

Unit 7: Fractions and Their Uses; Chance and Probability Study Guide

Fractions

- * The whole {one, or the unit, or $1/1$ }
- * **Parts:** numerator/denominator
- * **Types:** mixed number ($4 \frac{3}{5}$)
improper ($15/8$)
- * To change a mixed number to an improper fraction, multiply the denominator times the whole number and add the numerator. Ex. $4 \frac{3}{5} = ((5 \times 4) + 3 = 23/5)$
- * To change an improper fraction into a mixed number, divide the numerator by the denominator. Ex. $15/8 = 15/8 = 1 \frac{7}{8}$

* **Fraction of the Whole Formula:** Divide the whole number by the denominator. Multiply that quotient times the numerator. Example: $\frac{2}{3}$ of $27 = 18$ (27 divided by 3 equals 9 . 9 times 2 equals 18)

* **Equivalent Fraction Rule** - If the numerator and the denominator of a fraction are multiplied by the same nonzero number, the result is a fraction that is equivalent to the original fraction.

* Ways to Make Equivalent Fractions

1. Add zeroes.
2. Multiply the numerator & the denominator by the same number.
3. Reduce the fraction if possible.

* Adding & Subtracting Fractions

1. If the denominators are the same, just add/subtract the numerators, keeping the same denominator. Ex. $\frac{2}{9} + \frac{5}{9} = \frac{7}{9}$

2. If denominators are not the same:

a. Change one denominator into the other denominator.

Ex. $\frac{2}{4} = \frac{4}{8}$ (Must multiply the numerator & denominator by the same number.)

$$\begin{array}{r} + \frac{1}{8} \quad \frac{1}{8} \\ \hline \frac{5}{8} \end{array}$$

b. Cross Multiply. Ex. $\frac{2}{3} + \frac{4}{5} =$

Step 1: Multiply the denominators x each other. $3 \times 5 = 15$

Step 2: Multiply each denominator x the opposite numerator. $5 \times 2 = 10$

$$3 \times 4 = 12$$

Step 3: Add the new numerators. $\frac{10}{15} + \frac{12}{15} = \frac{22}{15}$ or $1 \frac{7}{15}$

* Strategies for Comparing Fractions:

1. Same numerator then...

2. Same denominator then...
3. Look for $\frac{1}{2}$ then...
4. Change to decimal.
5. Cross multiply using the denominators.
6. Reduce & then compare again.

Decimals

- * **Types:** Repeating Ex. .33363336... (You may need to round it to .33)
 Terminating Ex. .5

Conversions

* Memorize:	Fraction	Decimal	Percent
	$\frac{1}{1}$	1.	100%
	$\frac{1}{2}$.5 (.50)	50%
	$\frac{1}{4}$.25	25%
	$\frac{1}{5}$.20	20%
	$\frac{1}{10}$.10	10%

Pattern Blocks

- * Types: triangle, rhombus, hexagon, square
 * Be able to share what fraction of the whole each pattern block represents.

Probability

- * Probability Language - "equal chance, same, more likely, twice as, 1 out of 2 times, half the time, 50%...."
 * Be able to:
 1. Make a spinner using specific fractions for its sections.
 2. Record spins in tally marks and fractions of the whole.

Secure Goals:

Students should be able to:

1. Write equivalent fractions.
2. Compare fractions.
3. Order fractions.
4. Name fraction of regions; find the ONE.
5. Calculate expected probability of an event.
6. Plot coordinate grid.
7. Multiply a two-digit factor times a two-digit factor.
8. Divide two & three-digit dividends by a one-digit divisor.