# TABE  Math-E

# PAXEN

Unit-4  Fractions

Lesson 30
Compare Fractions
(with Common Denominators)

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Some graphics may not have copied well during the scan process.

# Math-E - Lesson 30 – Compare Fractions

## Lesson 30 · Compare Fractions With the Same Numerator or Same Denominator

3.NF.3.d – High

When two fractions have the same denominator, they have the same unit size. A larger numerator means a greater number of units and therefore a greater fraction.

**Example** Twins Bill and Bob each own the same type of car. The gas tank in Bill's car is $\frac{3}{5}$ full. The gas tank in Bob's car is $\frac{4}{5}$ full. Whose car has more gas?

1) The denominator of each fraction is 5. That means each whole is divided into five $\frac{1}{5}$ parts.

2) Bill's gas tank is $\frac{3}{5}$ full. Shade three $\frac{1}{5}$ parts. Bob's gas tank is $\frac{4}{5}$ full. Shade four $\frac{1}{5}$ parts.

Bill
Bob

3) Compare the two shaded areas. Which is greater?
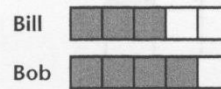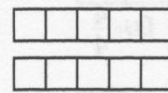
$\frac{4}{5}$ is greater than $\frac{3}{5}$.
$$\frac{4}{5} > \frac{3}{5}$$

Bob's car has more gas.

When two fractions have the same numerator, they represent the same number of units, or parts, to be counted. A larger denominator means a smaller unit size and therefore a smaller fraction.

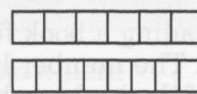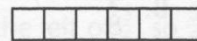**Example** Which is less, $\frac{4}{6}$ or $\frac{4}{8}$?

1) The fraction $\frac{4}{6}$ has a denominator of 6. That means the whole is divided into six $\frac{1}{6}$ parts.

2) The fraction $\frac{4}{8}$ has a denominator of 8. That means the whole is divided into eight $\frac{1}{8}$ parts.

3) Shade $\frac{4}{6}$. Shade $\frac{4}{8}$.
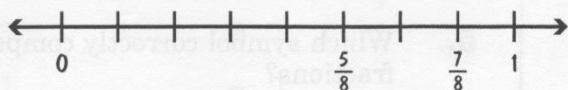
4) Compare the two shaded areas. Which is less?

$\frac{4}{8}$ is less than $\frac{4}{6}$.
$$\frac{4}{8} < \frac{4}{6}$$

# Math-E - Lesson 30 – Compare Fractions

1. Look at the number line below. Which statement is true?



A. $\frac{5}{8}$ and $\frac{7}{8}$ have the same numerator.

B. $\frac{5}{8}$ is greater than $\frac{7}{8}$.

C. $\frac{7}{8}$ is less than $\frac{5}{8}$.

D. $\frac{5}{8}$ is less than $\frac{7}{8}$.

1. **D** $\frac{5}{8}$ and $\frac{7}{8}$ have the same denominator, so the fraction with the smaller numerator is less.

**Hint**

If the denominators are the same, compare the numerators.

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**Practice**

**Read each question. Select the correct answer.**

**1** Which fraction is greater than $\frac{1}{6}$?

A. $\frac{1}{8}$  B. $\frac{1}{7}$

C. $\frac{1}{6}$  D. $\frac{1}{5}$

**2** Which fraction is less than $\frac{2}{5}$?

A. $\frac{2}{6}$  B. $\frac{2}{5}$

C. $\frac{2}{4}$  D. $\frac{2}{3}$

**3** Which fraction makes this comparison true?

$\frac{3}{8} > ?$

A. $\frac{4}{8}$  B. $\frac{3}{5}$

C. $\frac{3}{9}$  D. $\frac{5}{8}$

**4** Which fraction is less than $\frac{1}{7}$?

A. $\frac{1}{8}$  B. $\frac{1}{6}$

C. $\frac{1}{5}$  D. $\frac{1}{4}$

**5** Which fraction is greater than $\frac{4}{6}$?

A. $\frac{1}{6}$  B. $\frac{5}{6}$

C. $\frac{3}{6}$  D. $\frac{2}{6}$

**6** Which fraction makes this comparison true?

$? < \frac{3}{7}$

A. $\frac{6}{7}$  B. $\frac{5}{7}$

C. $\frac{4}{7}$  D. $\frac{2}{7}$

**7** Which fraction is greater than $\frac{9}{12}$?

A. $\frac{2}{12}$  B. $\frac{9}{12}$

C. $\frac{10}{12}$  D. $\frac{1}{12}$

**8** Which comparison is true?

A. $\frac{3}{5} < \frac{4}{5}$  B. $\frac{6}{7} > \frac{7}{7}$

C. $\frac{6}{8} < \frac{5}{8}$  D. $\frac{5}{9} > \frac{6}{9}$

**Lesson 30** | **Compare Fractions With the Same Numerator or Same Denominator**

(3.NF.3.d)

1. D. $\frac{1}{5} > \frac{1}{6}$. When the numerators are the same, the fraction with the smaller denominator is greater.

