Florida Department of Education
Adult General Education
Curriculum Framework

GED® PREPARATION COMPREHENSIVE	
Program Title	GED® Preparation
Program Number	9900130
Course Title	GED® Comprehensive
Course Number	9900135
CIP Number	1532020207
Grade Level	30, 31
Program Length	Varies

PURPOSE

Adult General Education Program: The Florida Department of Education (FDOE) administers the Adult General Education (AGE) Program in accordance with the statutory framework outlined in the following state and federal laws: Florida Statute 1004.02, F.S.,[1] 1004.93, F.S.,[2] and Title II of the Workforce Investment and Opportunity Act (WIOA), also known as the federal Adult Education and Family Literacy Act (AEFLA).[3]

As administered by FDOE, AGE encompasses the following programs, services and activities:

- Academic Skills Building (ASB) Program
- Adult Basic Education (ABE) Program
- Adult High School (AHS) Program
- Adult English for Speakers of Other Languages (ESOL) Program
- GED® Program
- Integrated Education and Training (IET) Service Approach
- Integrated English Literacy and Civics Education (IELCE) Service Approach
- 2-Generation and Family Literacy Service Approaches
- Workforce Preparation Activities

The AGE Program is designed to serve the following objectives:

- Provide literacy instruction to adults to obtain the knowledge and skills necessary for employment and economic self-sufficiency.
- Facilitate adult learners to attain a secondary school diploma and progress to postsecondary education and training, including career pathways.
- Empower parents to obtain the education and skills that are necessary to participate as full partners in the educational development of their children and to achieve sustainable economic opportunities for their families.
- Deliver English language instruction to adult English language learners whose native language is other than English or who live in a family or community environment where a language other than English is the dominant language, to achieve competence in reading, writing, speaking and comprehension of the English language.

[1] http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=1000-1099/1004/Sections/1004.02.html
[2] http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=1000-1099/1004/Sections/1004.93.html
[3] https://www.congress.gov/113/bills/hr803/BILLS-113hr803enr.pdf

GED® Preparation Program: The purpose of the GED® Preparation Program is to prepare students to pass the GED® Test and be awarded a State of Florida High School Diploma. The program prepares students in four content areas: Reasoning through Language Arts (RLA), Mathematical Reasoning, Science and Social Studies.

STUDENTS

Per State Board Rule 6A-6.014, Florida Administrative Code (F.A.C.) - General Requirements for Adult General Education[4], students eligible to enroll in the GED® Comprehensive Preparation Program are those who:

- Are 16 years of age or older.
- Are not enrolled in the K12 educational system.
- Obtain pre-test scores that place them within National Reporting System (NRS) ABE Levels 5 or 6.

Per 1003.435(4), F.S.,[5] "A candidate for a high school equivalency diploma shall be at least 18 years of age on the date of the examination, except that in extraordinary circumstances, as provided for in rules of the district school board, a candidate may take the examination after reaching the age of 16."

EDUCATIONAL FUNCTIONING LEVELS

Educational Functioning Level (EFL) is a term found in WIOA (Code of Federal Regulations Title 34 Subtitle B Chapter IV Part 462)[6] that refers to the literacy levels in the GED® Preparation program. The GED® Preparation program has 2 EFLs, each representing a specific set of GED® Preparation skills. Additional information on the term EFL is available in the official NRS Technical Assistance Guide.[7]

Table 1: NRS EFLs for the GED® Comprehensive course in relation to the Grade Equivalent for each level

Course Title	NRS Educational Functioning Levels	Grade Equivalent
GED® Preparation Comprehensive	ABE Level 5	9.0 – 10.9
GED® Preparation Comprehensive	ABE Level 6	11.0 – 12.9

PROGRAM LENGTH

The maximum number of instructional hours recommended by the Florida DOE is 450 hours per EFL. Acknowledging the individualized nature of learning, some students may finish an EFL in fewer (or more) hours than the recommended maximum duration indicated.

Table 2: Recommended Maximum Number of Hours by Educational Functioning Level

Course Title	NRS Educational Functioning Levels	Recommended Maximum Hours
GED® Preparation Comprehensive	ABE Level 5	450
GED® Preparation Comprehensive	ABE Level 6	450

CURRICULUM AND INSTRUCTION

[4] https://www.flrules.org/gateway/ruleno.asp?id=6A-6.014
[5] https://www.flsenate.gov/laws/statutes/2012/1003.435
[6] https://www.ecfr.gov/current/title-34/subtitle-B/chapter-IV/part-462
[7] https://nrsweb.org/policy-data/nrs-ta-guide

The FDOE disseminates the GED® Comprehensive curriculum framework to agencies statewide, empowering local agency personnel to craft a curriculum relevant to the objectives of their students and instructors. Below is a structured outline of elements to consider when creating the local agency's curriculum:

1. **Educational Outcomes:**
    - Clearly defined outcomes that students are expected to achieve upon completion of the course.
2. **Core Instructional Materials:**
    - A set of materials (both print and digital) aligned with the defined educational outcomes. This can include textbooks, workbooks, online resources and multimedia materials.
3. **Needs Assessment Tools:**
    - Create a set of needs assessment tools to help teachers identify the specific learning needs and educational goals of individual students. This will aid in prioritizing standards and tailoring instruction to meet the varying needs of learners.
4. **Supplementary Textbooks:**
    - Provide workbooks covering the subjects of the four subtests of the GED® Test: Mathematical Reasoning, RLA, Social Studies and Science.
5. **Pacing Guides and Matrices:**
    - Develop pacing guides and matrices that outline the scope and sequence of the curriculum. This helps in organizing the content over the duration of the course and ensures a logical progression of skills.
6. **Recommended Resources:**
    - Compile a list of recommended websites, films and dictionaries that can be utilized by teachers to supplement the curriculum. Ensure that these resources are relevant, up-to-date and support the varying needs of adult learners.
7. **Overview of Content:**
    - Provide an overview of the content to be covered in the course based on the four subtests of the GED® Test: Mathematical Reasoning, RLA, Social Studies and Science.
8. **Learning Activities:**
    - Describe a variety of learning activities that can be used regularly for reinforcement. Include a mix of individual and group activities, hands-on projects, discussions and real-world application exercises.
9. **Vocabulary Lists:**
    - Utilize widely available vocabulary lists[8] designed specifically for the GED® Test that focus on reading comprehension, grammar and usage, word knowledge, literary analysis, math terminology, American history, government, economics, geography, life science, earth science and physical science.
10. **Grammar and Language Skills:**
    - Provide instructors and students with widely available free educational products from the GED® Testing Service, including the GED® Assessment Guide for Educators.[9]

It is recommended to continuously assess and update the agency's curriculum based on feedback, changes in educational standards and the evolving needs of learners. Regular collaboration with instructors and seeking input from the FDOE Bureau of Adult Education can further enhance the quality and effectiveness of the agency's curriculum.

