

## $5^{\text {th }}$ Grade

# Tier 2 Intervention Lessons 

Readiness Standard 5-4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for 5.NF.1: Add and subtract mixed numbers with different denominators
Session 1: Planning Guide ..... p. 4
Session 1: Re-engagement Lesson Resources ..... p. 5-13
Sessions 2 through 8: Planning Guide ..... p. 14
Sessions 2 through 8: Lesson Resources ..... p. 15-55
Independent Practice Activities: "Addition/Subtraction Match-up!" ..... p. 56-63
Classroom Poster: Questions for Solving Word Problems ..... p. 64
Tier 1 Support Classroom Poster: Steps for Solving Word Problems ..... p. 65

## IES Recommendations for Tier $\mathbf{2}$ and $\mathbf{3}$ intervention lessons:

| 2. Instructional materials for students receiving interventions should <br> focus intensely on in-depth treatment of whole numbers in kindergar- <br> ten through grade 5 and on rational numbers in grades 4 through 8. <br> These materials should be selected by committee. | Low |
| :--- | :--- |
| 3. Instruction during the intervention should be explicit and systematic. <br> This includes providing models of proficient problem solving, verbal- <br> ization of thought processes, guided practice, corrective feedback, and <br> frequent cumulative review. | Strong |
| 4. Interventions should include instruction on solving word problems <br> that is based on common underlying structures. | Strong |
| 5. Intervention materials should include opportunities for students to <br> work with visual representations of mathematical ideas and interven- <br> tionists should be proficient in the use of visual representations of <br> mathematical ideas. | Moderate |
| 6. Interventions at all grade levels should devote about lo minutes in each <br> session to building fluent retrieval of basic arithmetic facts. | Moderate |
| 7. Monitor the progress of students receiving supplemental instruction |  |
| and other students who are at risk. | Low |
| 8. Include motivational strategies in tier 2 and tier 3 interventions. | Low |

(Institute of Educational Sciences, Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools, 2009, p. 6)

## Gradual release of responsibility model

Teacher Responsibility


Figure 1
(Dr. Douglas Fisher, Effective Use of the Gradual Release of Responsibility Model)

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

| Recommended Actions |  |
| :---: | :---: |
| Beginning (15 min.) | Review the readiness standard with the intervention group using the Guided Review <br> > Introduce the learning target and why it is important for future learning <br> > Read each question on the Guided Review and ask students to share what they remember from the previous school year. |
| Middle <br> (5 min.) | Ask students to reflect on their progress towards the learning target <br> > What did I remember about the learning target? <br> > What did I learn today about the learning target? <br> > How confident do I feel about doing the learning target on my own? |
| $\begin{aligned} & \text { End } \\ & \text { (10min.) } \end{aligned}$ | Assess each student's progress using Quick Check - Form A <br> > Guide students to self-correct their Quick Check - Form A <br> > Guide students to chart their progress by recording the date and Quick Check score in their Growth Chart <br> Collect each student's Quick Check and Growth Chart |
| After | Create sub-groups to differentiate the middle of sessions 2 through 8 <br> - Group 1-Include students who did not meet the learning goal <br> - Group 2 - Include students who met or exceeded the learning goal |

## $5^{\text {th }}$ Grade Fall Guided Review

$\qquad$

Learning Target: I will add and subtract mixed numbers.
1.

Add:

$$
\begin{array}{r}
4 \frac{2}{3} \\
+1 \frac{2}{3}
\end{array}
$$

- $5 \frac{1}{3}$
- $5 \frac{4}{6}$
- $6 \frac{1}{3}$
- $6 \frac{4}{3}$

2. 

Subtract:

$$
\begin{array}{r}
5 \frac{4}{5} \\
-3 \frac{1}{5}
\end{array}
$$

- $2 \frac{3}{0}$
- $2 \frac{3}{5}$
- $2 \frac{5}{5}$
- $8 \frac{5}{10}$


## $5^{\text {th }}$ Grade Fall Guided Review

Readiness Standard 5-4.NF.3c (continued)
3.

Subtract:

$$
\begin{array}{r}
4 \frac{2}{5} \\
-2 \frac{3}{5} \\
\hline
\end{array}
$$

- $1 \frac{1}{5}$
- $1 \frac{4}{5}$
- $2 \frac{1}{5}$
- $2 \frac{4}{5}$


## $5^{\text {th }}$ Grade Winter Guided Review

Readiness Standard 5-4.NF.3c
$\qquad$

Learning Target: I will add and subtract mixed numbers.
1.

$$
\begin{array}{r}
\text { Add: } \\
\\
\\
\\
\\
\\
+2 \frac{3}{5}
\end{array}
$$

○ $7 \frac{1}{5}$

- $7 \frac{6}{5}$
- $6 \frac{6}{10}$

O
$6 \frac{1}{5}$
2.

