



Aligned Standards
of Learning
2019–2020

ALIGNED STANDARDS OF LEARNING

Teachers may use the *Reading ASOL Summary Matrix* during the initial development of the student's instruction and assessment plan to track the learning progression of the student throughout the year and for planning units and lessons.

NOTE: An ASOL from the grade level of enrollment must be selected for each reporting category for inclusion in the Collection of Evidence. The level of performance that is appropriate for the student must be selected for each ASOL using the performance levels indicated below:

- **Level I** — The ASOL is demonstrated with significant support and modification.
- **Level II** — The ASOL is partially demonstrated.
- **Level III** — The ASOL is fully demonstrated.

Samples of *Reading ASOL* showing each performance level are provided in Appendix E.

Reading ASOL Summary Matrix Based on the 2010 *English Standards of Learning*

Reporting Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
Use word analysis strategies and word reference materials (E-RW)	3E-RW 1 3E-RW 2 3E-RW 3 3E-RW 4 3E-RW 5 3E-RW 6 3E-RW 7	4E-RW 1	5E-RW 1	6E-RW 1	7E-RW 1	8E-RW 1	HSE-RW 1 HSE-RW 2 HSE-RW 3
Demonstrate comprehension of fictional texts (E-CF)	3E-CF 1 3E-CF 2	4E-CF 1	5E-CF 1	6E-CF 1	7E-CF 1	8E-CF 1	HSE-CF 1 HSE-CF 2 HSE-CF 3
Demonstrate comprehension of nonfiction texts (E-CN)	3E-CN 1 3E-CN 2	4E-CN 1	5E-CN 1	6E-CN 1	7E-CN 1	8E-CN 1	HSE-CN 1 HSE-CN 2 HSE-CN 3

READING ALIGNED STANDARDS OF LEARNING

GRADE 3

Reporting Category: Use word analysis strategies and word reference materials

- 3E-RW 1
(SOL 2.5) The student will
- a) indicate the number of syllables in a spoken word;
 - b) apply letter name and letter-sound knowledge when decoding words;
 - c) apply letter-sound and word analysis skills in decoding words by identifying 18 or more letter-sound associations in context;
 - d) identify the beginning sound of familiar words beginning with a single consonant sound.
- 3E-RW 2
(SOL 2.6) The student will
- a) use newly acquired vocabulary drawn from reading and other content areas;
 - b) demonstrate understanding of the meaning of newly acquired vocabulary.
- 3E-RW 3
(SOL 2.7) The student will
- a) sort words into familiar categories;
 - b) expand vocabulary when reading by using knowledge of antonyms and synonyms;
 - c) determine meaning of vocabulary related to a familiar text;
 - d) demonstrate understanding of word relationships (e.g., prefix, suffix, singular, plural, homophones);
 - e) identify words that describe personal emotional states;
 - f) use familiar nouns (e.g., own name, Mom, dog) in isolation;
 - g) identify words from other content areas.
- 3E-RW 4
(SOL 2.10) The student will
- a) recognize that books have titles;
 - b) demonstrate comprehension of information in reference materials by using table of contents;
 - c) demonstrate comprehension of information in reference materials by using pictures, captions, and charts;
 - d) demonstrate comprehension of information in reference materials by using dictionaries, glossaries, and indices;
 - e) demonstrate comprehension of information in reference materials by using online resources.
- 3E-RW 5
(SOL3.3) The student will
- a) recognize 10 or more written words;
 - b) apply letter-sound skills in decoding consonant sounds of familiar one-syllable words; In context, demonstrate basic knowledge of letter-sound correspondences;
 - c) recognize 40 or more written words;
 - d) read text comprised of familiar words to support comprehension. Read familiar text with purpose and understanding.
- 3E-RW 6
(SOL 3.4) The student will
- a) decode single-syllable words with common spelling patterns (consonant-vowel-consonant [CVC] or high-frequency rhymes);
 - b) use context to determine missing words in familiar texts;
 - c) consult print in the environment to support reading;
 - d) demonstrate understanding of words that signal spatial and temporal relationships (e.g., behind, under, after, soon, next, later).

- 3E-RW 7 The student will
(SOL 3.7)
- a) identify text features and search tools;
 - b) locate facts or information in a familiar text.

Reporting Category: Demonstrate comprehension of fictional texts

- 3E-CF 1 The student will
(SOL 2.8)
- a) identify the adventures or experiences of a character(s) in a familiar story;
 - b) identify characters and settings in a familiar story;
 - c) independently engage in exploring a book or navigating pages in a multimedia book;
 - d) retell familiar stories from diverse cultures, including two or more elements from different parts of the story;
 - e) identify the actions and feelings of the characters in a familiar story;
 - f) determine the beginning and ending of a story;
 - g) use illustrations in print or digital text to identify characters and setting;
 - h) identify similarities in two versions of the same story;
 - i) identify parts of illustrations that depict a particular mood, setting, or character;
 - j) ask and answer questions about details from a fictional text read aloud or information presented orally or through other media.

- 3E-CF 2 The student will
(SOL 3.5)
- a) identify details in familiar stories;
 - b) identify rhyming words or repeated phrases in a familiar story, poem, or song;
 - c) identify purpose of a fictional text;
 - d) answer questions to demonstrate understanding of fictional text;
 - e) retell stories, including fables, folktales, and myths from diverse cultures including details from the text;
 - f) identify the traits, motivations, or feelings of characters in a story;
 - g) identify similarities in the settings of two stories by the same author;
 - h) list a progression of a series of events in a fictional text.

Reporting Category: Demonstrate comprehension of nonfiction texts

- 3E-CN 1 The student will
(SOL 2.9)
- a) identify individuals, events, or ideas in a familiar informational text;
 - b) match similar parts of two nonfiction texts on the same topic;
 - c) identify events or ideas in a familiar nonfiction text;
 - d) sustain attention to a variety of reading materials reflecting a variety of nonfiction text genre;
 - e) answer *who* and *what* questions to demonstrate understanding of details in a familiar nonfiction text;
 - f) identify the topic of the nonfiction text;
 - g) sequence at least two steps in a procedure or ideas/incidents in an event;
 - h) demonstrate understanding of how images relate to a familiar informational text;
 - i) identify a common element between two nonfiction texts;
 - j) identify similarities of two resources on the same topic.
- 3E-CN 2 The student will
(SOL 3.6)
- a) answer *who* and *where* questions to demonstrate understanding of details in a familiar nonfiction text;
 - b) identify a detail of a nonfiction text;
 - c) demonstrate an understanding of nonfiction text by connecting a visual element.

GRADE 4**Reporting Category: Use word analysis strategies and word reference materials**

- 4E-RW 1 The student will
(SOL 4.4)
- a) apply letter-sound knowledge by using first letter plus context to identify unfamiliar words;
 - b) decode single-syllable words with common spelling patterns (consonant-vowel-consonant [CVC] or high-frequency rhymes);
 - c) use newly acquired vocabulary drawn from reading and other content areas;
 - d) demonstrate understanding of opposites.

Reporting Category: Demonstrate comprehension of fictional texts

- 4E-CF 1 The student will
(SOL 4.5)
- a) use details from the text to retell what the text says;
 - b) determine the main idea of a fictional text;
 - c) use details from fictional text to describe a character in a story;
 - d) make connection between fictional text and visual or oral presentations;
 - e) determine meaning of words in context in fictional text.

Reporting Category: Demonstrate comprehension of nonfiction texts

- 4E-CN 1 The student will
(SOL 4.6)
- a) use details from the nonfiction text to retell what the text says;
 - b) determine main idea of a nonfiction text;
 - c) identify the chronological structure of a text (first, then, next);
 - d) interpret information presented visually and orally;
 - e) identify the author's purpose.

GRADE 5**Reporting Category: Use word analysis strategies and word reference materials**

- 5E-RW 1 The student will
(SOL 5.4)
- a) after listening to or reading a familiar text, determine the meanings of words and phrases;
 - b) apply phonics and word analysis skills in decoding words by decoding two-syllable words;
 - c) read more than 20 common high-frequency words;
 - d) use context clues to determine the meaning of vocabulary words drawn from reading and other content areas;
 - e) demonstrate understanding of word relationships by using simple, common idioms (e.g., *You bet!*, *It's a deal.*, *We're cool.*);
 - f) demonstrate understanding of content-specific words.

Reporting Category: Demonstrate comprehension of fictional texts

- 5E-CF 1 The student will
(SOL 5.5)
- a) identify words in the text to answer a question about explicit information in fictional text;
 - b) identify the central idea or theme of a familiar story, drama, or poem;
 - c) read fictional text comprised of familiar words with accuracy and understanding.

Reporting Category: Demonstrate comprehension of nonfiction texts

- 5E-CN 1 The student will
(SOL 5.6)
- when given nonfiction text, identify the main ideas that are supported by the key details;
 - make connections between two individuals or events/actions in a nonfiction text;
 - identify the beginning, middle, and end of a nonfiction text with a clear sequential structure;
 - given two pieces of information on the same event or topic, note what is the same.

GRADE 6**Reporting Category: Use word analysis strategies and word reference materials**

- 6E-RW 1 The student will
(SOL 6.4)
- determine the meaning of simple idioms and figures of speech as they are used in a text;
 - use context clues to determine the meaning of vocabulary words drawn from reading and other content areas;
 - seek clarification and meaning support when unfamiliar words are encountered while reading by using word reference materials;
 - demonstrate word relationships by interpreting similes (e.g., *the man was as big as a tree.*).

Reporting Category: Demonstrate comprehension of fictional texts

- 6E-CF 1 The student will
(SOL 6.5)
- determine what a fictional text says explicitly as well as what simple inferences should be drawn;
 - determine the theme or central idea of a familiar story and identify details that relate to it;
 - identify the episodes or significant events in a story or drama;
 - identify the progression of a key individual, event, or idea throughout a fictional text.

Reporting Category: Demonstrate comprehension of nonfiction texts

- 6E-CN 1 The student will
(SOL 6.6)
- analyze a nonfiction text to determine what it says explicitly as well as what inferences should be drawn;
 - determine the central idea of a short nonfiction passage and details or facts related to it;
 - use content words and phrases from nonfiction text.

GRADE 7**Reporting Category: Use word analysis strategies and word reference materials**

- 7E-RW 1 The student will
(SOL 7.4)
- use rhyme and other repetitions of words or sounds (e.g., alliteration) to support understanding of a poem or a section of a story or drama;
 - determine the meaning of words and phrases;
 - use context clues to determine the meaning of vocabulary words drawn from reading and other content areas;
 - seek clarification and meaning support when unfamiliar words are encountered while reading by using word reference materials;
 - demonstrate an understanding of word relationships by using synonyms and antonyms.

Reporting Category: Demonstrate comprehension of fictional texts

- 7E-CF 1 The student will

- (SOL 7.5)
- a) cite text to draw inferences from stories and poems;
 - b) determine the theme or central idea of a fictional text and identify the details that relate to it;
 - c) recognize the relationship of two story elements;
 - d) determine how poetry form and structure contributes to its meaning;
 - e) identify how a character's point of view is the same or different from another character.

Reporting Category: Demonstrate comprehension of nonfiction texts

- 7E-CN 1 The student will
(SOL 7.6)
- a) cite text to draw inferences from informational text;
 - b) determine two central ideas that progress throughout a nonfiction text;
 - c) determine how headings, key words, and key phrases relate to the topic of a nonfiction text;
 - d) determine author's point of view in nonfiction text and compare to own point of view;
 - e) use content words and phrases from a nonfiction text.

