

Boston Day & Evening Academy Curriculum Competencies



Answering the question “*What should a high school graduate know and be able to do?*” is a complicated and difficult task. This book of competencies is the result of many hours of thoughtful discussion and thinking by the BDEA staff. BDEA students must complete three steps before earning a diploma. These are: passing the MCAS exam in Math and English Language Arts, demonstrating competency in the four subject areas, and completing and presenting a final capstone project.

Humanities

Reading and Literature

Student will use multiple reading strategies to understand, analyze, and think critically about a text.

- 1a. Asks questions before, during, and after reading a text.
- 1b. Makes predictions about plot and characters based on context clues
- 1c. Identifies and summarizes in own words the main idea and supporting details in a text
- 2a. Makes connections/activates and builds schema while reading a text (T-S, T-T, T-W).
- 2b. Visualizes characters, events, and settings to help with comprehension.
- 2c. Makes inferences while reading texts.
- 3a. Occasionally pauses reading text in order to review, clarify, and reflect on its meaning.
- 3b. Skims informational texts for key information.
- 3c. Uses multiple reading strategies concurrently to understand an independent reading text.

Student will deepen his/her understanding of a literary text by analyzing the context in which it was written

- 2a. Relates a literary work to supplementary information about its history, contemporary setting, and/or author's life
- 3a. Relates a literary work to other texts or larger themes beyond the reading
- 3b. Links a literary work to the influential ideas or historical and social trends of its time

Student will identify and analyze different elements of genres of writing.

- 1a. Recognizes at least three different literary forms
- 1b. Identifies and understands the basic literary elements of a text (plot, setting, character, conflict).
- 2a. Identifies the genre of a major text, as well as some of the characteristics of that specific genre.
- 2b. Identifies and analyzes the theme(s) of a text
- 2c. Identifies and analyzes figurative language and/or other higher level literary devices.
- 3a. Identifies and understands the impact of narrator's point of view in literature
- 3b. Analyzes how the choice of genre helps the author present his/her own ideas for different purposes and audiences

- 3c. Identifies and analyzes the connection of the text's theme(s) to the essential question

Student develops effective reading habits.

- 1a. Uses strategies to choose a 'just right' book at appropriate reading level.
- 1b. Reads aloud with appropriate expression.
- 2a. Shows awareness and understanding of creating a good reading environment.
- 2b. Uses graphic organizers to think about and analyze text.
- 2c. Demonstrates increased reading stamina by ability to read silently for 20-30 uninterrupted minutes.
- 3a. Supports statements about a text by regularly referring back to the text (text-based discussions)
- 3b. Shows evidence of tracking own reading progress
- 3c. Differentiates between author's opinion, reader's opinion, and facts
- 3d. Reads book at appropriate reading level from cover to cover.
- 3e. Demonstrates increased reading stamina by ability to read silently for 30-40 uninterrupted minutes

Student uses Habits of Mind when reading literature.

- 2a. Interprets author's meaning in a text using evidence
- 2b. Reflects deeply on the relevance of the literature's themes to own life
- 3a. Judges and critiques a literacy text

Vocabulary

- 1a. Sorts a set of new vocabulary words conceptually in a unit or module.
- 2a. Understands and explains connections and associations between a set of vocabulary words in a unit or module.
- 3a. Is able to independently track unknown vocabulary words in a text and demonstrate a confident understanding and analysis of these words.
- 3b. Uses new vocabulary words in writing, discussions, and/or everyday conversations.

Writing and Composition

Student will write an argumentative essay with clear focus, organization and detail

- 1a. Writes an organized and logical paragraph
- 1b. Accepts the idea of incorporating relevant and specific evidence to support the main ideas.

- 2a Develops own thesis statement in response to a given prompt.
- 2b Creates and uses an outline in preparation for argumentative essay.
- 2c Writes argumentative essay with engaging, relevant lead, clear thesis, organized and logical paragraphs, evidence from relevant sources, and effective conclusion.
- 3a Integrates quotes from other sources correctly in own writing.
- 3b Applies elements of argumentative essay to longer works (e.g. Research paper, reflection essays, literary analysis essays, position paper)

Student will write within different genres.

- 1a Understands the purpose of writing activity (e.g., inform, describe, defend, summarize, analyze, provoke).
- 1b Is able to use writing style appropriate to a specific audience (and to purpose of piece).
- 2a Identifies the elements of at least two major modes of writing (narrative, drama, or poetry)
- 2b Applies the elements of a specific genres in his/her own writing pieces
- 3a Uses evidence appropriate to genre, purpose, audience, and theme
- 3b. Produces the elements of at least two major modes of writing (narrative, drama, poetry, creative non-fiction, etc)

Student develops effective writing habits.

