

Math Makes Sense!



FRACTIONS WITHOUT DISTRACTIONS

1

Way up North in the

Numerator

How many parts are we talking about?

2

Way down Deep in the

Denominator

How many equal parts in all?

A common fraction is a part of an object or group. It is less than whole number 1.

Simplify Fractions

- If numerator is smaller, find a "magic number" (common factor) that will divide evenly into the numerator and denominator
- Try smallest numerator
- Try 2, 3, 4, 5, etc.

$$\textcircled{2} \quad \frac{8}{2} \div \frac{2}{2} = \frac{4}{1} \quad \frac{20}{5} \div \frac{5}{5} = \frac{4}{1}$$

$$\textcircled{3} \quad \frac{6}{6} \div \frac{3}{3} = \frac{2}{2} \quad \frac{100}{10} \div \frac{10}{10} = \frac{1}{1}$$

- If numerator is larger, change improper fraction to a mixed number
- Divide denominator into numerator for whole number

$$\frac{9}{3} = 3 \quad \frac{3}{3} = 1$$

2. If you have a remainder, place it over the divisor

$$\frac{2}{3} = 1 \frac{2}{3} \quad \frac{2}{2} = 1 \frac{1}{1}$$

Add Like Denominators

- Add numerators
- Denominators stay the same

$$\frac{3}{9} + \frac{2}{9} = \frac{5}{9}$$

(Try to make wholes with pictures)



Subtract Like Denominators

- Subtract numerators
- Denominators stay the same

$$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$

(Circle parts that go away)



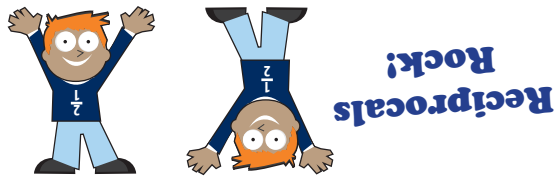
Divide Fractions

- Invert the second fraction
- Change the \div to \times
- Multiply (See p. 6)

$$\text{a. fraction} \div \text{fraction} \quad \frac{6}{12} \div \frac{1}{2} = \frac{6}{1} \times \frac{2}{1} = \frac{12}{1}$$

$$\text{b. whole number} \div \text{fraction} \quad 4 \div \frac{3}{4} = \frac{4}{1} \times \frac{4}{3} = \frac{16}{3}$$

$$\text{c. mixed number} \div \text{fraction} \quad 3 \frac{2}{3} \div \frac{4}{3} = \frac{11}{3} \times \frac{3}{4} = \frac{11}{4}$$



Add Unlike Denominators

- Find least common denominator (See #2, Plan A on p. 3)

$$\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$

- Add numerators
- Denominators stay the same

$$\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$

Subtract Unlike Denominators

- Find least common denominator (See #2, Plan B on p. 3)

$$\frac{1}{2} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6} = \frac{1}{6}$$

- Subtract numerators
- Denominators stay the same

$$\frac{3}{6} - \frac{2}{6} = \frac{1}{6}$$

Multiply Fractions

- Multiply numerators
- Multiply denominators

$$\frac{3}{2} \times \frac{5}{1} = \frac{15}{2}$$

Multiply a Fraction and a Whole Number

- "Of" means multiply.
- Put whole numbers over 1

$$\frac{1}{5} \times 5 \text{ or } \frac{1}{5} \text{ of } 5 = \frac{1}{1} \times \frac{5}{1} = \frac{5}{1}$$

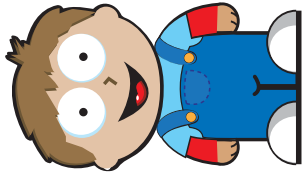
Multiply a Fraction and a Mixed Number

- Use quality check \times
- Say "Whole number times denominator plus numerator equals numerator"
- Denominator stays same

$$2 \frac{1}{2} \times \frac{3}{1} = \frac{3}{1} \times \frac{2}{5} = \frac{6}{5}$$

Name _____

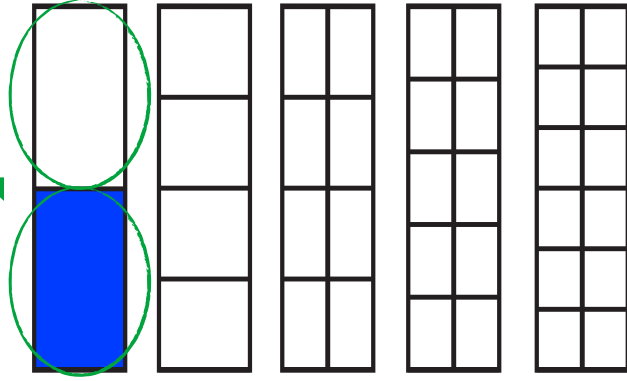
Equivalent Fractions



Way up **N**orth in the **N**umerator
How many parts are we talking about?
Way **D**own **D**eep in the **D**enominator
How many equal parts in all?

