Webb's Depth of Knowledge & Assessment Targets for the 2014 GED® Test

Webb's Depth of Knowledge

In 1997, Norman Webb developed a process and criteria for systematically analyzing the alignment between instructional standards and standardized assessments. Webb's work grew out of research on studying different state assessments and their alignment with various state standards. Psychometricians and test developers use Webb's Depth of Knowledge (DOK) as a way to design and evaluate different assessment tasks. It is Webb's DOK that is used by the 2014 GED® test.

It is important to recognize that Webb's DOK:

- Is descriptive; it is not a taxonomy
- Focuses on how deeply a student has to know the content in order to respond

DOK provides instructors with a vocabulary and frame of reference when thinking about how students engage with course content.

"We teach a subject not to produce little living libraries on that subject, but rather to get a student to think mathematically, to consider matters as an historian does, to take part in the process of knowledge getting. Knowing is a process, not a product."

Jerome Bruner

Webb's Depth of Knowledge Levels

DOK Level	DOK Definition	DOK Examples
DOK-1 Recall and Reproduction	Recall of a fact, term, principle, concept, or perform a routine procedure.	Recall elements and details of story; structure, such as sequence of events, character, plot and setting; Conduct basic mathematical calculations; Label locations on a map; Represent in words or diagrams a scientific concept or relationship. Perform routine procedures like measuring length or using punctuation marks correctly; Describe the features of a place or people.
DOK-2 Basic Application of Skills/Concepts	Use of information, conceptual knowledge, select appropriate procedures for a task, two or more steps with decision points along the way, routine problems, organize/display data, interpret/use simple graphs.	Identify and summarize the major events in a narrative; Use context cues to identify the meaning of unfamiliar words; Solve routine multiple-step problems; Describe the cause/effect of a particular event; Identify patterns in events or behavior; Formulate a routine problem given data and conditions; Organize, represent, and interpret data.
DOK-3 Strategic Thinking	Requires reasoning, developing a plan or sequence of steps to approach problem; requires some decision making and justification; abstract, complex, or non-routine; often more than one possible answer.	Support ideas with details and examples; Use voice appropriate to the purpose and audience; Identify research questions and design investigations for a scientific problem; Develop a scientific model for a complex situation; Determine the author's purpose and describe how it affects the interpretation of a reading selection; Apply a concept in other contexts.
DOK-4 Extended Thinking	Requires investigation or application to real world; requires time to research, problem solve, and process multiple conditions of the problem or task; non-routine manipulations, across disciplines/content areas/multiple sources.	A product or a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/solutions; Apply mathematical model to illuminate a problem or situation; Analyze and synthesize information from multiple sources; Describe and illustrate how common themes are found across texts from different cultures; Design a mathematical model to inform and solve a practical or abstract situation.

Bloom vs. Webb

You may be more familiar with Bloom's Taxonomy. The following chart provides a comparison of the cognitive complexity of Bloom's Taxonomy and Webb's Depth of Knowledge.[2]

Bloom's Taxonomy	Webb's Depth of Knowledge
Knowledge The recall of specifics and universals, involving little more than bringing to mind the appropriate material. **Comprehension** The ability to process knowledge on a low level such that the knowledge can be reproduced or communicated without a verbatim repetition.	**Recall** Recall of a fact, information, or procedure (e.g., What are 3 critical skill cues for the overhand throw?)
Application The use of abstractions in concrete situations.	**Basic Application of Skill/Concept** Use of information, conceptual knowledge, procedures, two or more steps, etc. (e.g., Explain why each skill cue is important to the overhand throw. By stepping forward you are able to throw the ball further.)
Analysis The breakdown of a situation into its component parts.	*Strategic Thinking* Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer; generally takes less than 10 minutes to do (e.g., Design 2 different plays in basketball and explain what different skills are needed and when the plays should be carried out.)
Synthesis and Evaluation Putting together elements and parts to form a whole and then making value judgments about the method.	**Extended Thinking** Requires an investigation; time to think and process multiple conditions of the problem or task; and more than 10 minutes to do non-routine manipulations (e.g., Analyze 3 different tennis, racquetball, and badminton strokes for similarities, differences, and purposes. Then, discuss the relationship between the mechanics of the stroke and the strategy for using the stroke during game play.)