GRADE 8

Reporting Category: Use word analysis strategies and word reference materials

- 8E-RW 1 The student will
(SOL 8.4)
- a) determine meanings of words and phrases in literature including figurative language;
 - b) demonstrate knowledge of new vocabulary drawn from reading and other content areas;
 - c) seek clarification and meaning support when unfamiliar words are encountered while reading by using word reference materials;
 - d) demonstrate an understanding of word relationships by using multiple meaning words;
 - e) acquire and use content words and phrases.

Reporting Category: Demonstrate comprehension of fictional texts

- 8E-CF 1 The student will
(SOL 8.5)
- a) cite text to support inferences from stories and poems;
 - b) provide a summary of a familiar fictional text;
 - c) identify cause and effect relationships in a story or drama;
 - d) compare and contrast the structure of two or more fictional texts;
 - e) identify and ask questions that clarify various viewpoints in a fictional text;
 - f) make connections between key individuals or events in a fictional text.

Reporting Category: Demonstrate comprehension of nonfiction texts

- 8E-CN 1 The student will
(SOL 8.6)
- a) cite text to support inferences from informational text;
 - b) provide a summary of familiar informational text;
 - c) determine meanings of words and phrases in informational text including figurative language;
 - d) determine the role of sentences in a paragraph (e.g., topic sentence, supporting details, and examples) in nonfiction text;
 - e) determine an author's purpose or point of view in nonfiction text;
 - f) determine whether claims in a text are fact or opinion;
 - g) compare and contrast the key information in two different nonfiction texts on the same topic.

High School

Reporting Category: Use word analysis strategies and word reference materials

- HSE-RW 1
(SOL 9.3) The student will
- determine the meaning of words and phrases as they are used in a text, including common analogies and figures of speech;
 - determine the meaning of words and phrases as they are used in informational text including figurative language;
 - determine or clarify the meaning of unknown and multiple-meaning words by using context.
- HSE-RW 2
(SOL 10.3) The student will
- consult reference materials (dictionaries, online vocabulary supports) to clarify meaning of unfamiliar words encountered when reading;
 - demonstrate understanding of multiple-meaning words and figurative language;
 - acquire and use content words and phrases.
- HSE-RW 3
(SOL 11.3) The student will
- determine how words or phrases with multiple meanings have an impact on meaning or tone of a text;
 - determine meanings of words or phrases within an informational text;
 - demonstrate knowledge of the meaning of words and phrases from reading and other content areas by using context;
 - demonstrate understanding of figurative language and word relationships by interpreting simple figures of speech encountered while reading;
 - demonstrate understanding of words and phrases by using authentic texts (e.g., resumes, job descriptions, tasks instructions).

Reporting Category: Demonstrate comprehension of fictional texts

- HSE-CF 1
(SOL 9.4) The student will
- determine which citations demonstrate what the text says explicitly as well as inferences drawn from the text;
 - determine the central idea of the fictional text and select details that relate to it to retell the text;
 - describe interactions between characters in fictional text;
 - determine sequence of events in a story or drama;
 - identify when an author references one fictional text to another text;
 - provide a summary of the fictional text;
 - determine how the author's choice of where to end the story contributes to the meaning.
- HSE-CF 2
(SOL 10.4) The student will
- connect the experiences of characters in a story or drama from outside of the U.S. with personal experience;
 - cite textual evidence to determine where the fictional text leaves matters uncertain;
 - compare the representation of a subject or topic in two different artistic mediums (e.g., poetry and illustration).
- HSE-CF 3
(SOL 11.4) The student will
- identify statements that support an argument in fictional text;
 - explain how characters develop over the course of a story;
 - identify the intended meaning to match what an author wrote in fictional text;
 - compare two or more interpretations (e.g., recorded or live production of a play or recorded novel or poetry) of a story, drama, or poem;
 - compare and contrast elements of American literature to other literary works (e.g., compare themes, topics, locations, context, and point of view).

Reporting Category: Demonstrate comprehension of nonfiction texts

- HSE-CN 1
(SOL 9.5)
- The student will
- determine which citations demonstrate what the nonfiction text says explicitly as well as inferentially;
 - determine central idea of the nonfiction text and select details to support it;
 - determine connections drawn between ideas or events in informational text;
 - determine which sentences in a nonfiction text support the claims of the author.
- HSE-CN 2
(SOL 10.5)
- The student will
- determine an author's purpose or point of view in a nonfiction text;
 - determine whether a claim made by a speaker is credible (e.g., fact or opinion; supported or unsupported);
 - analyze information presented in different media on related topics to answer questions or solve problems.
- HSE-CN 3
(SOL 11.5)
- The student will
- use U.S. documents of historical and literary significance to clarify understanding of concepts;
 - cite textual evidence to determine where informational text leaves matters uncertain;
 - provide a summary of an informational text;
 - explain how specific events develop over the course of the nonfiction text;
 - determine how the author's choice of where to make an argument contributes to the meaning;
 - determine how the author's style affects the purpose of the nonfiction text;
 - explain how U.S. texts inform citizen's rights;
 - determine the purposes of foundational U.S. documents of historical significance.

Teachers may use the *Writing ASOL Summary Matrix* during the initial development of the student's instruction and assessment plan to track the learning progression of the student throughout the year and for planning units and lessons.

NOTE: An ASOL from the grade level of enrollment must be selected for each reporting category for inclusion in the Collection of Evidence. The level of performance that is appropriate for the student must be selected for each ASOL using the performance levels indicated below:

- **Level I** — The ASOL is demonstrated with significant support and modification.
- **Level II** — The ASOL is partially demonstrated.
- **Level III** — The ASOL is fully demonstrated.

Samples of *Writing* ASOL showing each performance level are provided in Appendix E.

**Writing ASOL Summary Matrix
Based on the 2010 English Standards of Learning**

Reporting Category	Grade 8	High School
Research, plan, compose, and revise for a variety of purposes (E-WP)	8E-WP 1 8E-WP 2 8E-WP 3 8E-WP 4 8E-WP 5 8E-WP 6	HSE-WP 1 HSE-WP 2 HSE-WP 3 HSE-WP 4 HSE-WP 5 HSE-WP 6
Edit for correct use of language capitalization punctuation and spelling (E-WE)	8E-WE 1 8E-WE 2 8E-WE 3	HSE-WE 1 HSE-WE 2 HSE-WE 3 HSE-WE 4

WRITING ALIGNED STANDARDS OF LEARNING

GRADE 8

Reporting Category: Research, plan, compose, and revise for a variety of purposes

- 8E-WP 1
(SOL 6.7) The student will
- write to convey ideas and information including facts, details, and other information;
 - write about an event or personal experience by introducing the event or experience, at least one character, and two or more events in sequence;
 - plan by brainstorming and revise own writing by adding more information;
 - use content specific vocabulary when writing about a topic.
- 8E-WP 2
(SOL 6.9) The student will
- write a research report to answer a question based on two or more sources of information;
 - identify quotes from print or digital sources that provide information about a topic.
- 8E-WP 3
(SOL 7.7) The student will
- write a persuasive report and support it with reasons or other relevant evidence;
 - write to convey ideas and information including facts, details, and other information as well as graphics and multimedia as needed;
 - write routinely for a variety of tasks, purposes, and audiences.
- 8E-WP 4
(SOL 7.9) The student will
- use technology, including the Internet, to produce written work or research report;
 - research to answer a question based on multiple sources of information;
 - use information from literary and informational text to support writing (e.g., “Recognize the difference between fictional characters and nonfictional characters.” “Delineate the specific claims in a text.”);
 - use information from literary or informational text to support writing by using specific claims in a text.
- 8E-WP 5
(SOL 8.7) The student will
- write an argument to support a claim with one clear reason or piece of evidence;
 - write to convey ideas and information clearly including facts, details, and other information;
 - produce writing that is appropriate for the task, purpose, or audience.
- 8E-WP 6
(SOL 8.9) The student will
- write a short research report to pose and answer questions based on one source of information;
 - select quotes from multiple print or digital sources that provide important information about a topic;
 - use information from literary and informational text to support writing (e.g., “Compare and contrast themes, patterns of events, or characters across two or more stories or dramas.” “Determine whether claims in a text are fact or opinion.”).

Reporting Category: Edit for correct use of language, capitalization, punctuation, and spelling

- 8E-WE 1
(SOL 6.8) The student will
- a) use standard English rules when writing by using question marks at the end of written questions.
- 8E-WE 2
(SOL 7.8) The student will
- a) use standard English rules when writing by using ending punctuation when writing a sentence or question;
 - b) spell words phonetically, drawing on knowledge of letter-sound relationships and/or common spelling patterns.
- 8E-WE 3
(SOL 8.8) The student will
- a) use standard English rules when writing by using ending punctuation and capitalization when writing a sentence or question.

HIGH SCHOOL

Reporting Category: Research, plan, compose, and revise for a variety of purposes

- HSE-WP 1
(SOL 9.6) The student will
- a) write about a personal opinion and give more than one reason supporting or rejecting the claim;
 - b) write to convey ideas and information using clear organization and including facts, details, and other information as well as graphics and multimedia as needed;
 - c) write about an event or personal experience by introducing the event or experience, at least one character, and describing multiple events in sequence;
 - d) produce writing that is appropriate to a particular task, purpose, and audience;
 - e) develop writing by planning and revising own writing by adding more information.
- HSE-WP 2
(SOL 9.8) The student will
- a) write a short research report to answer questions using multiple sources of information;
 - b) use knowledge of language to achieve desired meaning when writing;
 - c) write and revise work so that it communicates clearly to the intended audience.
- HSE-WP 3
(SOL 10.6) The student will
- a) write routinely over extended time frames (time for research, reflection, and revision) for a range of tasks, purposes, and audiences.
- HSE-WP 4
(SOL 10.8) The student will
- a) select information from multiple sources and use the information to write answers to questions.
- HSE-WP 5
(SOL 11.6) The student will
- a) write to express opinion with supporting information about a topic or text and a concluding statement;
 - b) develop and strengthen writing as needed by planning, revising, editing, and rewriting.
- HSE-WP 6
(SOL 11.8) The student will
- a) use technology, including the Internet, to produce, publish and update an individual writing project;
 - b) write a short research report to answer questions posed by self and others using multiple sources of information;
 - c) cite evidence from literary or informational texts.

Reporting Category: Edit for correct use of language, capitalization, punctuation, and spelling

- HSE-WE 1
(SOL 9.7) The student will
- a) use standard English rules by using correct punctuation when writing;
 - b) spell most single-syllable words correctly and apply knowledge of word chunks in spelling longer words.
- HSE-WE 2
(SOL10.7) The student will
- a) peer edit writing for correct grammar, capitalization, punctuation, spelling, sentence structure, and paragraphing.
- HSE-WE 3
(SOL 11.7) The student will
- a) apply conventions of English grammar rules to convey desired meaning in writing;
 - b) use knowledge of language to achieve desired meaning when writing by varying sentence structure using a variety of simple and compound sentence structure.
- HSE-WE 4
(SOL 11.8) The student will
- a) edit writing for grammatically correct use of language, spelling, punctuation, capitalization, and sentence/paragraph structure.

Teachers may use the *Mathematics ASOL Summary Matrix* during the initial development of the student's instruction and assessment plan to track the learning progression of the student throughout the year and for planning units and lessons.

NOTE: An ASOL from the grade level of enrollment must be selected for each reporting category for inclusion in the Collection of Evidence. The level of performance that is appropriate for the student must be selected for each ASOL using the performance levels indicated below:

- **Level I** — The ASOL is demonstrated with significant support and modification.
- **Level II** — The ASOL is partially demonstrated.
- **Level III** — The ASOL is fully demonstrated.