$\frac{1}{2}$

Shade $\frac{1}{2}$. Circle equal groups.



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

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

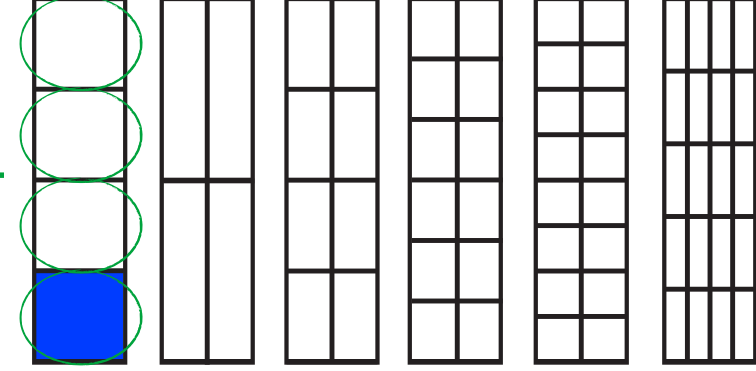
$$\frac{1}{2} = \frac{\quad}{8}$$

$$\frac{1}{2} = \frac{\quad}{10}$$

$$\frac{1}{2} = \frac{\quad}{12}$$

$\frac{1}{4}$

Shade $\frac{1}{4}$. Circle equal groups.



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

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

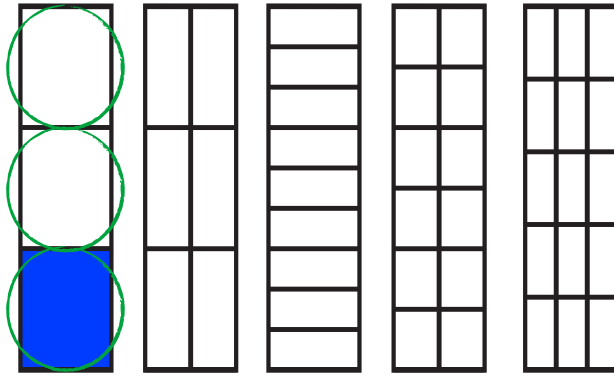
$$\frac{1}{4} = \frac{\quad}{8}$$

$$\frac{1}{4} = \frac{\quad}{12}$$

$$\frac{1}{4} = \frac{\quad}{16}$$

$\frac{1}{3}$

Shade $\frac{1}{3}$. Circle equal groups.



$$\frac{1}{3} = \frac{\quad}{\quad}$$

$$\frac{1}{3} = \frac{\quad}{6}$$

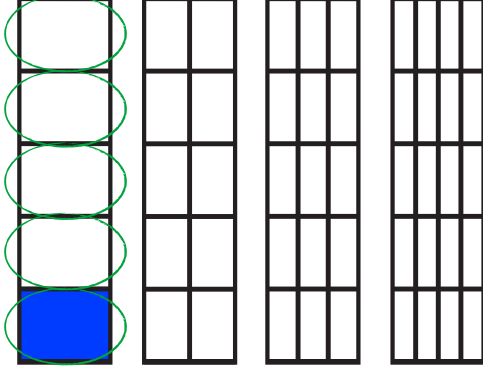
$$\frac{1}{3} = \frac{\quad}{9}$$

$$\frac{1}{3} = \frac{\quad}{12}$$

$$\frac{1}{3} = \frac{\quad}{15}$$

$\frac{1}{5}$

Shade $\frac{1}{5}$. Circle equal groups.



$$\frac{1}{5} = \frac{\quad}{\quad}$$

$$\frac{1}{5} = \frac{\quad}{10}$$

$$\frac{1}{5} = \frac{\quad}{15}$$

$$\frac{1}{5} = \frac{\quad}{20}$$

Fraction Rap

Way up **N**orth in the **N**umerator

(Point up, high voice)

Way **D**own **D**eep in the **D**enominator

(Point down, low voice)

Way up **N**orth in the **N**umerator

(Point up, high voice)

Way **D**own **D**eep in the **D**enominator

(Point down, low voice)

WHAT DOES IT MEAN??

Way up **N**orth in the **N**umerator

(Point up, high voice)

How many parts are we talking about?

Way **D**own **D**eep in the **D**enominator

(Point down, low voice)

How many equal parts in all?

ONE MORE TIME!

Way up **N**orth in the **N**umerator

(Point up, high voice)

How many parts are we talking about?

Way **D**own **D**eep in the **D**enominator

(Point down, low voice)

How many equal parts in all?

