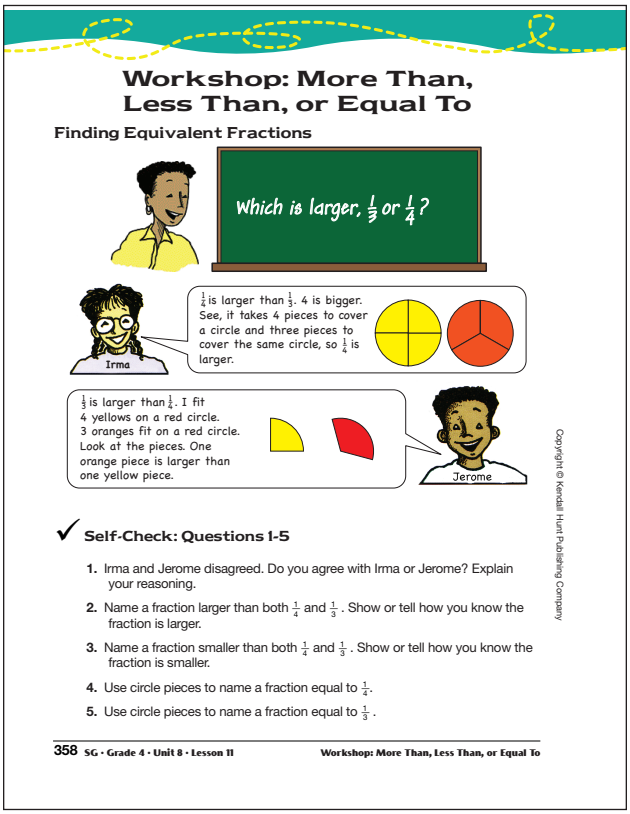

Workshop: More Than, Less Than, or Equal To

Finding Equivalent Fractions

Self-Check: Questions 1-5

1. Irma and Jerome disagreed. Do you agree with Irma or Jerome? Explain your reasoning.
2. Name a fraction larger than both $\frac{1}{4}$ and $\frac{1}{3}$. Show or tell how you know the fraction is larger.
3. Name a fraction smaller than both $\frac{1}{4}$ and $\frac{1}{3}$. Show or tell how you know the fraction is smaller.
4. Use circle pieces to name a fraction equal to $\frac{1}{4}$.
5. Use circle pieces to name a fraction equal to $\frac{1}{3}$.

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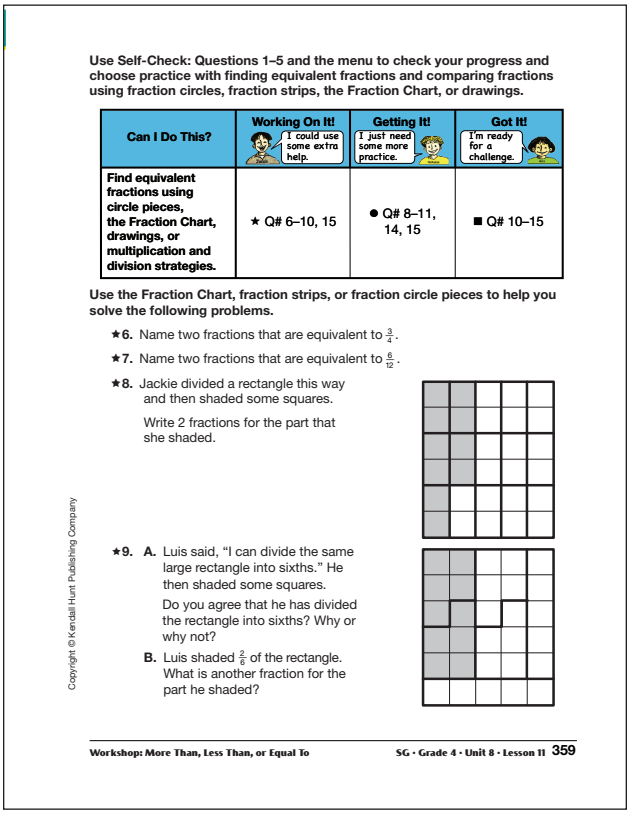

Use Self-Check: Questions 1–5 and the menu to check your progress and choose practice with finding equivalent fractions and comparing fractions using fraction circles, fraction strips, the Fraction Chart, or drawings.