Subtract:

$$
\begin{array}{r}
6 \frac{5}{7} \\
-3 \frac{1}{7} \\
\hline
\end{array}
$$

- $3 \frac{6}{7}$
- $3 \frac{4}{7}$
- $9 \frac{6}{14}$
- $3 \frac{4}{0}$


## $5^{\text {th }}$ Grade Winter Guided Review

Readiness Standard 5-4.NF.3c (continued)
3.

Subtract:

$$
\begin{array}{r}
6 \frac{1}{3} \\
-1 \frac{2}{3} \\
\hline
\end{array}
$$

- $4 \frac{1}{3}$
- $5 \frac{1}{3}$
- $5 \frac{2}{3}$
- $4 \frac{2}{3}$
$\qquad$

Learning Target: I will add and subtract mixed numbers.
1.

Add:

$$
\begin{array}{r}
5 \frac{3}{4} \\
+2 \frac{2}{4}
\end{array}
$$

- $7 \frac{1}{4}$
- $7 \frac{5}{8}$
- $8 \frac{1}{4}$
- $8 \frac{5}{4}$

2. 

Subtract:

$$
\begin{array}{r}
6 \frac{2}{3} \\
-4 \frac{1}{3}
\end{array}
$$

- $2 \frac{3}{3}$
- $10 \frac{3}{6}$
- $2 \frac{1}{0}$
- $2 \frac{1}{3}$
$5^{\text {th }}$ Grade Spring Guided Review
Readiness Standard 5-4.NF.3c (continued)

3. 

Subtract:

$$
\begin{array}{r}
7 \frac{2}{5} \\
-2 \frac{4}{5}
\end{array}
$$

- $5 \frac{3}{5}$
- $4 \frac{3}{5}$
- $5 \frac{2}{5}$
- $4 \frac{2}{5}$

What did I remember today about adding and subtracting mixed numbers with like denominators?

What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

Quick Check - Form A
$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

## Name

Date $\qquad$

Learning Target: I will add and subtract mixed numbers.

Directions: Write the answer to each problem. (Work time: 4 minutes)


## Growth Chart

$5^{\text {th }}$ Grade - Readiness Standard 5 - 4.NF.3c
$\qquad$

Learning Target: I will add and subtract mixed numbers.
Goal: 3 out of 4 correct


| Intervention | Date | Score |
| :--- | :---: | :---: |
| Session 1: |  |  |
| Session 2: |  |  |
| Session 3: |  |  |
| Session 4: |  |  |
| Session 5: |  |  |
| Session 6: |  |  |
| Session 7: |  |  |
| Session 8: |  |  |

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

| Recommended Actions |  |  |
| :---: | :---: | :---: |
| Beginning ( 5 min .) | Review the learning target with the whole group and ask each student to set a goal for today's learning |  |
| Middle (15 min.) | Group 1: (Students who did not meet the learning goal on the previous Quick Check) <br> Model solving a word problem - "I do" <br> Guided Practice - "We do together/ You do together" <br> Session 2: Use fraction strips to add and subtract mixed numbers with like denominators <br> Session 3: Use number lines to add and subtract mixed numbers with like denominators <br> Session 4: Use understanding of whole numbers and fractional parts to add and subtract mixed numbers with like denominators | Group 2: (Students who met the learning goal) <br> Independent practice - "You do alone" <br> Activity: Addition/Subtraction Match-up! <br> (Look for additional activities in $4^{\text {th }}$ grade core instruction resources.) |
| $\begin{gathered} \text { End } \\ (10 \mathrm{~min} .) \end{gathered}$ | Bring the students back together. <br> Ask students to reflect on their progress towards the learning target <br> - What did I learn today about adding and subtracting mixed numbers with the like denominators? <br> - How confident do you feel about adding and subtracting mixed numbers with the like denominators on my own? (Thumbs up, down, or sideways) <br> Assess each student's progress using the next Quick Check form <br> Guide students to self-correct their Quick Check <br> Guide students to chart their progress in their Growth Chart <br> - If not using Delta Math lessons, record the activity in the table <br> Collect each student's Quick Check and Growth Chart |  |
| After | Regroup students to differentiate the middle of se <br> - Promote students who met the learning geal <br> - Exit students who met the learning goal fo <br> Problem solve with a team to plan additional supp | sions 3 through 8 <br> al to group 2 <br> a third time <br> rt for students who did not exit |

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

Kristin and her friend both had a string of licorice that was 1 foot long. After eating some, Kristin had $\frac{3}{4}$ of a foot left and her friend had $\frac{2}{4}$ of a foot left. If they combine their remaining licorice, how much do they have left altogether?


