

# Getting Ready for Honors Math 6

Your child will be skipping their 6<sup>th</sup> grade year in Mathematics. Your child has proven through achievement tests and teacher recommendations that they are up for this challenge. The following will help you understand what they will be missing and how to jump start them for a successful year in 7<sup>th</sup> Grade Math.

## Sixth Grade Math Key Concepts

- Develop an understanding of all operations of rational numbers
- Write, interpret, and use mathematical expressions and equations to solve linear equations.
- Describe three dimensional shapes and analyze their properties, including volume and surface area.

## Honors Sixth Grade Math Key Concepts (7<sup>th</sup> Grade Math)

- Developing an understanding of and applying proportionality, including similarity
- Analyze and represent linear functions and solve linear equations and systems of equations.

## Math Vocabulary to Know

**Integer:** The set of whole numbers and their opposite's e.g. ...-2, -1, 0, 1, 2...

**Rational Number:** any number that can be expressed as a ratio of two integers e.g. fractions, decimals, mixed number.  $1 = \frac{12}{12}$   $2.5 = \frac{5}{2}$

**Mathematical Expression:** A variable or combination of variables, numbers and symbols that represents a mathematical relationship (no equal sign is used in an expression).

*Kim has 3 cats. Each cat has four legs.*

**4** represents the number of legs. **c** would represent the number of cats Kim has.  
Therefore the expression would read:

**4c**

**Mathematical Equation:** A statement that two mathematical expressions are equal.

*Tracey has an unknown number of cats. She knows that each cat has four legs and has counted 16 legs. How many cats does Tracey have?*

4 still represents the number of legs each cat has.  
C still represents the number of cats Tracey has.  
We do know that the total number of legs equals 16.

So the mathematical equation should read:  
**4c=16**  
**Tracey has 4 cats.**

# Foundational Skills for Success in Honors Math 6

## **Number and Operations**

- Understand how to multiply and divide fractions and mixed numbers
- Solve word problems or other problems that involve dividing fractions
- Write a mathematical statement to describe division of fractions from a word problem
- Add, subtract, multiply and divide integers between -10 and 10.
- Add, subtract, multiply and divide positive rational numbers fluently (whole numbers, fractions, and decimals)
- Be able to find equivalent ratios.
- Solve decimal, percentage, and rational number problems including percentage of a number, sales tax, and tips.
- Estimate calculations in problems with percentage, decimal or fractional numbers.

## **Algebra**

- Solve problems that involve rates e.g., If a car is going 50 mph, how far will it go in  $3\frac{1}{2}$  hours?
- Use letters with units to represent quantities in a variety of contexts.
- Be able to tell the difference between an equation and an expression.
- Represent information given in words using algebraic expressions and equations.
- Relate simple linear equations to a particular situation such as a word problem and solve. *See the example with Tracey and the cats on the first page.*
- Understand that adding or subtracting the same number to both sides an equation creates a new equation but the solution remains the same.
- Understand that multiplying or dividing the equation by the same non-zero number creates a new equations but the solution remains the same.

## **Measurement**

- Draw a pattern for a cube or a rectangular prism, that when cut would exact cover the solid shape (net)
- Compute volume and surface area of cubes and rectangular prisms given length of side, using the formulas

## **Web Resources to help Students**

Please see the attached sheet “Pre-Algebra Websites”. This document can also be found our Gifted and Talented Website @ [www.bcpsgifted.com](http://www.bcpsgifted.com) . See the [Parent Support](#) Page and scroll to the very bottom for Math Resources.

# 6<sup>th</sup> Grade Math Text and Resources Online

[www.glencoe.com](http://www.glencoe.com)

Select → Michigan

Select → Student/Parent

Select → Mathematics

Select → IMPACT Mathematics Course 1 © 2009

## Left hand side Menu

### Program Resources

- Student Workbooks → Skills Practice Notebook → Worksheets of Problems in all areas

### Chapter Resources

- Chapter Test → Each Chapter Test is provided
  - *You can have your child take the test to see what areas they already know and what areas they need to work on.*
  - *Focus on Chapters 2-7 and Chapter 9*
- Concepts in Motion
  - *Animations of the chapters key concepts to help students understand*
  - *Interactive Labs to again help students understand concepts*
- Test Practice → Additional test questions for each chapter are provided

### Lesson Resources

- Personal Tutor → The *Glencoe Personal Tutor* presents a teacher explaining a step-by-step solution to a problem like one in your lesson.
- Self Check Quizzes → *After students have watched a personal tutor or completed a worksheet of the problems from the Skills Practice Notebook they can take a quiz to see what they have retained.*
- Extra Examples → Another source of examples for students to see how to work out the problems.

### Additional Resources

- Math Tools
- Multilingual Glossary