Instructors are not obligated to follow the standards sequentially. The distinct needs of each group of students can guide instruction, empowering instructors to modify the sequence of teaching the standards.

ASSESSMENT

For guidance on the assessment guidelines and requirements for GED® Preparation, see State Board Rule 6.A-6.014, F.A.C.[10]

[8] https://www.vocabulary.com/lists/sqwixtkp/ged
[9] https://ged.com/educators_admins/teaching/teaching_resources/

References for Assessment and Reporting: For complete information regarding assessment procedures and policies, see the FDOE Assessment Technical Assistance Paper.[11] For guidelines on the procedures for reporting data related to student test results, see the FDOE Division of Career and Adult Education (DCAE) Office of Research and Evaluation.[12]

Pre-testing: Federal and state regulations mandate that local adult education agencies conduct pre-tests for all new students within the initial 12 hours of enrollment activity. The Florida DOE defines a new student as someone not previously enrolled in the local agency during the current or preceding program year. GED® Comprehensive Preparation course students are required to pre-test and obtain a score at or above NRS EFL 5 in reading and math. The agency is responsible for submitting the pre-test results to the FDOE in accordance with the guidelines outlined by the DCAE Office of Research and Evaluation.

Students who pass the GED® RLA subtest but not the GED® Social Studies and/or Science subtest(s) should pre-test in reading on one of the assessments noted above. The student should obtain a level 5 or higher in reading and be enrolled in GED® Comprehensive Social Studies and/or Science course(s).

Students who pass the GED® Social Studies and or Science test(s) but not the GED® RLA test should pre-test in reading on one of the assessments noted above. The student should obtain a level 5 or higher in reading and be enrolled in GED® Comprehensive course.

Post-testing: Agencies are not required to post-test students enrolled in the GED® Comprehensive Preparation course for NRS reporting purposes, however, students will benefit from a variety of assessments to gauge their knowledge and skills. The GED® Ready Test[13] is an appropriate tool for determining when the student is likely to be able to pass the GED® Test.

Course Completion: Students complete the GED® Comprehensive course when they pass the complete set of GED® subtests. Upon passing all subtests of the GED®, the agency is responsible for reporting the course completion date as reflected by the date on the student's diploma. The agency is responsible for reporting the post-test results to the FDOE following the guidelines outlined by the DCAE Office of Research and Evaluation.

ACCOMMODATIONS

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Adult students with disabilities must self-identify, provide documentation and request such services. Students with disabilities may need accommodations in areas such as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

ADULT EDUCATION INSTRUCTOR CERTIFICATION

As per 1012.39 (1)(b), F.S.,[14] each school district shall establish the minimal qualifications for part-time and full-time teachers in adult education agencies.

FDOE IET SERVICE APPROACH[15]

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[10] https://www.flrules.org/gateway/ruleno.asp?id=6A-6.014
[11] https://www.fldoe.org/core/fileparse.php/5398/urlt/2024FLAssessmentPolicy.pdf
[12] https://www.fldoe.org/academics/career-adult-edu/research-evaluation/
[13] https://ged.com/study/ged_ready/
[14] https://www.flsenate.gov/laws/statutes/2011/1012.39
[15] https://www.fldoe.org/academics/career-adult-edu/adult-edu/adult-edu-career-pathways.stml

The FDOE promotes the planning, development and implementation of an IET service approach that provides concurrent and contextualized adult education and literacy activities in combination with workforce preparation activities and workforce training for a specific occupation or occupational cluster for the purpose of educational and career advancement.

Florida's IET service approach is well-suited for meeting the specific needs of GED® Comprehensive Preparation students. Agencies are encouraged to create opportunities that seamlessly integrate education and career-focused content and deliver workforce preparation and training for GED® Comprehensive Preparation students.

The IET service approach provides students at all levels of adult education with the opportunity to acquire the skills needed to:

- Shift to and complete postsecondary education and training programs.
- Obtain employment and advance in employment leading to economic self-sufficiency.
- Exercise the rights and responsibilities of citizenship.

All IET Programs must include the following three components as noted in the following sections of WIOA.[16]

- Adult education and literacy activities (WIOA Section 203(2)).
- Workforce preparation activities (WIOA Section 203(17)).
- Workforce training services (one or more) for a specific occupation or occupation cluster (WIOA Section 134(c)(3)(D)).

To meet the "integrated" requirement of IET, all services must include the following:

- Adult education and literacy activities run concurrently and contextually with workforce preparation activities and workforce training for a specific occupation or occupational cluster for the purpose of educational and career advancement.
- Activities are of sufficient intensity and quality, and based on the most rigorous research available, particularly with respect to improving reading, writing, mathematics and English proficiency of eligible individuals.
- Occur simultaneously.
- Use occupationally relevant instructional materials.

The integrated education and training program must have a single set of learning objectives that identifies specific adult education content, workforce preparation activities, workforce training competencies and that the program activities function cooperatively.

GED® COMPREHENSIVE PREPARATION STANDARDS

The GED® Comprehensive Preparation Standards are based on the four content areas of the GED® Test, namely: RLA, Mathematical Reasoning, Science and Social Studies.

GED® Comprehensive RLA Standards

The GED® RLA Standards focus on the fundamentals in three major content areas: Reading, Language Arts and Writing. Students will achieve the ability to read closely, the ability to write clearly and the ability to edit and understand the use of standard written English in context. The most significant predictor of readiness for career and college lies in the proficiency to read and comprehend intricate texts, particularly nonfiction.

