



# Beacon Hill Preparatory School

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## Eighth Grade GOALS AND EXPECTATIONS

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## **The Common Core Standards**

The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy.

### **About the Standards**

The Common Core State Standards Initiative is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO). The standards were developed in collaboration with teachers, school administrators, and experts, to provide a clear and consistent framework to prepare our children for college and the workforce.

The NGA Center and CCSSO received initial feedback on the draft standards from national organizations representing, but not limited to, teachers, postsecondary educators (including community colleges), civil rights groups, English language learners, and students with disabilities. Following the initial round of feedback, the draft standards were opened for public comment, receiving nearly 10,000 responses.

The standards are informed by the highest, most effective models from states across the country and countries around the world, and provide teachers and parents with a common understanding of what students are expected to learn. Consistent standards will provide appropriate benchmarks for all students, regardless of where they live.

These standards define the knowledge and skills students should have within their K-12 education careers so that they will graduate high school able to succeed in entry-level, credit-bearing academic college courses and in workforce training programs. The standards:

- Are aligned with college and work expectations;
- Are clear, understandable and consistent;
- Include rigorous content and application of knowledge through high-order skills;
- Build upon strengths and lessons of current state standards;
- Are informed by other top performing countries, so that all students are prepared to succeed in our global economy and society; and
- Are evidence-based.

# ENGLISH LANGUAGE ARTS

## Literature

### Student will be able to:

1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.
3. Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.
4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
5. Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.
6. Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.
7. Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.
8. Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.
9. By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6-8 text complexity band independently and proficiently.

## Informational Text

### Student will be able to:

1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.
3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).
4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
5. Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.
6. Determine an author's point of view in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.
7. Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.
8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.
9. Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.
10. By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6-8 text complexity band independently and proficiently.

## **Writing**

### **Student will be able to:**

1. Write arguments to support claims with clear reasons and relevant evidence.
  - a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
  - b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.

- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
  - d. Establish and maintain a formal style.
  - e. Provide a concluding statement or section that follows from and supports the argument presented.
2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
  - a. Introduce a topic clearly, previewing what is to follow: organize ideas, concepts and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
  - b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
  - c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
  - d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
  - e. Establish and maintain a formal style.
  - f. Provide a concluding statement or section that follows from and supports the information or explanation presented.
3. Write narratives to develop real or imagined experiences or events using effecting technique, relevant descriptive details, and well-structured event sequences.
  - a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
  - b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.
  - c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events.
  - d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
  - e. Provide a conclusion that follows from and reflects on the narrated experiences or events.

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3).
5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.
7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
8. Gather relevant information multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
9. Draw evidence from literary or informational texts to support analysis, reflection, and research.
  - a. Apply grade 8 Reading standards to literature (e.g., “Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new”).
  - b. Apply grade 8 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced”).
10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

## **Speaking and Listening**

### **Student will be able to:**

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8

topics, texts, and issues, building on others' ideas and expressing their own clearly.

- a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
  - b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.
  - c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.
  - d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.
2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.
  3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
  4. Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
  5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.
  6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated and appropriate.

## **Language**

### **Student will be able to:**

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
  - a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.
  - b. Form and use verbs in the active and passive voice.
  - c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.

- d. Recognize and correct inappropriate shifts in verb voice and mood.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
  - a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break.
  - b. Use an ellipsis to indicate omission.
  - c. Spell correctly.
3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
  - a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).
4. Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.
  - a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
  - b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word.
  - c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
  - d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
  - a. Interpret figures of speech (e.g., verbal irony, puns) in context.
  - b. Use the relationship between particular words to better understand each of the words.
  - c. Distinguish among the connotations (associations) of words with similar denotations (definitions).
6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.



## **Literacy in History/Social Studies**

### **Student will be able to:**

1. Cite specific textual evidence to support analysis of primary and secondary sources.
2. Determine the central ideas or information of a primary and secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.
3. Identify the steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).
4. Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
5. Describe how a text presents information (e.g., sequentially, comparatively, and causally).
6. Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).
7. Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
8. Distinguish among fact, opinion, and reasoned judgment in a text.
9. Analyze the relationship between a primary and secondary source on the same topic.
10. By the end of grade 8, read and comprehend history/social studies texts in the grades 6-8 text complexity band independently and proficiently.