Can I Do This?	Working On It! I could use some extra help.	Getting It! I just need some more practice.	Got It! I'm ready for a challenge.
Find equivalent fractions using circle pieces, the Fraction Chart, drawings, or multiplication and division strategies.	★ Q# 6–10, 15	● Q# 8–11, 14, 15	■ Q# 10–15

Use the Fraction Chart, fraction strips, or fraction circle pieces to help you solve the following problems.

★6. Name two fractions that are equivalent to $\frac{3}{4}$.

★7. Name two fractions that are equivalent to $\frac{6}{12}$.

★8. Jackie divided a rectangle this way and then shaded some squares.

Write 2 fractions for the part that she shaded.

★9. **A.** Luis said, "I can divide the same large rectangle into sixths." He then shaded some squares.

Do you agree that he has divided the rectangle into sixths? Why or why not?

B. Luis shaded $\frac{2}{6}$ of the rectangle. What is another fraction for the part he shaded?

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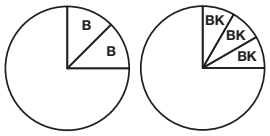
Student Guide

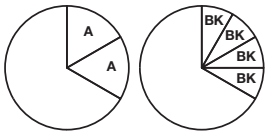
More Than, Less Than, or Equal To

Questions 1–21 (SG pp. 358–363)

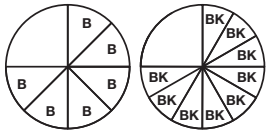
1. Jerome is correct. Possible explanation: I can see that the orange piece is larger than the yellow piece. It covers more of the red circle.
2. Possible response: $\frac{1}{2}$; A circle split into 2 pieces will have larger pieces than a circle split into 3 or 4 pieces.
3. Possible response: $\frac{1}{5}$; As the denominator gets bigger, the number of pieces needed to cover a circle gets bigger, so each piece must get smaller.
4. $\frac{2}{8}$ or $\frac{3}{12}$



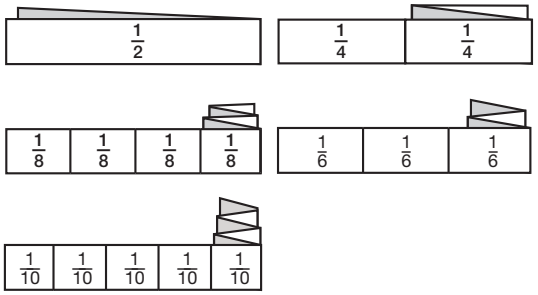
5. $\frac{2}{6}$ or $\frac{4}{12}$



6. $\frac{6}{8}$ or $\frac{9}{12}$



7. Possible response include: $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, $\frac{5}{10}$



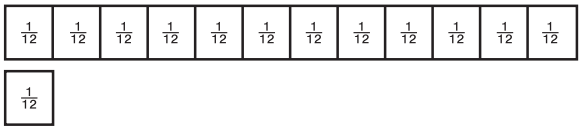
8. The 2 fractions must be equivalent to $\frac{1}{3}$. Possible response: $\frac{10}{30}$, $\frac{5}{15}$
9. **A.** Yes. There are 6 parts, and each part is the same area.

   B. Possible responses: $\frac{1}{3}$, $\frac{10}{30}$

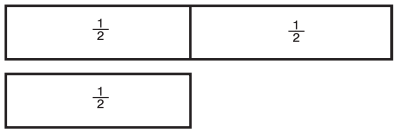
10. A. Yes

B. No. He showed $\frac{12}{12}$ and $\frac{1}{2}$. He should have shown $\frac{12}{12}$ and $\frac{1}{12}$.

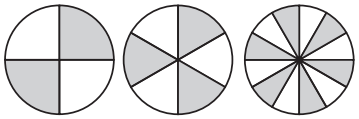
C.



D. Possible response: $\frac{3}{2}$

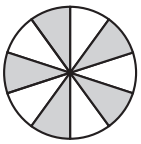


11. A. Possible responses:



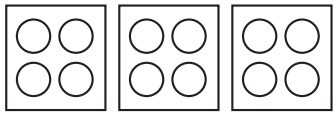
B. $\frac{2}{4}$ $\frac{3}{6}$ $\frac{6}{12}$

C–D. Responses will vary. Possible response:



$\frac{5}{10}$ of the spinner is red.