[16] https://www.congress.gov/113/bills/hr803/BILLS-113hr803enr.pdf

Reading Standards	
R.1	**Determine central ideas or themes of texts, analyze their development and summarize the key supporting details and ideas.**
R.1.a	Comprehend explicit details and main ideas in text.
R.1.b	Summarize details and ideas in text.
R.1.c	Make sentence-level inferences about details that support main ideas.
R.1.d	Infer implied main ideas in paragraphs or whole texts.
R.1.e	Determine which detail(s) support(s) a main idea.
R.1.f	Identify a theme or identify which element(s) in a text support a theme.
R.1.g	Make evidence-based generalizations or hypotheses based on details in text, including clarifications, extensions or applications of main ideas to new situations.
R.1.h	Draw conclusions or make generalizations that require mixing several main ideas in text.
R.2	**Analyze how individuals, events and ideas develop and interact over the course of a text.**
R.2.a	Order sequences of events in texts.
R.2.b	Make inferences about plot/sequence of events, characters/people, settings or ideas in texts.
R.2.c	Analyze relationships within texts, including how events are important in relation to plot or conflict; how people, ideas or events are connected, developed or distinguished; how events contribute to theme or relate to key ideas; or how a setting or context shapes structure and meaning.
R.2.d	Infer relationships between ideas in a text (e.g., an implicit cause and effect, parallel or contrasting relationship).
R.2.e	Analyze the roles that details play in complex literary or informational texts.
R.3.2; L.4.2	**Interpret words and phrases that appear frequently in texts from a wide variety of disciplines, including determining connotative and figurative meanings from context and analyzing how specific word choices shape meaning or tone.**
R.3.1/L.4.1	Determine the meaning of words and phrases as they are used in a text, including determining connotative and figurative meanings from context.
R.3.2/L.4.2	Analyze how meaning or tone is affected when one word is replaced with another.
R.4.3/L.4.3	Analyze the impact of specific words, phrases or figurative language in text, with a focus on an author's intent to convey information or construct an argument.
R.4	**Analyze the structure of texts, including how specific sentences or paragraphs relate to each other and the whole.**
R.4.a	Analyze how a particular sentence, paragraph, chapter or section fits into the overall structure of a text and contributes to the development of the ideas.
R.4.b	Analyze the structural relationship between adjacent sections of text (e.g., how one paragraph develops or refines a key concept or distinguishing one idea from another).
R.4.c	Analyze transitional language or signal words (words that indicate structural relationships, such as consequently, nevertheless, otherwise) and determine how they refine meaning, emphasize certain ideas or reinforce an author's purpose.
R.4.d	Analyze how the structure of a paragraph, section or passage shapes meaning, emphasizes key ideas or supports an author's purpose.
R.5	**Determine an author's purpose or point of view in a text and explain how it is conveyed and shapes the content and style of a text.**

R.5.a	Determine an author's point of view or purpose of a text.
R.5.b	Analyze how the author distinguishes his or her position from that of others or how an author acknowledges and responds to conflicting evidence or viewpoints.
R.5.c	Infer an author's implicit and explicit purposes based on details in text.
R.5.d	Analyze how an author uses rhetorical techniques to advance his or her point of view or achieve a specific purpose (e.g., analogies, enumerations, repetition and parallelism, juxtaposition of opposites, qualifying statements).
R.6	**Delineate and evaluate the argument and specific claims in a text, including if the reasoning was valid, as well as the relevance and sufficiency of the evidence.**
R.7.1	Delineate the specific steps of an argument the author puts forward, including how the argument's claims build on one another.
R.8.a	Identify specific pieces of evidence an author uses in support of claims or conclusions.
R.8.b	Evaluate the relevance and sufficiency of evidence offered in support of a claim.
R.8.c	Distinguish claims that are supported by reason and evidence from claims that are not.
R.8.d	Assess whether the reasoning is valid; identify false reasoning in an argument and evaluate its impact.
R.8.e	Identify an underlying premise or assumption in an argument and evaluate the logical support and evidence provided.
R.9 & R.7	**Analyze how two or more texts address similar themes or topics.**
R.9.a/R.7.a	Draw specific comparisons between two texts that address similar themes or topics, or between information presented in different formats (e.g., between information presented in text and information or data summarized in a table or timeline).
R.9.b	Compare two passages in a similar or closely related genre that share ideas or themes, focusing on similarities and/or differences in perspective, tone, style, structure, purpose or overall impact.
R.9.c	Compare two argumentative passages on the same topic that present opposing claims (either main or supporting claims) and analyze how each text emphasizes different evidence or advances a different interpretation of facts.
R.7.b	Analyze how data or quantitative and/or visual information extends, clarifies or contradicts information in text or determines how data supports an author's argument.
R.7.c	Compare two passages that present related ideas or themes in different genre or formats (e.g., a feature article and an online FAQ or fact sheet) in order to evaluate differences in scope, purpose, emphasis, intended audience or overall impact when comparing.
R.7.d	Compare two passages that present related ideas or themes in different genre or formats in order to synthesize details, draw conclusions or apply information to new situations.
Language Standards	
L.1	**Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.**
L.1.a	Edit to correct errors involving frequently confused words and homonyms, including contractions (passed, past; two, too, to; there, their, they're; knew, new; it's, its).
L.1.b	Edit to correct errors in straightforward subject-verb agreement.
L.1.c	Edit to correct errors in pronoun usage, including pronoun-antecedent agreement, unclear pronoun references and pronoun case.
L.1.d	Edit to eliminate nonstandard or informal usage (e.g., correctly use tries to win the game instead of try and win the game).
L.1.e	Edit to eliminate dangling or misplaced modifiers or illogical word order (e.g., correctly use to meet almost all requirements instead of to almost meet all requirements).

