



Maryland College and Career Ready Standards Framework

Disciplinary Literacy

Introduction

The Code of Maryland Regulations (COMAR) 13A.04.14.01 *Reading and English Language Arts Instructional Programs for Grades Prekindergarten – 12* states that, “each local education agency shall provide in public schools an instructional program in English language arts/literacy each year for all students in grades prekindergarten – 5; provide in public schools an instructional program in English language arts/literacy each year for all students in grades 6—8; offer an English language arts/literacy program in grades 9 – 12 which enables students to meet graduation requirements and to select English language arts/literacy electives including English Language Arts/Literacy Transition Courses.”

State Frameworks are developed by the Maryland State Department of Education (MSDE) to support local education agencies in providing high-quality instructional programs in English Language Arts/Literacy. State Frameworks are defined as supporting documents and provide guidance for implementing Maryland College and Career Readiness Standards in English Language Arts/Literacy which are reviewed and adopted by the Maryland State Board of Education. State Frameworks also provide consistency in learning expectations for students in English Language Arts/Literacy programs across the twenty-four local education agencies as local curriculum is developed and adopted using these documents as a foundation. The State Standards and Frameworks for Literacy Standards for History and Social Studies, as well as for Science and Other Technical Subjects are part of the Maryland College and Career Ready Standards for English Language Arts/Literacy.

MSDE shall update the State Frameworks in English Language Arts/Literacy in the manner and time the State Superintendent of Schools determines is necessary to ensure alignment with best-in-class, research-based practices. Tenure and stability of State Frameworks affords local education agencies the necessary time to procure supporting instructional materials, provide professional development, and to measure student growth within the program. Educators, practitioners, and experts who participate in writing workgroups for State Frameworks represent the diversity of stakeholders across Maryland. State Frameworks in English Language Arts/Literacy, Prekindergarten – Grade 12 were developed, reviewed, and revised by teams of Maryland educators and practitioners, including local education agency content curriculum specialists, classroom teachers, accessibility staff, and academic researchers and experts in close collaboration with MSDE.

The Maryland College and Career Ready English Language Arts/Literacy Frameworks were released in June of 2012.

Maryland College and Career Ready Standards Framework Disciplinary Literacy - Writing Standards for Literacy in Science and Technical Subjects Grades 9-12

The Maryland College and Career Ready (MCCR) Standards for Disciplinary Literacy in History/Social Studies, Science, and Technical Subjects define skills that students must develop to be fully prepared for the challenges and expectations of college and careers. With the adoption of the MCCR Standards, teachers in all subject areas will build discipline-specific literacy into daily instruction when and where appropriate. The disciplinary literacy standards are not meant to replace existing content standards in the history, social studies, science, or technical subject classrooms, but rather to support them. Literacy development is essential for students to access and learn disciplinary content and must be a shared responsibility across all fields of study.

The Division of Instruction (MSDE) has developed curricular documents to support the implementation and understanding of the MCCR Standards for Disciplinary Literacy in History/Social Studies, Science, and Technical Subjects for grades 6-12. The framework identifies essential skills for accessing, analyzing, and evaluating content-rich informational texts and presenting evidence-based conclusions in argumentative and explanatory writing, emphasizing research. The MCCR Anchor Standards frame the document and define the ultimate literacy expectations required for graduation. Grade-banded standards (6-8, 9-10, and 11-12) provide a progression of rigor designed to help students achieve these expectations. A set of essential skills and knowledge, identified for each standard, recognizes the supporting skills needed for mastery.

It is important to note that MCCR Standards are not hierarchal or sequential; they are a collection of skills and strategies that work together flexibly throughout the learning process. To unlock and communicate content knowledge, students will employ strategic reading and writing strategies when interacting with various texts. The teacher will facilitate knowledge-building while students regularly and actively participate in content-specific discussions, use domain-specific vocabulary, and adhere to the conventions of language when speaking and writing.

Note: Informational Text is not limited to information presented as printed written exposition. It includes items such as maps, tables, charts, oral histories, multimedia presentations, technical data, art, photographs, websites, sound clips, etc.