## Session 2: Modeling (I Do - Visual Support)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

Kristin and her friend both had a string of licorice that was 1 foot long. After eating some, Kristin had $\frac{3}{4}$ of a foot left and her friend had $\frac{2}{4}$ of a foot left. If they combine their remaining licorice, how much do they have left altogether?

Step 1: Draw $\frac{3}{4}$


Step 2: Draw $\frac{2}{4}$ added to $\frac{3}{4}$


Step 3: Find the total


## Session 2: Modeling (I Do - Teacher Notes)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators
Kristin and her friend both had a string of licorice that was 1 foot long. After eating some, Kristin had $\frac{3}{4}$ of a foot left and her friend had $\frac{2}{4}$ of a foot left. If they combine their remaining licorice, how much do they have left altogether?
I am going to think aloud to model solving this problem.
Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.
This problem is about Kristin and her friend eating string licorice.
Second, I need to determine what I need to find.
I need to find how much they have left after each of them ate some.
Third, I need to determine what I know.
I know that they each began with 1 foot of licorice. And, after they both ate some, Kristin had $\frac{3}{4}$ of a foot left and her friend had $\frac{2}{4}$ of a foot left.

Fourth, I need to figure out what I can try.
I am going to try using fraction strips and a number line to add $\frac{3}{4}$ and $\frac{2}{4}$.
(Hold up a template of fraction strips and the fraction cards.)
I am going fold my fraction template to so that the "fourths" are visible as the bottom row...
(Fold the template so that four-fourths are visible at the bottom.)
Since Kristin had 3 "fourths" of a foot left, I will use the fraction strips to mark off 4 fourths.
(Draw 3 marks to separate the fourths and draw a fraction arrow/vector.)
To add $\mathbf{2}$ "fourths" of a foot to Kristin's, I notice that the total will go past 1 whole.
(Place the left side of the template to the right of the fraction arrow/vector.)
I will need to separate the second whole into fourths so that I can figure out the total.
(Draw 3 marks to separate the fourths between 1 and 2.)
Now I can draw an arrow/vector to represent $\mathbf{2}$ "fourths".
(Draw the fractions arrow/vector.)
It looks like Kristin and her friend have 1 and 1 fourth feet of licorice left.

Last, I need to make sure that my answer makes sense.
I found that Kristin and her friend have 1 and 1 fourth feet of licorice left. It makes sense because I used a fraction template to represent both fractional amounts on a number line and then located the total.

Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 2: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use fraction strips and number lines to add or subtract.
1.

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

$\qquad$

2. $1 \frac{1}{4}-\frac{3}{4}=$ $\qquad$

3. $\frac{5}{8}+\frac{7}{8}=$ $\qquad$

4. $1 \frac{3}{6}-\frac{5}{6}=\square$


Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 2: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading using fraction strips and number lines to add or subtract.
5. $\frac{3}{4}+\frac{3}{4}=$ $\qquad$

6. $1 \frac{2}{6}-\frac{5}{6}=$ $\qquad$

7. $\frac{6}{8}+\frac{4}{8}=$ $\qquad$

8. $1 \frac{1}{3}-\frac{2}{3}=\square$

$\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 2: Guided Practice (We Do - Teacher Notes)

We Do Together: (Teacher Actions)
$>$ Use fraction strips and number lines to add or subtract.

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

- Draw and combine the fractional parts
- Simplify by grouping 3 of the thirds into another whole

- Draw the total

2. $1 \frac{1}{4}-\frac{3}{4}=\frac{2}{4}=\frac{1}{2}$

- Ungroup the whole between 0 and 1 to make more fourths
- Take away 3 fourths
- Find how much is left and simplify


3. $\frac{5}{8}+\frac{7}{8}=\underline{\frac{12}{8}=} 1 \frac{4}{8}=1 \frac{1}{2}$

- Draw and combine the fractional parts
- Simplify by grouping 8 of the eighths into another whole
- Simplify 1 and 4 eighths to 1 and 1 half


4. $1 \frac{3}{6}-\frac{5}{6}=\frac{4}{6}=\frac{2}{3}$

- Ungroup the whole between 0 and 1 to make more sixths
- Take away 5 sixths
- Find how much is left and simplify
 Fraction Strips (4 Sets)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Directions: Each student should receive two sets of strips...do not cut into individual strips. (See example on p. 9, fold the fraction strips twice to show fractional parts of a whole.)