L.1.f	Edit to ensure parallelism and proper subordination and coordination.
L.1.g	Edit to correct errors in subject-verb or pronoun antecedent agreement in more complicated situations (e.g., with compound subjects, interceding phrases or collective nouns).
L.1.h	Edit to eliminate wordiness or awkward sentence construction.
L.1.i	Edit to ensure effective use of transitional words, conjunctive adverbs and other words and phrases that support logic and clarity.
L.2	**Demonstrate command of the conventions of standard English capitalization and punctuation when writing.**
L.2.a	Edit to ensure correct use of capitalization (e.g., proper nouns, titles and beginnings of sentences).
L.2.b	Edit to eliminate run-on sentences, fused sentences or sentence fragments.
L.2.c	Edit to ensure correct use of apostrophes with possessive nouns.
L.2.d	Edit to ensure correct use of punctuation (e.g., commas in a series or in appositives and other nonessential elements, end marks and appropriate punctuation for clause separation).
Writing Standards	
W.1	Determine the details of what is explicitly stated and make logical inferences or valid claims that square with textual evidence
W.2	Produce and extended analytical response in which the writer introduces the idea(s) or claim(s) clearly; creates an organization that logically sequences information; develops the idea(s) or claim(s) thoroughly with well-chosen examples, facts or details from the text; and maintains a coherent focus.
W.3	Write clearly and demonstrate sufficient command of standard English conventions

GED® Comprehensive Mathematical Reasoning Standards

The Mathematical Reasoning Standards focus on the fundamentals of mathematics in two major content areas: quantitative problem solving and algebraic problem solving. The Mathematical Practices provide specifications for assessing real-world problem-solving skills in a mathematical context.

Range of Depth of Knowledge (DOK)	Mathematical Practices
1-2 1-3 2-3 1-2 1-3	**MP.1 Building Solution Pathways and Lines of Reasoning** a. Search for and recognize entry points for solving a problem. b. Plan a solution pathway or outline a line of reasoning. c. Select the best solution pathway, according to given criteria. d. Recognize and identify missing information that is required to solve a problem. e. Select the appropriate mathematical technique(s) to use in solving a problem or a line of reasoning.
1-2 1-2 2-3	**MP2. Abstracting Problems** a. Represent real world problems algebraically. b. Represent real world problems visually. c. Recognize the important and salient attributes of a problem.
1-3 1-3 2-3	**MP.3 Furthering Lines of Reasoning** a. Build steps of a line reasoning or solution pathway, based on previous step or givens. b. Complete the lines of reasoning of others. c. Improve or correct a flawed line of reasoning.
	MP.4 Mathematical Fluency

1-2 1-2 1-2	a. Manipulate and solve arithmetic expressions. b. Transform and solve algebraic expressions. c. Display data or algebraic expressions graphically**.**
	MP.5 Evaluating Reasoning and Solution Pathways
2-3 2-3 2-3	a. Recognize flaws in others' reasoning. b. Recognize and use counterexamples. c. Identify the information required to evaluate a line of reasoning.

Quantitative Problem-Solving Standards and Content Indicators	
Q.1	**Apply number sense concepts, including ordering rational numbers, absolute value, multiples, factors and exponents**
Q.1.a	Order fractions and decimals, including on a number line.
Q.1.b	Apply number properties involving multiples and factors, such as using the least common multiple, greatest common factor or distributive property to rewrite numeric expressions.
Q.1.c	Apply rules of exponents in numerical expressions with rational exponents to write equivalent expressions with rational exponents.
Q.1.d	Identify absolute value or a rational number as its distance from zero on the number line and determine the distance between two rational numbers on the number line, including using the absolute value of their difference.
Q.2	**Add, subtract, multiply, divide and use exponents and roots of rational, fraction and decimal numbers**
Q.2.a	Perform addition, subtraction, multiplication and division on rational numbers.
Q.2.b	Perform computations and write numerical expressions with squares and square roots of rational numbers.
Q.2.c	Perform computations and write numerical expressions with cubes and cube roots of rational numbers.
Q.2.d	Determine when a numerical expression is undefined.
Q.2.e	Solve single-step or multistep real-world arithmetic problems involving the four operations with rational numbers, including those involving scientific notation.
Q.3	**Calculate and use ratios, percent and scale factors**
Q.3.a	Compute unit rates. Examples include but are not limited to: unit pricing, constant speed, persons per square mile, BTUs (British thermal units) per cubic foot.
Q.3.b	Use scale factors to determine the magnitude of a size change. Convert between actual drawings and scale drawings.
Q.3.c	Solve multistep, real-world arithmetic problems using ratios or proportions including those that require converting units of measure.
Q.3.d	Solve two-step, real-world arithmetic problems involving percentages. Examples include but are not limited to: simple interest, tax, markups and markdowns, gratuities and commissions, percent increase and decrease.
Q.4	**Calculate dimensions, perimeter, circumference and area of two-dimensional figures**
Q.4.a	Compute the area and perimeter of triangles and rectangles. Determine side lengths of triangles and rectangles when given area or perimeter.
Q.4.b	Compute the area and circumference of circles. Determine the radius or diameter when given area or circumference.
Q.4.c	Compute the perimeter of a polygon. Given a geometric formula, compute the area of a polygon. Determine side lengths of the figure when given the perimeter or area.

Q.4.d	Compute perimeter and area of 2-D composite geometric figures, which could include circles, given geometric formulas as needed.
Q.4.e	Use the Pythagorean theorem to determine unknown side lengths in a right triangle.
Q.5	**Calculate dimensions, surface area and volume of three-dimensional figures**
Q.5.a	When given geometric formulas, compute volume and surface area of rectangular prisms. Solve for side lengths or height, when given volume or surface areas.
Q.5.b	When given geometric formulas, compute volume and surface area of cylinders. Solve for height, radius or diameter when given volume or surface area.
Q.5.c	Use geometric formulas to compute volume and surface area of right prisms. Solve for side lengths or height, when given volume or surface area.
Q.5.d	When given geometric formulas, compute volume and surface area of right pyramids and cones. Solve for side lengths, height, radius or diameter when given volume or surface area.
Q.5.e	When given geometric formulas, compute volume and surface area of spheres. Solve for radius or diameter when given the surface area.
Q.5.f	Compute surface area and volume of composite 3-D geometric figures, given geometric formulas as needed.
Q.6	**Interpret and create data displays**
Q.6.a	Represent, display and interpret categorical data in bar graphs or circle graphs.
Q.6.b	Represent, display and interpret data involving one variable plots on the real number line including dot plots, histograms and box plots.
Q.6.c	Represent, display and interpret data involving two variables in tables and the coordinate plane including scatter plots and grants.
Q.7	**Calculate and use mean, median, mode and weighted average**
Q.7.a	Calculate the mean, median, mode and range. Calculate a missing data value, given the average and all the missing data values but one, as well as calculating the average, given the frequency counts of all the data values, and calculating a weighted average.
Q.8	**Utilize counting techniques and determine probabilities**
Q.8.a	Use counting techniques to solve problems and determine combinations and permutations.
Q.8.b	Determine the probability of simple and compound events.
Algebraic Problem Solving Standards and Content Indicators	
A.1	**Write, evaluate and compute with expressions and polynomials**
A.1.a	Add, subtract, factor, multiply and expand linear expressions with rational coefficients.
A.1.b	Evaluate linear expressions by substituting integers for unknown quantities.
A.1.c	Write linear expressions as part of word-to-symbol translations or to represent common settings.
A.1.d	Add, subtract, multiply polynomials, including multiplying two binomials, or divide factorable polynomials.
A.1.e	Evaluate polynomial expressions by substituting integers for unknown quantities.
A.1.f	Factor polynomial expressions.
A.1.g	Write polynomial expressions as part of word-to-symbol translations or to represent common settings.
A.1.h	Add, subtract, multiply and divide rational expressions.
A.1.i	Evaluate rational expressions by substituting integers for unknown quantities.
A.1.j	Write rational expressions as part of word-to-symbol translations or to represent common settings.

