## Alg. Lesson 1-1 Variables and Expressions

OAS: A1.A.3.4 Evaluate linear, absolute value, rational, and radical expressions. Include applying a nonstandard operation such as $\mathbf{a} @ \mathbf{b}=\mathbf{2 a + b}$.

It is very important to use math words to understand how to link a word problem to mathematical language.

| Addition | Subtraction | Multiplication | Division |
| :--- | :--- | :--- | :--- |
| Sum | Difference | Product | quotient |
| More than | Less than | OF | Divided by |
| Plus | Minus | Times | factored |
| Increased by | Decreased by | Multiplied by | Split into equal <br> parts |
| Added to | Subtracted from | Total |  |
| Total |  |  |  |
|  |  |  |  |

Don't forget that if the word sentence say "more than or less than", this means AT THE END!!!

Ex) Ten less than a number times eight.

$$
8 n-10
$$

Ex) Two thirds the volume of C .

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

## Exponents



Exponential form $\longrightarrow 2^{4}=2 \cdot 2 \cdot 2 \cdot 2=16 \longleftrightarrow$ evaluated


## Absolute Value Expressions

Absolute value-def.-the distance from the number to zero on the number line. Absolute value is ALWAYS POSITIVE or zero because you cannot have a negative distance in this case.


The absolute value of -3 , shown $-3 \mid$, is 3 because the distance from -3 to zero is three spaces.

The absolute value of 5 , shown $|5|$, is 5 because the distance from 5 to zero is five spaces.

The absolute value of 0 , shown $|0|$, is 0 because there is no distance between zero to zero.

When solving absolute value expressions, we follow PEMDAS. Absolute value follows under the parenthesis step.

Ex)
$|9+8|+|-8+2|=$ Original problem $|17|+|-6|=\quad$ Parenthesis (also includes absolute value)
$17+G=$ No E, M and D, so we switch to Add and subtract from left to right

Final answer