| 1 Whole |  |  |  |  |  |  |  |  | 1 Whole |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{1}{2}$ |  |  |  | $\frac{1}{2}$ |  |  |  |  | $\frac{1}{2}$ |  |  |  | $\frac{1}{2}$ |  |  |  |
| $\frac{1}{3}$ |  |  | $\frac{1}{3}$ |  | $\frac{1}{3}$ |  |  |  | $\frac{1}{3}$ |  |  | $\frac{1}{3}$ |  | $\frac{1}{3}$ |  |  |
|  |  | $\frac{1}{4}$ |  | $\frac{1}{4}$ |  | $\frac{1}{4}$ |  |  | $\frac{1}{4}$ |  | 1 |  | $\frac{1}{4}$ |  | $\frac{1}{4}$ |  |
| $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ |  |  | $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ | $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ |
| $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |  | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |
| 1 Whole |  |  |  |  |  |  |  |  | 1 Whole |  |  |  |  |  |  |  |
| $\frac{1}{2}$ |  |  |  | 1 |  |  |  |  | $\frac{1}{2}$ |  |  |  | $\frac{1}{2}$ |  |  |  |
| $\frac{1}{3}$ |  |  | $\frac{1}{3}$ |  | $\frac{1}{3}$ |  |  |  | $\frac{1}{3}$ |  |  | $\frac{1}{3}$ |  | $\frac{1}{3}$ |  |  |
|  |  | $\frac{1}{4}$ |  | 4 |  | $\frac{1}{4}$ |  |  | $\frac{1}{4}$ |  | 4 |  |  |  | $\frac{1}{4}$ |  |
| $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ | $\frac{1}{6}$ | $\frac{1}{6}$ |  |  | $\frac{1}{6}$ | $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ | $\frac{1}{6}$ | $\frac{1}{6}$ |  | $\frac{1}{6}$ |
| $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |  |  | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |

Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

## Quick Check - Form B

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

## Name

Date $\qquad$

Learning Target: I will add and subtract mixed numbers.

Directions: Write the answer to each problem. (Work time: 4 minutes)


Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators
Lori is preparing for a running race. As part of her practice schedule, she $\operatorname{ran} 1 \frac{2}{4}$ miles on the first day of practice and $1 \frac{3}{4}$ miles on the second day. How far did she run during her first two days of practice?


Session 3: Modeling (I Do - Visual Support)
$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators
Lori is preparing for a running race. As part of her practice schedule, she ran $1 \frac{2}{4}$ miles on the first day of practice and $1 \frac{3}{4}$ miles on the second day. How far did she run during her first two days of practice?


## Session 3: Modeling (I Do - Teacher Notes)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators
Lori is preparing for a running race. As part of her practice schedule, she ran $1 \frac{2}{4}$ miles on the first day of practice and $1 \frac{3}{4}$ miles on the second day. How far did she run during her first two days of practice?

I am going to think aloud to model solving this problem.

Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.
This problem is about Lori preparing for a race.

Second, I need to determine what I need to find.
I need to find how far she ran during two days of practice.

Third, I need to determine what I know.
I know that Lori ran 1 and 2-fourths of a mile on the first day and 1 and 3-fourths of a mile on the second.

## Fourth, I need to figure out what I can try.



To make this addition drawing, I am going to draw the whole numbers first and the fractional parts second. (Point to the whole numbers and then the fractional parts.)
To add the whole numbers, I simply need to model one plus one on the number line.
(Count 1 whole and draw a vertical mark above the number line, then the first arrow from 0 to 1 . Count another whole and draw a vertical mark above the number line, then the second arrow from 1 to 2 .)

To add the fractional parts, I need to separate the next whole numbers on the number line into fourths.
(Draw 3 marks on the number line to separate the whole between 2 and 3 into fourths.)
To draw 2 "fourths" of a whole, I will draw an arrow that is $\mathbf{2}$ fourths of the whole from $\mathbf{2}$ to 3.
(Count 2 fourths and draw a vertical mark above the number line, then the arrow.)
I don't have enough fourths identified to draw 3 fourths, so I will need to separate another whole into fourths. (Draw 3 marks to separate the whole between 3 and 4 into fourths.)

Now I can draw 3 more "fourths" to see that Lori ran 3 and 1 fourth miles.
(Count 3 fourths and draw a longer vertical mark above the number line, then the arrow between 2 and 2 fourths and 3 and 1 fourth.)