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[2] Bloom's Taxonomy and Webb's Depth of Knowledge. Retrieved from the World Wide Web at: http://www.palmbeachschools.org/qa/documents/WebbsDepthofKnowledge.pdf

Resources

For additional information on the Webb's Depth of Knowledge and how it relates to each content area assessment, access the following:

- Assessment Guide for Educators, Chapter 2 – What Is Webb's Depth of Knowledge Model?
  http://www.gedtestingservice.com/educators/assessment-guide-for-educators

Assessment Targets Aligned with Common Core State Standards

Setting clear and achievable targets is the starting point for creating an assessment tool. In developing the 2014 GED® test, the GED Testing Service® used the Common Core State Standards, along with the state standards of Virginia and Texas. The career- and college- ready content specifications of these standards provide clear and rigorous assessment targets that have been translated into different types of assessment tasks for the Next Generation GED® test.

Anchor standards are those core educational standards necessary to achieve a specific goal. The Common Core State Standards for high school completion provide anchor standards necessary for students to be college and career ready.

The philosophy that underlines the GED® test is that there is a foundational core of knowledge that must be obtained in order for an adult to enter postsecondary education and training and/or today's workplace.

The Common Core State Standards encompass the K-12 system. At the high school level, the following are the anchor standards for the areas of language, writing, reading, and mathematics.

Common Core State Standards: Anchor Standards for Language

Conventions of Standard English

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Knowledge of Language

3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Vocabulary Acquisition and Use

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
5. Demonstrate understanding of word relationships and nuances in word meanings.
6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Common Core State Standards: Anchor Standards for Reading

Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

Craft and Structure

4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
6. Assess how point of view or purpose shapes the content and style of a text.

Integration of Knowledge and Ideas

7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

Range of Reading and Level of Text Complexity

10. Read and comprehend complex literary and informational texts independently and proficiently.

Common Core State Standards: Anchor Standards for Writing

Text Types and Purposes

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Production and Distribution of Writing

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Research to Build and Present Knowledge

7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

Range of Writing

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 tasks, purposes, and audiences

Mathematical Content Standards

At the high school level, the Common Core State Standards for Mathematics are divided by:

- Content Standards (6)
- Practice Standards (8)

Mathematical Content Standards

- Number and Quantity
- Modeling
- Algebra
- Functions
- Geometry
- Statistic and Probability

Mathematical Practice Standards

- 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 reasoning

GED® teachers will need to align their present curriculum to the new GED® curriculum frameworks that have been approved by the State Board of Education for use in GED Preparation Programs for 2013-2014.

 # Resources

For additional information on the Common Core State Standards access the following resources:

- Common Core State Standards English Language Arts
  http://www.corestandards.org/ELA-Literacy

- Common Core State Standards Mathematics
  http://www.corestandards.org/Math

Assessment Targets for the 2014 GED® Test

The Florida Department of Education and the GED® Advisory Committee have aligned the assessment targets for all four content areas of the 2014 GED® test in the 2013-2014 GED® Curriculum Frameworks.

 # Resources

For additional information on the Webb's Depth of Knowledge and Assessment Targets for the 2014 GED® test, access the Assessment Guide for Educators, Chapter 2:

- GED Testing Service® website
  http://www.gedtestingservice.com/educators/assessment-guide-for-educators

For additional information on the Florida GED® Curriculum Frameworks access:

- Florida's GED® Curriculum Frameworks
  http://www.fldoe.org/workforce/dwdframe/ad_frame.asp

For additional information on other standards that were used to develop assessment targets, access the following:

- National Science Teachers Association: Next Generation Science Standards
  http://www.nsta.org/about/standardsupdate/default.aspx

- NCSS National Curriculum Standards for Social Studies
  http://www.ncss.org/standards

- National Standards for History
  http://www.nchs.ucla.edu/Standards/

Writing Rubric

The 2014 GED® test uses different types of test items. Two of the item types are extended response and short answer items. Both of these types of assessment items require text-based responses where students analyze source text(s) and use evidence to support an argument. This is a very different type of writing than that of an expository essay.

Three primary traits form the assessment rubric for extended response answers. These are:

- Creation of arguments and use of evidence
- Development of ideas and organizational structure
- Clarity and command of standard English conventions

Within each trait for the RLA extended response are three dimensions which are scored on a scale of 0 through 2 plus a non-scorable category. A non-scorable response would include such things as a response that:

- exclusively contains text copied from the source text(s)
- is off-topic
- is incomprehensible
- is left blank

In the Social Studies module, extended responses are scored on a 0 through 2 on dimension 1 and a 0 through 1 on dimensions 2 and 3. As in Reasoning through Language Arts, writing samples can be assessed as non-scorable.

Short-answer responses in the Science module are scored on a three-point scale. Scoring guides are developed for the different types of short-answer items.

The GED Testing Service® provides a comprehensive view of the short answer and extended response scoring rubrics, as well as the reporting category descriptions for each of the content areas.