





# Comparing Fractions 4

1. Compare the fractions, writing  $<$  or  $>$  in between them.

If the fractions have the same KINDS of pieces, you can simply compare how many of those kind of pieces they have.			c. $\frac{5}{9}$ <input type="text"/> $\frac{7}{9}$
	a. $\frac{3}{8}$ <input type="text"/> $\frac{7}{8}$	b. $\frac{7}{12}$ <input type="text"/> $\frac{6}{12}$	d. $\frac{6}{6}$ <input type="text"/> $\frac{2}{6}$

2. Compare the fractions, writing  $<$  or  $>$  in between them.

If the fractions have the same AMOUNT of pieces, you can simply compare the size of pieces.			c. $\frac{5}{6}$ <input type="text"/> $\frac{5}{8}$
	a. $\frac{3}{8}$ <input type="text"/> $\frac{3}{9}$	b. $\frac{1}{10}$ <input type="text"/> $\frac{1}{12}$	d. $\frac{2}{6}$ <input type="text"/> $\frac{2}{5}$

Sometimes one fraction is more than  $\frac{1}{2}$ , and the other is less.

Compare  $\frac{5}{6}$  and  $\frac{3}{8}$ . Now,  $\frac{3}{8}$  is less than  $\frac{1}{2}$ . How can you know? Because  $\frac{4}{8}$  would be exactly  $\frac{1}{2}$ , so  $\frac{3}{8}$  is less than that. And,  $\frac{5}{6}$  is more than  $\frac{1}{2}$  (how can you know?). So,  $\frac{5}{6} > \frac{3}{8}$ .

3. Compare the fractions. **Note:** Sometimes one of the fractions is actually *equal* to  $\frac{1}{2}$ !

a. $\frac{1}{6}$ <input type="text"/> $\frac{3}{5}$	b. $\frac{4}{5}$ <input type="text"/> $\frac{2}{8}$	c. $\frac{3}{4}$ <input type="text"/> $\frac{2}{5}$	d. $\frac{5}{10}$ <input type="text"/> $\frac{4}{12}$
e. $\frac{4}{5}$ <input type="text"/> $\frac{3}{6}$	f. $\frac{1}{9}$ <input type="text"/> $\frac{2}{3}$	g. $\frac{3}{6}$ <input type="text"/> $\frac{5}{10}$	h. $\frac{4}{10}$ <input type="text"/> $\frac{7}{12}$

4. Write these fractions in order, from the smallest to the greatest.

a. $\frac{6}{8}, \frac{3}{8}, \frac{3}{6}$	b. $\frac{6}{5}, \frac{2}{5}, \frac{5}{6}$	c. $\frac{1}{4}, \frac{1}{7}, \frac{5}{8}$
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**Sometimes one fraction is more than 1 whole, and the other is less.**

Compare  $\frac{7}{10}$  and  $\frac{11}{4}$ . Clearly, 11 fourths is more than 1 whole since 4 fourths makes 1 whole.

And,  $\frac{7}{10}$  is less than 1. So,  $\frac{7}{10}$  must also be less than  $\frac{11}{4}$ .

5. Compare the fractions.

a.  $\frac{8}{7} \square \frac{7}{8}$

b.  $\frac{9}{12} \square \frac{7}{5}$

c.  $\frac{3}{4} \square \frac{8}{5}$

d.  $\frac{11}{12} \square \frac{10}{3}$

6. Compare.

a. $\frac{1}{7} \square \frac{3}{7}$	b. $\frac{1}{2} \square \frac{5}{6}$	c. $\frac{4}{5} \square \frac{8}{3}$	d. $1\frac{2}{9} \square 1\frac{3}{5}$	e. $\frac{9}{5} \square \frac{6}{6}$
f. $\frac{5}{12} \square \frac{5}{11}$	g. $\frac{12}{8} \square \frac{8}{12}$	h. $\frac{5}{5} \square \frac{5}{7}$	i. $\frac{2}{3} \square \frac{5}{10}$	j. $2\frac{4}{8} \square 2\frac{2}{7}$

**Sometimes you can write an equivalent fraction, then compare.**

Compare  $\frac{3}{5}$  and  $\frac{7}{10}$ . This time, we can write  $\frac{3}{5}$  as  $\frac{6}{10}$  since they are equivalent fractions.

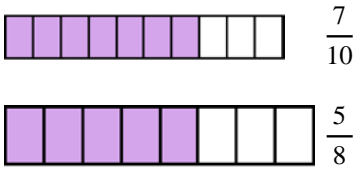
Then the problem changes to comparing  $\frac{6}{10}$  and  $\frac{7}{10}$ , and clearly  $\frac{7}{10}$  is more.

