

Fractions and Decimals

A presentation by Math Doodles

Vocabulary Words

- fraction
- simplest form
- numerator
- denominator
- common denominator
- improper fractions
- mixed number
- common factor
- greatest common factor (GCF)

Fraction

$$\frac{2}{3}$$

fraction

a symbol such as $\frac{1}{3}$
used to describe
one or more parts
of a whole that is
divided into equal parts

Simplest Form

reduce to
smallest
example: $\frac{1}{4}$

Simplest
form

a fraction in which
the greatest
common factor of
the numerator and
denominator is one

Numerator

$$\frac{2}{3}$$

← Top

numerator

the number
above the
fraction bar in
a fraction

Denominator

$$\frac{2}{3}$$

bottom


denominator

the number below
the fraction
bar in a fraction

Common Denominator

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

common $\frac{1}{12}$



Common
denominator

a number that is
the denominator
of two or
more fractions

Improper Fractions

bigger number
on top

$$\frac{20}{4}$$

improper
fractions

a fraction whose
numerator is
greater than or
equal to its
denominator

Mixed Number

$$2\frac{2}{3}$$

mixed
number

a number that
has a whole -
number part and
a fractional
part

Common Factor

$\begin{array}{r} 6 \\ / \quad \backslash \\ 2 \times 3 \end{array}$ $\begin{array}{r} 4 \\ / \quad \backslash \\ 2 \times 2 \end{array}$ <hr/> <p>Common factor 2</p>	Common factor	a number that is a factor of two or more given numbers
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Greatest Common Factor (GCF)

$\begin{array}{c} 6 \\ 1, 2, 3, 6 \end{array}$ <hr/> $\begin{array}{c} 12 \\ 1, 2, 3, 4, 6, 12 \end{array}$	greatest common factor GCF	the greatest number that is a factor of two or more given numbers
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Fractions

Foldable

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NUMERATOR

DENOMINATOR

TOTAL

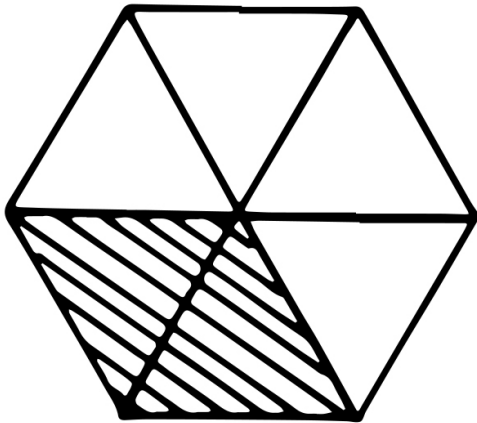
equal
number
of parts,
the
number above

NUMERATOR

DENOMINATOR

the number below,
TOTAL number
of equal
parts

A fraction describes one or more parts of a whole that is divided into equal parts.



Total parts: 6

Total shaded parts: 2

Shaded parts
represented as
the fraction:

$$\frac{2}{6}$$

which
can
reduce to

$$\frac{1}{3}$$

A line can be divided into equal parts.



The top number (numerator) is DIVIDED
into the bottom number (denominator).

Write as Fractions

$$3 \div 4$$

$$\frac{3}{4}$$

$$2 \div 5$$

$$\frac{2}{5}$$

$$7 \div 9$$

$$\frac{7}{9}$$

A MIXED number is a
whole number and a
fraction. EXAMPLES:
 $7\frac{2}{9}$, $4\frac{5}{8}$, $3\frac{1}{2}$

An IMPROPER fraction is
a fraction whose numerator
is greater than or equal
to its denominator.

EXAMPLES: $\frac{22}{17}$, $\frac{8}{8}$, $\frac{16}{5}$

REDUCING
fractions:

DIVIDE both
numbers by the
same number.