- 1a. Sustains the writing process over a number of days
- 2a Sustains the writing process over a number of days and completes major assignments in a timely fashion.
- 3a Is reflective in writing and meta-cognitive about writing and writing process.
- 3b. Is able to manage time in meeting deadlines

Student uses the writing process.

- 1a Effectively analyzes and understands the question and/or the assignment.
- 1b Has access to and uses at least one prewriting strategy for generating ideas for writing (lists, webbing, free-writing etc.).
- 1c Is able to choose a writing lead from a variety of approaches.
- 2a Accepts the concept of multiple drafts.
- 2b Revises language purposefully to improve word choice and to communicate ideas clearly.
- 2c Accepts and practices self-editing and peer editing.
- 3a. Uses originality in developing writing focus and process
- 3b Accepts the concept of multiple drafts that reflect revision in content, organization, style, and/or depth of exploration.
- 3c Edits work to publishable quality in mechanics, syntax, spelling, and grammar.

Student uses conventions in writing.

- 1a Identifies and uses sentence variation in writing (simple, compound and complex).

- 1b Demonstrates effective use and understanding of punctuation.
- 2a Identifies and uses correct verb tense with consistency.
- 2b Correctly identifies and uses standard syntax
- 2c Correctly identifies and uses correct spelling
- 3a Uses transitional words, phrases, and sentences to organize a text.
- 3b Is able to manipulate and apply new concepts and new vocabulary

Oral Communication

Practices effective presentation skills

- 1a Effectively organizes and prepares for presentation
- 2a Understands and employs the guidelines for a polished and engaging presentation (e.g. eye contact, volume, posture, visuals, fielding questions, etc.)
- 2b Both as a participant and a presenter is respectful, appropriate and interactive during presentation.
- 3a Understands and employs the guidelines for a polished and engaging presentation (e.g. eye contact, volume, posture, visuals, fielding questions, etc.)
- 3b Applies and expands presentation skills to other setting and occasions

Follows agreed upon rules for formal and informal discussions

- 2a Understands and employs the norms and protocols set for each type of discussion (one-on-one, small group, whole class, town meeting) or debate.
- 2b Demonstrates understanding of purpose and theme of discussion through participation
- 3a Practices the habits of mind by considering other perspectives, exploring new ideas and possibilities, making connections between points made, providing relevant evidence, asking relevant questions, and respectfully and reflectively, participating in d
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Practices the habits of good oral communication

- 2a Participates in discussion by listening actively, asking clarifying and probing questions, and making relevant comments during discussion.
- 2b Summarizes or restates other perspective before responding to it.
- 3a Reviews, reflects on, and writes down essential points at end of the discussion

History and Social Science

Understands Civics and Government

- 1a Identifies the 3 branches of government
- 1b Demonstrates understanding of Amendments, particularly the Bills of Rights
- 2a Demonstrates understanding of key concepts outlined in the U.S. Constitution

- 2b Identifies at last two other systems of government
- 2c Identifies at last two economic systems
- 3a Makes connections between the ideas/philosophy of governments and their structures, and the evidence of their impact on government today
- 3b Explores connections between philosophy and practice of government systems and philosophy and practice of economic systems

Connects historical past to the current day

- 1a Makes connections between history and current events
- 1b. Can connect history to the shaping of historical documents
- 2a Applies knowledge of historical documents and events to the present day
- 3a Applies an understanding of historical events and trends to understand society in the present day

Historiography and the HOM in the discipline of history.

- 1a Creates chronologies and makes connections between events
- 2a Articulates the significance of historical documents --primary and secondary
- 2b Uses different "lenses" to describe the course of historical events (e.g.: labor, war, race, women, immigrants, culture)
- 2c Recognizes and can define the role of a major "-ism" in shaping history (e.g.: racism, classicism, sexism et cetera).
- 3a Recognizes viewpoint in a piece of historical writing.
- 3b Explores the roles that individuals can play in shaping the course of history
- 3c Understands and can describe history and society in terms of its major components (e.g.: religion, art, government)
- 3d Provides and analysis of an issues or periods in History

Understands geography and demographics through maps and charts

- 1a Identifies the continents and oceans of the world
- 2a Has a working knowledge of reading maps (keys, scale, latitude, longitude).
- 3a Has a more detailed and specific knowledge of the geography of the given areas of study.

