



Dear Parents,

Over the next few weeks, we will be learning how to **add, subtract, and multiply fractions and convert fractions to decimals** in math! The information below will help you to support your child as they learn these exciting, yet important fourth grade math skills.

The GOAL:

By the end of the unit, your child should be able to **represent mathematical relationships with fractions and rewrite fractions as decimals.**

Add and Subtract Fractions

Students must be able to add and subtract fractions with common denominators.

Adding Fractions

$$\frac{1}{8} + \frac{3}{8} = ?$$

How to add fractions:

$$\frac{1}{8} + \frac{3}{8} = \frac{1+3}{8} = \frac{4}{8}$$

When adding fractions with a common denominator, keep the number the same.

Subtracting Fractions

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

How do subtraction fractions:

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

When subtracting fractions with a common denominator, keep the number the same.

Multiply Fractions

Students must be able to multiply a fraction by a whole number and a whole number by a mixed number.

Multiply a **whole number** by a **fraction**:

$$3 \times \frac{1}{4} = \frac{3}{4}$$

Step 1: The whole number 3 is the same as $\frac{3}{1}$.

$$\frac{3}{1} \times \frac{1}{4} = \frac{3}{4}$$

Step 2: Multiply the numerators 3×1 ($3 \times 1 = 3$).

Step 3: Multiply the denominators 1×4 ($1 \times 4 = 4$).

Multiply a **whole number** by a **mixed number**:

$$3 \times 1\frac{1}{2} = \frac{9}{2} \text{ OR } 4\frac{1}{2}$$

Step 1: Rewrite the mixed number as an improper fraction. (To do this, multiply the denominator by the whole number, then add the numerator. Keep the denominator the same.)

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

Step 2: Multiply the numerators. Then multiply the denominators.

$$\frac{3}{1} \times \frac{3}{2} = \frac{9}{2}$$

Step 3: Convert the improper fraction back to a mixed number.

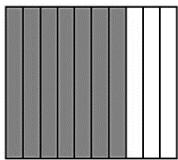
$$\frac{9}{2} = 4\frac{1}{2}$$

(To do this, divide 9 by 2. The quotient (4) becomes the whole number, the remainder (1) becomes the numerator. The denominator stays the same.)

Decimals and Fractions

Students must be able to represent fractions as decimals, relate fractions to money, and compare two decimals.

$\frac{7}{10}$ of the model is shaded. $\frac{7}{10}$ is equal to 0.7.



Written as: $\frac{7}{10}$

Read as: seven tenths

$$\frac{7}{10} = \frac{70}{100}$$

Ones	.	Tenths	Hundredths
0	.	7	
0	.	7	0

Written as: 0.7

Read as: seven tenths

$$0.7 = 0.70$$

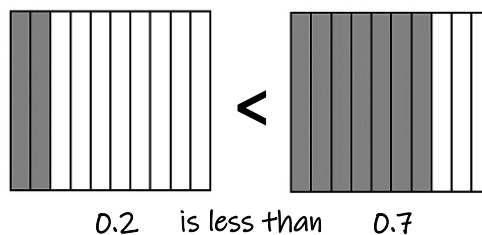
0.70 is read as seventy hundredths

Students must be able to show the relationship between fractions and decimals as it relates to money.

\$ Bills and Coins	Money Amount	Fraction or Mixed Number	Decimal
3 quarters and 1 penny	\$0.76	$\frac{76}{100}$	0.76
1 \$1 bill and 5 pennies	\$1.05	$1\frac{5}{100}$	1.05

Students must be able to compare two decimals.

Compare using models:



Compare using place value chart:

Ones	.	Tenths
0	.	2
0	.	7

Always compare the digits in the greatest place-value position first.

Grade 4 Math: PA Core Math Standards in Unit 3

CC.2.1.4.C.1. Extend the understanding of fractions to show equivalence and ordering.

CC.2.1.4.C.2. Build fractions from unit fractions by applying and extending previous understandings of operations as whole numbers.

CC.2.1.4.C.3. Connect decimal notations to fractions, and compare decimal fractions (base 10 denominator, e.g. 19/100).

CC.2.2.4.A.2 Develop and/or apply number theory concepts to find factors and multiples.

-- KEY MATH VOCABULARY --

Common Denominator: a common multiple of two or more denominators

Equivalent: having the same value

Factor: a whole number that can divide another whole number with no remainder.

Improper Fraction: a fraction in which the numerator is larger than the denominator

Least Common Denominator: the least common multiple of the denominators of two or more fractions

Least Common Multiple: the least whole number that is a common multiple of two or more numbers

Mixed Number: a number that is made up of a whole number and a fraction (example: $3\frac{1}{2}$)

Multiple: a number that is divisible by another number with no remainder (3, 6, 9, 12, etc. are multiples of 3)