

Student Guide


Questions 1–17 (SG pp. 298–301)

1. The denominator tells the number of equal parts into which the whole is divided: 4.
2. The numerator tells how many parts you are interested in: 3.
- 3.* The equal parts get smaller as the denominator gets bigger because as the whole is divided into more pieces, the pieces get smaller.
4. $\frac{5}{8}$
5. A. $\frac{3}{8}$
B. $\frac{1}{4}$
C. $\frac{4}{4}$
D. $\frac{6}{8}$
6. $\frac{2}{8}$
7. $\frac{3}{4}$
8. $\frac{2}{2}$ or $\frac{8}{8}$


Fraction Strips

Lee Yah demonstrated folding fourths for her class.


"First, I folded my strip into two equal pieces. I folded my strip by matching the edges and then making a crease in the middle.



Next, I kept the strip folded and then I folded it in half again.




When I unfold the strip, it is divided into 4 equal pieces.



Since the 4 parts are all the same size, each piece is $\frac{1}{4}$ of the strip."

Lee Yah showed three of the pieces to show $\frac{3}{4}$ of the strip.



In a fraction, the bottom number is the **denominator**. This number tells us how many equal pieces the whole is divided into. The top number, the **numerator**, tells us how many of the pieces we are concerned with.

$$\frac{3}{4}$$

← numerator
← denominator


1. In the fraction $\frac{3}{4}$, what information does the denominator give us?
2. What information does the numerator give us in the fraction $\frac{3}{4}$?
3. What happens to the size of the equal parts as the denominator gets bigger? Why?

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4. Lee Yah made the following fraction using her fraction strips. What fraction did she make?



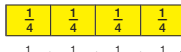
$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = ?$$
5. Write a fraction for each fraction strip.

A. 


$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} = ?$$

B. 

$$\frac{1}{4} + 0 = ?$$

C. 

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = ?$$

D. 

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = ?$$

Lee Yah pasted her fraction strips onto a piece of paper. She made a chart like this:

Fraction Chart

Whole							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

When two fractions show the same part of the whole, they are called **equivalent**. For example $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{4}{8}$ are equivalent to each other. Use the Fraction Chart or your fraction strips to help answer these questions:

6. Find a fraction that is equivalent to $\frac{1}{2}$.
7. Find a fraction that is equivalent to $\frac{3}{8}$.
8. Find a fraction that is equivalent to $\frac{1}{4}$.

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

Use the Fraction Chart or your fraction strips to complete the following questions.

9. Tom found a cookie recipe that called for $\frac{3}{8}$ cup sugar. His sister Kate found a different recipe that called for $\frac{1}{2}$ cup sugar. Whose recipe called for more sugar?



10. Jessie walked $\frac{6}{8}$ of a mile around the track. Maria walked $\frac{3}{4}$ of a mile around the track. Who walked farther?

11. Use the Fraction Chart to compare the following pairs of fractions. For each pair, tell which fraction is larger.

A. $\frac{2}{6}, \frac{1}{2}$ B. $\frac{2}{4}, \frac{3}{8}$ C. $\frac{1}{2}, \frac{3}{4}$ D. $\frac{5}{8}, \frac{1}{2}$ E. $\frac{3}{2}, \frac{5}{4}$

12. Use the Fraction Chart or your fraction strips to put the following fractions in order from smallest to largest.

A. $\frac{1}{8}, \frac{1}{2}, \frac{1}{4}$ B. $\frac{2}{4}, \frac{2}{2}, \frac{2}{8}$ C. $\frac{3}{2}, \frac{3}{8}, \frac{3}{4}$

13. Look at the fractions in Question 12. When two fractions have the same numerator, which fraction is larger? Why?

14. Write two different fractions with the same numerator. Order the fractions from smallest to largest.

15. Which number sentences are true?

A. $\frac{1}{2} = \frac{1}{4} + \frac{1}{4}$ B. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$
 C. $\frac{1}{8} + \frac{1}{8} = \frac{2}{8}$ D. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{1}{2} + \frac{1}{2}$
 E. $\frac{2}{4} = \frac{3}{8}$ F. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{8}{8}$
 G. $\frac{3}{8} = \frac{1}{4} + \frac{2}{4}$ H. $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{3}{6}$

16. Pick a false number sentence from Question 15 and make it true.

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9. Kate's recipe called for more sugar.
10. Maria walked farther.
11. A. $\frac{1}{2}$
 B. $\frac{2}{4}$
 C. $\frac{3}{4}$
 D. $\frac{5}{8}$
 E. $\frac{3}{2}$
12. A. $\frac{1}{8}, \frac{1}{4}, \frac{1}{2}$
 B. $\frac{2}{8}, \frac{2}{4}, \frac{2}{2}$
 C. $\frac{3}{8}, \frac{3}{4}, \frac{3}{2}$
13. The larger fraction is the fraction that has the smaller denominator, because it is divided into fewer pieces so the pieces are larger.
14. Possible student response: $\frac{3}{8}, \frac{3}{4}$
15. A, B, C, D, F
16. Possible responses: D: $\frac{3}{4} = \frac{1}{4} + \frac{2}{4}$ or E: $\frac{2}{4} = \frac{4}{8}$
17. A. $\frac{2}{8}$
 B. $\frac{3}{8}$
 C. $\frac{3}{8}$

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17. Maya has 8 frosted cookies.