2. A. $\frac{2}{6} < \frac{2}{5}$. When the numerators are the same, the fraction with the larger denominator is smaller.

3. C. $\frac{3}{8} > \frac{3}{9}$. When the numerators are the same, the fraction with the smaller denominator is greater.

4. A. $\frac{1}{8} < \frac{1}{7}$. When the numerators are the same, the fraction with the larger denominator is smaller.

5. B. $\frac{5}{6} > \frac{4}{6}$. When the denominators are the same, the fraction with the greater numerator is greater.

6. D. $\frac{2}{7} < \frac{3}{7}$. When the denominators are the same, the fraction with the smaller numerator is smaller.

7. C. $\frac{10}{12} > \frac{9}{12}$. When the denominators are the same, the fraction with the greater numerator is greater.

8. A. $\frac{3}{5} < \frac{4}{5}$. When the denominators are the same, the fraction with the smaller numerator is smaller.

## Practice 30 | Compare Fractions with the Same Numerator or Same Denominator

**1** Which fraction is less than $\frac{1}{7}$?

A. $\frac{1}{8}$     B. $\frac{1}{6}$

C. $\frac{1}{5}$     D. $\frac{1}{4}$

**2** Which fraction is greater than $\frac{3}{6}$?

A. $\frac{1}{6}$     B. $\frac{2}{6}$

C. $\frac{3}{8}$     D. $\frac{3}{4}$

**3** Which fraction makes the comparison true?

$$\frac{7}{12} > ?$$

A. $\frac{7}{8}$     B. $\frac{7}{10}$

C. $\frac{6}{12}$     D. $\frac{9}{12}$

**4** Which comparison is true?

A. $\frac{1}{4} > \frac{2}{4}$     B. $\frac{1}{3} < \frac{2}{3}$

C. $\frac{1}{3} < \frac{1}{4}$     D. $\frac{2}{4} > \frac{2}{3}$

**5** Which fraction is greater than $\frac{5}{8}$?

A. $\frac{1}{8}$     B. $\frac{2}{8}$

C. $\frac{4}{8}$     D. $\frac{6}{8}$

**6** Which comparison is true?

A. $\frac{3}{12} > \frac{3}{5}$     B. $\frac{3}{12} < \frac{3}{8}$

C. $\frac{4}{8} < \frac{3}{8}$     D. $\frac{3}{12} > \frac{4}{12}$

**7** Aiyana's gas tank is less than $\frac{1}{4}$ full. Which fraction is less than $\frac{1}{4}$?

A. $\frac{1}{2}$     B. $\frac{1}{3}$

C. $\frac{1}{6}$     D. $\frac{2}{4}$

**8** Shahan usually runs $\frac{8}{10}$ mile before stopping to take a drink. In hotter weather, he runs a shorter distance before stopping. Which distance is less than $\frac{8}{10}$ mile?

A. $\frac{8}{8}$ mi     B. $\frac{8}{9}$ mi

C. $\frac{9}{10}$ mi     D. $\frac{7}{10}$ mi

**9** A tailor hems two pairs of Fernanda's dress pants. One pair of pants is hemmed $\frac{3}{8}$ inch, and the other pair is hemmed more. Which hem length is greater than $\frac{3}{8}$ inch?

A. $\frac{1}{8}$ in.     B. $\frac{2}{8}$ in.

C. $\frac{3}{5}$ in.     D. $\frac{3}{9}$ in.

**10** Takoda and Sidone each have an equal budget to spend on advertising for their separate product launches. Takoda spends $\frac{3}{5}$ of his budget. Sidone spends less of her budget. Which fraction makes the comparison true?

$$\frac{3}{5} > ?$$

A. $\frac{2}{5}$     B. $\frac{3}{3}$

C. $\frac{3}{4}$     D. $\frac{4}{5}$

**11** Each day Monday through Thursday, $\frac{7}{10}$ of the seats on a commuter train are occupied. On Friday, fewer seats are occupied. Which fraction is less than $\frac{7}{10}$?

A. $\frac{8}{10}$     B. $\frac{9}{10}$

C. $\frac{7}{9}$     D. $\frac{7}{12}$

**12** Stacey and Adelina order the same sandwich for lunch. Stacey eats $\frac{2}{8}$ of her sandwich and saves the rest for later. Adelina eats more of her sandwich than Stacey does. Which fraction is greater than $\frac{2}{8}$?

A. $\frac{4}{8}$

B. $\frac{2}{9}$

C. $\frac{2}{12}$

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

**13** Akeno bakes cookies using a new recipe. She measures $\frac{1}{4}$ teaspoon of salt. She measures a greater amount of baking soda than salt. Which measurement is greater than $\frac{1}{4}$ teaspoon?