A.2	**Write, manipulate, solve and graph linear equations**
A.2.a	Solve one-variable linear equations with rational number coefficients, including equations for which solutions require expanding expressions using the distributive property and collecting like terms or equations with coefficients represented by letters.
A.2.b	Solve real-world problems involving linear equations.
A.2.c	Write one-variable and multi-variable linear equations to represent context.
A.2.d	Solve a system of two simultaneous linear equations by graphing, substitution or linear combination. Solve real-world problems leading to a system of linear equations.
A.3	**Write, manipulate, solve and graph linear inequalities**
A.3.a	Solve linear inequalities in one variable with rational number coefficients.
A.3.b	Identify or graph the solution to a one variable linear inequality on a number line.
A.3.c	Solve real-world problems involving inequalities.
A.3.d	Write linear inequalities in one variable to represent context.
A.4	**Write, manipulate and solve quadratic equations**
A.4.a	Solve quadratic equations in one variable with rational coefficients and real solutions, using appropriate methods (e.g., quadratic formula, completing the square, factoring and inspection).
A.4.b	Write one-variable quadratic equations to represent context.
A.5	**Connect and interpret graphs and functions**
A.5.a	Locate points in the coordinate plane.
A.5.b	Determine the slope of a line from a graph, equation or table.
A.5.c	Interpret unit rate as the slope in a proportional relationship.
A.5.d	Graph two-variable linear equations.
A.5.e	For a function that models a linear or nonlinear relationship between two quantities, interpret key features of graphs and tables in terms of quantities, and sketch graphs showing key features of graphs and tables in terms of quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive or negative; relative maximums and minimums; symmetries, end behavior and periodicity.
A.6	**Connect coordinates, lines and equations**
A.6.a	Write the equation of a line with a given slope through a given point.
A.6.b	Write the equation of a line passing through two given distinct points.
A.6.c	Use slope to identify parallel and perpendicular lines and to solve geometric problems.
A.7	**Compare, represent and evaluate functions**
A.7.a	Compare two different proportional relationships represented in different ways. Examples include but are not limited to: compare a distance-time graph to a distance-time equation to determine which of two moving objects has a greater speed.
A.7.b	Represent or identify a function in a table or graph as having exactly one output (one element in the range) for each input (each element in the domain).
A.7.c.	Evaluate linear and quadratic functions for values in their domain when represented using function notation.
A.7.d.	Compare properties of two linear or quadratic functions each represented in a different way (algebraically, numerically in tables, graphically or by verbal descriptions). Examples include but are not limited to: 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.

GED® Comprehensive Social Studies Standards

The GED® Comprehensive Social Studies Standards focus on the fundamentals of social studies reasoning, striking a balance of deeper conceptual understanding, procedural skill and fluency, and the ability to apply these fundamentals in realistic situations. Four major content domains are addressed: civics and government, United States history, economics and geography and the world. The GED® Comprehensive Social Standards are divided into two sections: the practices and the content topics. Each content topic has been translated into a standard including sub-content areas.

Social Studies Content Topics

The Social Studies Content Topics are designed to provide context for measuring the skills defined in the Social Studies Practices. The matrix below summarizes the Social Studies content topics.

Social Studies Themes	Social Studies Content Topics			
	Civics & Government 50%*	U.S. History 20%*	Economics 15%*	Geography and the World 15%*
I. Development of Modern Liberties and Democracy	1. Types of modern & historical governments 2. Principles that have contributed to development of American constitutional democracy 3. Structure and design of United States Government 4. Individual rights and civic responsibilities	1. Key historical documents that have shaped American constitutional government 2. Revolutionary and Early Republic Periods 3. Civil War & Reconstruction 4. Civil Rights Movement	1. Key economic events that have shaped American government and policies 2. Relationship between political and economic freedoms	1. Development of classical civilizations
II. Dynamic Responses in Societal Systems	1. Political parties, campaigns and elections in American politics 2. Contemporary public policy	1. European population of the Americas 2. World War I & II The Cold War 3. American foreign policy since 9/11	1. Fundamental economic concepts 2. Microeconomics & macroeconomics 5. Consumer economics Economic causes & impacts of wars 3. Economic drivers of exploration and colonization	1. Relationships between the environment and societal development 2. Borders between peoples and nations 3. Human migration