12. 4 students;



12 students divided into three equal sized groups.

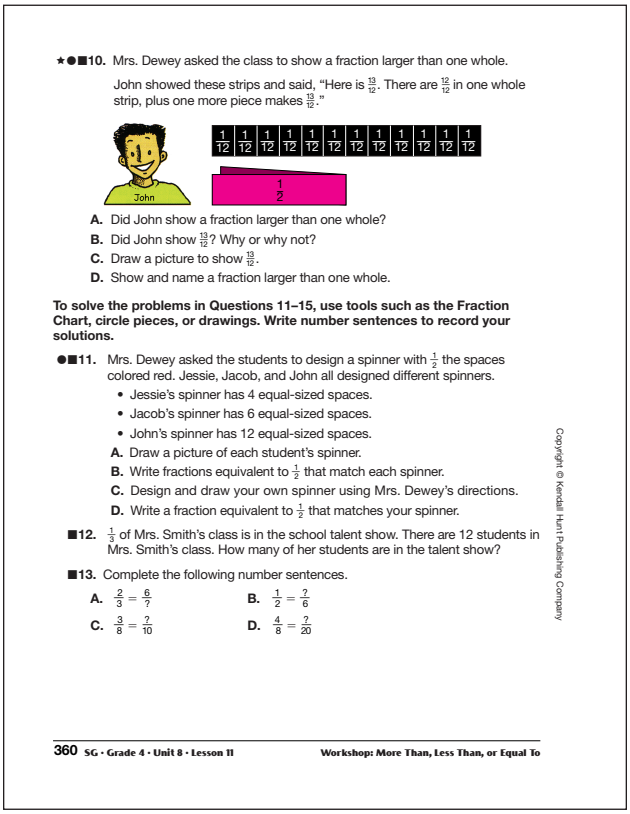
4 students are in the talent show.

13. A. $\frac{2}{3} = \frac{6}{9}$

B. $\frac{1}{2} = \frac{3}{6}$

C. $\frac{3}{8} = \frac{6}{16}$

D. $\frac{4}{8} = \frac{10}{20}$



★●■**10.** Mrs. Dewey asked the class to show a fraction larger than one whole.

John showed these strips and said, "Here is $\frac{13}{12}$. There are $\frac{12}{12}$ in one whole strip, plus one more piece makes $\frac{13}{12}$."

A. Did John show a fraction larger than one whole?

B. Did John show $\frac{13}{12}$? Why or why not?

C. Draw a picture to show $\frac{13}{12}$.

D. Show and name a fraction larger than one whole.

To solve the problems in Questions 11–15, use tools such as the Fraction Chart, circle pieces, or drawings. Write number sentences to record your solutions.

●■**11.** Mrs. Dewey asked the students to design a spinner with $\frac{1}{2}$ the spaces colored red. Jessie, Jacob, and John all designed different spinners.

- Jessie's spinner has 4 equal-sized spaces.
- Jacob's spinner has 6 equal-sized spaces.
- John's spinner has 12 equal-sized spaces.

A. Draw a picture of each student's spinner.

B. Write fractions equivalent to $\frac{1}{2}$ that match each spinner.

C. Design and draw your own spinner using Mrs. Dewey's directions.

D. Write a fraction equivalent to $\frac{1}{2}$ that matches your spinner.

■**12.** $\frac{1}{3}$ of Mrs. Smith's class is in the school talent show. There are 12 students in Mrs. Smith's class. How many of her students are in the talent show?

■**13.** Complete the following number sentences.

A. $\frac{2}{3} = \frac{6}{?}$ **B.** $\frac{1}{2} = \frac{?}{6}$

C. $\frac{3}{8} = \frac{?}{10}$ **D.** $\frac{4}{8} = \frac{?}{20}$

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●■14. Maya used a multiplication chart to complete this number sentence: $\frac{3}{4} = \frac{?}{20}$.