Disciplinary Literacy Abbreviations:

- RH = Reading Standards for Literacy in History/Social Studies
- RST = Reading Standards for Literacy in Science and Technical Subjects
- WHST = Writing Standards for Literacy in History/Social Studies, Science and Technical Subjects
- MD SLM = Maryland School Library Media Curriculum
- DL = Digital Learning

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Text Types and Purposes

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

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.1 Write arguments focused on discipline-specific content.</p> <p>1a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>1b Develop claims and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience’s knowledge level and concerns.</p> <p>1c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>1d Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p>	<p>WHST.11-12.1 Write arguments focused on discipline-specific content.</p> <p>1a Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.</p> <p>1b Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases. (SC, 11-12)</p> <p>1c Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. (SC, 11-12)</p> <p>1d Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p>

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>1e Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• Narrow and refine the focus of a grade-appropriate complex science or technical question or problem.<ul style="list-style-type: none">○ Analyze the topic to target information gathering.○ Gather reliable and valid information from print, non-print, and digital sources. (See CCSS RST.9-10.7; See also MD SML 2.0, 3.0, 4.0.)○ Evaluate information to determine sufficiency and relevancy.○ Identify claim(s) and counter claims.• Choose, apply, and maintain an organizational structure appropriate to the writing purpose. (See SL.9-10.1a, SL.9-10.4.)<ul style="list-style-type: none">○ Establish clear structure that shows relationships among claim(s), counterclaims, reasons, and evidence/data.○ Logically sequence claims, counterclaims, reasons, and evidence/data.• Construct an introduction that provides an explanation of the topic, a well-constructed claim that states, refutes, or modifies a position. (See MD SLM 1.B.3.)	<p>1e Provide a concluding statement or section that follows from and supports the argument presented.</p> <p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• Narrow and refine the focus of a grade-appropriate complex science or technical question or problem.<ul style="list-style-type: none">○ Analyze the topic to target information gathering.○ Gather reliable and valid information from print, non-print, and digital sources. (See CCSS RST.9-10.7; See also MD SML 2.0, 3.0, 4.0.)○ Evaluate information to determine sufficiency and relevancy.○ Identify claim(s) and counter claims.• Choose, apply, and maintain an organizational structure appropriate to the writing purpose. (See SL.9-10.1a, SL.9-10.4.)<ul style="list-style-type: none">○ Establish clear structure that shows relationships among claim(s), counterclaims, reasons, and evidence.○ Logically sequence claims, counterclaims, reasons, and evidence.• Construct an introduction that provides an explanation of the topic, a well-constructed claim that states, refutes, or modifies a position. (See MD SLM 1.B.3.)

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<ul style="list-style-type: none"> • Develop the claims and counterclaims to support the body of the argument. <ul style="list-style-type: none"> ○ Use fair and factual evidence/data while pointing out strengths and limitations of each. • Draft the body of the argument. • Attend to audience knowledge, interest, and concern. <ul style="list-style-type: none"> ○ Use a wide range of academic and domain-specific vocabulary. (See CCSS L.9-10.6.) ○ Use words, phrases, and clauses appropriately to link major sections of the text to enhance and clarify the argument. ○ Maintain a formal writing style. ○ Integrate quotations and summarizations of source material appropriately. (See CCSS L.9.3; See also MD SLM 3.c.2, SLM 5.0.) ○ Use a standard format for citations. (See CCSS L.9.3; See also MD SLM 3.c.2, SLM 5.0.) • Write a relevant, concise, and effective conclusion. (See CCSS WHST .9-10.4, W.9-10.5.) • Apply the editing phase of the writing process independently. (See CCSS L.9- 10.3.a.) • Apply the publishing phase of the writing process independently, using a variety of print, non-print, and digital formats. (See CCSS L.9-10.3.a, SL.4, SL.5, SL.6) • See also MD SLM 4.0 and SL 9-10.4. 	<ul style="list-style-type: none"> • Develop the claims and counterclaims to support the body of the argument. • Use fair and factual evidence while pointing out strengths and limitations of each. <ul style="list-style-type: none"> ○ Draft the body of the argument. • Attend to audience knowledge, interest, and concern. <ul style="list-style-type: none"> ○ Use a wide range of academic and domain-specific vocabulary. (See CCSS L.9-10.6.) ○ Use words, phrases, and clauses appropriately to link major sections of the text to enhance and clarify the argument. ○ Maintain a formal writing style. ○ Integrate quotations and summarizations of source material appropriately. (See CCSS L.9.3; See also MD SLM 3.c.2, SLM 5.0.) ○ Use a standard format for citations. (See CCSS L.9.3; See also MD SLM 3.c.2, SLM 5.0.) • Write a relevant, concise, and effective conclusion. (See CCSS WHST.9-10.4, WHST.9-10.5.) • Apply the editing phase of the writing process independently. (See CCSS L.9- 10.3.a.) • Apply the publishing phase of the writing process independently, using a variety of print, non-print, and digital formats. (See CCSS L.9-10.3.a, SL.4, SL.5, SL.6.) • See also MD SLM 4.0 and SL 9-10.4.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Text Types and Purposes