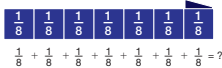


- A. What fraction of the cookies are striped?
 B. What fraction of the cookies are pink?
 C. What fraction of the cookies are polka-dotted?

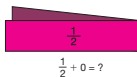
Homework

Use the Fraction Chart or your fraction strips for the following questions.

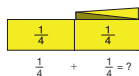
1. Lee Yah showed the following fraction using her fraction strips. What fraction is she showing?



2. Grace showed the following fraction using her fraction strips. What fraction is she showing?



3. Frank showed the following fraction using his fraction strips. What fraction is he showing?



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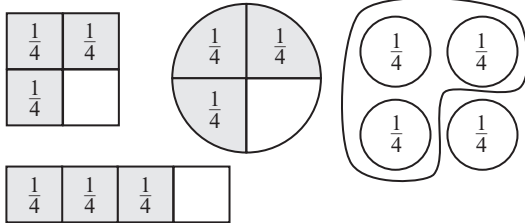
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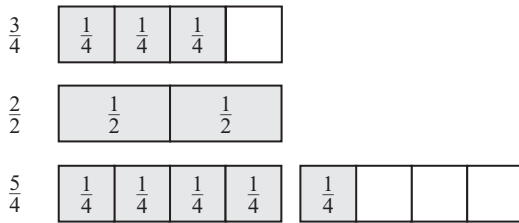
Homework (SG pp. 301–303)

Questions 1–13

1. $\frac{7}{8}$
2. $\frac{1}{2}$
3. $\frac{2}{4}$ or $\frac{1}{2}$
4. A. $\frac{2}{8}$ or $\frac{1}{4}$
B. $\frac{2}{2}$ or 1
C. $\frac{4}{8}$, $\frac{2}{4}$ or $\frac{1}{2}$
5. Some possible responses:



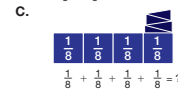
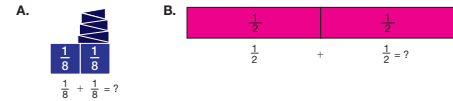
6. A. $\frac{4}{8}$ or $\frac{2}{4}$
B. $\frac{4}{8}$ or $\frac{1}{2}$
C. Some possible responses:



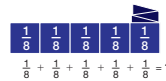
7. A. The denominator tells us that the fraction strip is divided into 8 equal pieces.
B. The numerator tells us that she is showing 5 of the 8 pieces.
8. A. $\frac{3}{8}$
B. $\frac{2}{8}$ or $\frac{1}{4}$
C. $\frac{5}{8}$
9. A. $\frac{2}{4}$ or $\frac{1}{2}$
B. $\frac{3}{4}$
10. A, C, D, E
11. Possible responses: B: $\frac{2}{4} = \frac{1}{2}$ or F: $\frac{4}{8} = \frac{1}{2}$
12. A, D, E, F
13. Possible responses: B: $\frac{1}{2} = \frac{4}{8}$ or C: $\frac{2}{4} = \frac{4}{8}$

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4. Write a fraction for each fraction strip.



5. Draw and label a picture showing $\frac{3}{4}$.
6. A. Write another fraction that is equivalent to the fraction shown in Question 2.
B. Write another fraction that is equivalent to the fraction shown in Question 3.
C. Write and draw a fraction larger than the fraction shown in Question 3.
7. Nila folded her eighths strip to show $\frac{5}{8}$.



- A. In the fraction $\frac{5}{8}$ what information does the denominator give us?
- B. In the fraction $\frac{5}{8}$ what information does the numerator give us?
8. Ana has 8 buttons. Three of the buttons are black, three of the buttons are gray, and two of the buttons are white.
A. What fraction of the buttons are black?
B. What fraction of the buttons are white?
C. What fraction of the buttons are not gray?



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9. Irma, Ming, Maya, and Nila are working at the same table.
A. What fraction of the students are wearing glasses?
B. What fraction of the students are girls?



10. Which number sentences are true? Use your Fraction Chart or fraction strips to help you.
A. $\frac{4}{8} = \frac{1}{2}$ B. $\frac{2}{4} = \frac{4}{2}$
C. $\frac{3}{4} = \frac{6}{8}$ D. $\frac{3}{6} = \frac{4}{8}$
E. $\frac{1}{4} = \frac{2}{8}$ F. $\frac{4}{8} = \frac{1}{4}$
11. Pick a false number sentence from Question 10 and make it true.
12. Which number sentences are true? Use your Fraction Chart or fraction strips to help you.
A. $\frac{1}{2} + \frac{1}{8} + \frac{1}{8} = \frac{3}{8}$ B. $\frac{1}{2} = \frac{3}{8}$
C. $\frac{2}{4} = \frac{2}{8}$ D. $\frac{4}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
E. $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{3}{2}$ F. $\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$
13. Pick a false number sentence from Question 12 and make it true.

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