Social Studies Practices
SSP.1 Draw Conclusions and Make Inferences

SSP.1.a.	Determine the details of what is explicitly stated in primary and secondary sources and make logical inferences or valid claims based on evidence.
SSP.1.b.	Cite or identify specific evidence to support inferences or analyses of primary and secondary sources, attending to the precise details of explanations or descriptions of a process, event or concept.
SSP.2 Determine Central Ideas, Hypotheses and Conclusions	
SSP.2.a.	Determine the central ideas or information of a primary or secondary source document, corroborating or challenging conclusions with evidence.
SSP2.b.	Describe people, places, environments, processes and events and the connections between and among them.
SSP.3 Analyze Events and Ideas	
SSP.3.a.	Identify the chronological structure of a historical narrative and sequence steps in a process.
SSP.3.b.	Analyze in detail how events, processes and ideas develop and interact in a written document; determine whether earlier events caused later ones or simply preceded them.
SSP.3.c.	Analyze cause-and-effect relationships and multiple causation, including action by individuals, natural and societal processes and the influence of ideas.
SSP3.d.	Compare differing sets of ideas related to political, historical, economic, geographic or societal contexts; evaluate the assumptions and implications inherent in differing positions.
SSP.4 Analyze Meanings of Words and Phrases	
SSP.4.a.	Determine the meaning of words and phrases as they are used in context, including vocabulary that describes historical, political, social, geographic and economic aspects of social studies.
SSP.5 Analyze Purpose and Point of View	
SSP.5.a.	Identify aspects of a historical document that reveals an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts) SSP.5.b. Identify instances of bias or propagandizing.
SSP.5.c.	Analyze how a historical context shapes an author's point of view.
SSP.5.d.	Evaluate the credibility of an author in historical and contemporary political discourse.
SSP.6 Integrate Content Presented in Different Ways	
SSP.6.a.	Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.
SSP.6.b.	Analyze information presented in a variety of maps, graphic organizers, tables and charts; and in a variety of visual sources such as artifacts, photographs, political cartoons.
SSP.6.c.	Translate quantitative information expressed in words in a text into visual form (e.g., table or chart); translate information expressed visually or mathematically into words.
SSP.7 Evaluate Reasoning and Evidence	
SSP.7.a.	Distinguish among fact, opinion and reasoned judgment in a primary or secondary source document
SSP.7.b.	Distinguish between unsupported claims and informed hypotheses grounded in social studies evidence.
SSP.8 Analyze Relationships between Texts	
SSP.8.a.	Compare treatments of the same social studies topic in various primary and secondary sources, noting discrepancies between and among the sources.
SSP.9 Write Analytic Response to Source Texts	
SSP.9.a.	Produce writing that develops the idea(s), claim(s) and/or argument(s) thoroughly and logically, with well-chosen examples, facts or details from primary and secondary source documents.
SSP.9.b.	Produce writing that introduces the idea(s) or claim(s) clearly; creates an organization that logically sequences information; and maintains a coherent focus.

SSP.9.c. Write clearly and demonstrate sufficient command of standard English conventions.
SSP.10 Read and Interpret Graphs, Charts and Other Data Representation
SSP.10.a. Interpret, use and create graphs (e.g., scatterplot, line, bar, circle) including proper labeling. Predict reasonable trends based on the data (e.g., do not extend trend beyond a reasonable limit). SSP.10.b. Represent data on two variables (dependent and independent) on a graph; analyze and communicate how the variables are related. SSP.10.c. Distinguish between correlation and causation.
SSP.11 Measure the Center of a Statistical Dataset
SSP.11.a. Calculate the mean, median, mode and range of a dataset.

Social Studies Standards	
Civics and Government	
CG.1	**Describe types of modern and historical governments that contributed to the development of American constitutional democracy.** CG.1.a. **d**irect democracy CG.1.b. representative democracy CG.1.c. parliamentary democracy CG.1.d. presidential democracy CG.1.e. monarchy and other types
CG.2	**Describe the principles that have contributed to the development of American constitutional democracy.** CG.2.a. natural rights philosophy CG.2.b. popular sovereignty and consent of the governed CG.2.c. constitutionalism CG.2.d. majority rule and minority rights CG.2.e. checks and balances CG.2.f. separation of powers CG.2.g. rule of law CG.2.h. individual rights CG.2.I. federalism
CG.3	**Analyze the structure and design of United States Government.** CG.3.a. Structure, powers and authority of the federal executive, judicial and legislative branches CG.3.b. Individual governmental positions (e.g., president, speaker of the house, cabinet secretary, etc.) CG.3.c. Major powers and responsibilities of the federal and state governments CG.3.d. Shared powers CG.3.e. Amendment process CG.3.f. Governmental Departments and Agencies
CG.4	**Describe individual rights and civic responsibilities.** CG.4.a. The Bill of Rights CG.4.b. Personal and civil liberties of citizens
CG.5	**Describe political parties, campaigns and elections in American politics.** CG.5.a. Political parties CG.5.b. Interest groups CG.5.c. Political campaigns, elections and the electoral process
CG.6	**Define contemporary public policy**

United States History

USH.1	**Explain the ideas and significance of key historical documents that have shaped American constitutional government.** USH.1.a. Magna Carta USH.1.b. Mayflower Compact USH.1.c. Declaration of Independence USH.1.d. United States Constitution USH.1.e. Martin Luther King's Letter from the Birmingham Jail USH.1.f. Landmark decisions of the United States Supreme Court and other Key documents)
USH.2	**Describe the causes and consequences of the wars during the Revolutionary and Early Republic Periods.** USH.2.a. Revolutionary War USH.2.b. War of 1812 USH.2.c. George Washington USH.2.d. Thomas Jefferson USH.2.e. Articles of Confederation USH.2.f. Manifest Destiny USH.2.g. U.S. Indian Policy
USH.3	**Examine causes and consequences of the Civil War and Reconstruction and its effects on the American people.** USH.3.a. Slavery USH.3.b. Sectionalism USH.3.c. Civil War Amendments USH.3.d. Reconstruction policies
USH.4	**Identify the expansion of civil rights by examining the principles contained in primary documents and events.** USH.4.a. Jim Crow laws USH.4.b. Women's suffrage USH.4.c. Civil Rights Movement USH.4.d. Plessy vs. Ferguson and Brown vs. Board of Education USH.4.e. Warren court decisions
USH.5	**Describe the impact of European settlement on population of the Americas.**
USH.6	**Explain the significant causes, events, figures and consequences of World Wars I & II.** USH.6.a. Alliance system USH.6.b. Imperialism, nationalism and militarism USH.6.c. Russian Revolution USH.6.d. Woodrow Wilson USH.6.e. Treaty of Versailles and League of Nations USH.6.f. Neutrality Acts USH.6.g. Isolationism USH.6.h. Allied and Axis Powers USH.6.i. Fascism, Nazism and totalitarianism USH.6.j. The Holocaust USH.6.k. Japanese-American internment USH.6.l. Decolonization USH.6.m. GI Bill
USH.7	**Describe the significant events and people from the Cold War era.** USH.7.a Communism and capitalism USH.7.b. NATO and the Warsaw Pact USH.7.c. U.S. maturation as an international power USH.7.d. Division of Germany, Berlin Blockade and Airlift USH.7.e. Truman Doctrine

