Pre Algebra

The Real Numbers

- Integers, integer operations, absolute value
- Fractions – simplifying, mixed/improper converting between decimals, fractions and percent, all fraction operations
- Exponents
- Scientific notation
- Perfect squares, non-perfect squares and square roots
- Order of operations and evaluating expressions
- Evaluating expressions

Algebraic Expressions

- Translating expressions
- Simplifying expressions
- Factoring
- Monomials - all operations
- Exponent rules
- Operations with scientific notations
- Intro polynomials and adding and subtracting polynomials

Equations and Inequalities

- Multi step solving equations
- Translating and solving equations
- Multi ttep solving inequalities

Ratios, Proportions & Percent

- Ratios, similar figures, scale drawings
- Rates and unit rates

- Proportional and Nnonproportional relationships
- Similar figures
- Percent equations, discount, mark up, sales, tax and tip, simple interest
- Percent of change

Functions and Linear Representation

- Coordinate plane review, relations vs. functions and domain and range
- Equations as functions, graphing linear equations by table
- Rate of change
- Slope formula and applications
- Graphing linear equations by slope-intercept form and standard form

Systems of Equations

- Solving systems of equations by graphing, substitution and elimination

Geometry

- Introduction to angles (parts, types, finding angle measures, angle relationships – vertical, adjacent complementary, supplementary)
- Parallel lines cut by a transversal
- Classifying triangles and triangle sum theorem
- Pythagorean theorem
- Quadrilaterals
- Polygons, sum of interior and congruent polygons
- Reflections, translations, rotations and dilations

Measurement: Area and volume

- Area and perimeter of plane figures and composite figures, similar figures
- Area and circumference of circles
- Classifying and slicing 3-D figures
- Volume of prisms, cylinders, pyramids and cones
- Surface area of prisms, cylinders, pyramids and cones
- Volume and surface area of spheres

Probability and Statistics

- Simple probability
- Theoretical vs. experimental probability
- Counting outcomes and compound probability
- Biased vs. unbiased samples
- Measures of center (mean, median, mode), range and mean absolute value deviation
- Box and whisker plots, scatter plots
- Scatter plots and line of best fit

English and Language Arts

Students in this course level will be mastering the Texas Essential Knowledge and Skills Standards for grade six and will be given opportunities to extend their practice and demonstration of skills into standards beyond the expected grade six standards. Grammar instruction is augmented by No Red Ink, a self-paced and adaptive software program that provides practice and documents mastery in an individualized setting. Grammar skills are then applied in student compositions in a variety of formats including personal narrative, informative, persuasive, explanatory, and compare/contrast. All English and reading assignments are completed using Microsoft Office tools. Vocabulary development is based on SAT College Entrance Vocabulary Lists. Classic literature works in all genres are used for reading, and these works are selected for a Lexile rating recommended for Grades 7 – 10 college preparatory students. Students continue applying publishing standards to their compositions as they create electronic and print-based literary magazines, newspapers, and interactive, hyperlinked multimedia E-books and presentations.

Life Science

What is Life Science

- Introduction

Ecology & The Environment

- Interactions of living things: Biotic/abiotic, food chains, population dynamics
- Earth's biomes and ecosystems: Land/aquatic, energy and changes
- Earth's resources and human impact: renewable/nonrenewable, pollution

Diversity of Living Things

- Life over time
- Earth's organisms

Cells & Heredity

- Cells: Animal and plant; function
- Reproduction & heredity: Reproductive organs in male/female; asexual and sexual reproduction in plants and animals.

The Human Body - Anatomy

- Human body systems: Skeletal, muscular, nervous, respiratory, etc. (12)
- Human Hhealth: Diet and nutrition, exercise, viruses & diseases, sun exposure