Samples of *Mathematics* ASOL showing each performance level are provided in Appendix E.

Grades 3–8 *Mathematics* ASOL Summary Matrix Based on the 2009 *Mathematics* Standards of Learning

Reporting Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Number, Number Sense, Computation and Estimation (M-NSCE)	3M-NSCE 1 3M-NSCE 2 3M-NSCE 3 3M-NSCE 4 3M-NSCE 5 3M-NSCE 6 3M-NSCE 7	4M-NSCE 1 4M-NSCE 2 4M-NSCE 3 4M-NSCE 4 4M-NSCE 5	5M-NSCE 1 5M-NSCE 2 5M-NSCE 3 5M-NSCE 4	6M-NSCE 1 6M-NSCE 2 6M-NSCE 3 6M-NSCE 4 6M-NSCE 5	7M-NSCE 1 7M-NSCE 2 7M-NSCE 3	8M-NSCE 1 8M-NSCE 2 8M-NSCE 3
Measurement and Geometry (M-MG)	3M-MG 1 3M-MG 2 3M-MG 3 3M-MG 4	4M-MG 1 4M-MG 2 4M-MG 3	5M-MG 1	6M-MG 1	7M-MG 1 7M-MG 2	8M-MG 1 8M-MG 2 8M-MG 3
Probability, Statistics, Patterns, Functions, and Algebra (M-PSPFA)	3M-PSPFA 1 3M-PSPFA 2 3M-PSPFA 3	4M-PSPFA 1	5M-PSPFA 1 5M-PSPFA 2	6M-PSPFA 1 6M-PSPFA 2 6M-PSPFA 3	7M-PSPFA 1 7M-PSPFA 2 7M-PSPFA 3	8M-PSPFA 1 8M-PSPFA 2 8M-PSPFA 3 8M-PSPFA 4

High School *Mathematics* ASOL Summary Matrix Based on the 2009 *Mathematics* Standards of Learning

Reporting Category	High School
Expressions and Operations (M-EO)	HSM-EO 1 HSM-EO 2
Equations and Inequalities (M-EI)	HSM-EI 1 HSM-EI 2 HSM-EI 3
Functions and Statistics (M-FS)	HSM-FS 1 HSM-FS 2 HSM-FS 3 HSM-FS 4

MATHEMATICS ALIGNED STANDARDS OF LEARNING

GRADE 3

Reporting Category: Number, Number Sense, Computation and Estimation

- 3M-NSCE 1 The student will
(SOL 3.1) a) identify and write numerals 0 to 30;
 b) identify the place value of tens on a number line between the numbers 0 to 30.
- 3M-NSCE 2 The student will
(SOL 3.2) a) solve addition and subtraction problems when result is unknown with number 0–30.
- 3M-NSCE 3 The student will
(SOL 3.3) a) differentiate a fractional part from a whole;
 b) recognize that shapes can be partitioned into equal areas.
- 3M-NSCE 4 The student will
(SOL 3.4) a) add to solve single-step story problems from 0–30;
 b) identify place value to tens.
- 3M-NSCE 5 The student will
(SOL 3.5) a) use addition to find the total number of objects arranged within equal groups up to a total of 10;
 b) count by tens using money.
- 3M-NSCE 6 The student will
(SOL 3.6) a) use repeated addition and equal groups to find the total number of objects to find the sum.
- 3M-NSCE 7 The student will
(SOL 3.7) a) differentiate between whole, half, and fourth.

Reporting Category: Measurement and Geometry

- 3M-MG 1 The student will
(SOL 3.8) a) identify coins (penny, nickel, dime, quarter) and their values.
- 3M-MG 2 The student will
(SOL 3.9) a) order by length using non-standard units;
 b) identify standard units of measure for mass and volume;
 c) measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks.
- 3M-MG 3 The student will
(SOL 3.11) a) tell time to the hour on a digital clock.
- 3M-MG 4 The student will
(SOL 3.14) a) recognize that shapes in different categories can share attributes.

Reporting Category: Probability, Statistics, Patterns, Functions, and Algebra

- 3M-PSPFA 1 The student will
(SOL 3.17) a) create picture graphs from collected measurement data;
 b) use picture or bar graph data to answer questions;
 c) insert data into a preconstructed bar graph template;
 d) interpret data from a variety of graphs to answer questions.
- 3M-PSPFA 2 The student will
(SOL 3.19) a) identify arithmetic patterns.
- 3M-PSPFA 3 The student will
(SOL 3.20) a) demonstrate the connection between repeated addition and multiplication.

GRADE 4

Reporting Category: Number, Number Sense, Computation and Estimation

- 4M-NSCE 1 The student will
(SOL 4.1) a) compare numbers to each other based on place value groups by composing and decomposing to 50;
 b) compare whole numbers (<, >, =);
 c) round one-and two-digit whole numbers from 0–50 to the nearest 10.
- 4M-NSCE 2 The student will
(SOL 4.2) a) represent equivalent fractions (e.g., $2/4 = 1/2$).
- 4M-NSCE 3 The student will
(SOL 4.3) a) round money to a nearest dollar.
- 4M-NSCE 4 The student will
(SOL 4.4) a) solve single-step word problems using addition or subtraction;
 b) add and subtract double-digit whole numbers.
- 4M-NSCE 5 The student will
(SOL 4.5) a) show one way to arrive at product.

Reporting Category: Measurement and Geometry

- 4M-MG 1 The student will
(SOL 4.6) a) identify smaller measurement units that divide a larger unit within a measurement system.
- 4M-MG 2 The student will
(SOL 4.9) a) tell time to the half hour using a digital or to the hour using an analog clock.
- 4M-MG 3 The student will
(SOL 4.10) a) distinguish between parallel and intersecting lines.

Reporting Category: Probability, Statistics, Patterns, Functions and Algebra

- 4M-PSPFA 1 The student will
(SOL 4.15) a) use repeating patterns to make predictions.

GRADE 5

Reporting Category: Number, Number Sense, Computation and Estimation

- 5M-NSCE 1 The student will
(SOL 5.1)
- a) compare numbers to each other based on place value groups by composing and decomposing to 99;
 - b) recognize patterns in the number of zeros when multiplying a number by powers of 10;
 - c) round two-digit whole numbers to the nearest 10 from 0–90.
- 5M-NSCE 2 The student will
(SOL 5.4)
- a) multiply whole numbers up to 5;
 - b) apply the concept of fair share and equal shares to divide.
- 5M-NSCE 3 The student will
(SOL 5.5)
- a) illustrate the concept of division using fair and equal shares.
- 5M-NSCE 4 The student will
(SOL 5.6)
- a) differentiate between halves, fourths, and eighths;
 - b) solve two-step word problems using addition and subtraction of whole numbers.

Reporting Category: Measurement and Geometry

- 5M-MG 1 The student will
(SOL 5.8)
- a) use customary units to measure weight and length of objects;
 - b) determine volume of a cube by counting units of measure.

Reporting Category: Probability, Statistics, Patterns, Functions, and Algebra

- 5M-PSPFA 1 The student will
(SOL 5.16)
- a) compare two sets of data within a single data display such as a picture graph, line plot, or bar graph;
 - b) represent and interpret data on a picture, line plot, or bar graph given a model and a graph to complete.
- 5M-PSPFA 2 The student will
(SOL 5.17)
- a) identify and extend numerical patterns.

GRADE 6

Reporting Category: Number, Number Sense, Computation and Estimation

- 6M-NSCE 1 The student will
(SOL 6.1)
- a) demonstrate a simple ratio relationship.
- 6M-NSCE 2 The student will
(SOL 6.3)
- a) understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).
- 6M-NSCE 3 The student will
(SOL 6.4)
- a) compare the relationships between two unit fractions.
- 6M-NSCE 4 The student will
(SOL 6.7)
- a) solve two factor multiplication problems with products up to 50 using concrete objects and/or calculators.
- 6M-NSCE 5 The student will
(SOL 6.8)
- a) identify equivalent number sentences.

Reporting Category: Measurement and Geometry

- 6M-MG 1 The student will

- (SOL 6.10) a) demonstrate area;
b) identify common three-dimensional shapes.

Reporting Category: Probability, Statistics, Patterns, Functions, and Algebra

- 6M-PSPFA 1 The student will
(SOL 6.14) a) display data on a graph or table that shows variability in the data;
b) summarize data distributions on a graph or table;
c) answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student.
- 6M-PSPFA 2 The student will
(SOL 6.18) a) match an equation to a real-world problem in which variables are used to represent numbers.
- 6M-PSPFA 3 The student will
(SOL 6.19) a) demonstrate understanding of equivalent expressions.

GRADE 7

Reporting Category: Number, Number Sense, Computation and Estimation

- 7M-NSCE 1 The student will
(SOL 7.1) a) add fractions with like denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
- 7M-NSCE 2 The student will
(SOL 7.3) a) solve multiplication problems with products to 100;
b) solve division problems with divisors up to five and also with a divisor of 10 without remainders;
c) demonstrate the value of various money amounts using decimals.
- 7M-NSCE 3 The student will
(SOL 7.4) a) use a ratio to model or describe a relationship;
b) use the concept of equality with models to solve one-step addition and subtraction equations.

Reporting Category: Measurement and Geometry

- 7M-MG 1 The student will
(SOL 7.5) a) find the area of a rectangle given the length and width using a model.
- 7M-MG 2 The student will
(SOL 7.8) a) draw or classify and recognize basic two-dimensional geometric shapes without a model (circle, triangle, rectangle/square).

Reporting Category: Probability, Statistics, Patterns, Functions, and Algebra

- 7M-PSPFA 1 The student will
(SOL 7.9) a) describe the probability of events occurring as possible or impossible.
- 7M-PSPFA 2 The student will
(SOL 7.13) a) use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent.
- 7M-PSPFA 3 The student will
(SOL 7.16) a) compare fractions to fractions and decimals to decimals using rational numbers less than one.

GRADE 8

Reporting Category: Number, Number Sense, Computation and Estimation

- 8M-NSCE 1 The student will
(SOL 8.1) a) compose and decompose numbers to three digits.
- 8M-NSCE 2 The student will
(SOL 8.2) a) subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.
- 8M-NSCE 3 The student will
(SOL 8.5) a) represent different forms and values of decimal numbers using fractions with numerators that are multiples of five and a denominator of 100.

Reporting Category: Measurement and Geometry

- 8M-MG 1 The student will
(SOL 8.6) a) compare measures of angles to a right angle (greater than, less than, or equal to).
- 8M-MG 2 The student will
(SOL 8.7) a) identify volume of common measures (cups, pints, quarts, gallons, etc.).
- 8M-MG 3 The student will
(SOL 8.8) a) identify similarity and congruence (same) in objects and shapes containing angles without transformations;
b) identify similar shapes with and without rotation.

Reporting Category: Probability, Statistics, Patterns, Functions, and Algebra

- 8M-PSPFA 1 The student will
(SOL 8.14) a) determine the values or rule of a function using a graph or a table;
b) describe how a graph represents a relationship between two quantities.
- 8M-PSPFA 2 The student will
(SOL 8.15) a) solve algebraic equations using simple addition and subtraction.
- 8M-PSPFA 3 The student will
(SOL 8.16) a) graph a simple ratio by connecting the origin to a point representing the ratio in the form of y/x . For example, when given a ratio in standard form (2:1), convert to $2/1$, and plot the point (1,2).
- 8M-PSPFA 4 The student will
(SOL 8.17) a) identify the missing number, when given a function table.

