

## What your eighth grader will be able to do by the end of the year

### English Language Arts

- Analyze the structure, elements, style, intended audience, and purpose of narrative genre including historical fiction, realistic fiction, and science fiction
- Analyze author's craft including the use of symbolism and imagery, the role of rising and falling actions, the role of minor characters in relation to conflict, and the credibility of the narrator in narrative genre
- Apply the unique structure, elements, style, and purpose of each genre to write a historical fiction, realistic fiction, and/or science fiction
- Analyze the structure, element, feature, style, bias, intended audience, and purpose of informational text including comparative essays, newspaper writings, technical writings, and persuasive essays
- Analyze the organizational patterns of informational text
- Explain how authors use text features to enhance the reader's understanding of central and supporting ideas in informational text
- Re-tell through concise summarization grade-level narrative and informational text
- Apply appropriate text features and organizational patterns to write a historical expository piece such as a journal, biography, or simulated memoir
- Analyze global themes, universal truths, and principles within and across texts to create a deeper understanding
- Respond to multiple text types to explore problems and pose solutions supported with evidence, take a stand on an issue and support it, and identify personally with a universal theme
- Formulate research questions that show critical evaluation of multiple resources, perspectives, and arguments/counter-arguments, and support an opinion/thesis in a final writing project
- Plan, outline, and deliver an informational presentation using logical organization, and precise and vivid language in active voice
- Imitate authors' styles and patterns when writing
- Correctly use style conventions (MLA) and a variety of grammatical structures in writings including infinitives, gerunds, participial phrases, and dashes or ellipses in writing

## What your eighth grader will be able to do by the end of the year

### English Language Arts

- Revise drafts for coherence and consistency in word choice, structure, and style
- Proofread and edit writing using grade-level checklists and other appropriate resources both individually and in groups

### Science

- State the three identifiers that define all minerals
- Identify unknown minerals by using various mineral tests
- Identify the three types of rocks
- List the various types of evidence that support the Theory of Continental Drift
- Identify the three types of Tectonic Plate Boundaries
- List the three types of faults which produce earthquakes
- Identify by shape and materials the three types of volcanoes
- List the four layers of the Earth's atmosphere in order
- Identify two of each type of primary and secondary pollutants found in the atmosphere
- Identify the major cloud types by shape and altitude
- Identify the four types of precipitation
- List the location on Earth of the three major climate zones
- Define the term biome, and identify biome locations around the world by using climatographs showing temperature and precipitation
- List the two milestones in the study of astronomy
- Analyze the H-R diagram and determine what stage of development a star is in
- Identify the major layers of the sun
- Find an answer to a scientific problem by following the steps set by the Scientific Method to conduct an experiment for the Science Fair Project



March 2011



In line with State of Michigan  
Grade Level Content Expectations

## Belding Middle School Eighth Grade Student Learning Objectives

Belding Middle School  
Grades 6-8  
410 Ionia Street  
Belding, MI 48809  
616-794-4400

## What your eighth grader will be able to do by the end of the year

### Math

#### Pre-Algebra

- Estimate square roots and cube roots, relate square roots to areas of squares and cube roots to volumes of cubes, and solve problems
- Apply the concepts of zero and negative integer exponents and use rational and irrational numbers to solve problems
- Solve problems in real-life situations involving percent increase or decrease, compound interest, and multiple discounts
- Solve problems in real-life situations involving weighted averages and ratio units
- Identify and represent linear functions using tables, graphs, and equations
- Describe how changes in one variable affect other variables and solve problems
- Find products of two simple binomials, recognize and apply common formulas, and factor simple quadratic expressions
- Determine whether a given value is a solution to an equation, and graph and solve applied problems involving simultaneous linear equations and linear inequalities involving one and two variables
- Use the Pythagorean theorem and distance formula to solve problems
- Develop and use formulas for the circumference and area of a circle, find area and perimeter of complex figures by subdividing into basic shapes, and solve applied problems involving area and perimeter
- Sketch a variety of two-dimensional representations of three-dimensional solids, develop and use formulas for surface area and volume of common three-dimensional shapes and solve problems
- Use transformations (dilations, reflections, translations, and rotations) to solve problems involving similar and congruent polygons

## What your eighth grader will be able to do by the end of the year

### Math

- Justify conclusions based on data, determine which measure of central tendency best represents a data set, and recognize potential bias in presenting or analyzing data
- Compute relative frequency, explain the relationship of probability to relative frequency, and apply the Basic Counting Principle to find total number of possible outcomes for independent events

#### Algebra

- Perform and analyze operations within the different number systems and explain and use properties of integers, rational, and real number systems
- Write algebraic expressions and evaluate them by substitution
- Know the properties of exponents and roots and apply them to algebraic expressions
- Add, subtract, multiply, divide, and factor polynomials and algebraic expressions
- Write, solve, and interpret equations, inequalities and absolute value relationships and solve equations for a designated variable
- Read, interpret, and use function notation (in symbols, graphs, and in tables), and identify zeros, recognize and describe behaviors of functions
- Graph lines and determine the equation for a line in slope intercept form, point-slope form and standard form, use properties of parallel and perpendicular lines to determine an equation for a line, apply transformations to linear graphs and equations
- Write and solve equations and inequalities with two variables using the following methods: graphing, substitution, and elimination
- Create a scatter plot, identify correlations and distinguish correlations from causation, find the line of best fit and use it to make predictions
- Express direct and inverse relationships as functions, identify the key features of direct and inverse relationships

## What your eighth grader will be able to do by the end of the year

### Math

- Write the equation for a parabola in standard form, factored form and vertex form, convert standard form to vertex form by completing the square, identify the key features of a parabola and find the zeros, graph a parabola and apply transformations to them, solve quadratic equations by taking square roots, completing square, and by using the quadratic formula
- Write, solve, and graph exponential functions, and identify the key features of exponential functions
- Write and solve power functions
- Solve real-world situations using algebra

### Social Studies

- Describe the ideas, experiences, and interactions that influenced the colonists' decisions to declare independence
- Describe the important role of the Declaration of Independence in the development of early American society and government
- Describe the consequences of the American Revolution
- Explain the challenges faced by the new nation and the development of the Constitution
- Explain the challenges the new government faced following the Revolutionary War
- Describe the nature and impact of the territorial, demographic, and economic growth in the first three decades of the new nation using maps, charts, and other evidence
- Evaluate the early attempts to abolish and/or contain slavery in early American history
- Describe the multiple causes, key events, and complex consequences of the Civil War
- Describe the political, social, and economic character of reconstruction
- Explain the major changes in communication, transportation, demography, and urban centers, including the location and growth of cities linked by industry and trade, in the last half of the 19th century