Chapter 7

Lesson 5

Comparing Fractions

You will need
- fraction circles
- pencil crayons

GOAL

Compare two fractions using equivalent fractions.

Every guest at Matthew's party made a pizza. The pizzas were all the same size, but they were cut into different numbers of slices.

Cara

Matthew

Sydney

Tai

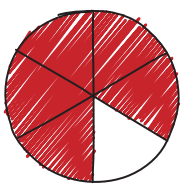
Pizza Slices Eaten by Guests

Name	Number of slices eaten	Total number of slices
Cara	5	6
Matthew	3	4
Sydney	4	5
Tai	4	10

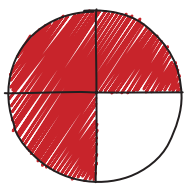
Who ate the most pizza?

Matthew's Pizza Fractions

I shaded the number of slices that Cara and I ate red.

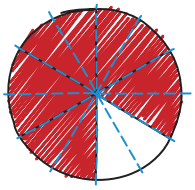


Cara's pizza

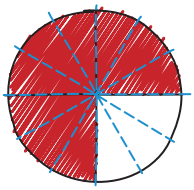


my pizza

If I cut both pizzas into the same number of slices, it will be easy to compare the amounts we ate. I'll cut each sixth of Cara's pizza into 2 smaller slices to make 12 equal slices. I'll cut each fourth of my pizza into 3 smaller slices to make 12 equal slices.



Cara's pizza



my pizza

$\frac{5 \times 2}{6 \times 2} = \frac{10}{12}$ $\frac{3 \times 3}{4 \times 3} = \frac{9}{12}$

Cara ate $\frac{10}{12}$ of her pizza. I ate $\frac{9}{12}$ of my pizza.

$\frac{10}{12} > \frac{9}{12}$

So Cara ate more pizza than I did.

A. Who ate more pizza: Sydney or Tai? Show how you know using equivalent fractions.

B. Compare the amounts of pizza that Sydney and Tai ate, without using equivalent fractions.

C. Who ate the most pizza: Cara, Matthew, Sydney, or Tai? Show your work.

Reflecting

D. To compare Sydney's fraction $\left(\frac{4}{5}\right)$ with Cara's fraction $\left(\frac{5}{6}\right)$, why could you think of each fifth in $\frac{4}{5}$ as six equal pieces and each sixth in $\frac{5}{6}$ as five equal pieces?

Checking

1. Compare these fractions of pizzas using $<$ or $>$.

a) $\frac{3}{8} \square \frac{3}{4}$

b) $\frac{3}{5} \square \frac{2}{4}$

Practising

2. Compare each pair of fractions using $<$, $>$, or $=$. Explain your strategy for two comparisons.

a) $\frac{6}{14} \square \frac{9}{14}$

b) $\frac{3}{5} \square \frac{3}{4}$

c) $\frac{4}{9} \square \frac{6}{9}$

d) $\frac{2}{12} \square \frac{1}{6}$

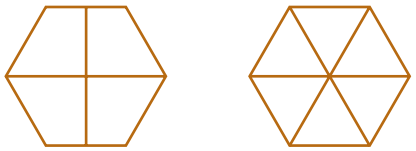
e) $\frac{4}{5} \square \frac{8}{15}$

f) $\frac{1}{5} \square \frac{7}{10}$

3. Compare each pair of fractions using $<$ or $>$.

a) $\frac{2}{5} \square \frac{5}{10}$

b) $\frac{3}{4} \square \frac{4}{6}$



4. Sam's giant cookie recipe calls for $\frac{3}{4}$ of a measuring bowl of oatmeal and $\frac{2}{3}$ of a measuring bowl of flour. How do you know that there is more oatmeal than flour in the recipe?

5. Anne said that she did not need to use equivalent fractions to compare $\frac{1}{10}$ and $\frac{7}{8}$. How could she know which fraction is greater?

6. Compare each pair of fractions using $<$, $>$, or $=$. Explain your strategy for two comparisons.

a) $\frac{6}{18} \square \frac{1}{3}$

b) $\frac{2}{8} \square \frac{7}{24}$

c) $\frac{10}{16} \square \frac{10}{50}$

d) $\frac{3}{8} \square \frac{2}{10}$

7. Is each fraction greater or less than $\frac{1}{3}$? How do you know?

a) $\frac{1}{5}$ **b)** $\frac{2}{3}$ **c)** $\frac{3}{6}$ **d)** $\frac{4}{15}$

8. Is $\frac{2}{7}$ between $\frac{2}{6}$ and $\frac{2}{8}$? How do you know?

9. To compare $\frac{1}{4}$ and $\frac{5}{14}$, Jessica rewrote $\frac{1}{4}$ as $\frac{1 \times 5}{4 \times 5}$. She said it's easy to compare $\frac{5}{20}$ and $\frac{5}{14}$. Why might Jessica think that?

10. Isaac is using equivalent fractions to compare $\frac{1}{3}$ and $\frac{4}{9}$.

a) What fractions can he use if he creates fractions with the same denominator?

b) What fractions can he use if he creates fractions with the same numerator?

11. Martin and Buddy have tipis in the First Nations Village at the Calgary Stampede. Their tipis are decorated with the same number of symbols. $\frac{5}{8}$ of Martin's symbols are animals, and $\frac{3}{4}$ of Buddy's symbols are animals. Whose tipi has a greater fraction of animal symbols?

12. How can you use counters to show that $\frac{3}{4}$ is greater than $\frac{9}{16}$?

13. What strategies can you use to compare two fractions with different denominators? Use examples to help you explain.