Last, I need to make sure that my answer makes sense.
I found that Lori ran 3 and 1 fourth miles during her first two days of practice. It makes sense because I drew both mixed numbers on a number line to see that 2 whole numbers and 5 fourths is the same as 3 wholes and 1 fourth.

Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 3: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use number lines to add or subtract the mixed numbers.

1. $1 \frac{2}{3}+2 \frac{2}{3}=$ $\qquad$

2. $4 \frac{1}{4}-1 \frac{3}{4}=$ $\qquad$

3. $2 \frac{5}{8}+1 \frac{7}{8}=$ $\qquad$

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


Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 3: Guided Practice (We Do - Continued)

You Do Together: (Teacher Actions)
> Students take turns leading using number lines to add or subtract the mixed numbers.
5. $1 \frac{2}{3}+3 \frac{1}{3}=$ $\qquad$

7. $1 \frac{4}{8}+3 \frac{6}{8}=$ $\qquad$

8. $3 \frac{2}{6}-1 \frac{3}{6}=$ $\qquad$


Learning Target: I will add and subtract mixed numbers with like denominators

## Session 3: Guided Practice (We Do - Teacher Notes)

We Do Together: (Teacher Actions)
> Use number lines to add or subtract the mixed numbers.

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

- Draw and combine the wholes
- Draw and combine the fractional parts
- Simplify by grouping 3 of the thirds into another whole

- Draw the total

2. $4 \frac{1}{4}-1 \frac{3}{4}=2 \frac{2}{4}=2 \frac{1}{2}$

- Ungroup the whole between 3 and 4 to make more fourths
- Take away 3 fourths, then 1 whole
- Find how much is left and simplify 2 fourths as 1 half


3. $2 \frac{5}{8}+1 \frac{7}{8}=3 \frac{12}{8}=4 \frac{4}{8}=4 \frac{1}{2}$

- Draw and combine the wholes
- Draw and combine the fractional parts
- Simplify by grouping 8 of the eighths into another whole

- Draw the total

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

- Ungroup the whole between 4 and 5 to make more sixths
- Take away 5 sixths, then 2 wholes
- Find how much is left and simplify

4 sixths as 2 thirds


Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

## Quick Check - Form C

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

## Name

Date $\qquad$

Learning Target: I will add and subtract mixed numbers.

Directions: Write the answer to each problem. (Work time: 4 minutes)


Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

Lauren was making bracelets out of ribbon for her daughter's birthday party. She began with $3 \frac{1}{4}$ feet of ribbon and used $1 \frac{3}{4}$ feet to make the bracelets. How many feet of ribbon does she have left?

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

Lauren was making bracelets out of ribbon for her daughter's birthday party. She began with $3 \frac{1}{4}$ feet of ribbon and used $1 \frac{3}{4}$ feet to make the bracelets. How many feet of ribbon does she have left?

Feet of Ribbon

$$
\begin{aligned}
& 2 \frac{5}{4} \\
& -2 \frac{1}{4} \\
& -1 \frac{3}{4} \\
& 1 \frac{2}{4} \frac{\pi}{2 \times 1} \\
& 2 \times 2
\end{aligned}
$$

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators
Lauren was making bracelets out of ribbon for her daughter's birthday party. She began with $3 \frac{1}{4}$ feet of ribbon and used $1 \frac{3}{4}$ feet to make the bracelets. How many feet of ribbon does she have left?

I am going to think aloud to model solving this problem.
Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.
This problem is about Lauren making bracelets out of ribbon for her daughter's birthday party.
Second, I need to determine what I need to find.
I need to find how much ribbon she has left.

Third, I need to determine what I know.
I know that she began with 3 and 1 fourth feet of ribbon and used 1 and 3 fourths to make the bracelets.
Fourth, I need to figure out what I can try.
Feet of Ribbon
I am going to try using my understanding of whole numbers and fractional parts to subtract 1 and 3 fourths from 3 and 1 fourth.
(Write the label and subtraction problem.)
$2 \frac{5}{4}$

Since I am subtracting 3 fourths and I currently only have 1 fourth, I will need to ungroup one of my wholes into 4 more fourths.
(Point to the fractional parts of each mixed number.)
If I ungroup one of my $\mathbf{3}$ wholes, I am left with $\mathbf{2}$ wholes.
(Cross off the 3 and write the whole number " 2 " above it.)
One whole ungroups into 4 fourths, so I now have 5 fourths in the fractional part. (Cross off the 1 fourth and write 5 fourths above it.)