High School

Reporting Category: Expressions and Operations

- HSM-EO 1 The student will
(SOL A.1) a) match an algebraic expression involving one operation to represent a given word expression with an illustration.
- HSM-EO 2 The student will
(SOL A.2) a) solve division problems with remainders using concrete objects;
b) solve simple one-step equations (multiplication and division) with a variable.

Reporting Category: Equations and Inequalities

- HSM-EI 1
(SOL A.4) The student will
a) solve an algebraic equation using subtraction.
- HSM-EI 2
(SOL A.5) The student will
a) solve one-step inequalities.
- HSM-EI 3
(SOL A.6) The student will
a) determine the two pieces of information that are plotted on a graph of an equation with two variables that form a line when plotted;
b) interpret rate of change (e.g., higher/lower, faster/slower).

Reporting Category: Functions and statistics

- HSM-FS 1
(SOL A.7) The student will
a) use the concept of functions to solve problems;
b) select the appropriate graphical representation (first quadrant) given a situation involving constant rate of change.
- HSM-FS 2
(SOL A.9) The student will
a) indicate general trends on a graph or chart.
- HSM-FS 3
(SOL A.10) The student will
a) given data, construct a simple graph (table, line, pie, bar, or picture) and answer questions about the data.
- HSM-FS 4
(SOL A.11) The student will
a) model a simple linear function such as $y = mx$ to show functions grow by equal factors over equal intervals.

Teachers may use the *Science ASOL Summary Matrix* during the initial development of the student's instruction and assessment plan to track the learning progression of the student throughout the year and for planning units and lessons.

NOTE: An ASOL from the grade level of enrollment must be selected for each reporting category for inclusion in the Collection of Evidence. The level of performance that is appropriate for the student must be selected for each ASOL using the performance levels indicated below:

- **Level I** — The ASOL is demonstrated with significant support and modification.
- **Level II** — The ASOL is partially demonstrated.
- **Level III** — The ASOL is fully demonstrated.

Samples of *Science* ASOL showing each performance level are provided in Appendix E.

Grade 5 Science ASOL Summary Matrix Based on the 2010 Science Standards of Learning

Reporting Category	Grade 5
Scientific Investigation (S-SI)	5S-SI 1 5S-SI 2
Force, Motion, Energy, and Matter (S-FME)	5S-FME 1 5S-FME 2 5S-FME 3 5S-FME 4 5S-FME 5
Life Processes and Living Systems (S-LPS)	5S-LPS 1 5S-LPS 2 5S-LPS 3 5S-LPS 4
Earth/Space Systems and Cycles (S-ESS)	5S-ESS 1 5S-ESS 2 5S-ESS 3 5S-ESS 4 5S-ESS 5 5S-ESS 6

**Grade 8 Science ASOL Summary Matrix
Based on the 2010 Science Standards of Learning**

Reporting Category	Grade 8
Scientific Investigation (S-SI)	8S-SI 1 8S-SI 2 8S-SI 3
Force, Motion, Energy, and Matter (S-FME)	8S-FME 1 8S-FME 2 8S-FME 3 8S-FME 4 8S-FME 5
Life Systems (S-LS)	8S-LS 1 8S-LS 2 8S-LS 3 8S-LS 4 8S-LS 5 8S-LS 6
Ecosystems (S-ECO)	8S-ECO 1 8S-ECO 2 8S-ECO 3 8S-ECO 4 8S-ECO 5 8S-ECO 6 8S-ECO 7
Earth and Space Systems (S-ESS)	8S-ESS 1 8S-ESS 2 8S-ESS 3 8S-ESS 4 8S-ESS 5 8S-ESS 6 8S-ESS 7

**High School Science ASOL Summary Matrix
Based on the 2010 Science Standards of Learning**

Reporting Category	High School
Scientific Investigation and the Nature of Science (S-SI)	HSS-SI 1 HSS-SI 2
Earth and Space Systems (S-ESS)	HSS-ESS 1 HSS-ESS 2 HSS-ESS 3
Earth Materials and Processes (S-EMP)	HSS-EMP 1 HSS-EMP 2 HSS-EMP 3 HSS-EMP 4
Cosmology, Origins, and Time (S-COT)	HSS-COT 1
Earth Resources and Human Interactions (S-ERH)	HSS-ERH 1 HSS-ERH 2 HSS-ERH 3

SCIENCE ALIGNED STANDARDS OF LEARNING

GRADE 5

Reporting Category: Scientific Investigation

- 5S-SI 1
(SOL 4.1)
- The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which
- a) distinctions are made among observations, conclusions, inferences, and predictions;
 - b) objects or events are classified and arranged according to characteristics or properties;
 - c) appropriate instruments are selected and used to measure length, mass, volume, and temperature in metric units;
 - d) appropriate instruments are selected and used to measure elapsed time;
 - e) predictions and inferences are made, and conclusions are drawn based on data from a variety of sources;
 - f) independent and dependent variables are identified;
 - g) constants in an experimental situation are identified;
 - h) hypotheses are developed as cause and effect relationships;
 - i) data are collected, recorded, analyzed, and displayed using bar and basic line graphs;
 - j) numerical data that are contradictory or unusual in experimental results are recognized;
 - k) data are communicated with simple graphs, pictures, written statements, and numbers;
 - l) models are constructed to clarify explanations, demonstrate relationships, and solve needs.

- 5S-SI 2
(SOL 5.1)
- The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which
- a) items such as rocks, minerals, and organisms are identified using various classification keys;
 - b) estimates are made and accurate measurements of length, mass, volume, and temperature are made in metric units using proper tools;
 - c) estimates are made and accurate measurements of elapsed time are made using proper tools;
 - d) hypotheses are formed from testable questions;
 - e) independent and dependent variables are identified;
 - f) constants in an experimental situation are identified;
 - g) data are collected, recorded, analyzed, and communicated using proper graphical representations and metric measurements;
 - h) predictions are made using patterns from data collected, and simple graphical data are generated;
 - i) inferences are made and conclusions are drawn;
 - j) models are constructed to clarify explanations, demonstrate relationships, and solve needs.

Reporting Category: Force, Motion, Energy, and Matter

- 5S-FME 1
(SOL 4.2)
- The student will investigate and understand characteristics and interactions of moving objects. Key concepts include
- a) motion is described by an object's direction and speed;
 - b) changes in motion are related to force and mass;
 - c) friction is a force that opposes motion;
 - d) moving objects have kinetic energy.

- 5S-FME 2 (SOL 4.3) The student will investigate and understand the characteristics of electricity. Key concepts include
- a) conductors and insulators;
 - b) basic circuits;
 - c) static electricity;
 - d) the ability of electrical energy to be transformed into light and motion, and to produce heat;
 - e) simple electromagnets and magnetism;
 - f) historical contributions in understanding electricity.
- 5S-FME 3 (SOL 5.2) The student will investigate and understand how sound is created and transmitted, and how it is used. Key concepts include
- a) compression waves;
 - b) vibration, compression, wavelength, frequency, amplitude;
 - c) the ability of different media (solids, liquids, and gases) to transmit sound;
 - d) uses and applications of sound waves.
- 5S-FME 4 (SOL 5.3) The student will investigate and understand basic characteristics of visible light and how it behaves. Key concepts include
- a) transverse waves;
 - b) the visible spectrum;
 - c) opaque, transparent, and translucent;
 - d) reflection of light from reflective surfaces;
 - e) refraction of light through water and prisms.
- 5S-FME 5 (SOL 5.4) The student will investigate and understand that matter is anything that has mass, and takes up space; and occurs as a solid, liquid, or gas. Key concepts include
- a) distinguishing properties of each phase of matter;
 - b) the effect of temperature on the phases of matter;
 - c) atoms and elements;
 - d) molecules, and compounds;
 - e) mixtures including solutions.

Reporting Category: Life Processes and Living Systems

- 5S-LPS 1 (SOL 4.4) The student will investigate and understand basic plant anatomy and life processes. Key concepts include
- a) the structures of typical plants and the function of each structure;
 - b) processes and structures involved with plant reproduction;
 - c) photosynthesis;
 - d) adaptations allow plants to satisfy life needs and respond to the environment.
- 5S-LPS 2 (SOL 4.5) The student will investigate and understand how plants and animals, including humans, in an ecosystem interact with one another and with the nonliving components in the ecosystem. Key concepts include
- a) plant and animal adaptations;
 - b) organization of populations, communities, and ecosystems and how they interrelate;
 - c) flow of energy through food webs;
 - d) habitats and niches;
 - e) changes in an organism's niche at various stages in its life cycle;
 - f) influences of human activity on ecosystems.
- 5S-LPS 3 (SOL 4.9) The student will investigate and understand important Virginia natural resources. Key concepts include
- a) animals and plants.
- 5S-LPS 4 The student will investigate and understand that organisms are made of one or

- (SOL 5.5) more cells and have distinguishing characteristics that play a vital role in the organism's ability to survive and thrive in its environment. Key concepts include
- a) basic cell structures and functions;
 - b) classification of organisms using physical characteristics, body structures, and behavior of the organism;
 - c) traits of organisms that allow them to survive in their environment.

Reporting Category: Earth/Space Systems and Cycles

- 5S-ESS 1
(SOL 4.6) The student will investigate and understand how weather conditions and phenomena occur and can be predicted. Key concepts include
- a) weather phenomena;
 - b) weather measurements and meteorological tools;
 - c) use of weather measurements and weather phenomena to make weather predictions.
- 5S-ESS 2
(SOL 4.7) The student will investigate and understand the organization of the solar system. Key concepts include
- a) the planets in the solar system;
 - b) the order of the planets in the solar system;
 - c) the relative sizes of the planets.
- 5S-ESS 3
(SOL 4.8) The student will investigate and understand the relationships among Earth, the moon, and the sun. Key concepts include
- a) the motions of Earth, the moon, and the sun;
 - b) the causes for Earth's seasons;
 - c) the causes for the phases of the moon;
 - d) the relative size, position, age, and makeup of Earth, the moon, and the sun;
 - e) historical contributions in understanding the Earth-moon-sun-system.
- 5S-ESS 4
(SOL 4.9) The student will investigate and understand important Virginia natural resources. Key concepts include
- a) watershed and water resources;
 - c) minerals, rocks, ores, and energy sources;
 - d) forests, soil, and land.
- 5S-ESS 5
(SOL 5.6) The student will investigate and understand characteristics of the ocean environment. Key concepts include
- a) geological characteristics;
 - b) physical characteristics;
 - c) ecological characteristics.
- 5S-ESS 6
(SOL 5.7) The student will investigate and understand how Earth's surface is constantly changing. Key concepts include
- a) identification of rock types;
 - b) the rock cycle and how transformations including between rocks occur;
 - c) Earth history and fossil evidence;
 - d) the basic structure of Earth's interior;
 - e) changes in Earth's crust due to plate tectonics;
 - f) weathering, erosion, and deposition;
 - g) human impact.

GRADE 8

Reporting Category: Scientific Investigation

- 8S-SI 1
(SOL 6.1) The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations which

- a) observations are made involving fine discrimination between similar objects and organisms;
- b) precise and approximate measurements are recorded;
- c) scale models are used to estimate distance, volume, and quantity;
- d) hypotheses are stated in ways that identify the independent and dependent variables;
- e) a method is devised to test the validity of predictions and inferences;
- f) one variable is manipulated over time, using many repeated trials;
- g) data are collected, recorded, analyzed, and reported using metric measurements and tools;
- h) data are analyzed and communicated through graphical representation;
- i) models and simulations are designed and used to illustrate and explain phenomena and systems.

