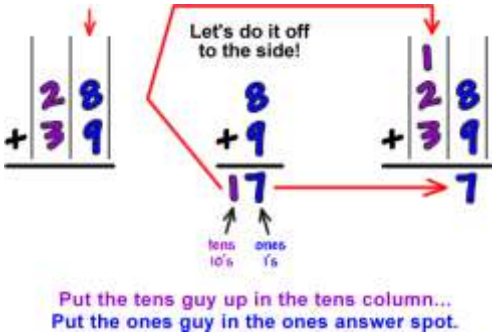
FSA Math Review

Rounding / Estimating

Rounding a number:
Key vocabulary*: round, estimate, about*

5 or more add one more-----round UP
0 - 4 just ignore-----stay SAME
Find the number in the place value given. Circle the number in the place value given. Look at the number right next door. If that number is 0-4, just ignore your circled number and all other numbers to the right become a zero. If that number is 5 or more, add one more to your circled number. All other numbers become zeros.
Example: Round 342 to the nearest ten. Find the number in the tens place = 4. **Circle** the 4. Look at the number next door to the right =2. 2 is between 0-4, so just ignore your circled number and change all other numbers to the right become a zero. 342 rounded to the nearest ten is 340.
Example: Round 687 to the nearest hundred. Find the number in the hundreds place = 6. Circle the 6. Look at the number next door to the right = 8. 8 is more than 5, so add one more to the circled number. The 6 becomes a 7. All other numbers to the right become a zero. 687 rounded to the nearest hundred is 700.

Addition and Subtraction

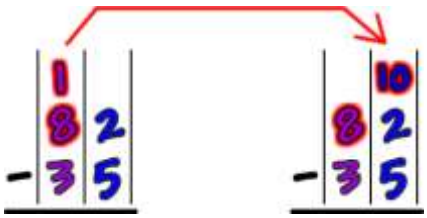


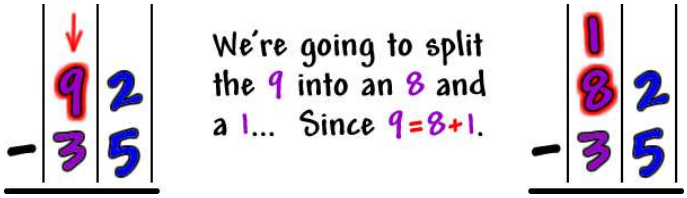
Addition with regrouping:

Key vocabulary:
Addition: *in all, all together, sum*

Subtraction with regrouping:
Begin by placing the larger number on top. Subtract the ones place value. If the ones digit on top is larger than the ones digit on the bottom, you will need to borrow one from the tens place.

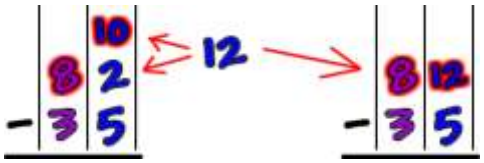
Key Vocabulary:
Subtraction: *difference, how many more, are left, how many fewer*



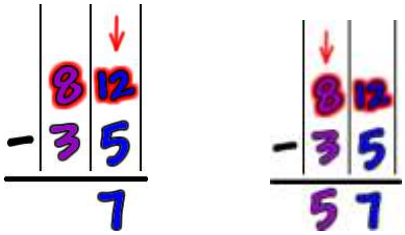


It's just like swapping a $10 bill for ten $1 bills!

Now, add the 10 and the 2 in the ones stripe:



Subtract the ones... Then, subtract the tens...



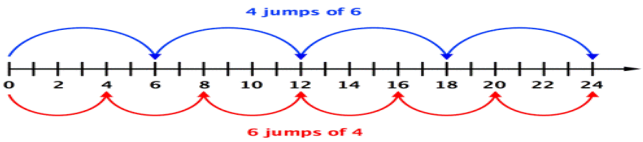
Multiplication and Division

Key Vocabulary:
Multiplication: *each, times as much, by, factor, multiple, product, in all, per, area, combinations (trying to find a total)*
Division: *cut, each, evenly, equal parts, divide, distribute, separate, split, share equally (given a total)*

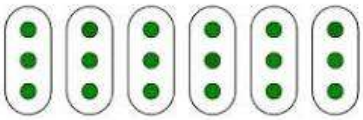
Strategies for multiplication and division:

Arrays: Draw an equal number of columns for the first factor, and an equal number of rows for the second factor. Count all of the x's or o's to find the product.
Example: 4 x 3 = 12

Number line: Jump equal groups on a number line. Start on zero. Jump the number of the first factor. The second factor tells you how many jumps to make. The number you end on is the product.
Example: 4 x 6 = 24

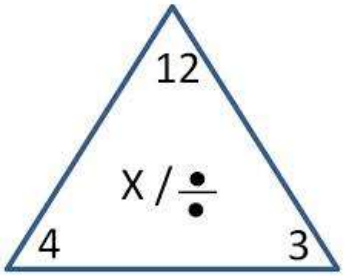


Equal Groups: Draw circles for the first factor. Add the number of o's or x's to the circles based on the second factor. Count all of the dots to find the product.
Example: 6 x 3 = 18



Repeated Addition: Add the first factor as many times as the second factor.
Example: 8 x 3 8 + 8 + 8 or 3+3+3+3+3+3+3+3 = 24

<u>Fact Family:</u> Knowing a fact family can help with both multiplication and division. Each family has 2 factors and a product. These factors and products can help with finding quotient, dividend, or divisor.