A. $\frac{1}{8}$ tsp

B. $\frac{1}{6}$ tsp

C. $\frac{1}{5}$ tsp

D. $\frac{1}{3}$ tsp

**14** On Tuesday, $\frac{3}{6}$ of the customers at a coffee shop order tea. On Wednesday, fewer customers order tea than on Tuesday. Which fraction is less than $\frac{3}{6}$?

A. $\frac{1}{6}$

B. $\frac{4}{6}$

C. $\frac{3}{5}$

D. $\frac{3}{4}$

**15** Which two fractions are greater than $\frac{5}{7}$?

A. $\frac{5}{12}$

B. $\frac{5}{8}$

C. $\frac{5}{6}$

D. $\frac{3}{7}$

E. $\frac{4}{7}$

F. $\frac{6}{7}$

**16** Isamu plants a vegetable garden. In three weeks, the peppers grow $\frac{1}{3}$ foot, but the tomatoes grow taller. Which fraction makes the comparison true?

$$\frac{1}{3} < ?$$

A. $\frac{1}{6}$

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

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

D. $\frac{2}{3}$

**17** Mariana and Larry each order a small pizza. Mariana eats $\frac{4}{12}$ of her pizza. Larry eats less of his pizza than Mariana. Which fraction is less than $\frac{4}{12}$?

A. $\frac{4}{6}$

B. $\frac{3}{12}$

C. $\frac{5}{12}$

D. $\frac{6}{12}$

**18** Cottonwood Park has $\frac{1}{4}$ mile of ADA accessible trails. Mountainview Park has more ADA accessible trails than Cottonwood Park. Which distance is greater than $\frac{1}{4}$ mile?

A. $\frac{1}{2}$ mi

B. $\frac{1}{6}$ mi

C. $\frac{1}{8}$ mi

D. $\frac{1}{9}$ mi

**19** Which two statements are true?

A. $\frac{2}{6} > \frac{2}{4}$

B. $\frac{3}{4} < \frac{3}{6}$

C. $\frac{3}{4} > \frac{3}{6}$

D. $\frac{7}{10} < \frac{8}{10}$

E. $\frac{7}{10} > \frac{8}{10}$

F. $\frac{9}{10} < \frac{8}{10}$

**Practice 30** | **Compare Fractions with the Same Numerator or Same Denominator**

pp. 66–67 $\hspace{6cm}$ (3.NF.3.d)

1. A. $\frac{1}{8} < \frac{1}{7}$; When the numerators are the same, the fraction with the greater denominator is smaller.

2. D. $\frac{3}{4} > \frac{3}{6}$; When the numerators are the same, the fraction with the smaller denominator is greater.

3. C. $\frac{7}{12} > \frac{6}{12}$; When the denominators are the same, the fraction with the greater numerator is greater.

4. B. $\frac{1}{3} < \frac{2}{3}$; When the denominators are the same, the fraction with the smaller numerator is smaller.

5. D. $\frac{6}{8} > \frac{5}{8}$; When the denominators are the same, the fraction with the greater numerator is greater.

6. B. $\frac{3}{12} < \frac{3}{8}$; When the numerators are the same, the fraction with the greater denominator is smaller.

7. C. $\frac{1}{6} < \frac{1}{4}$; When the numerators are the same, the fraction with the greater denominator is smaller.

8. D. $\frac{7}{10} < \frac{8}{10}$; When the denominators are the same, the fraction with the smaller numerator is smaller.

9. C. $\frac{3}{5} > \frac{3}{8}$; When the numerators are the same, the fraction with the smaller denominator is greater.

10. A. $\frac{3}{5} > \frac{2}{5}$; When the denominators are the same, the fraction with the greater numerator is greater.

11. D. $\frac{7}{12} < \frac{7}{10}$; When the numerators are the same, the fraction with the greater denominator is smaller.

12. A. $\frac{4}{8} > \frac{2}{8}$; When the denominators are the same, the fraction with the greater numerator is greater.

13. D. $\frac{1}{3} > \frac{1}{4}$; When the numerators are the same, the fraction with the smaller denominator is greater.

14. A. $\frac{1}{6} < \frac{3}{6}$; When the denominators are the same, the fraction with the smaller numerator is smaller.

15. C, F. $\frac{5}{6} > \frac{5}{7}$; When the numerators are the same, the fraction with the smaller denominator is greater. $\frac{6}{7} > \frac{5}{7}$; When the denominators are the same, the fraction with the greater numerator is greater.

16. D. $\frac{1}{3} < \frac{2}{3}$; When the denominators are the same, the fraction with the smaller numerator is smaller.

17. B. $\frac{3}{12} < \frac{4}{12}$; When the denominators are the same, the fraction with the smaller numerator is smaller.

18. A. $\frac{1}{2} > \frac{1}{4}$; When the numerators are the same, the fraction with the smaller denominator is greater.

19. C, D $\frac{3}{4} > \frac{3}{6}$; When the numerators are the same, the fraction with the smaller denominator is greater. $\frac{7}{10} < \frac{8}{10}$; When the denominators are the same, the fraction with the smaller numerator is smaller.