8S-SI 2
(SOL LS.1)

The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- a) data are organized into tables showing repeated trials and means;
- b) a classification system is developed based on multiple attributes;
- c) triple beam and electronic balances, thermometers, metric rulers, graduated cylinders, and probeware are used to gather data;
- d) models and simulations are constructed and used to illustrate and explain;
- e) sources of experimental error are identified;
- f) dependent variables, independent variables, and constants are identified;
- g) variables are controlled to test hypotheses, and trials are repeated;
- h) data are organized, communicated through graphical representation, interpreted, and used to make predictions;
- i) patterns are identified in data and are interpreted and evaluated.

8S-SI 3
(SOL PS.1)

The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- a) chemicals and equipment are used safely;
- b) length, mass, volume, density, temperature, weight, and force are accurately measured;
- c) conversions are made among metric units, applying appropriate prefixes;
- d) triple beam and electronic balances, thermometers, metric rulers, graduated cylinders, probeware, and spring scales are used to gather data;
- e) numbers are expressed in scientific notation where appropriate;
- f) independent and dependent variables, constants, controls, and repeated trials are identified;
- g) data tables showing the independent and dependent variables, derived quantities, and the number of trials are constructed and interpreted;
- h) data tables for descriptive statistics showing specific measures of central tendency, the range of the data set, and the number of repeated trials are constructed and interpreted;
- i) frequency distributions, scatter plots, line plots, and histograms are constructed and interpreted;
- j) valid conclusions are made after analyzing data;
- k) research methods are used to investigate practical problems and questions;
- l) experimental results are presented in appropriate written form;
- m) models and simulations are constructed and used to illustrate and explain phenomena.

Reporting Category: Force, Motion, Energy, and Matter

8S-FME 1 The student will investigate and understand basic sources of energy, their origins,

- (SOL 6.2) transformations, and uses. Key concepts include
 a) potential and kinetic energy;
 e) energy transformations.
- 8S-FME 2 (SOL 6.4) The student will investigate and understand that all matter is made up of atoms. Key concepts include
 a) atoms consist of particles, including electrons, protons, and neutrons;
 b) atoms of a particular element are alike but are different from atoms of other elements;
 c) elements may be represented by chemical symbols;
 d) two or more atoms interact to form new substances, which are held together by electrical forces (bonds);
 e) compounds may be represented by chemical formulas;
 f) chemical equations can be used to model chemical changes;
 g) a limited number of elements comprise the largest portion of the solid Earth, living matter, the oceans, and the atmosphere.
- 8S-FME 3 (SOL 6.5) The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment. Key concepts include
 a) water as the universal solvent;
 b) the properties of water in all three phases.
- 8S-FME 4 (SOL 6.6) The student will investigate and understand the properties of air and the structure and dynamics of Earth's atmosphere. Key concepts include
 a) air as a mixture of gaseous elements and compounds.
- 8S-FME 5 (SOL PS.2) The student will investigate and understand the nature of matter. Key concepts include
 a) the particle theory of matter;
 b) elements, compounds, mixtures, acids, bases, and salts;
 c) solids, liquids, and gases;
 d) physical properties;
 e) chemical properties;
 f) characteristics of types of matter based on physical and chemical properties.

Reporting Category: Life Systems

- 8S-LS 1 (SOL LS.2) The student will investigate and understand that all living things are composed of cells. Key concepts include
 a) cell structure and organelles;
 b) similarities and differences between plant and animal cells;
 c) development of cell theory;
 d) cell division.
- 8S-LS 2 (SOL LS.3) The student will investigate and understand that living things show patterns of cellular organization. Key concepts include
 a) cells, tissues, organs, and systems;
 b) patterns of cell organization and their relationship to life processes in living things.
- 8S-LS 3 (SOL LS.4) The student will investigate and understand how organisms can be classified. Key concepts include
 a) the distinguishing characteristics of domains of organisms;
 b) the distinguishing characteristics of kingdoms of organisms;
 c) the distinguishing characteristics of major animal phyla and plant divisions;
 d) the characteristics that define a species.

- 8S-LS 4
(SOL LS.5) The student will investigate and understand the basic physical and chemical processes of photosynthesis and its importance to plant and animal life. Key concepts include
- a) energy transfer between sunlight and chlorophyll;
 - b) transformation of water and carbon dioxide into sugar and oxygen;
 - c) photosynthesis as the foundation of virtually all food webs.
- 8S-LS 5
(SOL LS.12) The student will investigate and understand that organisms reproduce and transmit genetic information to new generations. Key concepts include
- a) the structure and role of DNA;
 - b) the function of genes and chromosomes;
 - c) genotypes and phenotypes;
 - d) characteristics that can and cannot be inherited;
 - e) genetic engineering and its applications;
 - f) historical contributions and significance of discoveries related to genetics.
- 8S-LS 6
(SOL LS.13) The student will investigate and understand that populations of organisms change over time. Key concepts include
- a) the relationships of mutation, adaptation, natural selection, and extinction.

Reporting Category: Ecosystems

- 8S-ECO 1
(SOL 6.7) The student will investigate and understand the natural processes and human interactions that affect watershed systems. Key concepts include
- a) the health of ecosystems and the abiotic factors of a watershed;
 - b) the location and structure of Virginia's regional watershed systems;
 - c) divides, tributaries, river systems, and river and stream processes;
 - d) wetlands;
 - e) estuaries;
 - f) major conservation, health, and safety issues associated with watersheds;
 - g) water monitoring and analysis using field equipment including hand-held technology.
- 8S-ECO 2
(SOL LS.6) The student will investigate and understand that organisms within an ecosystem are dependent on one another and on nonliving components of the environment. Key concepts include
- a) the carbon, water, and nitrogen cycles;
 - b) interactions resulting in a flow of energy and matter throughout the system;
 - c) complex relationships within terrestrial, freshwater, and marine ecosystems;
 - d) energy flow in food webs and energy pyramids.
- 8S-ECO 3
(SOL LS.7) The student will investigate and understand that interactions exist among members of a population. Key concepts include
- a) competition, cooperation, social hierarchy, territorial imperative;
 - b) influence of behavior on a population.
- 8S-ECO 4
(SOL LS.8) The student will investigate and understand interactions among populations in a biological community. Key concepts include
- a) the relationships among producers, consumers, and decomposers in food webs;
 - b) the relationship between predators and prey;
 - c) competition and cooperation;
 - d) symbiotic relationships;
 - e) niches.
- 8S-ECO 5
(SOL LS.9) The student will investigate and understand how organisms adapt to biotic and abiotic factors in an ecosystem. Key concepts include
- a) differences between ecosystems and biomes;

- b) characteristics of land, marine, and freshwater ecosystems;
- c) adaptations that enable organisms to survive within a specific ecosystem.

8S-ECO 6
(SOL LS.10) The student will investigate and understand that ecosystems, communities, populations, and organisms are dynamic, change over time, and respond to daily, seasonal, and long-term changes in their environment. Key concepts include

- a) phototropism, hibernation, and dormancy;
- b) factors that increase or decrease population size;
- c) eutrophication, climate changes, and catastrophic disturbances.

8S-ECO 7
(SOL LS.11) The student will investigate and understand the relationships between ecosystem dynamics and human activity. Key concepts include

- a) food production and harvest;
- b) change in habitat size, quality, or structure;
- c) change in species competition;
- d) population disturbances and factors that threaten or enhance species survival;
- e) environmental issues.

Reporting Category: Earth and Space Systems

8S-ESS 1
(SOL 6.2) The student will investigate and understand basic sources of energy, their origins, transformations, and uses. Key concepts include

- b) the role of the sun in the formation of most energy sources on Earth;
- c) nonrenewable energy sources;
- d) renewable energy sources.

8S-ESS 2
(SOL 6.3) The student will investigate and understand the role of solar energy in driving most natural processes within the atmosphere, the hydrosphere, and on Earth's surface. Key concepts include

- a) Earth's energy budget;
- b) the role of radiation and convection in the distribution of energy;
- c) the motion of the atmosphere and the oceans;
- d) cloud formation;
- e) the role of thermal energy in weather-related phenomena including thunderstorms and hurricanes.

8S-ESS 3
(SOL 6.5) The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment. Key concepts include

- c) the action of water in physical and chemical weathering;
- d) the ability of large bodies of water to store thermal energy and moderate climate;
- e) the importance of water for agriculture, power generation, and public health;
- f) the importance of protecting and maintaining water resources.

8S-ESS 4
(SOL 6.6) The student will investigate and understand the properties of air and the structure and dynamics of Earth's atmosphere. Key concepts include

- b) pressure, temperature, and humidity;
- c) atmospheric changes with altitude;
- d) natural and human-caused changes to the atmosphere and the importance of protecting and maintaining air quality;
- e) the relationship of atmospheric measures and weather conditions;
- f) basic information from weather maps including fronts, systems, and basic measurements.

8S-ESS 5
(SOL 6.8) The student will investigate and understand the organization of the solar system and the interactions among the various bodies that comprise it. Key concepts include

- a) the sun, moon, Earth, other planets and their moons, dwarf planets, meteors, asteroids, and comets;

- b) relative size of and distance between planets;
- c) the role of gravity;
- d) revolution and rotation;
- e) the mechanics of day and night and the phases of the moon;
- f) the unique properties of Earth as a planet;
- g) the relationship of Earth's tilt and the seasons;
- h) the cause of tides;
- i) the history and technology of space exploration.

- 8S-ESS 6 (SOL 6.9) The student will investigate and understand public policy decisions relating to the environment. Key concepts include
- a) management of renewable resources;
 - b) management of nonrenewable resources;
 - c) the mitigation of land-use and environmental hazards through preventive measures;
 - d) cost/benefit tradeoffs in conservation policies.
- 8S-ESS 7 (SOL LS 13) The student will investigate and understand that populations of organisms change over time. Key concepts include
- b) evidence of evolution of different species in the fossil record;
 - c) how environmental influences, as well as genetic variation, can lead to diversity of organisms.

HIGH SCHOOL

Reporting Category: Scientific Investigation and the Nature of Science

- HSS-SI 1 (SOL ES.1) The student will plan and conduct investigations in which
- a) volume, area, mass, elapsed time, direction, temperature, pressure, distance, density, and changes in elevation/depth are calculated utilizing the most appropriate tools;
 - b) technologies, including computers, probeware, and geospatial technologies, are used to collect, analyze, and report data and to demonstrate concepts and simulate experimental conditions;
 - c) scales, diagrams, charts, graphs, tables, imagery, models, and profiles are constructed and interpreted;
 - d) maps and globes are read and interpreted, including location by latitude and longitude;
 - e) variables are manipulated with repeated trials.

- HSS-SI 2 (SOL ES.2) The student will demonstrate an understanding of the nature of science and scientific reasoning and logic. Key concepts include
- a) science explains and predicts the interactions and dynamics of complex Earth systems;
 - b) evidence is required to evaluate hypotheses and explanations;
 - c) observation and logic are essential for reaching a conclusion;
 - d) evidence is evaluated for scientific theories.

Reporting Category: Earth and Space Systems

- HSS-ESS 1 (SOL ES.3) The student will investigate and understand the characteristics of Earth and the solar system. Key concepts include
- a) position of Earth in the solar system;
 - b) sun-Earth-moon relationships (seasons, tides, and eclipses);
 - c) characteristics of the sun, planets and their moons, comets, meteors, and asteroids.
- HSS-ESS 2 (SOL ES.8) The student will investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans. Key concepts include

- c) relationships between groundwater zones, including saturated and unsaturated zones, and the water table;
- d) identification of sources of fresh water including rivers, springs, and aquifers, with reference to the hydrologic cycle.