Chooses a topic and formulates questions

- 1a Distinguishes between thin and thick questions
- 1b Can formulate and ask just right questions
- 2a Uses brainstorming techniques to choose a topic of interest
- 2b Asks HOM questions when prompted and can focus topic, narrow search and/or revise question
- 3a Can design an essential question from a chosen topic

Gathers and uses information

- 1a Initiates a clear plan for locating information
- 2a Locates resources effectively
- 2b Can determine whether a source is useful and valid for project and purpose
- 2c Can highlight pertinent information from various sources
- 2d Is able to take notes on relevant information
- 2e Integrates both primary and secondary sources into research paper
- 3a Assesses validity and relative usefulness of different sources (print, electronic).

Represents knowledge in research paper

- 1a Identifies and understands the difference between organized research and plagiarism
- 1b Formulates a thesis statement based on research
- 1c Uses research evidence to prove thesis
- 2a Differentiates between summarizing, paraphrasing and using direct quotes
- 2b Documents and attributes sources in proper MLA format
- 3a Identifies own POV and considers other POV
- 3b Analyzes and interprets evidence
- 3c Able to synthesize material/research within paper

Reflects on the research process

- 2a. Reflects thoughtfully about the research process and considers what was learned for future projects
- 3a. Reflects on the research findings and uses HOM to make connections to self, others and the world.

Math

Demonstrate accuracy and fluency with whole numbers

- 1a perform whole number operations accurately
- 1b follow the order of operations
- 1c solve problems involving exponents and roots
- 2a recognize and describe number properties
- 2b use factors, multiples, and divisibility rules to solve problems

Use fractions, decimals, and percents flexibly to solve problems

- 1a add, subtract, multiply, and divide fractions
- 1b add, subtract, multiply, and divide decimals
- 1c compare and order fractions, decimals, and percents
- 1d understand place value and round off to a given place value
- 2a use estimation to solve fraction, decimal, and percent problems
- 2b convert between fractions, decimals, and percents
- 2c identify common fraction/decimal/percent equivalents
- 2d find the part, whole, and percent in percent problems
- 2e solve real-world, multi-step problems involving fractions, decimals, and percents
- 2f use ratios to compare two quantities
- 2g solve real-life applications using ratios and proportions

Work with Integers

- 1a compare and order integers
- 1b solve problems involving absolute value
- 2a use a variety of models for understanding integers
- 2b add, subtract, multiply, and divide integers accurately

Collect, organize, display and describe data

- 1a calculate mean, median, mode, and range
- 2a estimate mean, median, mode, and range
- 2b organize/display data using tables, frequency graphs, line graphs, circle graphs, stem-and-leaf plots, boxplots, scatterplots, and spreadsheets
- 2c select appropriate graphs for representing particular sets of data
- 2d use Excel to input and graph sets of data
- 2e select appropriate statistical measures for representing particular sets of data
- 2f draw conclusions by comparing sets of data
- 2g describe effect of additions, deletions, or other changes to a set of data
- 2h solve problems involving mathematical and observed probability
- 3a examine questions of experimental design
- 3b critically analyze statistics

Solve equations

- 1a write and evaluate variable expressions

- 1b solve single-step equations
- 2a solve multi-step equations
- 2b solve equations involving fractions and decimals
- 2c use the distributive property and combine like terms
- 2d check solutions to equations
- 2e write and solve equations that represent real-world situations/problems
- 2f solve for a given variable in a formula

Demonstrate an understanding of linear equations and inequalities

- 1a identify linear relationships
- 1b calculate the slope of a line
- 1c identify intercepts
- 1d identify points in all four quadrants of the coordinate plane
- 2a graph linear equations using appropriate scale, dependent and independent variables, and selected points
- 2b represent linear relationships using tables, graphs, and equations
- 2c recognize and use the point-slope form of an equation
- 2d approximate a line of best fit to describe data, using technology where appropriate
- 2e identify graphs and equations of horizontal, vertical, parallel, and perpendicular lines
- 2f use linear equations and their graphs to model real-world situations
- 2g understand the real-world meaning of slope and intercepts
- 3a find the equation of a line of best fit

Use systems of equations and inequalities to solve real-world problems

- 2a use systems of equations to model real-world situations
- 2b solve systems of equations by graphing
- 2c solve systems of equations using algebra
- 2d graph inequalities in two variables
- 2e use inequalities and their graphs to model real-world situations
- 2f determine solution areas for systems of inequalities

Use a graphing calculator

- 2a use a graphing calculator to graph linear equations and inequalities
- 2b use a graphing calculator to evaluate values of coordinates and intercepts
- 2c use a graphing calculator to plot points
- 2d use a graphing calculator to create a table of values