Now that I rewrote 3 and 1 fourth as an equivalent 2 and 5 fourths, I can subtract the "like" values.
2 wholes minus 1 whole is equal to 1 whole.
(Write the whole number 1 under the subtraction line.)
And, $\mathbf{5}$ fourths minus $\mathbf{3}$ fourths is equal to $\mathbf{2}$ fourths.
(Write the fractional part 2 fourths under the subtraction line.)
Lauren has 1 and 2 fourths feet of ribbon left which can be simplified as 1 and 1 half, since the numerator and denominator have a common factor of 2.
(Write $=1 \frac{1}{2}$ next to the answer)
I can figure this out because $\mathbf{2}$ times 1 equals $\mathbf{2}$ and $\mathbf{2}$ times $\mathbf{2}$ equals $\mathbf{4}$, then $\mathbf{2}$ fourths is equal to $\mathbf{1}$ half
Last, I need to make sure that my answer makes sense.
I found that Lauren had 1 and 1 half feet of ribbon left. It makes sense because ungrouped a whole to make enough fourths, then I subtracted the whole and fourths separately to find what was left.
$\qquad$
$5^{\text {th }}$ Grade - RS 5-4.NF.3c
Learning Target: I will add and subtract mixed numbers with like denominators

## Session 4: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use your understanding of whole numbers and fractional parts to add or subtract.


Learning Target: I will add and subtract mixed numbers with like denominators

## Session 4: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Take turns leading to use your understanding of whole numbers and fractional parts to add or subtract.

$\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 4: Guided Practice (We Do)

We Do Together: (Teacher Actions)
$>$ Use your understanding of whole numbers and fractional parts to add or subtract.


Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)
$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Name
Date $\qquad$

Learning Target: I will add and subtract mixed numbers.
Directions: Write the answer to each problem. (Work time: 4 minutes)


Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 5: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use number lines to add or subtract the mixed numbers.

1. $1 \frac{2}{3}+2 \frac{1}{3}=$ $\qquad$

2. $2 \frac{1}{4}-1 \frac{3}{4}=$ $\qquad$

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

4. $4 \frac{1}{6}-2 \frac{5}{6}=$ $\qquad$


Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 5: Guided Practice (We Do - Continued)

You Do Together: (Teacher Actions)
$>$ Students take turns leading using number lines to add or subtract the mixed numbers.
5. $1 \frac{2}{3}+2 \frac{1}{3}=$ $\qquad$

7. $1 \frac{5}{8}+2 \frac{6}{8}=$ $\qquad$

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


Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

## Quick Check - Form E

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Name
Date $\qquad$

Learning Target: I will add and subtract mixed numbers.
Directions: Write the answer to each problem. (Work time: 4 minutes)

| 1. $\begin{array}{r} 1 \frac{2}{3} \\ +4 \frac{2}{3} \end{array}$ | 2. $\begin{array}{r} 2 \frac{5}{7} \\ +1 \frac{2}{7} \end{array}$ |
| :---: | :---: |
| 3. | 4. |
| $6$ $-1 \frac{3}{4}$ | $\begin{array}{r} 5 \frac{1}{6} \\ -1 \frac{4}{6} \end{array}$ |

Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use number lines to add or subtract the mixed numbers.

1. $1 \frac{1}{3}+2 \frac{1}{3}=$ $\qquad$

2. $2 \frac{5}{8}+1 \frac{3}{8}=$ $\qquad$

3. $5 \frac{2}{6}-2 \frac{5}{6}=$ $\qquad$


Name $\qquad$

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 6: Guided Practice (We Do - Continued)

You Do Together: (Teacher Actions)
> Students take turns leading using number lines to add or subtract the mixed numbers.
5. $2 \frac{2}{3}+3 \frac{1}{3}=$ $\qquad$

6. $4 \frac{1}{4}-1 \frac{3}{4}=$ $\qquad$

7. $1 \frac{2}{8}+3 \frac{6}{8}=$ $\qquad$

8. $5 \frac{3}{6}-1 \frac{5}{6}=$ $\qquad$


Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

## Quick Check - Form F

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Name $\qquad$ Date $\qquad$

Learning Target: I will add and subtract mixed numbers.

Directions: Write the answer to each problem. (Work time: 4 minutes)

$\qquad$
$5^{\text {th }}$ Grade - RS 5 - 4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators

## Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)
$>$ Use your understanding of whole numbers and fractional parts to add or subtract.


Learning Target: I will add and subtract mixed numbers with like denominators

## Session 7: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Take turns leading to use your understanding of whole numbers and fractional parts to add or subtract.


Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

## Quick Check - Form G

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Name
Date $\qquad$

Learning Target: I will add and subtract mixed numbers.
Directions: Write the answer to each problem. (Work time: 4 minutes)

$\qquad$
$5^{\text {th }}$ Grade - RS 5-4.NF.3c
Learning Target: I will add and subtract mixed numbers with like denominators

## Session 8: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use your understanding of whole numbers and fractional parts to add or subtract.