HSS-ESS 3
(SOL ES.12) The student will investigate and understand that energy transfer between the sun and Earth and its atmosphere drives weather and climate on Earth. Key concepts include

- a) observation and collection of weather data;
- b) prediction of weather patterns;
- c) severe weather occurrences, such as tornadoes, hurricanes, and major storms;
- d) weather phenomena and the factors that affect climate including radiation, conduction, and convection.

Earth Materials and Processes

HSS-EMP 1
(SOL ES.4) The student will investigate and understand how to identify major rock-forming and ore minerals based on physical and chemical properties. Key concepts include

- a) hardness, color and streak, luster, cleavage, fracture, and unique properties.

HSS-EMP 2
(SOL ES.5) The student will investigate and understand the rock cycle as it relates to the origin and transformation of rock types and how to identify common rock types based on mineral composition and textures. Key concepts include

- a) igneous rocks;
- b) sedimentary rocks;
- c) metamorphic rocks.

HSS-EMP 3
(SOL ES.7) The student will investigate and understand geologic processes including plate tectonics. Key concepts include

- a) geologic processes and their resulting features;
- b) tectonic processes.

HSS-EMP 4
(SOL ES.8) The student will investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans. Key concepts include

- a) processes of soil development;
- b) development of karst topography.

Cosmology, Origins, and Time

HSS-COT 1
(SOL ES.9) The student will investigate and understand that many aspects of the history and evolution of Earth and life can be inferred by studying rocks and fossils. Key concepts include

- a) traces and remains of ancient, often extinct, life are preserved by various means in many sedimentary rocks;
- b) superposition, cross-cutting relationships, index fossils, and radioactive decay are methods of dating bodies of rock;
- c) absolute and relative dating have different applications but can be used together to determine the age of rocks and structures;
- d) rocks and fossils from many different geologic periods and epochs are found in Virginia.

Earth Resources and Human Interactions

HSS-ERH 1
(SOL ES.4) The student will investigate and understand how to identify major rock-forming and ore minerals based on physical and chemical properties. Key concepts include

- b) uses of minerals.

HSS-ERH 2
(SOL ES.6) The student will investigate and understand the differences between renewable and nonrenewable resources. Key concepts include

- a) fossil fuels, minerals, rocks, water, and vegetation;
- b) advantages and disadvantages of various energy sources;

- c) resources found in Virginia;
- d) environmental costs and benefits.

HSS-ERH 3
(SOL ES.8)

The student will investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans. Key concepts include

- e) dependence on freshwater resources and the effects of human usage on water quality;
- f) identification of the major watershed systems in Virginia, including the Chesapeake Bay and its tributaries.

Teachers may use the *History/Social Science ASOL Summary Matrix* during the initial development of the student's instruction and assessment plan to track the learning progression of the student throughout the year and for planning units and lessons.

NOTE: Teachers select one ASOL from each reporting category from the school group (Elementary, Middle, High) that corresponds to the student's grade of enrollment. VAAP participants must submit *History/Social Science* collections of evidence during the same administration as students participating in the SOL tests.

History/Social Science ASOL for high school students participating in the VAAP should be assessed at the grade level determined by the division. Please consult your division schedule or your DDOT.

NOTE: *History/Social Science* ASOL bullets used in a previous administration may not be repeated.

History/Social Science ASOL Summary Matrix
Based on the 2008 History/Social Science Standards of Learning

Reporting Category	Elementary School Grades 4 or 5		Middle School Grades 6, 7, or 8		High School Grades 9, 10, or 11
History (HS-H)	HS-H 1	HS-H 6	HS-H 12	HS-H 21	HS-H 30
	HS-H 2	HS-H 7	HS-H 13	HS-H 22	HS-H 31
	HS-H 3	HS-H 8	HS-H 14	HS-H 23	HS-H 32
	HS-H 4	HS-H 9	HS-H 15	HS-H 24	HS-H 33
	HS-H 5	HS-H 10	HS-H 16	HS-H 25	HS-H 34
		HS-H 11	HS-H 17	HS-H 26	HS-H 35
			HS-H 18	HS-H 27	HS-H 36
			HS-H 19	HS-H 28	HS-H 37
			HS-H 20	HS-H 29	HS-H 38
Geography (HS-G)	HS-G 1	HS-G 5	HS-G 10	HS-G 13	HS-G 16
	HS-G 2	HS-G 6	HS-G 11	HS-G 14	HS-G 17
	HS-G 3	HS-G 7	HS-G 12	HS-G 15	HS-G 18
	HS-G 4	HS-G 8			HS-G 19
		HS-G 9			HS-G 20
Economics (HS-E)	HS-E 1	HS-E 6	HS-E 12	HS-E 16	HS-E 21
	HS-E 2	HS-E 7	HS-E 13	HS-E 17	HS-E 22
	HS-E 3	HS-E 8	HS-E 14	HS-E 18	HS-E 23
	HS-E 4	HS-E 9	HS-E 15	HS-E 19	HS-E 24
	HS-E 5	HS-E 10		HS-E 20	HS-E 25
		HS-E 11			HS-E 26
					HS-E 27
					HS-E 28
					HS-E 29
Civics (HS-C)	HS-C 1	HS-C 6	HS-C 12	HS-C 15	HS-C 19
	HS-C 2	HS-C 7	HS-C 13	HS-C 16	HS-C 20
	HS-C 3	HS-C 8	HS-C 14	HS-C 17	
	HS-C 4	HS-C 9		HS-C 18	
	HS-C 5	HS-C 10			
		HS-C 11			

HISTORY/SOCIAL SCIENCE ALIGNED STANDARDS OF LEARNING

Reporting Category: *History*

Elementary School

- HS-H 1
(SOL K.1) The student will recognize that history describes events and people of other times and places by
- a) identifying examples of past events in legends, stories, and historical accounts of Powhatan, Pocahontas, George Washington, Betsy Ross, and Abraham Lincoln;
 - b) identifying the people and events honored by the holidays of Thanksgiving Day; Martin Luther King, Jr., Day; Presidents' Day; and Independence Day (Fourth of July).
- HS-H 2
(SOL 1.1) The student will interpret information presented in picture timelines to show sequence of events and will distinguish among past, present, and future.
- HS-H 3
(SOL 1.2) The student will describe the stories of American leaders and their contributions to our country, with emphasis on George Washington, Benjamin Franklin, Abraham Lincoln, George Washington Carver, and Eleanor Roosevelt.
- HS-H 4
(SOL 1.3) The student will discuss the lives of people associated with Presidents' Day, Columbus Day, and the events of Independence Day (Fourth of July).
- HS-H 5
(SOL 2.1) The student will explain how the contributions of ancient China and Egypt have influenced the present world in terms of architecture, inventions, the calendar, and written language.
- HS-H 6
(SOL 2.2) The student will compare the lives and contributions of three American Indian cultures of the past and present, with emphasis on the Powhatan of the Eastern Woodlands, the Lakota of the Plains, and the Pueblo peoples of the Southwest.
- HS-H 7
(SOL 2.3) The student will identify and compare changes in community life over time in terms of buildings, jobs, transportation, and population.
- HS-H 8
(SOL 3.1) The student will explain how the contributions of ancient Greece and Rome have influenced the present world in terms of architecture, government (direct and representative democracy), and sports.
- HS-H 9
(SOL 3.2) The student will study the early West African empire of Mali by describing its oral tradition (storytelling), government (kings), and economic development (trade).
- HS-H 10
(SOL 3.3) The student will study the exploration of the Americas by
- a) describing the accomplishments of Christopher Columbus, Juan Ponce de León, Jacques Cartier, and Christopher Newport;
 - b) identifying the reasons for exploring, the information gained, the results of the travels, and the impact of the travels on American Indians.
- HS-H 11
(SOL VS.2) The student will demonstrate knowledge of the physical geography and native peoples, past and present, of Virginia by
- f) describing how archaeologists have recovered new material evidence at sites including Werowocomoco and Jamestown.

Reporting Category: *History*

Middle School

- HS-H 12
(SOL VS.3) The student will demonstrate knowledge of the first permanent English settlement in America by
- a) explaining the reasons for English colonization;
 - e) identifying the importance of the arrival of Africans and English women to the Jamestown settlement;
 - f) describing the hardships faced by settlers at Jamestown and the changes that took place to ensure survival;
 - g) describing the interactions between the English settlers and the native peoples, including the contributions of Powhatan to the survival of the settlers.
- HS-H 13
(SOL VS.4) The student will demonstrate knowledge of life in the Virginia colony by
- b) describing how the culture of colonial Virginia reflected the origins of European (English, Scots-Irish, German) immigrants, Africans, and American Indians.
- HS-H 14
(SOL VS.5) The student will demonstrate knowledge of the role of Virginia in the American Revolution by
- b) identifying the various roles played by whites, enslaved African Americans, free African Americans, and American Indians in the Revolutionary War era, including George Washington, Thomas Jefferson, Patrick Henry, and James Lafayette;
 - c) identifying the importance of the Battle of Great Bridge, the ride of Jack Jouett, and the American victory at Yorktown.
- HS-H 15
(SOL VS.6) The student will demonstrate knowledge of the role of Virginia in the establishment of the new American nation by
- a) explaining why George Washington is called the “Father of our Country” and James Madison is called the “Father of the Constitution.”
- HS-H 16
(SOL VS.7) The student will demonstrate knowledge of the issues that divided our nation and led to the Civil War by
- a) identifying the events and differences between northern and southern states that divided Virginians and led to secession, war, and the creation of West Virginia;
 - b) describing Virginia’s role in the war, including identifying major battles that took place in Virginia;
 - c) describing the roles played by whites, enslaved African Americans, free African Americans, and American Indians.
- HS-H 17
(SOL VS.9) The student will demonstrate knowledge of twentieth- and twenty-first-century Virginia by
- b) identifying the impact of Virginians, such as Woodrow Wilson and George C. Marshall, on international events;
 - c) identifying the political, social, and/or economic contributions made by Maggie L. Walker; Harry F. Byrd, Sr.; Oliver W. Hill; Arthur R. Ashe, Jr.; A. Linwood Holton, Jr.; and L. Douglas Wilder.
- HS-H 18
(SOL USI.3) The student will demonstrate knowledge of how early cultures developed in North America by
- a) describing how archaeologists have recovered material evidence of ancient settlements, including Cactus Hill in Virginia.