Demonstrate an understanding of exponential equations/functions

- 2a apply properties of exponents, including negative exponents
- 2b graph exponential functions
- 2c model growth and decay to solve problems
- 3a calculate and graph logarithms

Demonstrate an understanding of polynomials

- 2a identify polynomials and give the degree

- 2b add and subtract polynomials
- 2c multiply binomials using FOIL
- 2d factor trinomials into two binomials
- 2e determine the greatest common factor of a polynomial
- 2f identify graphs of polynomial functions
- 3a recognize and use special products
- 3b recognize and use special factorizations
- 3c evaluate rational expressions

Demonstrate an understanding of quadratic equations/functions

- 2a graph quadratic functions
- 2b recognize and convert standard form and vertex form
- 2c solve quadratic equations using different methods
- 2d write quadratic equations that model real-world problems
- 2e solve quadratic equations that model real-world problems
- 2f use a graphing calculator to graph quadratic equations and identify the parts of the function, such as roots and vertices

Demonstrate an understanding of angles and triangles

- 1a measure, estimate, and classify angles and solve related problems
- 1b identify angle relationships and solve related problems
- 1c classify triangles by angle and side measurement
- 2a calculate lengths of sides of a right triangle using the Pythagorean Theorem
- 2b recognize Pythagorean Triples
- 2c use the Pythagorean Theorem to calculate distance on the coordinate plane
- 2d solve problems involving similar figures

Understand scale and systems of measurement

- 2a measure accurately using English and metric systems
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- 2b estimate accurately and efficiently for different tasks
- 2c draw to scale
- 3a convert within and between systems of measurement

Solve problems involving perimeter, area, and volume

- 1a identify, describe, compare, and model two- and three-dimensional figures
- 1b calculate perimeter, area, and circumference of two-dimensional figures
- 1c calculate surface area and volume of three-dimensional figures
- 2a select and use appropriate units of measurement
- 2b describe effect of a change in one or more dimensions on perimeter, area, or volume
- 2c derive dimensions for figures with a given perimeter, area, or volume
- 3a derive formulas for surface area or volume for a given figure
- 3b maximize or minimize perimeter, area, or volume

Demonstrate an understanding of trigonometric functions

- 3a work with angle measures in degrees and radians
- 3b define and evaluate the sine, cosine, and tangent functions of an angle
- 3c calculate inverse trigonometry functions: secant, cosecant, and cotangent
- 3d use graphs to solve problems related to period, amplitude, and vertical & horizontal shift
- 3e use trigonometric functions to solve problems involving height and depth
- 3f connect trigonometry to prior learning
- 3g use trigonometric identities to write and prove equivalent expressions

Science

Cause and Effect: Relate the physical evidence of natural phenomena to scientific concepts

- 1a Describe the phenomenon (what is it?)
- 1b Discuss possible causes of a scientific phenomenon (why?)
- 2a Use evidence to support or establish a causal relationship between natural events

Energy: Define energy and identify its transfer and or transformation within a process or system.

- 1a Distinguish between potential and kinetic energy
- 1b Identify different forms of energy in a system
- 2a Provide examples of how energy can be transformed from kinetic to potential and vice versa
- 2b Describe how energy flows and/or is transformed throughout a system
- 3a Describe how the flow of energy drives activity in scientific systems

Equilibrium: Identify the factors that contribute to equilibrium and disequilibrium

- 1a Explain the significance of equilibrium in a given scientific system
- 2a Identify factors that influence equilibrium and/or disequilibrium in a given system
- 3a Apply concepts of scientific equilibrium to a new system

History of Science: Demonstrate an understanding of the evolution and refinement of scientific theories over time and their historical significance.

- 1a Describe an original explanation of a natural phenomenon
- 2a Explain the historical scientific discoveries that shaped the current theory
- 2b Explain a scientific theory in detail
- 2c Describe the evidence that supports the theory
- 2d Explain how scientific theory impacts society

Research 1: Independently research a scientific topic.

- 1a Use key words to search for information using the internet and print media
- 1b Be able to skim articles for main points
- 1c Summarize relevant information
- 2a Formulate research question
- 2b Assess credibility of sources, author, sponsoring agency
- 2c Collect bibliographical information about references using MLA format
- 3a Identify the difference between primary and secondary sources

Research 2: Independently communicate a scientific topic.

- 2a Identify both sides of an argument
- 2b Collect evidence on two opposing or differing sides of an argument
- 2c Choose a position based on evidence and

tradeoffs

Research 3: Independently defend a scientific topic.