Learning Target: I will add and subtract mixed numbers with like denominators

## Session 8: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Take turns leading to use your understanding of whole numbers and fractional parts to add or subtract.


Learning Target: I will add and subtract mixed numbers with like denominators

Briefly discuss student responses:
$>$ What did I learn today about adding and subtracting mixed numbers with like denominators?
$>$ How confident do I feel about adding and subtracting mixed numbers with like denominators on my own?
(Thumbs up, down, or sideways)

## Quick Check - Form H

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Name
Date $\qquad$

Learning Target: I will add and subtract mixed numbers.

Directions: Write the answer to each problem. (Work time: 4 minutes)


## Independent Practice (You Do)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Learning Target: I will add and subtract mixed numbers with like denominators
Readiness for adding and subtracting mixed numbers with different denominators

Title of Game: Play "Addition/Subtraction Match-up!"
Number of Players: 2
Objective: To match your answer cards to unknown problem cards.

## Materials:

> 1 set of Problem and Answer cards per group
> 1 recording sheet per player

## Set-up:

> Deal all 10 Problem cards face down in a row.
> Deal 5 Answer cards face up to each player.

## Directions:

> Player 1 goes first

- Take a card from the row of face down Problem cards and turn it face up
- Write the problem on the recording sheet
- And, find the answer in simplest form
> If Player 1 has the Answer card, place it face up on top of the Problem card, take both cards and say:
"The answer to $\qquad$ is equal to $\qquad$ ."
> If Player 1 does not have the answer to the Problem card, turn the Problem card back over.
> Players $\mathbf{1}$ and $\mathbf{2}$ alternate turns. The winner is the first player to match all 5 of their cards.

Names
Date

Learning Target: I will add and subtract mixed numbers with like denominators
Independent Practice: Addition/Subtraction Match-up!
(Recording Sheet)

| P |  |  |  |
| :--- | :--- | :--- | :--- |

## Problem Cards (Set A)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Storage Suggestions: Copy the Problem (Set A) cards and Answer (Set A) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.

| を | $\begin{array}{r} 6 \frac{1}{4} \\ +2 \frac{2}{4} \end{array}$ | $\begin{array}{r} 6 \frac{2}{4} \\ +2 \frac{3}{4} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ +2 \frac{2}{4} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{1}{4} \\ +2 \frac{3}{4} \end{array}$ | $-2 \frac{3}{4}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{r} 6 \frac{1}{4} \\ -2 \frac{2}{4} \end{array}$ | $\begin{array}{r} 5 \frac{2}{4} \\ -2 \frac{3}{4} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ -2 \frac{2}{4} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{1}{4} \\ -2 \frac{3}{4} \\ \hline \end{array}$ | $-2 \frac{3}{4}$ |
| $\underset{~}{x}$ | $\begin{array}{r} 6 \frac{1}{4} \\ +2 \frac{2}{4} \end{array}$ | $\begin{array}{r} 6 \frac{2}{4} \\ +2 \frac{3}{4} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ +2 \frac{2}{4} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{1}{4} \\ +2 \frac{3}{4} \\ \hline \end{array}$ | $-2 \frac{3}{4}$ |
|  | $\begin{array}{r} 6 \frac{1}{4} \\ -2 \frac{2}{4} \end{array}$ | $\begin{array}{r} 5 \frac{2}{4} \\ -2 \frac{3}{4} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ -2 \frac{2}{4} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{1}{4} \\ -2 \frac{3}{4} \\ \hline \end{array}$ | $-2 \frac{3}{4}$ |

## Answer Cards (Set A)

$5^{\text {th }}$ Grade - Readiness Standard 5 - 4.NF.3c

Storage Suggestions: Copy the Problem (Set A) cards and Answer (Set A) cards in two different colors. Store 1 set of each in a sealable bag for each pair of students.

| Set $\mathrm{A}_{1}$ |  | Set A2 |  |
| :---: | :---: | :---: | :---: |
| $8 \frac{3}{4}$ | $3 \frac{3}{4}$ | $8 \frac{3}{4}$ | $3 \frac{3}{4}$ |
| Set A | Set A | Set A | Set A |
| $9 \frac{1}{4}$ | $2 \frac{3}{4}$ | $9 \frac{1}{4}$ | $2 \frac{3}{4}$ |
| Set A | Set A | Set A | Set A |
| $8 \frac{1}{4}$ | $3 \frac{1}{4}$ | $8 \frac{1}{4}$ | $3 \frac{1}{4}$ |
| Set A | Set A | Set A | Set A |
| 8 | $3 \frac{1}{2}$ | 8 | $3 \frac{1}{2}$ |
| Set A | SetA | Seta | Set A |
| $2 \frac{1}{4}$ | $2 \frac{1}{4}$ | $2 \frac{1}{4}$ | $2 \frac{1}{4}$ |
| Set A | SetA | SetA | Set A |