	USH.7.f. Marshall Plan USH.7.g. Lyndon B. Johnson and The Great Society USH.7.h. Richard Nixon and the Watergate scandal USH.7.i. Collapse of U.S.S.R. and democratization of Eastern Europe
USH.8	**Analyze the impact of the September 11, 2001 attacks on the United States foreign policy.**

Economics	
E.1	**Describe key economic events that have shaped American government and policies.**
E.2	**Explain the relationship between political and economic freedoms**
E.3	**Describe common economic terms and concepts.** E.3.a. Markets E.3.b. Incentives E.3.c. Monopoly and competition E.3.d. Labor and capital E.3.e. Opportunity cost E.3.f. Profit E.3.g. Entrepreneurship E.3.h. Comparative advantage E.3.i. Specialization E.3.j. Productivity E.3.k. interdependence
E.4	**Describe the principles of Microeconomics and Macroeconomics.** E.4.a. Supply, demand and price E.4.b. Individual choice E.4.c. Institutions E.4.d. Fiscal and monetary policy E.4.e. Regulation and costs of government policies E.4.f. Investment E.4.g. Government and market failures E.4.h. Inflation and deflation E.4.i. Gross domestic product (GDP) E.4.j. Unemployment E.4.k. Tariffs
E.5	**Describe consumer economics** E.5.a. Types of credit E.5.b. Savings and banking E.5.c. Consumer credit laws
E.6	**Examine the economic causes and impact on wars.**
E.7	**Describe the economic drivers of exploration and colonization in the Americas.**
E.8	**Explain the relationship between the Scientific and Industrial Revolutions.**

Geography	
G.1	**Describe how geography affected the development of classical civilizations.**
G.2	**Describe the relationships between the environment and societal development.** G.2.a. Nationhood and statehood G.2.b. Sustainability G.2.c. Technology

	G.2.d. Natural resources G.2.e. Human changes to the environment
G.3	**Describe the concept of borders between peoples and nations.** G.3.a. Concepts of region and place G.3.b. Natural and cultural diversity G.3.c. Geographic tools and skills
G.4	**Describe the forms of human migration.** G.4.a. Immigration, Emigration and Diaspora G.4.b. Culture, cultural diffusion and assimilation G.4.c. Population trends and issues G.4.d. Rural and urban settlement

GED® Comprehensive Science Standards

The GED® Science Standards include Science Content Standards and Science Practices. Science Content Topics are designed to provide context for measuring the skills defined in the science practices listed in this framework. The Science Practices are closely related to the Science Content Topics. Science Practices are skills important to scientific reasoning in both textual and quantitative contexts.

Science Content Topics Matrix

The Science Content Topics Matrix below identifies the major topics in science and shows the relationship between each content topic and each focusing theme. The percentage of test questions on each content topic is listed.

Science Content Topics			
Focusing Themes	**Life Science (L) 40%**	**Physical Science (P) 40%**	**Earth & Space Science (ES) 20%**
Human and Health Living Systems	a. Human body and health b. Organization of life (structure and function of life) c. Molecular basis for heredity d. Evolution	a. Chemical properties and reactions related to human systems	a. Interactions between Earth's systems and living things
Energy & Related Systems	a. Relationships between life functions and energy intake b. Energy flows in ecologic networks (ecosystems)	a. conservation, transformation and flow of energy b. Work, motion and forces	a. Earth and its system components and interactions b. Structure and organization of the cosmos

Science Practices
SP.1 Comprehending Scientific Presentations SP.1.a Understand and explain textual scientific presentations Sp.1.b Determine the meaning of symbols, terms and phrases as they are used in scientific presentations. SP.1.c Understand and explain a non-textual scientific presentations
SP.2 Investigation Design (Experimental and Observational) SP.2.a. Identify possible sources of error and alter the design of an investigation to ameliorate that error SP.2.b. Identify and refine hypotheses for scientific investigations SP.2.c. Identify the strength and weaknesses of one or more scientific investigation (i.e., experimental or observational) designs SP.2.d. Design a scientific investigation SP.2.e. Identify and interpret independent and dependent variables in scientific investigations

SP.3 Reasoning from Data SP.3.a. Cite specific textual evidence to support a finding or conclusion. SP.3.b. Reason from data or evidence to a conclusion. SP.3.c. Make a prediction based upon data or evidence. SP.3.d. Using sampling techniques to answer scientific questions.
SP.4 Evaluating Conclusions with Evidence SP.4.a. Evaluate whether a conclusion or theory is supported or challenged by particular data or evidence.
SP.5 Working with Findings SP.5.a. Reconcile multiple findings, conclusions or theories.
SP.6 Expressing Scientific Information SP.6.a. Express scientific information or findings visually. SP.6.b. Express scientific information or findings numerically or symbolically. SP.6.c. Express scientific information or findings verbally.
SP.7 Scientific Theories SP.7.a. Understand and apply scientific models, theories and processes. SP.7.b. Apply formulas from scientific theories.
SP.8 Probability & Statistics SP.8.a. Describe a data set statistically. SP.8.b. Use counting and permutations to solve scientific problems. SP.8.c. Determine the probability of events.

Science Standards and Content Topics – Life Science, Physical Science, Earth and Space

Listed below are the Science Standards and Content Topics. The content topics are designed to provide context for measuring the skills defined in the science practices listed in the preceding table.

Life Science Standards and Content Topics	
L.1	**Standard: Describe systems and functions of the human body systems and how to keep healthy.** Content Topics: L.1.a. Body systems (e.g., muscular, endocrine, nervous systems) and how they work together to perform a function (e.g., muscular and skeletal work to move the body). L.1.b. Homeostasis feedback methods that maintain homeostasis (e.g., sweating to maintain internal temperature) and effects of changes in the external environment on living things (e.g., hypothermia, injury). L.1.c. Sources of nutrients (e.g., foods, symbiotic organisms) and concepts in nutrition (e.g., calories, vitamins, minerals). L.1.d. Transmission of disease and pathogens (e.g., airborne, blood borne), the effects of disease or pathogens on populations (e.g., demographics change, extinction) and disease prevention methods (e.g., vaccination, sanitation).
L.2	**Standard: Explain the relationship between life functions and energy intake.** Content Topic: L.2.a. Energy for life functions (e.g., photosynthesis, respiration, fermentation).

