

Compose and Decompose Mixed Numbers

Circle Duets
Review the materials for *Circle Duets* in the *Student Activity Book*.

Discuss

Jackie and Linda are a team in a game of Circle Duets. In the first round of the game, Jackie spins $\frac{5}{6}$ and $\frac{1}{2}$. She adds her fractions together by making trades with fraction circle pieces. Then she writes a number sentence.

1. What circle pieces did Jackie trade?

Linda spins $\frac{1}{6}$ and $\frac{2}{3}$. Here is her work.

2. What circle pieces did Linda trade?

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To complete the round, the girls put their pieces together to find the grand total of their two sums.

3. The two players on the other team take their turns. Their grand total is $2\frac{1}{12}$. Did Jackie and Linda win the round? Why or why not?

Many Names for Mixed Numbers

When using mixed numbers and fractions, you often need to use different names for the same mixed number. For example, $2\frac{1}{3}$, $2\frac{2}{6}$, and $1\frac{8}{6}$ are all equal.

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* Answers and/or discussion are included in the lesson.

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Compose and Decompose Mixed Numbers (SG pp. 466–469)

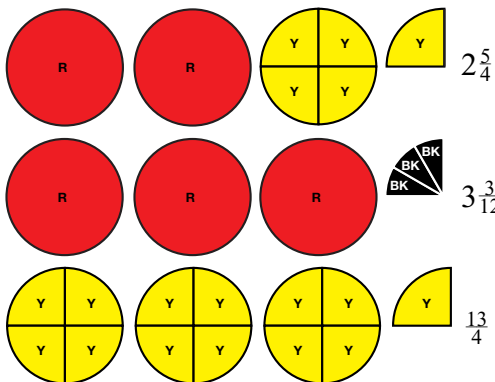
Questions 1–15

- 1.* Jackie traded a pink ($\frac{1}{2}$) piece for an aqua ($\frac{1}{6}$) piece and an orange ($\frac{1}{3}$) piece. Then she had six ($\frac{1}{6}$) pieces. She traded those for one whole (red) circle.
2. Linda traded each $\frac{1}{3}$ (orange) piece for two $\frac{1}{6}$ (aqua) pieces.
- 3.* Yes, $2\frac{1}{6} > 2\frac{1}{12}$.

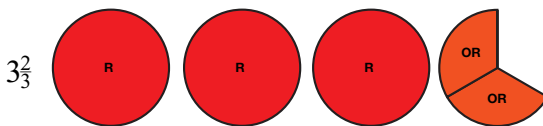
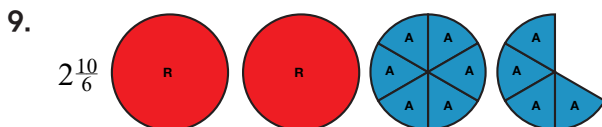
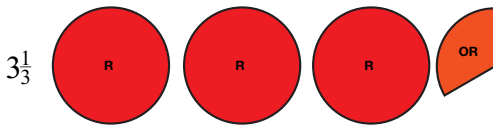
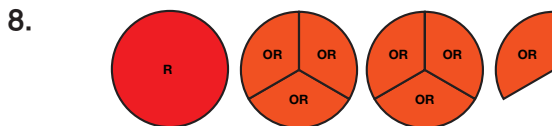
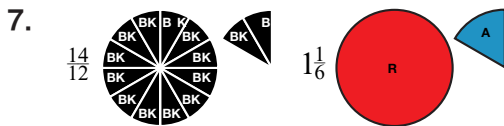
4.* See Figure 2 in the lesson.

5. Answers will vary. Possible solutions include:

$$3\frac{1}{4} = 2\frac{5}{4} = 3\frac{3}{12} = \frac{13}{4}$$



6.* See Figure 3 in the lesson.



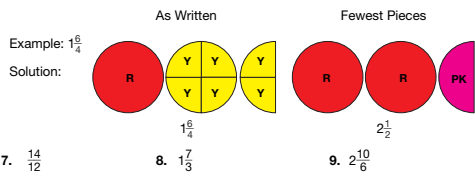
4. Find as many fractions and mixed numbers as you can that are equivalent to $2\frac{1}{3}$ and can be shown using circle pieces. The red circle is one whole. You may use the red, pink, orange, yellow, aqua, and black pieces, but you may use no more than two colors of pieces. For any number, be prepared to show the class your solutions using circle pieces and number sentences.