7. Compare the fractions. Write an equivalent fraction for one of the fractions.

*Hint: to make an equivalent fraction, multiply both the top and bottom number in the fraction by some same number.*

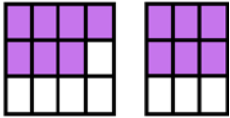
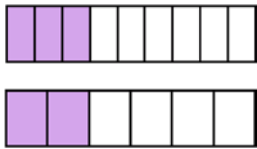
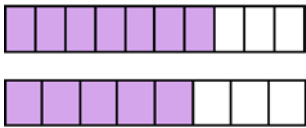
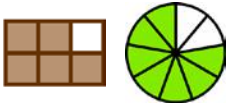

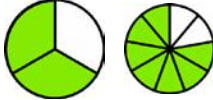
<p>a. <math>\frac{1}{5} \quad \frac{3}{10}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{\square}{10} \square \frac{3}{10}</math></p>	<p>b. <math>\frac{3}{4} \quad \frac{5}{8}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{\square}{8} \square \frac{5}{8}</math></p>	<p>c. <math>\frac{5}{12} \quad \frac{1}{3}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{5}{12} \square \frac{\square}{\square}</math></p>	<p>d. <math>\frac{11}{12} \quad \frac{5}{6}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{11}{12} \square \frac{\square}{\square}</math></p>
<p>e. <math>\frac{3}{4} \quad \frac{9}{12}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{\square}{\square} \square \frac{\square}{\square}</math></p>	<p>f. <math>\frac{5}{9} \quad \frac{2}{3}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{\square}{\square} \square \frac{\square}{\square}</math></p>	<p>g. <math>\frac{1}{3} \quad \frac{2}{9}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{\square}{\square} \square \frac{\square}{\square}</math></p>	<p>h. <math>\frac{3}{12} \quad \frac{1}{3}</math></p> <p style="text-align: center;">↓      ↓</p> <p><math>\frac{\square}{\square} \square \frac{\square}{\square}</math></p>

**You can only compare two fractions if they refer to the same-size whole.**

**Example.**   $\frac{7}{10}$   $\frac{5}{8}$

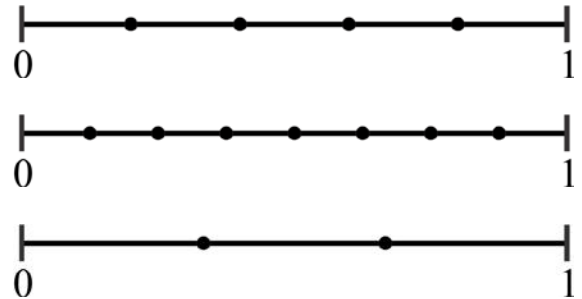
It looks like  $\frac{7}{10}$  is the same length as  $\frac{5}{8}$ . But the fraction bars themselves are not the same size, so you cannot compare by using these pictures.

8. Compare if you can! If the wholes are not the same size, then cross the whole problem out.

<p><b>a.</b> </p> <p><math>\frac{7}{9}</math> <math>\frac{6}{9}</math></p>	<p><b>b.</b> </p> <p><math>\frac{3}{9}</math> <math>\frac{2}{6}</math></p>	<p><b>c.</b> </p> <p><math>\frac{7}{10}</math> <math>\frac{5}{10}</math></p>
<p><b>d.</b> </p> <p><math>\frac{5}{6}</math> <math>\frac{7}{9}</math></p>	<p><b>e.</b> </p> <p><math>\frac{7}{6}</math> <math>\frac{5}{6}</math></p>	<p><b>f.</b> </p> <p><math>\frac{4}{5}</math> <math>\frac{7}{9}</math></p>

9. Order these fractions from the smallest to the greatest. Use the number lines to help.

$$\frac{5}{8}, \frac{1}{3}, \frac{2}{5}, \frac{3}{8}, \frac{2}{3}$$



10. **a.** Draw a picture to show that  $\frac{1}{3} < \frac{1}{2}$ .

**b.** Draw a picture to show that  $\frac{5}{6} > \frac{3}{5}$ .

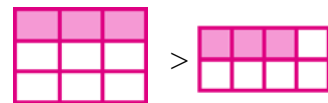
11. Angie ate  $\frac{3}{8}$  of a pizza, and Joe ate  $\frac{1}{4}$  of the same pizza.  
Who ate more pizza?

How much more pizza?

12. Bob pays  $\frac{21}{100}$  of his paycheck in taxes, and Chloe pays  $\frac{3}{10}$  of hers in taxes.  
Who pays a bigger part of his/her paycheck in taxes?

13. The store is running a sale! Which is a bigger discount:  
if a bike is discounted by  $\frac{35}{100}$  of its price,  
or if it is discounted by  $\frac{4}{10}$  of its price?

14. a. What is wrong with these pictures where Emily is trying to show that  $\frac{3}{9}$  is more than  $\frac{3}{8}$ ?



b. Draw a picture showing that actually, the opposite is true.

15. Write these fractions and mixed numbers in order, from the smallest to the greatest.

a. $\frac{3}{7}, \frac{3}{5}, 1\frac{1}{7}$	b. $1\frac{1}{4}, \frac{3}{8}, \frac{3}{6}$	c. $\frac{2}{3}, \frac{4}{9}, \frac{6}{5}$
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### Puzzle Corner

Mom baked two rectangular pizzas. One was twice as big as the other. Bob ate  $\frac{2}{3}$  of the smaller pizza, and Dad ate  $\frac{3}{8}$  of the larger pizza. Who ate more pizza?

Explain your reasoning.