L.3	**Standard: Explain the flow of energy in ecological networks (ecosystems).** Content Topics: L.3.a. Flow of energy in ecosystems (e.g., energy pyramids), conversation of energy in an ecosystem (e.g., energy lost as heat, energy passed on to other organisms) and sources of energy (e.g., sunlight, producers, lower-level consumer). L.3.b. Flow of matter in ecosystems (e.g., food webs and chains, positions of organisms in the web or chain) and the effects of change in communities or environment on food webs. L.3.c. Carrying capacity, changes in carrying capacity based on changes in populations and environmental effects and limiting resources necessary for growth. L.3.d. Symbiosis (e.g., mutualism, parasitism, commensalism) and predator/prey relationships (e.g., changes in one population affecting another population). L.3.e. Disruption of ecosystems (e.g., invasive species, flooding, habitat destruction and desertification) and extinction (e.g., causes [human and natural] and effects).
L.4	**Standard: Explain organization of life by structure and function of life.** Content Topics: L.4.a. Essential functions of life (e.g., chemical reactions, reproduction and metabolism) and cellular components that assist the functions of life (e.g., cell membranes, enzymes, energy). L.4.b. Cell theory (e.g., cells come from cells, cells are the smallest unit of living things), specialized cells and tissues (e.g., muscles, nerve, etc.) and cellular levels of organization (e.g., cells, tissues, organs, systems). L.4.c. Mitosis, meiosis (e.g. process and purpose).
L.5	**Standard: Describe the molecular basis for heredity.** Content Topics: L.5.a. Relationship of DNA, genes and chromosomes (e.g. description, chromosome splitting during meiosis) in heredity. L.5.b. Genotypes, phenotypes and the probability of traits in close relatives (e.g., Punnett squares, pedigree charts). L.5.c. New alleles, assortment of alleles (e.g., mutations, crossing over), environmental altering of traits and expression of traits (e.g., epigenetics, color points of Siamese cats).
L.6	**Standard: Describe the scientific theories of evolution.** Content Topics: L.6.a. Common ancestry (e.g., evidence) and cladograms (e.g., drawing, creating, interpreting). L.6.b. Selection (e.g., natural selection, artificial selection, evidence) and the requirements for selection (e.g., variation in traits, differential survivability). L.6.c. Adaptation, selection pressure and speciation.
Physical Science Standards and Content Topics	
P.1	**Standard: Explain conservation, transformation and flow of energy.** Content Topics: P.1.a. Heat, temperature, the flow of heat results in work and the transfer of heat (e.g., conduction, convection). P.1.b. Endothermic and exothermic reactions. P.1.c. Types of energy (e.g., kinetic, chemical, mechanical) and transformations between types of energy (e.g., chemical energy [sugar] to kinetic energy [motion of a body]). P.1.d. Sources of energy (e.g., sun, fossil fuels, nuclear) and the relationships between different sources (e.g., levels of pollutions, amount of energy produced). P.1.e. Types of waves, parts of waves (e.g. frequency, wavelength), types of electromagnetic radiation, transfer of energy by waves and the uses and dangers of electromagnetic radiation (e.g. radio transmission, UV light and sunburns).
P.2	**Standard: Explain the relationship of work, motion and forces.** Content Topics: P.2.a. Speed, velocity, acceleration, momentum and collisions (e.g., inertia in a car accident, momentum transfer between two objects). P.2.b. Force, Newton's Laws, gravity, acceleration due to Gravity (e.g., freefall, law of gravitational

	attraction), mass and weight. P.2.c. Work, simple machines (types and functions), mechanical advantages (forces, distance and simple machines) and power.
P.3	**Standard: Describe the chemical properties and reactions related to living systems.** Content Topics: P.3.a. Structure of matter. P.3.b. Physical and chemical properties, changes of state and density. P.3.c. Balancing chemical equations and different types of chemical equations, conservation of mass in balanced chemical equations and limiting reactants. P.3.c. Parts in solutions, general rules of solubility (e.g., hotter solvents allow more solute to dissolve), saturation and the differences between weak and strong solutions.
Earth and Space Science Standards and Content Topics	
ES.1	**Standard: Describe Interactions between earth's systems and living things.** Content Topics: ES.1.a. Interactions of matter between living and nonliving things (e.g., cycles of matter) and the location, uses and dangers of fossil fuels. ES.1.b. Natural Hazards (e.g., earthquakes, hurricanes, etc.) their effects (e.g., frequency, severity and short- and long-term effects) and mitigation thereof (e.g., dikes, storm shelters, building practices). ES.1c. Extraction and use of natural resources, renewable vs. nonrenewable resources and sustainability.
ES.2	**Standard: Describe Earth and its System Components and Interactions.** Content Topics: ES.2.a. Characteristics of the atmosphere, including its layers, gases and their effects on the Earth and its organisms, include climate change. ES.2.b. Characteristics of the oceans (e.g., salt water, currents, coral reefs) and their effects on Earth and organisms. ES.2.c. Interactions between Earth's systems (e.g., weathering caused by wind or water on rock, wind caused by high/low pressure and Earth rotation, etc.). ES.2.d. Interior structure of the Earth (e.g., core, mantle, crust, tectonic plates) and its effects (e.g., volcanoes, earth quakes, etc.) and major landforms of the Earth (e.g., mountains, ocean basins, continental shelves, etc.).
ES.3	**Standard: Describe the structures and organization of the Cosmos.** Content Topics: ES.3.a. Structures in the universe (e.g., galaxies, stars, constellations, solar systems), the age and development of the universe and the age and development of Stars (e.g., main sequence, stellar development, deaths of stars [black hole, white dwarf]). ES.3.b. Sun, planets and moons (e.g., types of planets, comets, asteroids), the motion of the Earth's motion and the interactions within the Earth's solar system (e.g., tides, eclipses). ES.3.c. The age of the Earth, including radiometrics, fossils and landforms.