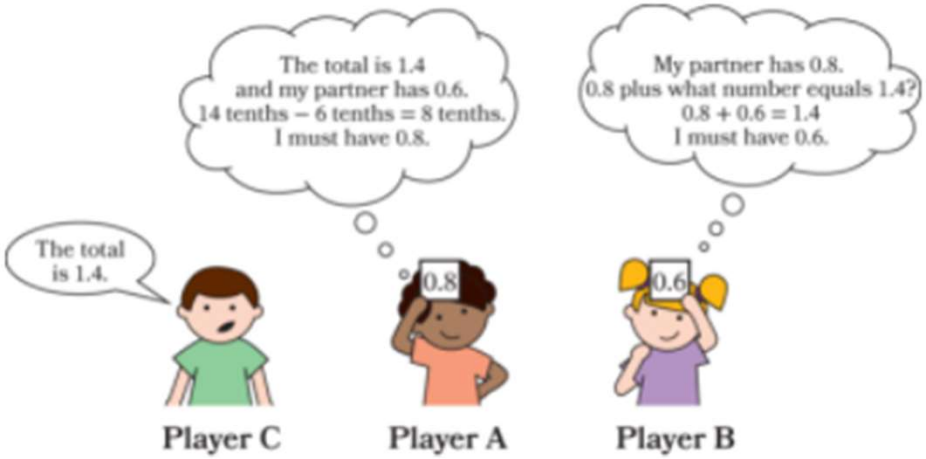
Module 4 - Lesson 13:

Solve word problems involving addition and subtraction of decimal numbers and fractions.

CCSS Standard – 5.NBT.B

FLUENCY (10-min) **Numbers Up!**



TASK:

Form a group of three.

- **Player A: one part**
- **Player B: one part**
- **Player C: the total**

Rules:

Player A & B each take a card and hold the card to their own foreheads so they **can't see the number on the card**.

Player C looks at both cards and says the **TOTAL**.

Players A & B find the number on their own card, based on the total and the other part they see.

Player C confirms the two parts.

Switch roles so everyone gets to be A, B, and C.

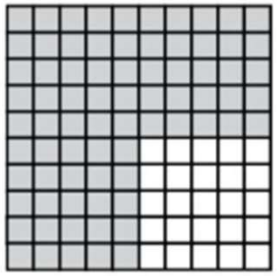
LAUNCH (5-min)

Four Representations of Three-Quarters

Which One Doesn't Belong?

A doesn't belong because it is the only representation that is in fraction form.

B doesn't belong because it is the only representation with an area model.

A	B
$\frac{3}{4}$	
C	**D**
	0.75

C doesn't belong because it is the only representation with money.

D doesn't belong because it is the only representation that is a decimal number.

How are A and B related?

A is the fraction ¾ and B is the area model ¾ shaded.

How are C and D related?

C is 3 quarters which is 75 cents, D shows 0.75 which is 75 cents in decimal form.

LEARN (35-min) **Rename Fractions as Decimals and Decimal Numbers as Fractions to Add.**

LEARN book page 123.

Use the Read–Draw–Write process to solve each problem.

1. Julie buys $1\frac{3}{4}$ pounds of apples and 2.5 pounds of pears. How many pounds of fruit does Julie buy?

What equation can we write to represent the problem? $1\frac{3}{4} + 2.5 = ?$

We need to RENAME one of the numbers so that the numbers are in the SAME FORM. Pick a side below:

$1\frac{3}{4} + 2\frac{5}{10} = ?$

$1.75 + 2.5 = ?$

LEARN (35-min) **Rename Fractions as Decimals and Decimal Numbers as Fractions to Add.**

Use the Read–Draw–Write process to solve each problem.

1. Julie buys $1\frac{3}{4}$ pounds of apples and 2.5 pounds of pears. How many pounds of fruit does Julie buy?

$1\ ^{3/4} + 2\ ^{5/10} = ?$

$1\ ^{/20} + 2\ ^{/20} = ?$

$1\ ^{15/20} + 2\ ^{10/20} = ?$

$3\ ^{25/20} = ?$

$4\ ^{5/20}$

$4\ ^{1/4}$

$1.75 + 2.5 = ?$

$$\begin{array}{r} 1.75 \\ +\ 2.5 \\ \hline \mathbf{4.25} \end{array}$$ **pounds**

LEARN (35-min) **Rename Fractions as Decimal Numbers to Subtract**

LEARN book page 123.

2. Ryan has 5.83 meters of rope. He uses $3\frac{2}{5}$ meters of the rope to make a swing. How many meters of rope does Ryan have left? Write the answer as a decimal number.

What equation can we write to represent the problem?

$5.83 - 3\ ^{2/5} = ?$

$5.83 - 3.4 = ?$

$$\begin{array}{r} 5.83 \\ -\ 3.4 \\ \hline \mathbf{2.43}\ \textbf{meters} \end{array}$$

Since the problem asks for the answer as a DECIMAL, we need to RENAME the mixed number as a decimal, then subtract. How do we do that?

$3\ ^{2/5}$ → 3 and $^{2/5}$

$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$ $\quad 3.4$

The goal is to get the fraction into multiples of 10, 100, or 1,000 to make as a place value decimal form.

$$\begin{array}{r} 0.4 \\ 5\overline{)\,20} \\ -20 \\ \hline 0 \end{array}$$

LEARN (35-min) **Rename Fractions as Decimal Numbers to Compare and Subtract**

LEARN book page 124.

We have a choice.
We can RENAME the mixed number as a decimal OR we can RENAME the decimal as a mixed number. Since the final question asks for the answer as a decimal, let's change the mixed number into a decimal.

3. Jada's car for a wooden car race is $2\frac{7}{8}$ inches wide. The wooden car race rules say the car must be 2.75 inches wide.

   a. Does Jada's car follow the rule? Explain.

   No! Jada's car is 2.875 inches. It is longer than 2.75 inches.

   b. What is the difference between the width of Jada's car and the width in the rule? Write the answer as a decimal number.

$2\frac{7}{8}$

2 7/8

$\frac{7}{8} \times \frac{125}{125} = \frac{875}{1,000}$

2.875

$$\begin{array}{r} 2.875 \\ -\ 2.75 \\ \hline 0.125 \end{array}$$

inches

$$\begin{array}{r} 0.875 \\ 8\overline{)7000} \\ -64 \\ \hline 60 \\ -56 \\ \hline 40 \end{array}$$

The goal is to get the fraction into multiples of 10, 100, or 1,000 to make as a place value decimal form.

LAND (10-min) **Exit Ticket**

Name _____ Date _____

13

Use the Read–Draw–Write process to solve the problem. Write the answer as a decimal number.

Sana lives 2.45 miles from school. Noah lives $3\frac{3}{4}$ miles from school. How much farther from school does Noah live than Sana?

Exit Ticket – PAGE 129

Small Group Time:
Problem Set Pages 125 – 127

Homework:
Page 81 APPLY BOOK