## **Literacy in Science and Technical Subjects**

### **Student will be able to:**

1. Cite specific textual evidence to support analysis of science and technical texts.
2. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
3. Follow precisely a multi-step procedure when carrying out experiments, taking measurements, or performing technical tasks.
4. Determine the meaning of symbols, key terms, and other domain-

specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
9. Compare and contrast information gained from experiments, simulations, video or multimedia sources with that gained from reading a text on the same topic.
10. By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

### **Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects**

#### **Student will be able to:**

1. Write arguments focused on discipline-specific content.
  - a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
  - b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
  - c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
  - d. Establish and maintain a formal style.
  - e. Provide a concluding statement or section that follows from and supports the argument presented.
2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts and information into broader categories as appropriate to achieve purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
  - b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
  - c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
  - d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
  - e. Establish and maintain a formal style and objective tone.
  - f. Provide a concluding statement or section that follows from and supports the information or explanation presented.
3. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
  4. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
  5. Use technology, including the Internet, to produce a publish writing and present the relationships between information and ideas clearly and efficiently.
  6. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
  7. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
  8. Draw evidence from informational texts to support analysis reflection, and research.
  9. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or day or two) for a range of discipline-specific tasks, purposes, and audiences.

## MATHEMATICS

Instructional time will focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

### Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reason.

### The Number System

**Know that there are numbers that are not rational, and approximate them by rational numbers.**

1. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g.,  $\sqrt{2}$ ). For example, by truncating the decimal expansion of  $\sqrt{2}$ , show that  $\sqrt{2}$  is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.

## Expressions and Equations

### Work with radicals and integer exponents.

1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example,  $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$ .
2. Use square root and cube root symbols to represent solutions to equations of the form  $x^2 = p$  and  $x^3 = p$ , where  $p$  is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that  $\sqrt{2}$  is irrational.
3. Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 times  $10^8$  and the population of the world as 7 times  $10^9$ , and determine that the world population is more than 20 times larger.
4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

### Understand the connections between proportional relationships, lines, and linear equations.

5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
6. Use similar triangles to explain why the slope  $m$  is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation  $y = mx$  for a line through the origin and the equation  $y = mx + b$  for a line intercepting the vertical axis at  $b$ .

### Analyze and solve linear equations and pairs of simultaneous linear equations.

7. Solve linear equations in one variable.
  - a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of

the form  $x = a$ ,  $a = a$ , or  $a = b$  results (where  $a$  and  $b$  are different numbers).

b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8. Analyze and solve pairs of simultaneous linear equations.

a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.

b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example,  $3x + 2y = 5$  and  $3x + 2y = 6$  have no solution because  $3x + 2y$  cannot simultaneously be 5 and 6.

c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.

## Functions

### Define, evaluate, and compare functions.

1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 1
2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
3. Interpret the equation  $y = mx + b$  as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function  $A = s^2$  giving the area of a square as a function of its side length is not linear because its graph contains the points  $(1,1)$ ,  $(2,4)$  and  $(3,9)$ , which are not on a straight line.

### Use functions to model relationships between quantities.

4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two  $(x, y)$  values,

including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

## Geometry

### **Understand congruence and similarity using physical models, transparencies, or geometry software.**

1. Verify experimentally the properties of rotations, reflections, and translations:
  - a. Lines are taken to lines, and line segments to line segments of the same length.
  - b. Angles are taken to angles of the same measure.
  - c. Parallel lines are taken to parallel lines.
2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.

### **Understand and apply the Pythagorean Theorem**

6. Explain a proof of the Pythagorean Theorem and its converse.
7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and

three dimensions.

8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

### **Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.**

9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

## **Statistics and Probability**

### **Investigate patterns of association in bivariate data.**

1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.
4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?