Example: If I know 3 x 4 = 12, then using the fact family I should also know 4 x 3 = 12, 12 ÷4 = 3, and 12÷3=4

<u>Distributive Property of Multiplication</u>: Use this property to find a product when a factor is more than 9. In order to find the product of 23 x 4, I can split 23 into 20 and 3. Then multiply both by 4, and add the sums together.

Example: 23 x 4 = (20 x 4) + (3 X 4) =

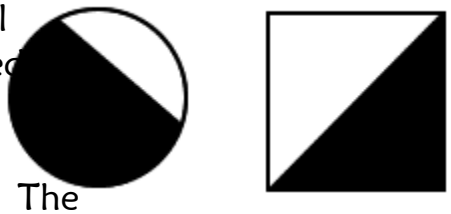
↓ ↓

80 + 12 = 92

<u>**Fractions**</u>

Key Vocabulary: *numerator, denominator, equal parts, unit fraction*

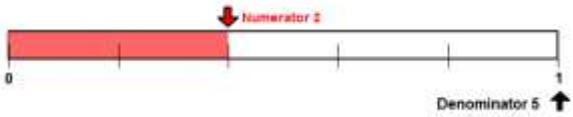
<u>Equal Parts:</u> Fractions of a whole will always represent equal parts. The numerator is the number of parts that are counted. The denominator is the total number of parts the whole is divided into.



Example: How many parts of the above shapes are shades? The circle is NOT an example of equal parts. The square is divided into two equal parts. The denominator would be 2 and the shaded part is 1. ½ of the square is shaded.

<u>Equal Parts on a Number Line:</u> Draw a number line from 0-1. Use the denominator to cut the number line into that many parts. *Hint: You will draw one less line in between 0-1 than the denominator.* Start at zero and shade or jump the number of spaces as the numerator. If the numerator is larger than the denominator, the fraction is greater than one. The number line will represent whole numbers.

Example: 2/5



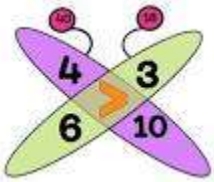
<u>Comparing Fractions:</u>

Key Vocabulary: *less than <, greater than >, equivalent*

- If the numerators are the same, **compare the denominators**. *The greater the denominator, the smaller each fractional part.*

  Example: $\frac{2}{4} < \frac{2}{3}$

- If the fractions have the same denominator, use the value in the numerator to compare.
  Example: $\frac{5}{10} > \frac{4}{10}$



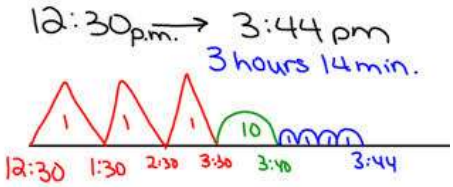
Always use the butterfly method to check your work!

**Measurement **

Telling Time: When telling time look for the small hand to tell you the hour. The small hour hand will be on the number or past the number. Then look for the long hand. The long hand is pointing to the notches on the outside of the numbers. Some notches are bold and right under the numbers. Use these to count by 5's. The smaller notches you use to count by 1's.

Example: The hour hand is just past the 5, so I know it is 5:??. The minute hand is just past the 9, so I would count by 5's, starting at the 12. The 1 is 5, the 2 is 10, the 3 is 15… and so on. The 9 is 45. Then I would count by 1's to the spot where the hand is pointing, 45… 46. It is 5:46. The closer you get to the next hour, the closer the hour hand will be to the next number. *Hint: Remember the hour hand has to be directly on the number or past the number.*

Elapsed Time: Draw a time line. Place the start time at the beginning of the time line. Jump in increments of one hour, 10s or 5s, then 1s if necessary. If you are given the end time, place the end time at the end of the time line and jump backward in increments of one hour, 10s, 5s, and/or 1s.



Key words: Key Vocabulary: *how much more time, how long until, how long has it been, at what time, quarter until, quarter past*

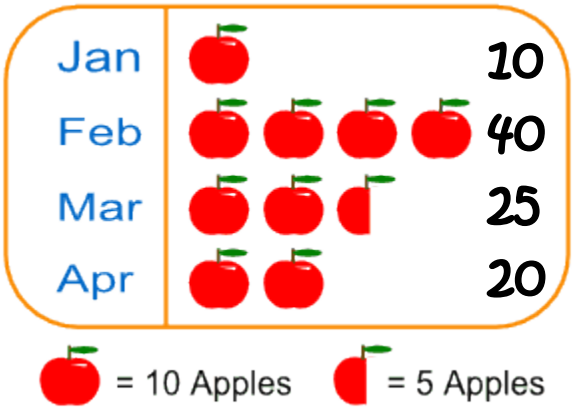
Mass / Volume: Measure the mass or volume of a container with a one-step addition, subtraction, multiplication or division problem.