- HS-H 19
(SOL USI.4) The student will demonstrate knowledge of European exploration in North America and West Africa by
- a) describing the motivations for, obstacles to, and accomplishments of the Spanish, French, Portuguese, and English explorations;
 - b) describing cultural and economic interactions between Europeans and American Indians that led to cooperation and conflict, with emphasis on the American Indian concept of land.
- HS-H 20
(SOL USI.5) The student will demonstrate knowledge of the factors that shaped colonial America by
- a) describing the religious and economic events and conditions that led to the colonization of America;
 - c) describing colonial life in America from the perspectives of large landowners, farmers, artisans, women, free African Americans, indentured servants, and enslaved African Americans;
 - d) identifying the political and economic relationships between the colonies and Great Britain.
- HS-H 21
(SOL USI.6) The student will demonstrate knowledge of the causes and results of the American Revolution by
- a) identifying the issues of dissatisfaction that led to the American Revolution;
 - c) describing key events and the roles of key individuals in the American Revolution, with emphasis on George Washington, Benjamin Franklin, Thomas Jefferson, and Patrick Henry;
 - d) explaining reasons why the colonies were able to defeat Great Britain.
- HS-H 22
(SOL USI.7) The student will demonstrate knowledge of the challenges faced by the new nation by
- b) describing the historical development of the Constitution of the United States;
 - c) describing the major accomplishments of the first five presidents of the United States.
- HS-H 23
(SOL USI.8) The student will demonstrate knowledge of westward expansion and reform in America from 1801 to 1861 by
- a) describing territorial expansion and how it affected the political map of the United States, with emphasis on the Louisiana Purchase, the Lewis and Clark expedition, and the acquisitions of Florida, Texas, Oregon, and California;
 - c) describing the impact of inventions, including the cotton gin, the reaper, the steamboat, and the steam locomotive, on life in America;
 - d) identifying the main ideas of the abolitionist and women's suffrage movements.
- HS-H 24
(SOL USI.9) The student will demonstrate knowledge of the causes, major events, and effects of the Civil War by
- a) describing the cultural, economic, and constitutional issues that divided the nation;
 - b) explaining how the issues of states' rights and slavery increased sectional tensions;
 - d) describing the roles of Abraham Lincoln, Jefferson Davis, Ulysses S. Grant, Robert E. Lee, Thomas "Stonewall" Jackson, and Frederick Douglass in events leading to and during the war;
 - f) describing the effects of war from the perspectives of Union and Confederate soldiers (including African American soldiers), women, and enslaved African Americans.
- HS-H 25
(SOL USII.3) The student will demonstrate knowledge of the effects of Reconstruction on American life by
- b) describing the impact of Reconstruction policies on the South and North;
 - c) describing the legacies of Abraham Lincoln, Robert E. Lee, and Frederick Douglass.

- HS-H 26
(SOL USII.4) The student will demonstrate knowledge of how life changed after the Civil War by
- b) explaining the reasons for the increase in immigration, growth of cities, and challenges arising from this expansion;
 - c) describing racial segregation, the rise of “Jim Crow,” and other constraints faced by African Americans and other groups in the post-Reconstruction South;
 - d) explaining the impact of new inventions, the rise of big business, the growth of industry, and life on American farms;
 - e) describing the impact of the Progressive Movement on child labor, working conditions, the rise of organized labor, women’s suffrage, and the temperance movement.
- HS-H 27
(SOL USII.5) The student will demonstrate knowledge of the changing role of the United States from the late nineteenth century through World War I by
- a) explaining the reasons for and results of the Spanish American War;
 - b) describing Theodore Roosevelt’s impact on the foreign policy of the United States;
 - c) explaining the reasons for the United States’ involvement in World War I and its international leadership role at the conclusion of the war.
- HS-H 28
(SOL USII.6) The student will demonstrate knowledge of the social, economic, and technological changes of the early twentieth century by
- b) describing the social and economic changes that took place, including prohibition and the Great Migration north and west;
 - c) examining art, literature, and music from the 1920s and 1930s, with emphasis on Langston Hughes, Duke Ellington, Georgia O’Keeffe, and the Harlem Renaissance.
- HS-H 29
(SOL USII.7) The student will demonstrate knowledge of the major causes and effects of American involvement in World War II by
- a) identifying the causes and events that led to American involvement in the war, including the attack on Pearl Harbor;
 - b) locating and describing the major events and turning points of the war in Europe and the Pacific;
 - c) describing the impact of the war on the home front.

Reporting Category: *History*

High School

- HS-H 30
(SOL USII.8) The student will demonstrate knowledge of the economic, social, and political transformation of the United States and the world between the end of World War II and the present by
- a) describing the rebuilding of Europe and Japan after World War II, the emergence of the United States as a superpower, and the establishment of the United Nations;
 - c) identifying the role of America’s military and veterans in defending freedom during the Cold War, including the wars in Korea and Vietnam, the Cuban missile crisis, the collapse of communism in Europe, and the rise of new challenges;
 - d) describing the changing patterns of society, including expanded educational and economic opportunities for military veterans, women, and minorities.
- HS-H 31
(SOL USII.9) The student will demonstrate knowledge of the key domestic and international issues during the second half of the twentieth and early twenty-first centuries by
- a) examining the Civil Rights Movement and the changing role of women;
 - b) describing the development of new technologies in communication, entertainment, and business and their impact on American life;
 - c) identifying representative citizens from the time period who have influenced America scientifically, culturally, academically, and economically;
 - d) examining American foreign policy, immigration, the global environment, and other emerging issues.

- HS-H 32
(SOL WHI.2) The student will demonstrate knowledge of early development of humankind from the Paleolithic Era to the agricultural revolution by
- b) listing characteristics of hunter-gatherer societies, including their use of tools and fire;
 - c) describing technological and social advancements that gave rise to stable communities.
- HS-H 33
(SOL WHI.3) The student will demonstrate knowledge of ancient river valley civilizations, including those of Mesopotamia, Egypt, the Indus River Valley, and China and the civilizations of the Hebrews, Phoenicians, and Nubians, by
- c) explaining the development of religious traditions;
 - d) describing the origins, beliefs, traditions, customs, and spread of Judaism;
 - e) explaining the development of language and writing.
- HS-H 34
(SOL WHII.2) The student will demonstrate an understanding of the political, cultural, geographic, and economic conditions in the world about 1500 A.D. (C.E.) by
- b) describing artistic, literary, and intellectual ideas of the Renaissance;
 - e) citing major technological and scientific exchanges in the Eastern Hemisphere.
- HS-H 35
(SOL WHII.4) The student will demonstrate knowledge of the impact of the European Age of Discovery and expansion into the Americas, Africa, and Asia by
- a) explaining the roles and economic motivations of explorers and conquistadors;
 - b) describing the influence of religion.
- HS-H 36
(SOL WHII.6) The student will demonstrate knowledge of scientific, political, economic, and religious changes during the sixteenth, seventeenth, and eighteenth centuries by
- a) describing the Scientific Revolution and its effects;
 - f) describing the expansion of the arts, philosophy, literature, and new technology.
- HS-H 37
(SOL WHII.12) The student will demonstrate knowledge of the worldwide impact of World War II by
- b) examining the Holocaust and other examples of genocide in the twentieth century.
- HS-H 38
(SOL WHII.15) The student will demonstrate knowledge of the influence of Judaism, Christianity, Islam, Buddhism, and Hinduism in the contemporary world by
- a) describing their beliefs, sacred writings, traditions, and customs.

Reporting Category: Geography

Elementary School

- HS-G 1
(SOL 1.4) The student will develop map skills by
- a) recognizing basic map symbols, including references to land, water, cities, and roads;
 - b) using cardinal directions on maps;
 - c) identifying the shapes of the United States and Virginia on maps and globes;
 - d) locating Washington, D.C., the capital of the United States, and Richmond, the capital of Virginia, on a United States map.
- HS-G 2
(SOL 1.6) The student will describe how the location of his/her community, climate, and physical surroundings affect the way people live, including their food, clothing, shelter, transportation, and recreation.
- HS-G 3
(SOL 2.4) The student will develop map skills by
- a) locating the United States, China, and Egypt on world maps;
 - b) understanding the relationship between the environment and the culture of ancient China and Egypt;
 - c) locating the regions of the Powhatan, Lakota, and Pueblo Indians on United States maps;

d) understanding the relationship between the environment and the culture of the Powhatan, Lakota, and Pueblo Indians.

HS-G 4
(SOL 2.5) The student will develop map skills by
a) locating the equator, the seven continents, and the five oceans on maps and globes;
b) locating selected rivers (James River, Mississippi River, Rio Grande, Huang He, and Nile River), mountain ranges (Appalachian Mountains and Rocky Mountains), and lakes (Great Lakes) in the United States and other countries.

HS-G 5
(SOL 3.4) The student will develop map skills by
a) locating Greece, Rome, and West Africa;
b) describing the physical and human characteristics of Greece, Rome, and West Africa;
c) explaining how the people of Greece, Rome, and West Africa adapted to and/or changed their environment to meet their needs.

HS-G 6
(SOL 3.5) The student will develop map skills by
a) positioning and labeling the seven continents and five oceans to create a world map;
b) using the equator and prime meridian to identify the Northern, Southern, Eastern, and Western Hemispheres;
c) locating the countries of Spain, England, and France;
d) locating the regions in the Americas explored by Christopher Columbus (San Salvador in the Bahamas), Juan Ponce de León (near St. Augustine, Florida), Jacques Cartier (near Quebec, Canada), and Christopher Newport (Jamestown, Virginia);
e) locating specific places, using a simple letter-number grid system.

HS-G 7
(SOL 3.6) The student will read and construct maps, tables, graphs, and/or charts.

HS-G 8
(SOL VS.2) The student will demonstrate knowledge of the physical geography and native peoples, past and present, of Virginia by
a) locating Virginia and its bordering states on maps of the United States;
b) locating and describing Virginia's Coastal Plain (Tidewater), Piedmont, Blue Ridge Mountains, Valley and Ridge, and Appalachian Plateau;
c) locating and identifying water features important to the early history of Virginia (Atlantic Ocean, Chesapeake Bay, James River, York River, Potomac River, Rappahannock River, and Lake Drummond and the Dismal Swamp);
d) locating three American Indian language groups (the Algonquian, the Siouan, and the Iroquoian) on a map of Virginia;
e) describing how American Indians related to the climate and their environment to secure food, clothing, and shelter;
g) identifying and locating the current state-recognized tribes.

HS-G 9
(SOL VS.3) The student will demonstrate knowledge of the first permanent English settlement in America by
b) describing how geography influenced the decision to settle at Jamestown.

Reporting Category: Geography

Middle School

HS-G 10
(SOL VS.4) The student will demonstrate knowledge of life in the Virginia colony by
c) explaining the reasons for the relocation of Virginia's capital from Jamestown to Williamsburg to Richmond.

HS-G 11
(SOL VS.6) The student will demonstrate knowledge of the role of Virginia in the establishment of the new American nation by

c) explaining the influence of geography on the migration of Virginians into western territories.

- HS-G 12
(SOL USI.2) The student will use maps, globes, photographs, pictures, or tables to
- a) locate the seven continents and five oceans;
 - b) locate and describe the location of the geographic regions of North America: Coastal Plain, Appalachian Mountains, Canadian Shield, Interior Lowlands, Great Plains, Rocky Mountains, Basin and Range, and Coastal Range;
 - c) locate and identify the water features important to the early history of the United States: Great Lakes, Mississippi River, Missouri River, Ohio River, Columbia River, Colorado River, Rio Grande, St. Lawrence River, Atlantic Ocean, Pacific Ocean, and Gulf of Mexico;
 - d) recognize key geographic features on maps, diagrams, and/or photographs.
- HS-G 13
(SOL USI.3) The student will demonstrate knowledge of how early cultures developed in North America by
- b) locating where the American Indians lived, with emphasis on the Arctic (Inuit), Northwest (Kwakiutl), Plains (Lakota), Southwest (Pueblo), and Eastern Woodlands (Iroquois).
- HS-G 14
(SOL USI.9) The student will demonstrate knowledge of the causes, major events, and effects of the Civil War by
- c) identifying on a map the states that seceded from the Union and those that remained in the Union.
- HS-G 15
(SOL USII.2) The student will use maps, globes, photographs, pictures, or tables for
- c) locating the 50 states and the cities most significant to the historical development of the United States.