## Problem Cards (Set B)

$5^{\text {th }}$ Grade - Readiness Standard 5 - 4.NF.3c

Storage Suggestions: Copy the Problem (Set B) cards and Answer (Set B) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.

|  | $\begin{array}{r} 5 \frac{1}{8} \\ +2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 4 \frac{3}{8} \\ +2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 4 \frac{7}{8} \\ +2 \frac{3}{8} \end{array}$ | $\begin{array}{r} 4 \frac{5}{8} \\ +2 \frac{7}{8} \end{array}$ | $-2 \frac{5}{8}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{r} 6 \frac{1}{8} \\ -2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 5 \frac{3}{8} \\ -2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 5 \frac{3}{8} \\ -2 \frac{7}{8} \end{array}$ | $\begin{array}{r} 6 \frac{5}{8} \\ -2 \frac{7}{8} \end{array}$ | $-2 \frac{3}{8}$ |
|  | $\begin{array}{r} 5 \frac{1}{8} \\ +2 \frac{5}{8} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{3}{8} \\ +2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 4 \frac{7}{8} \\ +2 \frac{3}{8} \end{array}$ | $\begin{array}{r} 4 \frac{5}{8} \\ +2 \frac{7}{8} \end{array}$ | $-2 \frac{5}{8}$ |
|  | $\begin{array}{r} 6 \frac{1}{8} \\ -2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 5 \frac{3}{8} \\ -2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 5 \frac{3}{8} \\ -2 \frac{7}{8} \end{array}$ | $\begin{array}{r} 6 \frac{5}{8} \\ -2 \frac{7}{8} \end{array}$ | $-2 \frac{3}{8}$ |

## Answer Cards (Set B)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Storage Suggestions: Copy the Problem (Set B) cards and Answer (Set B) cards in two different colors. Store 1 set of each in a sealable bag for each pair of students.


## Problem Cards (Set C)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Storage Suggestions: Copy the Problem (Set C) cards and Answer (Set C) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.

| ざ | $\begin{array}{r} 5 \frac{1}{12} \\ +2 \frac{5}{12} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{3}{12} \\ +2 \frac{9}{12} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{5}{12} \\ +2 \frac{10}{12} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{9}{12} \\ +2 \frac{7}{12} \\ \hline \end{array}$ | $-2 \frac{3}{12}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{r} 6 \frac{1}{12} \\ -1 \frac{5}{12} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{3}{12} \\ -1 \frac{9}{12} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{5}{12} \\ -2 \frac{10}{12} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{9}{12} \\ -2 \frac{7}{12} \\ \hline \end{array}$ | $-2 \frac{10}{12}$ |
|  | $\begin{array}{r} 5 \frac{1}{12} \\ +2 \frac{5}{12} \end{array}$ | $\begin{array}{r} 6 \frac{3}{12} \\ +2 \frac{9}{12} \end{array}$ | $\begin{array}{r} 4 \frac{5}{12} \\ +2 \frac{10}{12} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{9}{12} \\ +2 \frac{7}{12} \\ \hline \end{array}$ | $-2 \frac{3}{12}$ |
|  | $\begin{array}{r} 6 \frac{1}{12} \\ -1 \frac{5}{12} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{3}{12} \\ -1 \frac{9}{12} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{5}{12} \\ -2 \frac{10}{12} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{9}{12} \\ -2 \frac{7}{12} \\ \hline \end{array}$ | $-2 \frac{10}{12}$ |

## Answer Cards (Set C)

$5^{\text {th }}$ Grade - Readiness Standard 5-4.NF.3c

Storage Suggestions: Copy the Problem (Set C) cards and Answer (Set C) cards in two different colors. Store 1 set of each in a sealable bag for each pair of students.

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| $Q_{1}$ | What is the problem about? |
| :--- | :---: |
| $Q_{2}$ | What do I need to find? |
| $Q_{3}$ | What do I know? |
| $Q_{4}$ |  |
| $Q_{5}$ | Does my answer make sense? |

Steps for Solving Word Problems

| Q. What is the problem about? |
| :--- | :--- |
| Q. What do I need to find? |
| Q3. What do I know? |

$Q_{5}$. Does my answer make sense?

