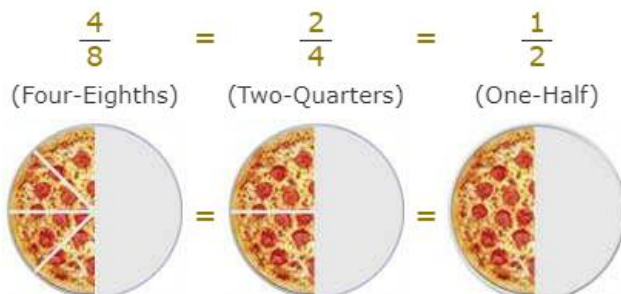# Fractions and Decimals (Part 1)
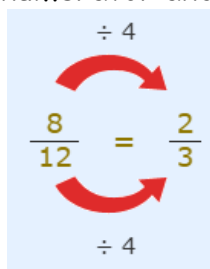# A quick recap for fractions

Simplifying (or *reducing*) fractions means to make the fraction as simple as possible.

Why say four-eighths ($\frac{4}{8}$) when we really mean half ($\frac{1}{2}$)?

$$\frac{4}{8} \quad = \quad \frac{2}{4} \quad = \quad \frac{1}{2}$$

(Four-Eighths)   (Two-Quarters)   (One-Half)

To simplify a fraction, divide the top (numerator) and the bottom (denominator) by the highest common factor (factor = a number that fits exactly into another number).

For example, the largest number that goes exactly into both 8 and 12 is 4, so the highest common factor is 4. We divide both the numerator and the denominator by 4.

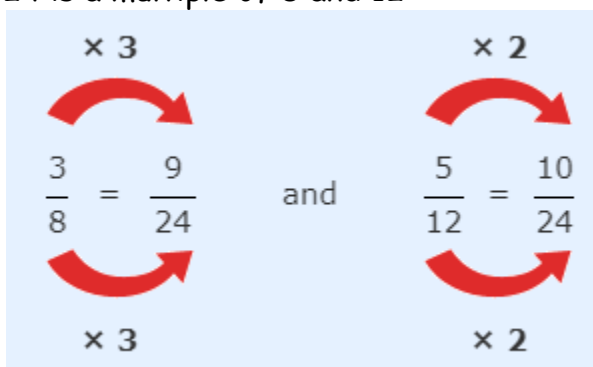$$\div 4$$
$$\frac{8}{12} = \frac{2}{3}$$
$$\div 4$$

To compare and order fractions we need to change the denominators so that they are the same and then they are easy to compare. First, we need to find a common multiple of the current denominators. Then you need to convert the fractions, so they have the common multiple as their denominator. Remember what ever you do to the denominator, you must do to the numerator.

For example,

Which is larger: $\frac{3}{8}$ or $\frac{5}{12}$?

24 is a multiple of 8 and 12

$$\times 3 \qquad\qquad \times 2$$
$$\frac{3}{8} = \frac{9}{24} \quad\text{and}\quad \frac{5}{12} = \frac{10}{24}$$
$$\times 3 \qquad\qquad \times 2$$

Now, we can see that the second fraction is larger.

<u>Simplifying fractions</u>

Using common factors, simplify the following fractions to their simplest form. You might need to do more than one division to reach the simplest form. Choose one of the options below.

1. $\dfrac{4}{16}$ = _____

2. $\dfrac{14}{21}$ = _____

3. $\dfrac{6}{15}$ = _____

4. $\dfrac{18}{34}$ = _____

5. $\dfrac{9}{12}$ = _____

6. $\dfrac{36}{45}$ = _____

7. $\dfrac{12}{20}$ = _____

8. $\dfrac{42}{64}$ = _____

9. $\dfrac{15}{24}$ = _____

10. $\dfrac{15}{35}$ = _____

11. $\dfrac{14}{16}$ = _____

12. $\dfrac{3}{33}$ = _____

13. $\dfrac{9}{18}$ = _____

14. $\dfrac{9}{27}$ = _____

15. $\dfrac{15}{25}$ = _____

16. $\dfrac{18}{54}$ = _____

17. $\dfrac{6}{8}$ = _____

18. $\dfrac{42}{49}$ = _____

Comparing and ordering fractions

Activity 2 – Use the symbols < > or = to compare these fractions. There is space underneath each question for you to write the fractions out with the same denominator.
Choose one of the options below.