MCCR Anchor Standard 2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p>2a Write informative/ explanatory texts, including the narration of scientific procedures/ experiments, or technical processes.</p> <p>2b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic</p> <p>2c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>2d Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.</p>	<p>WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p>2a Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>2b Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic. (SC, 11- 12)</p> <p>2c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>2e Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p> <p>2f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic)</p> <p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• Narrow and refine the focus of a grade-appropriate complex topic/concept.• Gather relevant information and evaluate the reliability and effectiveness.• Select and organize information to support the development to the topic identified.• Develop a well-constructed introduction that presents the topic, central idea, or concept.	<p>2d Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.</p> <p>2e Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p> <p>2f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• Narrow and refine the focus of a grade-appropriate complex topic.• Gather relevant information and evaluate the reliability and effectiveness.• Select and organize information to support the development to the topic identified.• Develop a well-constructed introduction that presents the topic, central idea, or concept.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<ul style="list-style-type: none"> • Develop the body of the informative or explanatory text. <ul style="list-style-type: none"> ○ Evaluate gathered information to determine sufficiency and relevancy. ○ Obtain other supporting reliable and valid facts, details, examples, and quotations from print, non-print, and digital sources. (See CCSS RH.9-10.8.) ○ Apply and maintain an organizational structure designed to clarify and connect complex ideas, concepts, and information. (See CCSS SL.9-10.1a, SL.9-10.4.) <ul style="list-style-type: none"> ▪ Use varied transitions to link the major sections of the text and clarify the relationships among ideas/concepts. ▪ Use appropriate formatting of headings and graphics. (See CCSS L.9-10.3.) ○ Integrate quotations, paraphrases, and summarizations of source material. (See CCSS L.9-10.3.) ○ Use a wide range of academic and domain-specific vocabulary. (See CCSS L.9-10.6.) ○ Maintain a formal writing style. • Use a standard format appropriately for citations. (See CCSS L.9-10.3a.) • Write a relevant, concise, and effective conclusion that integrate key components of the explanation and provides reinforcement for the explanation. • Apply the editing phase of the writing process independently. (See CCSS L.9-10 .3a.) 	<ul style="list-style-type: none"> • Develop the body of the informative or explanatory text. <ul style="list-style-type: none"> ○ Evaluate gathered information to determine sufficiency and relevancy. ○ Obtain other supporting reliable and valid facts, details, examples, and quotations from print, non-print, and digital sources. (See CCSS RH.9-10.8) ○ Apply and maintain an organizational structure designed to clarify and connect complex ideas, concepts, and information. (See CCSS SL.9-10.1a, SL.9-10.4.) <ul style="list-style-type: none"> ▪ Use varied transitions to link the major sections of the text and clarify the relationships among ideas/concepts. ▪ Use appropriate formatting of headings and graphics. (See CCSS – L.9- 10.3.) • Integrate quotations, paraphrases, and summarizations of source material. (See CCSS L.9-10.3.) • Use a standard format appropriately for citations. (See CCSS L.9-10.3a.) • Write relevant, concise, and effective conclusions that integrate key components of the explanation and provides reinforcement for the explanation. • Apply the editing phase of the writing process independently. (See CCSS L.9-10 .3a.)

