

## BIG IDEAS

For Your Notebook

## Big Idea 1

TEKS 2A.2.A

## Using Properties to Evaluate and Simplify Expressions

	Example	Answer
To <b>evaluate a numerical expression</b> , use order of operations and properties of real numbers.	$3 + (-3)^2$	$3 + 9 = 12$
To <b>evaluate an algebraic expression</b> , substitute the value(s) of the variable(s) into the expression, and then evaluate the resulting numerical expression.	$4x - 5$ when $x = 1$	$4(1) - 5 = -1$
To <b>simplify an algebraic expression</b> , combine like terms.	$3y - 4 + 2y - 6$	$5y - 10$

## Big Idea 2

TEKS a.5

## Using Problem Solving Strategies and Verbal Models

You may be able to write a **verbal model** that describes a real-world problem and use it to write an equation or inequality you can solve. To write the verbal model, analyze the information you are given and use a problem solving strategy if appropriate.

If this is what you know...	...try this strategy.
A formula can be applied to the situation.	Use a Formula
Numerical information is given in a table or a list.	Look for a Pattern
There is a geometric or physical context.	Draw a Diagram

## Big Idea 3

TEKS 2A.2.A

## Solving Linear and Absolute Value Equations and Inequalities

Use the following guidelines when solving equations and inequalities.

## Linear Equation

$$ax + b = 0$$

Use properties of equality to isolate  $x$ .

**Add** or **subtract** the same number from each side of the equation, or **multiply** or **divide** each side by the same nonzero number.

## Absolute Value Equation

$$|ax + b| = c$$

Rewrite as follows and solve:

$$ax + b = c \quad \text{or} \quad ax + b = -c$$

Check for **extraneous** solutions.

## Linear Inequality

$$ax + b < 0$$

Use properties similar to those used in solving equations.

Remember to **reverse the inequality** when multiplying or dividing by a **negative** number.

## Absolute Value Inequality

$$|ax + b| > c$$

↓  
Solve  
 $ax + b < -c$   
or  $ax + b > c$ .

$$|ax + b| < c$$

↓  
Solve  
 $-c < ax + b < c$ .