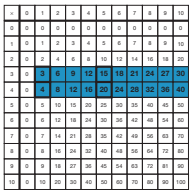
A. Name four other fractions equivalent to $\frac{3}{4}$ using the multiplication chart.

B. Use Maya's method to find three fractions equivalent to $\frac{2}{3}$.

C. Use Maya's method to find three fractions equivalent to $\frac{5}{6}$.

D. Which fractions are equivalent to $\frac{7}{8}$?

$\frac{14}{16}$, $\frac{35}{40}$, $\frac{21}{27}$, $\frac{49}{56}$, $\frac{70}{80}$, $\frac{50}{57}$



$\frac{3}{4} = \frac{15}{20}$

✓ **Check-In: Question 15**

★●■15. Roberto is making Trail Mix. He has a $\frac{1}{8}$-cup measuring scoop and a 1-cup measuring scoop. His recipe is below.

Explain how Roberto can use the measuring scoops he has to mix the recipe correctly.

Trail Mix
Mix together:
- $1\frac{7}{8}$ cups peanuts
- $1\frac{1}{2}$ cups raisins
- $\frac{3}{4}$ cup chocolate chips

Makes 6 servings.

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Comparing Fractions

✓ **Self-Check: Question 16**

16. Mrs. Dewey asked Grace to put $\frac{1}{2}$, $\frac{3}{6}$, and $\frac{4}{8}$ in order from smallest to largest.

$\frac{1}{2}$ is the smallest fraction because 2 − 1 = 1. $\frac{4}{8}$ is the largest because 8 − 4 = 4. The numerator is farther away from the denominator, so the fraction is larger.

A. Show or tell how to use the fraction chart or circle pieces to compare and order $\frac{1}{2}$, $\frac{3}{6}$, and $\frac{4}{8}$.

B. What would you tell Grace to help her understand her mistake?

Use the self-check question and menu to choose practice with comparing fractions.

Can I Do This?	Working On It! I could use some extra help.	Getting It! I just need some more practice.	Got It! I'm ready for a challenge.
Compare and order fractions using circle pieces, the Fraction Chart, or drawings.	★ Q# 16, 17, 19A–B, 20–21	● Q# 16, 17, 19A–D, 20–21	■ Q# 17, 18, 19A–F, 20–21

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14. A. Possible response: $\frac{6}{8}$, $\frac{9}{12}$, $\frac{12}{16}$, $\frac{18}{24}$

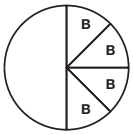
B. Possible response: $\frac{4}{6}$, $\frac{6}{9}$, $\frac{8}{12}$

C. Possible response: $\frac{10}{12}$, $\frac{15}{18}$, $\frac{20}{24}$

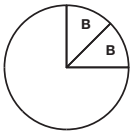
D. $\frac{14}{16}$, $\frac{35}{40}$, $\frac{49}{56}$, $\frac{70}{80}$

15.* Possible explanations:

I used my circle pieces. A blue piece is $\frac{1}{8}$ of a red circle, so the number of blues is the number of times you have to use the $\frac{1}{8}$ cup.



5 blues for $\frac{5}{8}$ cup, so use the $\frac{1}{8}$ cup 5 times for the peanuts. 4 blues is the same as $\frac{1}{2}$, so use the $\frac{1}{8}$ cup 4 times for the raisins.



2 blues is the same as $\frac{1}{4}$, so use the $\frac{1}{8}$ cup 2 times for the chips.

16. A. $\frac{1}{2}$, $\frac{3}{6}$ and $\frac{4}{8}$ are all the same. On the fraction chart they all line up. 1 pink circle piece, 3 aqua pieces, and 4 blue pieces all cover the same area.

B. Possible response: You have to think about the numerator and denominator together. The denominator tells you how many equal parts the whole is divided into, and the numerator tells you the number of parts you are talking about, so $\frac{1}{2}$ doesn't mean 2 – 1 = 1. It means 1 whole divided into 2 equal parts.

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

17. 5th grade ate more lasagna; Possible response: $\frac{1}{2} < \frac{8}{12}$; $\frac{6}{12} = \frac{1}{2}$, so $\frac{8}{12}$ is more than $\frac{1}{2}$.