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<ul style="list-style-type: none">• Apply the publishing phase of the writing process independently, using a variety of print, non-print, and digital formats. (See CCSS WHST.9-10.6, L.9-10.3.a, SL.4, SL.5, SL.6.)• See also MD SLM 1.B.3, SLM 2.0, SLM 3.0, SLM, 4.0, SLM 5.0.. (See CCSS L.9-10 .3a.)	<ul style="list-style-type: none">• Apply the publishing phase of the writing process independently, using a variety of print, non-print, and digital formats. (See CCSS WHST.9-10.6, L.9-10.3.a, SL.4, SL.5, SL.6.)• See also MD SLM 1.B.3, SLM 2.0, SLM 3.0, SLM, 4.0, SLM 5.0.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Text Types and Purposes

MCCR Anchor Standard 3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.3 Not applicable as a separate requirement.</p> <p>(Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise descriptions of the step-by-step procedures they use in investigations or technical work that others can replicate them and (possible) reach the same results. Students must also be able to write detailed and accurate observations made during an investigation or while testing a design.)</p>	<p>WHST.11-12.3 Not applicable as a separate requirement.</p> <p>(Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise descriptions of the step-by-step procedures they use in investigations or technical work that others can replicate them and (possible) reach the same results. Students must also be able to write detailed and accurate observations made during an investigation or while testing a design.)</p>

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Production and Distribution of Writing

MCCR Anchor Standard 4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> • Establish the purpose and audience of the writing piece. • Apply and maintain an organizational structure designed to clarify and connect complex ideas, concepts, and information. (See CCSS SL.9-10.1.a, SL.9-10.4.) • See Grades 9-10: WHST 1, WHST 2, WHST 3, WHST 7, SL1.a, and SL4 of CCSC Framework for specific application. • See also MD SC standard SLM 5.0. 	<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> • Establish the purpose and audience of the writing piece. • Apply and maintain an organizational structure designed to clarify and connect complex ideas, concepts, and information. (See CCSS SL.9-10.1.a, SL.9-10.4.) • See Grades 9-10: WHST 1, WHST 2, WHST 3, WHST 7, SL1.a and SL.4 of CCSC Framework for specific application. • See also MD SC standard SLM 5.0.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Production and Distribution of Writing

MCCR Anchor Standard 5: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p>	<p>WHST.11-12.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p>
<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> • Revise for clarity and effective organization of evidence and/or information. • Edit for Standard English grammar and usage when writing and speaking. • Use complete sentences. (See CCSS L.4.1f*.) • Use correct spelling, capitalization, and punctuation. (See CCSS L.9-10.2; see also CCSS L.4.3b* and CCSS L.4.1f*.) • See Grades 9-10: WHST 1, WHST 2, WHST 3, WHST 7, and SL.4 of CCSS Framework for specific application. 	<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> • Revise for clarity and effective organization of evidence and/or information. • Edit for Standard English grammar and usage when writing and speaking. • Use complete sentences. (See CCSS L.4.1f*.) • Use correct spelling, capitalization, and punctuation. (See CCSS L.9-10.2; see also CCSS L.4.3b* and CCSS L.4.1f*.) • See Grades 11-12: WHST 1, WHST 2, WHST 3, WHST 7, and SL.4 of CCSS Framework for specific application.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Production and Distribution of Writing

MCCR Anchor Standard 6: Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s cap</p>	<p>WHST.11-12.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.</p>
<p>Essential Skills and Knowledge</p> <p>Apply and/or adapt the MD Technology Literacy State Standards to the writing process as appropriate for different writing tasks, purposes, and audiences.</p> <p>Apply computer literacy and keyboarding skills at the proficient level as defined in “A Companion to the Maryland Technology Literacy Standards for Students.”</p> <p>Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (See CCSS SL.8.5.)</p> <p>Use network resources effectively and efficiently. (See MTSSL 8 1A1.a.)</p>	<p>Essential Skills and Knowledge</p> <p>Apply and/or adapt the MD Technology Literacy State Standards to the writing process as appropriate for different writing tasks, purposes, and audiences.</p> <p>Apply computer literacy and keyboarding skills at the proficient level as defined in “A Companion to the Maryland Technology Literacy Standards for Students.”</p> <p>Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (See CCSS SL.8.5.)</p> <p>Use network resources effectively and efficiently. (See MTLSS 8 1A1.a.)</p>