PRACTICE:

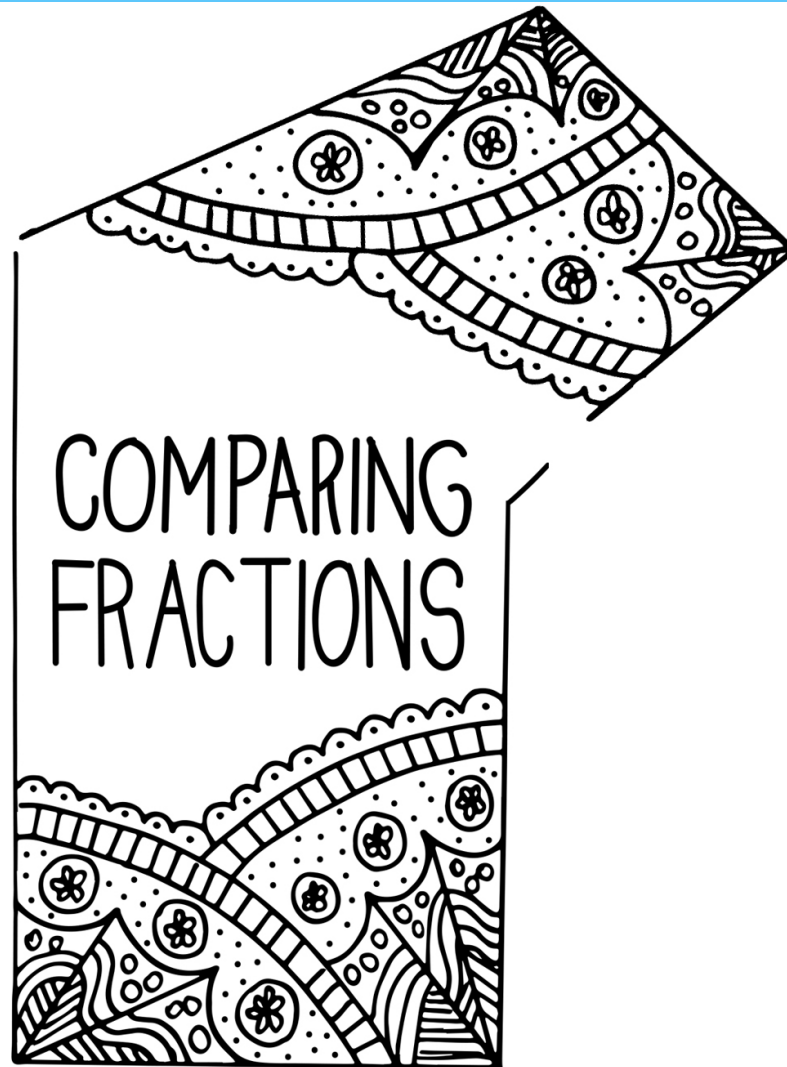
$$\frac{3}{6} \left(\div \frac{3}{3} \right) = \frac{1}{2}$$

$$\frac{2}{10} \left(\div \frac{2}{2} \right) = \frac{1}{5}$$

$$\frac{4}{8} \left(\div \frac{4}{4} \right) = \frac{1}{2}$$

Comparing Fractions

Foldable



FRACTIONS in SIMPLEST FORM

When its numerator and denominator have no other common factor other than 1.

WRITE $\frac{12}{20}$ in simplest form.

Since both are even, they have a factor of 2.

$$\frac{12}{20} \div \frac{2}{2} = \frac{6}{10} \quad \begin{array}{l} \text{Divide both} \\ \text{again by} \\ \underline{2} \end{array}$$

$$\frac{6}{10} \div \frac{2}{2} = \frac{3}{5}$$

★ To Compare fractions, find a Common denominator by writing the multiples of each denominator.

COMPARE: $\frac{5}{6}$ and $\frac{3}{4}$ Which is greater?

Step 1 List multiples of each denominator.

6: 6, 12, 18, 24...