Example: Identify the increments of the given container. The container is divided into increments of 50, so the smaller unidentified line is equal to half of 50 or 25.

Length: When measuring an object, it is important to always line up the object at the zero. The zero may not be the end of the ruler! Next, slide your finger across the ruler to find the greatest whole number the object is longer than. This is the whole number of your object. Then break the next whole inch up into fractions.

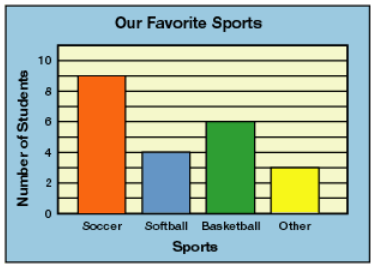
Example: The fish is past the whole number 1, so I know it is 1 inch. On the ruler, the 1 to 2 inch section is broken up into 4 parts. This is my denominator. I will jump from the 1 inch --2 spaces-- to the end of the fish's tail. This is my numerator. The fish measures 1 2/4 inches. I know 2/4 is equal to 1/2, so I can also say the fish is 1 ½ inches long.

Graphing



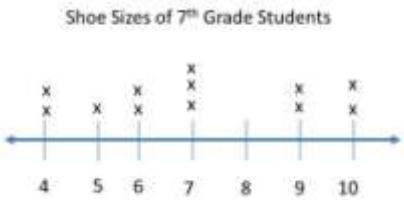
Pictograph: When working with a pictograph, the most important part is the **KEY**! First find the key and circle it. Then figure the amount for each of the categories. Then solve the problem for the pictograph.

Example: First I need to notice that each apple is equal to 10 apple. That means a picture with half of an apple will equal 5 apples. Next, I will calculate the apples for each month and place that number next to the pictures. Now I am ready to solve!



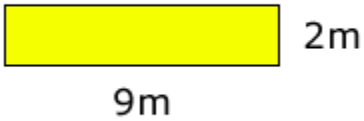
Bar Graphs: When working with a bar graph, first figure the amount for each of the categories. To do this, pay attention to the scale. The scale may be in increments of 2s, 5s, 10s, 25s, or 50s. Then solve the problem for the bar graph. Bar graphs will always start at zero.

Line Plot: Data is organized on a number line within a give range. For each of the number categories an x is placed above the number. When working with a line plot, it is important to distinguish what the numbers represent and what the x's represent. This will help determine which part to use for the answer.



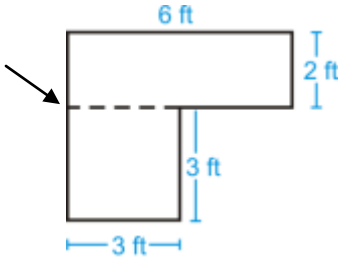
Example: In this example, I need to recognize that the numbers at the bottom are shoe sizes. The x's are students. When answering a question such as, "How many **students** have a shoe size 6?" I would use the x's above the 6 to answer - 2. When answering a question such as "What is the difference between the smallest **shoe** size and the largest **shoe** size?" I would use the shoe size numbers at the bottom. 10 - 4 =6

Area and Perimeter



Perimeter: Perimeter is solved by adding the length of all sides. If a side is not given, I know the opposite side will have the same length.
Example: I know if the left side is 2, then the right side is 2. If the bottom is 9, then the top is 9. Now I can add 2 + 2 + 9 + 9 to find the perimeter 22m.

Area: Area is solved by multiplying the length by the width. The area of the above rectangle would be 9 x 2 = 18 sq. m. If the shape given is not a rectangle, it will need to be split into two rectangles to find the area.
Example: To find the area of this example, I need to split the shape into 2 rectangles. Then I can figure the area of each rectangle and add them together. (6 x 2) + (3 x 3) = 21 sq. ft.



Classifying Figures

Right angle: A right angle makes a perfect "L". If the angle includes a small box, this indicates it is a right angle. I can use the corner of my book or paper to check the angle.
Quadrilateral: A polygon with 4 sides and 4 angles. The quadrilateral family includes rhombus, rectangle, square, parallelogram, and trapezoid.

Square – 4 equal sides, 4 right angles
Rectangle – 2 pairs of equal sides, 4 right angles
Rhombus – 4 equal sides
Parallelogram – 2 pairs of parallel sides
Trapezoid – only 1 pair of parallel sides (may have a right angle)

Know the properties of each quadrilateral! It is important to know what properties each of the shapes fall into. For example, a square falls under the definition of a rectangle, because it has 2 pairs of parallel sides and 4 right angles.