Lesson 7-6

Friday, December 13, 2019 10:40 AM

MB 401

Name _____

Solve

Lesson 7-6
Estimate Sums and Differences of Mixed Numbers

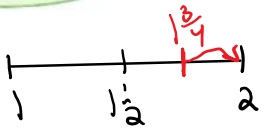
I can ...
estimate sums and differences of fractions and mixed numbers.

Content Standards 5.NF.A.1, 5.NF.A.2
Mathematical Practices MP.1, MP.2, MP.3, MP.6, MP.8

Solve & Share

Alex has five cups of strawberries. He wants to use $1\frac{3}{4}$ cups of strawberries for a fruit salad and $3\frac{1}{2}$ cups for jam. Does Alex have enough strawberries to make both recipes? ***Solve this problem any way you choose.***

Generalize You can estimate because you just need to know if Alex has enough. *Show your work!*



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

$2 + 4 = 6$

No, Alex does not have enough.

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

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

Underestimate, so the sum is greater than 5.

Look Back! MP.1 Make Sense and Persevere Does it make sense to use 1 cup and 3 cups to estimate if Alex has enough strawberries? Explain.

No. 1 and 3 are incorrect addends using rounding and too far away for compatible numbers.

Digital Resources at PearsonRealize.com Topic 7 | Lesson 7-6 401

Learn Glossary

Essential Question

What Are Some Ways to Estimate?

A

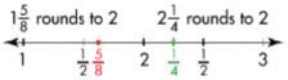
Jamila's mom wants to make a size 10 dress and jacket. About how many yards of fabric does she need?

DATA

Fabric Required (in yards)		
	Size 10	Size 14
Dress	$2\frac{1}{4}$	$2\frac{7}{8}$
Jacket	$1\frac{5}{8}$	$2\frac{1}{4}$

B One Way

Use a number line to round fractions and mixed numbers to the nearest whole number.



So, $2\frac{1}{4} + 1\frac{5}{8} \approx 2 + 2$, or 4.

Jamila's mom needs about 4 yards of fabric.

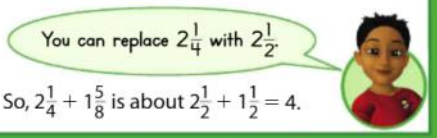
C Another Way

Use $\frac{1}{2}$ as a benchmark fraction.

Replace each fraction with the nearest $\frac{1}{2}$ unit.

$1\frac{5}{8}$ is close to $1\frac{1}{2}$.

$2\frac{1}{4}$ is halfway between 2 and $2\frac{1}{2}$.



So, $2\frac{1}{4} + 1\frac{5}{8}$ is about $2\frac{1}{2} + 1\frac{1}{2} = 4$.

Convince Me! MP.3 Critique Reasoning In Box C above, why does it make sense to replace $2\frac{1}{4}$ with $2\frac{1}{2}$ rather than 2?

You could use $2\frac{1}{2}$ instead of 2 because an overestimate will make sure that she has enough fabric.

Name _____

Guided Practice

Do You Understand?

1. MP.8 Generalize To estimate with mixed numbers, when should you round to the next greater whole number?

When the fraction part is equal to or greater than ½.

2. When should you estimate a sum or difference?

When the question asks for "about"

Do You Know How?

In **3–5**, round to the nearest whole number.

4. $1\frac{5}{7}$ → 2

5. $2\frac{3}{10}$ → 2

In **6** and **7**, estimate each sum or difference using benchmark fractions.

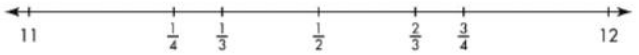
6. $2\frac{5}{9} - 1\frac{1}{3}$ 3 - 1 = 2

7. $2\frac{4}{10} + 3\frac{5}{8}$ 2 + 4 = 6

Complete 16, 17, 23-26

Independent Practice

Leveled Practice In **8–11**, use the number line to round the mixed numbers to the nearest whole numbers.



8. $11\frac{4}{6}$

9. $11\frac{2}{8}$

10. $11\frac{8}{12}$

11. $11\frac{4}{10}$

In **12–20**, estimate each sum or difference.

12. $2\frac{1}{8} - \frac{5}{7}$

13. $12\frac{1}{3} + 2\frac{1}{4}$

14. $2\frac{2}{3} + \frac{7}{8} + 6\frac{7}{12}$

15. $1\frac{10}{15} - \frac{8}{9}$

16. $10\frac{5}{6} - 2\frac{3}{8}$ 11 - 2 = 9

17. $12\frac{8}{25} + 13\frac{5}{9}$ 12 + 14 = 26

18. $48\frac{1}{10} - 2\frac{7}{9}$

19. $33\frac{14}{15} + 23\frac{9}{25}$

20. $14\frac{4}{9} + 25\frac{1}{6} + 7\frac{11}{18}$

*For another example, see Set D on page 446

Math Practices and Problem Solving

21. **MP.2 Reasoning** Use the recipes to answer the questions.

a Estimate how many cups of Fruit Trail Mix the recipe can make.

b Estimate how many cups of Traditional Trail Mix the recipe can make.

c Estimate how much trail mix you would have if you made both recipes.

22. Kim is $3\frac{5}{8}$ inches taller than Colleen. If Kim is $60\frac{3}{4}$ inches tall, what is the best estimate of Colleen's height?

23. **Higher Order Thinking** Last week Jason walked $3\frac{1}{4}$ miles each day for 3 days and $4\frac{5}{8}$ miles each day for 4 days. About how many miles did Jason walk last week?

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

$3 + 3 + 3 + 5 + 5 + 5 + 5 = 29$, About 29 miles

24. **MP.1 Make Sense and Persevere** Cal has $12.50 to spend. He wants to ride the roller coaster twice and the Ferris wheel once. Does Cal have enough money? Explain. What are 3 possible combinations of rides Cal can take using the money he has?

DATA

Ride Prices

Ride	Cost
Carousel	$3.75
Ferris Wheel	$4.25
Roller Coaster	$5.50

Common Core Assessment

25. Which is the best estimate for $2\frac{2}{9} + 9\frac{3}{4}$?

Ⓐ 8
Ⓑ 10
Ⓒ 12
Ⓓ 13

26. Which is the best estimate for $13\frac{1}{12} - 1\frac{9}{10}$?

Ⓐ 11
Ⓑ 12
Ⓒ 14
Ⓓ 15

$13 - 2 = 11$ (A)