Work with your group to answer Questions 5-6. Share circle pieces. Follow these directions:

- Find as many mixed numbers and improper fractions as you can that are equivalent to the number in the problem. You must be able to show the mixed number or fraction with no more than two colors of fraction circle pieces.
 - Write number sentences for your solutions. Follow the example for $2\frac{1}{3}$ above.
5. $3\frac{1}{4}$
6. 2



In Questions 7-9, you are given a mixed number or an improper fraction. Show this number with circle pieces as it is written in the problem. Then show it using only two colors and the fewest pieces possible. Write the mixed number represented by the pattern blocks when you use the fewest pieces.



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✓ Check-In: Questions 10-15

In Questions 10-15, write each number as a mixed number with the fraction in simplest form. There should be no improper fractions in your answers.

10. $\frac{15}{10}$ 11. $1\frac{17}{8}$ 12. $3\frac{14}{6}$ 13. $1\frac{12}{9}$

14. Show or tell how you found your answer for Question 11.

15. Add $1\frac{2}{6} + 1\frac{5}{12}$ to find Linda and Jackie's Circle Duets team total for the second round. Show your solution.

Homework

1. Write each number as a mixed number with the fraction in simplest forms. There should be no improper fractions in your answers.

- A. $\frac{15}{12}$ B. $2\frac{15}{20}$ C. $1\frac{10}{3}$
 D. $3\frac{12}{8}$ E. $5\frac{16}{6}$ F. $2\frac{18}{15}$

2. David is filling boxes with candy. One box holds $\frac{1}{4}$ pound and the other holds $\frac{2}{3}$ pound. He has 1 pound of candy. Does he have enough candy to completely fill both boxes? How do you know?

3. Jerome lives $1\frac{7}{8}$ miles from the soccer field. Grace lives $1\frac{9}{10}$ miles from the field. Who lives farther from the field? Justify your answer.

4. Jessie found a piece of wood that is 7 inches long. She needs a piece $\frac{3}{8}$ inches long. How much wood will be left if she cuts off $6\frac{3}{8}$ inches?

5. Write all answers in simplest forms.

- A. $\frac{7}{8} + \frac{7}{8} =$ B. $1\frac{5}{8} - 1\frac{1}{4} =$ C. $1\frac{2}{3} + \frac{5}{6} =$
 D. $\frac{4}{5} + \frac{7}{10} =$ E. $\frac{11}{12} + \frac{2}{3} =$ F. $1\frac{7}{8} - \frac{3}{4} =$

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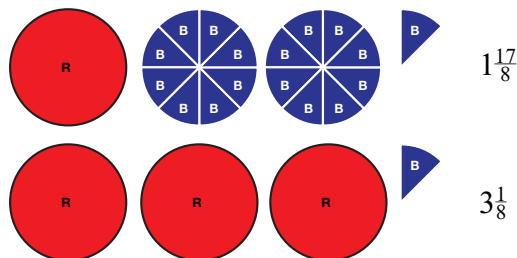
10. $1\frac{1}{2}$

11. * $3\frac{1}{8}$

12. $5\frac{1}{3}$

13. * $2\frac{1}{3}$

14. Responses will vary.



I traded $\frac{16}{8}$ for 2 wholes (red). So $1\frac{17}{8} = 3\frac{1}{8}$.

15. $1\frac{2}{6} + 1\frac{5}{12} = 1\frac{4}{12} + 1\frac{5}{12} = 2\frac{9}{12} = 2\frac{3}{4}$

Homework (SG p. 469)

Questions 1-5

1. A. $1\frac{1}{4}$

B. $2\frac{3}{4}$

C. $4\frac{1}{3}$

D. $4\frac{1}{2}$

E. $7\frac{2}{3}$

F. $3\frac{1}{5}$

2. Yes; the two boxes together hold $\frac{1}{4} + \frac{2}{3} = \frac{11}{12}$ of a pound of candy. Since David has 1 pound of candy, he has enough candy to fill the two boxes.

3. Grace. $\frac{7}{8} < \frac{9}{10}$

4. $\frac{5}{8}$ inch

5. A. $1\frac{3}{4}$

B. $\frac{7}{12}$

C. $2\frac{1}{2}$

D. $1\frac{1}{2}$

E. $1\frac{7}{12}$

F. $1\frac{1}{8}$

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