COMMON

4: 4, 8, 12, 16, 20... denominator:

12

Step 2 Convert fractions with 12 as the new denominator of both.

$$\frac{5}{6} \times \boxed{\frac{2}{2}} = \frac{10}{12}$$

$$\frac{3}{4} \times \boxed{\frac{3}{3}} = \frac{9}{12}$$

$$\frac{10}{12} > \frac{9}{12} \quad \text{So} \quad \frac{5}{6} > \frac{3}{4}$$

GREATEST COMMON FACTOR (GCF)

If a number is a factor of two numbers, it is a common factor. The GCF of two numbers is the greatest number that is a factor of both numbers. Find the GCF of 24 and 18.

LIST the factors of each.

24: 1, 2, 3, 4, 6, 8, 12, 24 Choose the largest factor in common.

18: 1, 2, 3, 6, 9, 18 the GCF of 18 and 24 = 6

Factor Trees

Foldable

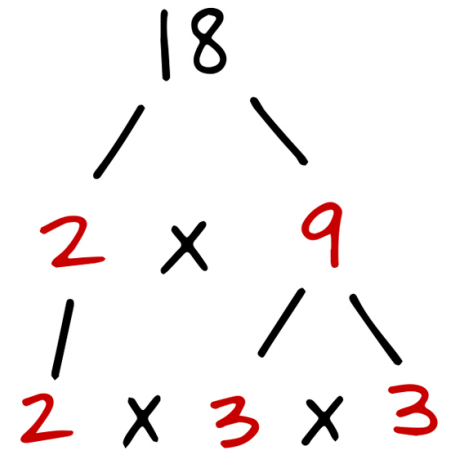
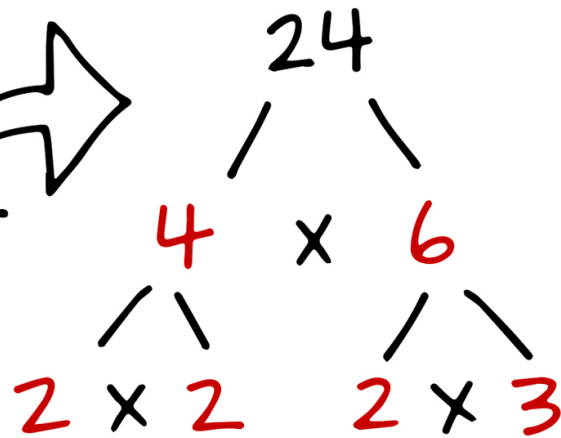
FACTOR TREES



USING prime factorization
to find: the greatest
common factor of two numbers
finding \Rightarrow GCF

Step 1 Find the prime factors of each number. 24 and 18

draw factor trees



Step 2

LIST the prime factors

$$24 = 2 \times 2 \times 2 \times 3$$

$$18 = 2 \times 3 \times 3$$

Step 3 Circle the prime factors that both numbers share (2 and 3)

$$24 = 2 \times 2 \times 2 \times 3$$

$$18 = 2 \times 3 \times 3$$

Step 4 Multiply the common factors

$$2 \times 3 = \boxed{6}$$

So, the GREATEST Common
FACTOR OR GCF
of 18 and 24 is $\boxed{6}$

QUIZ

**A number that has a whole number
part and a fractional part**

$$2\frac{2}{3}$$

mixed
number

a number that
has a whole -
number part and
a fractional
part

The number above the fraction bar in a fraction

$$\frac{2}{3}$$

← Top

numerator

the number
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a fraction


A number that is a factor of two or more given numbers

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**A number that is the denominator
of two or more fractions**

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

Common $\frac{1}{12}$



Common
denominator

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the denominator
of two or
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**A fraction whose numerator is
greater than or equal to its
denominator**

bigger number
on top

$$\frac{20}{4}$$

improper
fractions

a fraction whose
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The number below the fraction bar in a fraction

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A fraction in which the greatest common factor of the numerator and the denominator is one

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fraction

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**The greatest number that is a
factor of two or more given
numbers**

$\overset{6}{1, 2, 3, 6}$	greatest common factor GCF	the greatest number that is a factor of two or more given numbers
$\overset{12}{1, 2, 3, 4, 6, 12}$		