- 2a Make effective public presentation of research project or scientific experiment
- 2b Create visual/oral presentation (poster, powerpoint, etc.)
- 2c Design an effective written piece conveying scientific information

Scientific Method 1: Develop Hypothesis with Logical Reasoning

- 1a Form hypothesis based on personal observations and scientific knowledge
- 2a Pose original, testable questions based on personal observations and scientific knowledge

Scientific Method 2: Design and Conduct an investigation to test questions and hypothesis

- 1a Select required materials, equipment and conditions for conducting experiment
- 1b Write clear and replicable procedures for performing an experiment
- 1c Follow safety guidelines
- 2a Explain the major concepts being investigated and the purpose of an investigation
- 2b Identify independent and dependent variables
- 2c Design appropriate methods for accurately and consistently recording measurements at an appropriate level of precision.
- 2d Properly use equipment (such as scales, probeware, meter sticks, microscopes, computers, etc.)

Scientific Method 3: Accurately collect and analyze data

- 1a Collect both qualitative and quantitative data
- 1b. Present data in charts and graphs using appropriate technology
- 2a. Use mathematical operations to analyze and interpret data results (average, conversions, proportions)
- 2b. Review information, explain statistical analysis, and summarize data collected and analyzed from an investigation.

Scientific Method 4: Collect results from an investigation and draw conclusions based on review of data (communicate and apply the results of scientific investigations).

- 1a Use results of an experiment to draw a conclusion that addresses the initial questions and supports or refutes the stated hypothesis
- 2a Explain relevance and real-world implications of experimental results
- 2b Identify reasons for inconsistent results, such as sources of error or uncontrolled conditions, and assess reliability of data
- 2c State questions raised by an experiment that may require further investigation

System Organization: Understand the different

roles distinct subunits play in a scientific system as a whole.

- 1a Explain how a scientific system
- 1b Identify subunits of system
- 2a Identify how subunits drive the operation of system
- 2b Be able to identify possible causes or factors that may disrupt system
- 3a Given a disrupted system, identify possible causes and presenting possible solutions
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- 3b Compare/Contrast different scientific systems

Computer Skills: Use appropriate technology to collect, analyze and present scientific information.

- 1a Use Microsoft Word to present scientific work
- 2a Create tables in Microsoft Word and Microsoft Excel
- 2b Create graphs in Excel
- 2c Use PowerPoint to present Scientific work.

Technology

Navigation: Students will demonstrate the ability to navigate current Operating Systems.

- Navigation 1 – Ability to demonstrate an understanding of most widely used Operating System (Windows). Can perform basic computer tasks using programs, files and folders.
- Shortcuts 1 – Demonstrate knowledge of keyboard shortcuts within an Operating System and in specific programs.

Word Processing: Students will demonstrate the ability to use basic tools of current word processing programs through the production of academic and real-world documents.

- Word Processing 1 – familiarity and utilization of basic text and paragraph formatting tools.
- Word Processing 2 (Template Fluency)– familiarity and utilization of basic text and paragraph formatting tools.

Tables and Graphs: Students will demonstrate ability to use basic tools to create tables in two different programs.

- Tables 1 – Creating basic tables and graphs using a word processing program.
- Tables 2a – Creating basic tables and graphs using a spreadsheet program.
- Tables 2b – Creating tables and graphs, analyzing data and using basic functions in a spreadsheet program.

Graphic Organizer: Students will demonstrate ability to clearly convey ideas through graphical flow charts.

- Graphic Organizer 1 - familiarity and utilization of tools necessary to create a graphical flow chart.
- Graphic Organizer 2 – Ability to clearly convey and organize ideas through graphical flow-charts.

Communication: Students will practice and demonstrate ability to communicate with members of our community and the outside world through the use of computers.

- Search Engines 1 - An understanding of search engines and how to use them.
- Search Engines 2 – An understanding of how to research and extract valid Internet sources from search engines.
- Slideshows 1 – Understanding of tools used to create a basic slideshow.
- Slideshows 2 – Understanding of tools used to create a slideshow with animations, timers and links.

Advanced: As a prerequisite for graduation, students will demonstrate the ability to create and exhibit professional-level Internet enhanced presentations.

- Navigation 3 – Ability to demonstrate an understanding of a secondary Operating System (Macintosh). Can perform basic computer tasks using programs, files and folders.

- HTML 3 – Understanding and use of the HTML language to create web pages.
- Tables 3 – Ability to create tables for the web. (HTML or web editing software)
- Web Development 3 – Understanding of tools and button used to create a website with web editing software.
- Computer Graphics 3a – Familiarity and utilization of basic graphic design tools.
- Computer Graphics 3b – Ability to scan documents or photographs and properly prepare images for the web.

