**Virginia SOL 6.19 Pacing: 16 blocks**

The student will investigate and recognize

1. the identity properties for addition and multiplication;
2. the multiplicative property of zero; and
3. the inverse property for multiplication.

**Virginia SOL 6.18**

The student will solve one-step linear equations in one variable involving whole number coefficients and positive rational solutions.

**Virginia SOL 7.14**

The student will

1. solve one- and two- step linear equations in one variable; and
2. *solve practical problems requiring the solution of one-and two- step linear equations.*

*(NOT covered in Extended 6; covered in Extended 7)*

**Please see the Extended Grade 6 Curriculum Guide (pp. 69-73) for additional information.**

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| --- | --- | --- |
| **Key Vocabulary for 6.19** | **Key Vocabulary SOL 6.18** | **Key Vocabulary SOL 7.14a** |
| additive identity property associative property for additionassociative property for mult. commutative property for add. commutative property for mult. distributive property identity elements inverses multiplicative identity property multiplicative inverse property multiplicative property of zero reciprocal | coefficient equation expression numerical expressionterm variablevariable expression | inverse operations |

Expression

**a phrase…**

**no equal sign**

**3x + 4**

**OR**

**15 + 7**

**pairs of operations that “undo” each other**

0 + 7 = 7 so… 7 – 0 = 7

5 x 7 = 35 so… 35 ÷ 7 = 5

Inverse Operations

**the numerical factor**

**of a term**

Coefficient

2a + 6 + 4g³

The 2 and the 4 are coefficients!

Equation

**A mathematical statement…two expressions are equal.**

**=**

**2x + 1 = 5**

**5**

**2x+1**

**expressions that only contain numbers**

42-3•2

Numerical Expression

Reciprocal





also called Multiplicative Inverse

 

Can be a …

Variable

**letter or other symbol that represents a number**

*x n b a y*

Term

**quotient**

**number**

**product**

**variable**

**There are three terms in this expression…**

**3x + 4y - 7**

**3x, 4y, and -7**

17 ***n***



***X*** +3

4 - 3 ***k***

Variable

Expression

**an expression that contains a variable**

Additive Identity Property

**5 + 0 = 5**

**24 + 0 = 24**

**The sum of any real number and zero is equal to the given real number.**

**5 + (4 + 3) = (5 + 4) + 3**

Associative Property of Addition

**Regrouping the addends does not change the sum!**

Regrouping the factors does not change the product!

Associative Property of Multiplication

**5 (4 x 3) = (5 x 4) 3**

Commutative Property of Addition

**Changing the order of the addends does not change the sum!**

**5 + 4 = 4 + 5**

Commutative Property of Multiplication

**Changing the order of the factors does not change the product!**

5∙4 = 4∙5

Distributive Property

**The product of a number and the sum (or difference) of two other numbers equals the sum (or difference) of the products of the number and each other number.**

**5(3+7)=(5x3)+(5x7)**

**5(3-7)=(5x3)-(5x7)**

Identity Elements

* Additive Identity Property
* Multiplicative Identity Property

5 + 0 = 5 or 8 • 1 = 8

***Numbers that do not change the sum or product in an addition or multiplication problem!***

Inverses

* Additive Inverse Property
* Multiplicative Inverse Property

***numbers that combine with other numbers and result in identity elements***

2 + (-2) = 0 or 

Multiplicative Property of Zero

The product of any real number and zero is ZERO!!

a (0) = 0

Multiplicative Identity Property

The product of any real number and one is equal to the given real number.

**8 x 1 = 8**

Multiplicative Inverse

 Property

The product of a number and its reciprocal always equals one.

