



## Grade Level Benchmark for Grade 8

The following benchmark outlines the basic expectations of what students are expected to know at the end of this grade level.

### Literature

- Read a variety of genres with comprehension
- Read for enjoyment, information, enrichment
- Develop a wide range of literacy skills to support life-long learning
- Think creatively, critically, and analytically based on textual information
- Understand and apply literary elements: plot, character, setting, mood, atmosphere, style, tone, point of view, moral and ethical choice
- Use a variety of technological and informational resources to gather data and synthesize information
- Research interactive web sites

### Language Arts

- Write in a variety of formats: narrative, descriptive, persuasive, expository
- Compose structured and free-verse poetry, essays, personal and business letters
- Gather and organize data for a research paper
- Use technology for use in writing and research
- Proofread, revise, and edit to produce a final draft
- Distinguish between legitimate and corrupted Internet sites
- Use capitalization, punctuation, and spelling correctly in all written work
- Identify and use parts of speech correctly
- Expand and develop basic sentences with adjectives, adverbs, clauses, and phrases
- Use a variety of sentence patterns in written work
- Understand the connection between spelling and word meaning, and word etymology
- Understand the rules of spelling patterns
- Apply strategies to word understanding and multiple meanings
- Develop active and critical listening skills
- Develop a sense of positive oral presentation
- Use word processing effectively
- Use technology to communicate effectively
- Access the internet for research, data, and information

### Mathematics

- Understand, patterns, functional, and number relationships and systems
- Describe quantitative relationships
- Use numbers and properties to compare flexibility and fluency
- Use operations and properties to determine equivalence and solve problems
- Analyze characteristics and properties of two and three dimensional geometric shapes
- Specify locations and describe spatial relationships using coordinate geometry
- Apply transformations and use symmetry to analyze mathematical situations

- Understand measurement processes
- Use formulas to estimate and determine measurements
- Collect, organize, and display data using statistical and graphical methods
- Analyze data to form an hypothesis and make predictions
- Understand and apply concepts of probability
- Develop and evaluate inferences and predictions based on data
- Understand how algebra can be used to express generalizations
- Use algebraic skills to simplify expressions, solve and/or graph equations and inequities
- Graph linear equations on an  $xy$  axis
- Describe the slope and  $x$  and  $y$  intercepts of a given linear equation
- Write and use ratio, rate, unit rate, and proportions
- Use calculators to extend problem solving ability as appropriate
- Research interactive web sites

### Algebra I

(Offered to advanced eighth grade students and taught through a partnership with Sacred Heart High School, Waterbury. Credit applied for those who test out of Algebra I in high school.)

- Write and evaluate expressions
- Check solutions to equations and inequalities
- Organize data and represent functions
- Add, subtract, multiply, and divide real numbers
- Determine probability and odds of random events
- Solve linear equations
- Apply ratios, rates, and percentages with problem solving strategies
- Graph linear equations
- Determine if a function is represented by a graph or an equation
- Write a linear equation given a slope and one or two points
- Write an equation for perpendicular lines
- Solve and graph inequalities and absolute value equations
- Use measures of central tendencies and statistical plots
- Use different methods for solving a system of linear equations
- Graph and solve a system of linear inequalities
- Multiply and divide expressions with exponents
- Use scientific notation in problem solving
- Use exponential growth and decay models to solve real world problems
- Evaluate and approximate square roots
- Simplify radicals
- Solve quadratic equations
- Add, subtract, multiply, and factor polynomials
- Solve polynomial equations by factoring
- Solve rational equations
- Add, subtract, multiply, and divide rational expressions
- Graph rational expressions
- Solve and graph radical equations
- Apply the Pythagorean Theorem
- Use trigonometric ratios
- Prove theorems using algebraic properties
- Use graphing calculators appropriately