18. **A.** $\frac{1}{8}$

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

C. A zax is larger because the whole is divided into fewer pieces, so each piece is larger.

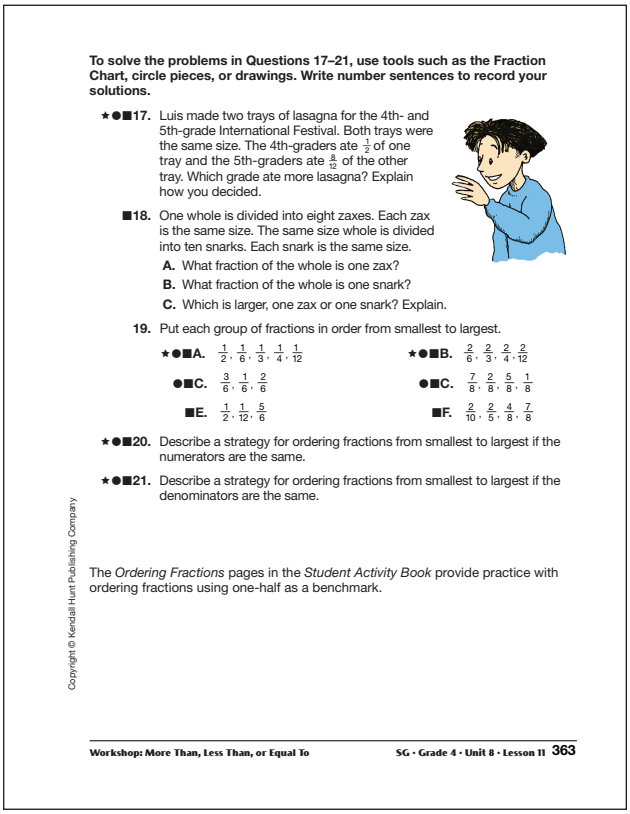
19. **A.** $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}$ **B.** $\frac{2}{12}, \frac{2}{6}, \frac{2}{4}, \frac{2}{3}$

C. $\frac{1}{6}, \frac{2}{6}, \frac{3}{6}$ **D.** $\frac{1}{8}, \frac{2}{8}, \frac{5}{8}, \frac{7}{8}$

E. $\frac{1}{12}, \frac{1}{2}, \frac{5}{6}$ **F.** $\frac{2}{10}, \frac{2}{5}, \frac{4}{8}, \frac{7}{8}$

20. Order the denominators from largest to smallest.

21. Order the numerators from smallest to largest.



To solve the problems in Questions 17–21, use tools such as the Fraction Chart, circle pieces, or drawings. Write number sentences to record your solutions.

★●■**17.** Luis made two trays of lasagna for the 4th- and 5th-grade International Festival. Both trays were the same size. The 4th-graders ate $\frac{1}{2}$ of one tray and the 5th-graders ate $\frac{8}{12}$ of the other tray. Which grade ate more lasagna? Explain how you decided.

■**18.** One whole is divided into eight zaxes. Each zax is the same size. The same size whole is divided into ten snarks. Each snark is the same size.

A. What fraction of the whole is one zax?

B. What fraction of the whole is one snark?

C. Which is larger, one zax or one snark? Explain.

19. Put each group of fractions in order from smallest to largest.

★●■**A.** $\frac{1}{2}, \frac{1}{6}, \frac{1}{3}, \frac{1}{4}, \frac{1}{12}$ ★●■**B.** $\frac{2}{6}, \frac{2}{3}, \frac{2}{4}, \frac{2}{12}$

●■**C.** $\frac{3}{6}, \frac{1}{6}, \frac{2}{6}$ ●■**C.** $\frac{7}{8}, \frac{2}{8}, \frac{5}{8}, \frac{1}{8}$

■**E.** $\frac{1}{2}, \frac{1}{12}, \frac{5}{6}$ ■**F.** $\frac{2}{10}, \frac{2}{5}, \frac{4}{8}, \frac{7}{8}$

★●■**20.** Describe a strategy for ordering fractions from smallest to largest if the numerators are the same.

★●■**21.** Describe a strategy for ordering fractions from smallest to largest if the denominators are the same.

The *Ordering Fractions* pages in the *Student Activity Book* provide practice with ordering fractions using one-half as a benchmark.

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