivalent fractions. (Items 3-8)	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6
Compare and order fractions. (Items 9-14, 21, and 22)	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8	___/8
Add and subtract fractions. (Items 15-20)	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6
Communicate ideas with key math vocabulary. (Items 21 and 22)	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2
UNIT 7	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**	**B**	**E**
Identify and generate equivalent fractions. (Items 1-6, and 21)	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7	___/7
Name and model fractions. (Items 7-11)	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5	___/5
Compare and order fractions. (Items 12-16, and 22)	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6	___/6
Add and subtract fractions. (Items 17-20)	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4	___/4
Communicate ideas with key math vocabulary. (Items 21 and 22)	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2	___/2

Objectives Tracker (Units 8–10)

OBJECTIVES / STUDENT NAMES																
UNIT 8	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E
Name and model fractions. (Items 1-4)	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4	/4
Compare and order fractions. (Items 5-16, and 21)	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13	/13
Identify and generate equivalent fractions. (Items 17-20, and 22)	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5
Communicate ideas with key math vocabulary. (Items 21 and 22)	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2
UNIT 9	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E
Compare and order fractions. (Items 1-2)	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2
Identify and generate equivalent fractions. (Items 3-8)	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6
Add and subtract fractions. (Items 9-22)	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14	/14
Communicate ideas with key math vocabulary. (Items 21 and 22)	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2
UNIT 10	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E
Identify and generate equivalent fractions. (Items 1-4 and 21)	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5	/5
Add and subtract fractions. (Items 5-20 and 22)	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17	/17
Communicate ideas with key math vocabulary. (Items 21 and 22)	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2	/2