Walk option   **Run option**

1. $\frac{1}{3}$ ☐ $\frac{1}{4}$ 2. $\frac{1}{5}$ ☐ $\frac{3}{15}$ 1. $\frac{7}{9}$ ☐ $\frac{6}{7}$ 2. $\frac{11}{8}$ ☐ $\frac{99}{72}$

—— ——   —— ——   —— ——   —— ——

3. $\frac{3}{5}$ ☐ $\frac{7}{10}$ 4. $\frac{2}{7}$ ☐ $\frac{3}{8}$ 3. $\frac{5}{6}$ ☐ $\frac{21}{25}$ 4. $\frac{44}{50}$ ☐ $\frac{7}{8}$

—— ——   —— ——   —— ——   —— ——

5. $\frac{1}{2}$ ☐ $\frac{4}{8}$ 6. $\frac{5}{3}$ ☐ $\frac{27}{16}$ 5. $\frac{35}{50}$ ☐ $\frac{49}{70}$ 6. $\frac{6}{17}$ ☐ $\frac{2}{5}$

—— ——   —— ——   —— ——   —— ——

7. $\frac{25}{9}$ ☐ $\frac{11}{4}$ 8. $\frac{5}{12}$ ☐ $\frac{2}{5}$ 7. $\frac{8}{9}$ ☐ $\frac{47}{53}$ 8. $\frac{24}{11}$ ☐ $\frac{51}{23}$

—— ——   —— ——   —— ——   —— ——

9. $\frac{11}{15}$ ☐ $\frac{3}{4}$ 10. $\frac{30}{24}$ ☐ $\frac{5}{4}$ 9. $\frac{22}{13}$ ☐ $\frac{7}{4}$ 10. $\frac{56}{63}$ ☐ $\frac{77}{99}$

—— ——   —— ——   —— ——   —— ——

Activity 2: Order these fractions from smallest to largest. Make sure you convert the fractions so they have the same denominator first. Choose the option you want to complete.

Walk

1. $\dfrac{3}{8}$ $\dfrac{1}{2}$ $\dfrac{1}{4}$ $\dfrac{3}{4}$ $\dfrac{7}{8}$

$\dfrac{}{8}$ $\dfrac{}{8}$ $\dfrac{}{8}$ $\dfrac{}{8}$ $\dfrac{}{8}$

smallest —   —   —   —   — largest

2. $\dfrac{7}{12}$ $\dfrac{11}{12}$ $\dfrac{2}{3}$ $\dfrac{3}{4}$ $\dfrac{5}{6}$

$\dfrac{}{12}$ $\dfrac{}{12}$ $\dfrac{}{12}$ $\dfrac{}{12}$ $\dfrac{}{12}$

smallest —   —   —   —   — largest

3. $\dfrac{6}{5}$ $\dfrac{17}{10}$ $\dfrac{3}{2}$ $\dfrac{9}{5}$ $\dfrac{13}{10}$

$\dfrac{}{10}$ $\dfrac{}{10}$ $\dfrac{}{10}$ $\dfrac{}{10}$ $\dfrac{}{10}$

smallest —   —   —   —   — largest

Try ordering these fractions. Watch out for the mixed numbers and remember to complete some workings to help you.

a. $\dfrac{3}{2}$ $\dfrac{5}{4}$ $\dfrac{4}{3}$

smallest   largest

b. $1\dfrac{3}{4}$ $\dfrac{8}{3}$ $\dfrac{11}{6}$

smallest   largest

c. $\dfrac{12}{5}$ $2\dfrac{1}{3}$ $\dfrac{11}{4}$

smallest   largest

d. $\dfrac{9}{2}$ $\dfrac{14}{3}$ $\dfrac{17}{4}$

smallest   largest

Run

1.

$\frac{5}{8}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{3}{8}$

$\frac{}{24}$ $\frac{}{24}$ $\frac{}{24}$ $\frac{}{24}$ $\frac{}{24}$

smallest — — — — — largest

2.

$\frac{11}{4}$ $\frac{31}{12}$ $\frac{12}{5}$ $\frac{8}{3}$ $\frac{17}{6}$

— — — — —

smallest — — — — — largest

3.

$\frac{2}{7}$ $\frac{1}{4}$ $\frac{4}{9}$ $\frac{1}{3}$ $\frac{1}{8}$

— — — — —

smallest — — — — — largest

Challenge: Can you solve these?

This list of numbers is in size order. Identify whether the largest number is at the beginning or at the end.

$\frac{26}{8}$ $\frac{10}{3}$ $\frac{17}{5}$ $\frac{24}{7}$

This list of numbers is in size order from left to right. One number is in the wrong place. Circle the number that is in the wrong place.

$\frac{19}{4}$ $\frac{14}{3}$ $\frac{23}{5}$ $\frac{47}{10}$ $\frac{9}{2}$