Reporting Category: *Geography*

High School

- HS-G 16
(SOL USII.4) The student will demonstrate knowledge of how life changed after the Civil War by
- a) identifying the reasons for westward expansion, including its impact on American Indians.
- HS-G 17
(SOL WG.1) The student will use maps, globes, satellite images, photographs, or diagrams to
- b) apply the concepts of location, scale, map projection, or orientation;
 - c) develop and refine mental maps of world regions.
- HS-G 18
(SOL WG.2) The student will analyze how selected physical and ecological processes shape the Earth's surface by
- b) describing how humans influence the environment and are influenced by it;
 - c) explaining how technology affects one's ability to modify the environment and adapt to it.
- HS-G 19
(SOL WG.12) The student will apply geography to interpret the past, understand the present, and plan for the future by
- b) relating current events to the physical and human characteristics of places and regions.
- HS-G 20
(SOL WHII.15) The student will demonstrate knowledge of the influence of Judaism, Christianity, Islam, Buddhism, and Hinduism in the contemporary world by
- b) locating the geographic distribution of religions in the contemporary world.

Reporting Category: *Economics*

Elementary School

- HS-E 1 (SOL K.6) The student will match simple descriptions of work that people do with the names of those jobs.
- HS-E 2 (SOL K.7) The student will
b) explain that people work to earn money to buy the things they want.
- HS-E 3 (SOL 1.8) The student will explain that people make choices because they cannot have everything they want.
- HS-E 4 (SOL 1.9) The student will recognize that people save money for the future to purchase goods and services.
- HS-E 5 (SOL 2.8) The student will distinguish between the use of barter and the use of money in the exchange for goods and services.
- HS-E 6 (SOL 2.9) The student will explain that scarcity (limited resources) requires people to make choices about producing and consuming goods and services.
- HS-E 7 (SOL 3.7) The student will explain how producers in ancient Greece, Rome, and the West African empire of Mali used natural resources, human resources, and capital resources in the production of goods and services.
- HS-E 8 (SOL 3.8) The student will recognize that because people and regions cannot produce everything they want, they specialize in what they do best and trade for the rest.
- HS-E 9 (SOL 3.9) The student will identify examples of making an economic choice and will explain the idea of opportunity cost (what is given up when making a choice).
- HS-E 10 (SOL VS.4) The student will demonstrate knowledge of life in the Virginia colony by
a) explaining the importance of agriculture and its influence on the institution of slavery;
d) describing how money, barter, and credit were used;
e) describing everyday life in colonial Virginia.
- HS-E 11 (SOL VS.8) The student will demonstrate knowledge of the reconstruction of Virginia following the Civil War by
a) identifying the effects of Reconstruction on life in Virginia;
c) describing the importance of railroads, new industries, and the growth of cities to Virginia's economic development.

Reporting Category: *Economics*

Middle School

- HS-E 12 (SOL VS.9) The student will demonstrate knowledge of twentieth- and twenty-first-century Virginia by
a) describing the economic and social transition from a rural, agricultural society to a more urban, industrialized society, including the reasons people came to Virginia from other states and countries.
- HS-E 13 (SOL VS.10) The student will demonstrate knowledge of government, geography, and economics by
b) describing the major products and industries of Virginia's five geographic regions;
c) explaining how advances in transportation, communications, and technology have contributed to Virginia's prosperity and role in the global economy.

- HS-E 14
(SOL USI.4) The student will demonstrate knowledge of European exploration in North America and West Africa by
c) identifying the location and describing the characteristics of West African societies (Ghana, Mali, and Songhai) and their interactions with traders.
- HS-E 15
(SOL USI.8) The student will demonstrate knowledge of westward expansion and reform in America from 1801 to 1861 by
b) identifying the geographic and economic factors that influenced the westward movement of settlers.
- HS-E 16
(SOL USII.3) The student will demonstrate knowledge of the effects of Reconstruction on American life by
a) analyzing the impact of the 13th, 14th, and 15th Amendments to the Constitution of the United States.
- HS-E 17
(SOL USII.6) The student will demonstrate knowledge of the social, economic, and technological changes of the early twentieth century by
a) explaining how developments in factory and labor productivity, transportation (including the use of the automobile), communication, and rural electrification changed American life and standard of living;
d) identifying the causes of the Great Depression, its impact on Americans, and the major features of Franklin D. Roosevelt's New Deal.
- HS-E 18
(SOL USII.8) The student will demonstrate knowledge of the economic, social, and political transformation of the United States and the world between the end of World War II and the present by
b) describing the conversion from a wartime to a peacetime economy;
e) describing how international trade and globalization have impacted American life.
- HS-E 19
(SOL WG.7) The student will identify types of natural, human, and capital resources and explain their significance by
a) showing their influence on patterns of economic activity and land use.
- HS-E 20
(SOL WG.8) The student will distinguish between developed and developing countries and relate the level of economic development to the standard of living and quality of life.

Reporting Category: *Economics*

High School

- HS-E 21
(SOL WHI.5) The student will demonstrate knowledge of ancient Greece in terms of its impact on Western civilization by
c) identifying the social structure and role of slavery, explaining the significance of citizenship and the development of democracy, and comparing the city-states of Athens and Sparta.
- HS-E 22
(SOL WHI.6) The student will demonstrate knowledge of ancient Rome from about 700 B.C. (B.C.E.) to 500 A.D. (C.E.) in terms of its impact on Western civilization by
c) explaining the social structure and role of slavery, significance of citizenship, and the development of democratic features in the government of the Roman Republic.
- HS-E 23
(SOL WHI.10) The student will demonstrate knowledge of civilizations and empires of the Eastern Hemisphere and their interactions through regional trade patterns by
b) identifying technological advances and transfers, networks of economic interdependence, and cultural interactions.
- HS-E 24
(SOL WHII.4) The student will demonstrate knowledge of the impact of the European Age of Discovery and expansion into the Americas, Africa, and Asia by
f) describing the impact of precious metal exports from the Americas.

- HS-E 25
(SOL WHII.5) The student will demonstrate knowledge of the status and impact of global trade on regional civilizations of the world after 1500 A.D. (C.E.) by
d) describing Africa and its increasing involvement in global trade.
- HS-E 26
(SOL WHII.9) The student will demonstrate knowledge of the effects of the Industrial Revolution during the nineteenth century by
b) explaining the emergence of capitalism as a dominant economic pattern, and the subsequent development of socialism and communism.
- HS-E 27
(SOL WHII.16) The student will demonstrate knowledge of cultural, economic, and social conditions in developed and developing nations of the contemporary world by
b) assessing the impact of economic development and global population growth on the environment and society, including an understanding of the links between economic and political freedom.
- HS-E 28
(SOL VUS.10) The student will demonstrate knowledge of key domestic events of the 1920s and 1930s by
d) describing how Franklin D. Roosevelt’s New Deal relief, recovery, and reform measures addressed the Great Depression and expanded the government’s role in the economy.
- HS-E 29
(SOL VUS.15) The student will demonstrate knowledge of economic, social, cultural, and political developments in recent decades and today by
e) assessing the role of government actions that impact the economy.

Reporting Category: *Civics*

Elementary School

- HS-C 1
(SOL 1.10) The student will apply the traits of a good citizen by
f) participating in classroom decision making through voting.
- HS-C 2
(SOL 1.11) The student will recognize the symbols and traditional practices that honor and foster patriotism in the United States by
a) identifying the American flag, bald eagle, Washington Monument, and Statue of Liberty;
b) demonstrating respect for the American flag by learning about the Pledge of Allegiance.
- HS-C 3
(SOL 1.12) The student will recognize that communities in Virginia
a) have local governments;
b) benefit from people who volunteer in their communities;
c) include people who have diverse ethnic origins, customs, and traditions, who make contributions to their communities, and who are united as Americans by common principles.
- HS-C 4
(SOL 2.11) The student will identify George Washington, Abraham Lincoln, Susan B. Anthony, Helen Keller, Jackie Robinson, and Martin Luther King, Jr., as Americans whose contributions improved the lives of other Americans.
- HS-C 5
(SOL 2.12) The student will understand that the people of Virginia
a) have state and local government officials who are elected by voters;
b) have diverse ethnic origins, customs, and traditions, make contributions to their communities, and are united as Americans by common principles.
- HS-C 6
(SOL 3.10) The student will recognize the importance of government in the community, Virginia, and the United States of America by
a) explaining the purpose of rules and laws;
b) explaining that the basic purposes of government are to make laws, carry out laws, and decide if laws have been broken;
c) explaining that government protects the rights and property of individuals.

- HS-C 7
(SOL 3.11) The student will explain the importance of the basic principles that form the foundation of a republican form of government by
- a) describing the individual rights to life, liberty, and the pursuit of happiness; and equality under the law;
 - b) identifying the contributions of George Washington; Thomas Jefferson; Abraham Lincoln; Rosa Parks; Thurgood Marshall; Martin Luther King, Jr.; and Cesar Chavez;
 - c) recognizing that Veterans Day and Memorial Day honor people who have served to protect the country's freedoms;
 - d) describing how people can serve the community, state, and nation.
- HS-C 8
(SOL 3.12) The student will recognize that Americans are a people of diverse ethnic origins, customs, and traditions, who are united by the basic principles of a republican form of government and respect for individual rights and freedoms.
- HS-C 9
(SOL VS.3) The student will demonstrate knowledge of the first permanent English settlement in America by
- c) identifying the importance of the charters of the Virginia Company of London in establishing the Jamestown settlement;
 - d) identifying the importance of the General Assembly (1619) as the first representative legislative body in English America.
- HS-C 10
(SOL VS.5) The student will demonstrate knowledge of the role of Virginia in the American Revolution by
- a) identifying the reasons why the colonies went to war with Great Britain, as expressed in the Declaration of Independence.
- HS-C 11
(SOL VS.6) The student will demonstrate knowledge of the role of Virginia in the establishment of the new American nation by
- b) identifying the ideas of George Mason and Thomas Jefferson as expressed in the Virginia Declaration of Rights and the Virginia Statute for Religious Freedom.

Reporting Category: Civics

Middle School

- HS-C 12
(SOL VS.8) The student will demonstrate knowledge of the reconstruction of Virginia following the Civil War by
- b) identifying the effects of segregation and “Jim Crow” on life in Virginia for whites, African Americans, and American Indians.
- HS-C 13
(SOL VS.9) The student will demonstrate knowledge of twentieth- and twenty-first-century Virginia by
- c) identifying the social and political events in Virginia linked to desegregation and Massive Resistance and their relationship to national history.
- HS-C 14
(SOL VS.10) The student will demonstrate knowledge of government, geography, and economics by
- a) identifying the three branches of Virginia government and the function of each.
- HS-C 15
(SOL USI.3) The student will demonstrate knowledge of how early cultures developed in North America by
- c) describing how the American Indians used the resources in their environment.
- HS-C 16
(SOL USI.5) The student will demonstrate knowledge of the factors that shaped colonial America by
- b) describing life in the New England, Mid-Atlantic, and Southern colonies, with emphasis on how people interacted with their environment to produce goods and services, including examples of specialization and interdependence.

- HS-C 17
(SOL USI.6) The student will demonstrate knowledge of the causes and results of the American Revolution by
- b) identifying how political ideas shaped the revolutionary movement in America and led to the Declaration of Independence.
- HS-C 18
(SOL USI.7) The student will demonstrate knowledge of the challenges faced by the new nation by
- a) identifying the weaknesses of the government established by the Articles of Confederation.

Reporting Category: Civics

High School

- HS-C 19
(SOL VUS.3) The student will describe how the values and institutions of European economic and political life took root in the colonies and how slavery reshaped European and African life in the Americas.
- HS-C 20
(SOL VUS.4) The student will demonstrate knowledge of events and issues of the Revolutionary Period by
- a) analyzing how the political ideas of John Locke and those expressed in *Common Sense* helped shape the Declaration of Independence;
 - b) evaluating how key principles in the Declaration of Independence grew in importance to become unifying ideas of American democracy.

