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 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 3/5 = ((5 x 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 7/8

* **Fraction of the Whole Formula**: Divide the whole number by the denominator. Multiply that quotient times the numerator. Example: 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. 2/9 + 5/9 = 7/9
2. If denominators are not the same:
   a. Change one denominator into the other denominator.
     Ex. 2/4 = 4/8 (Must multiply the numerator & denominator by the same number.)
      <u>+ 1/8   1/8</u>
         5/8
   b. Cross Multiply. Ex. 2/3 + 4/5 =
     Step 1: Multiply the denominators x each other. 3 x 5 = 15
     Step 2: Multiply each denominator x the opposite numerator. 5 x 2 = 10
                                    3 x 4 = 12
    Step 3: Add the new numerators. 10/15 + 12/15 = 22/15 or 1 7/15

* **Strategies for Comparing Fractions:**
     1. Same numerator then...
     2. Same denominator then...

3. Look for 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
	1/1	1.	100%
	1/2	.5 (.50)	50%
	1/4	.25	25%
	1/5	.20	20%
	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.