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s cap</p>	<p>WHST.11-12.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.</p>
<p>Use technology responsibly to enhance learning, collaboration, and communication. (See MTLSS 8 2A1, 2B1, 2B2, 2B3, 3A1, 3B1, 3C1, 4A1, 4B1.)</p> <p>Use technology to locate, evaluate, and organize information. (See MTLSS 8 5A1, 5B1.)</p> <p>Use technology to solve problems by strategizing, analyzing and communicating data, and examining solutions. (See MTLSS 8 6A1, 6A2, 6A3, 6A4, 6A5, 6B.)</p> <p>See also MD SLM 2.0, SLM 3.0, SLM 4.0, SLM 5.0, MTLSS 5.0, TL 6.0.</p>	<p>Use technology responsibly to enhance learning, collaboration, and communication. (See MTLSS 8 2A1, 2B1, 2B2, 2B3, 3A1, 3B1, 3C1, 4A1, 4B1.)</p> <p>Use technology to locate, evaluate, and organize information. (See MTLSS 8 5A1, 5B1.)</p> <p>Use technology to solve problems by strategizing, analyzing and communicating data, and examining solutions. (See MTLSS 8 6A1, 6A2, 6A3, 6A4, 6A5, 6B.)</p> <p>See also MD SLM 2.0, SLM 3.0, SLM 4.0, SLM 5.0, MTLSS 5.0, MTLSS 6.0.</p>

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Research to Build and Present Knowledge

MCCR Anchor Standard 7: Conduct short and well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.7 - Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources</p>	<p>WHST.11-12.7 - Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p>
<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> • Define a problem, formulate questions, and refine a problem and/or question as it relates to a particular scientific or technical issue or event. (See MD SLM 1.0.) • Identify, locate, evaluate, and select scientific and technical sources in a wide variety of formats to meet the information need in an ethical manner. (See MD SLM 2.0.) • Find, generate, record, and organize information relevant to the needed information in an ethical manner. (See MD SLM 3.0.) 	<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> • Define a problem, formulate questions, and refine as it relates to a particular scientific or technical issue or event. (See MD SLM 1.0.) • Identify, locate, evaluate, and select scientific and technical sources in a wide variety of formats to meet the information need in an ethical manner. (See MD SLM 2.0.) • Find, generate, record, and organize information relevant to the needed information in an ethical manner. (See MD SLM 3.0.) • Interpret recorded data/information to create new understandings, and knowledge related to the information need in an ethical manner. (See MD SLM 4.0.)

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.7 - Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple s</p>	<p>WHST.11-12.7 - Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p>
<ul style="list-style-type: none"> • Interpret recorded data/information to create new understandings, and knowledge related to the information need in an ethical manner. (See MD SLM 4.0.) • Share findings/conclusions in an appropriate format to support written, oral, and multimedia information products and evaluate the product and the process in an ethical manner. (See MD SLM 5.0.) • Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. • See CCSS Grades 9-10: WHST 1, WHST 2, WHST 7, SL2, RST.5, RST.7, and RST.8 for specific application. • See MTLSS 5.0, TL 6.0. 	<ul style="list-style-type: none"> • Share findings/conclusions in an appropriate format to support written, oral, and multimedia information products and evaluate the product and the process in an ethical manner. (See MD SLM 5.0.) • Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. • See CCSS Grades 11-12: WHST 1, WHST 2, WHST 7, SL2, RST.5, RST.7, and RST.8 for specific application. • See MTLSS 5.0, TL 6.0.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Research to Build and Present Knowledge

MCCR Anchor Standard 8: Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p>	<p>WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.</p>
<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> Find, generate, record, and organize scientific and technical source material relevant to the research purpose in an ethical manner. (See also MD SLM 3.0.) Interpret recorded data/information to create new understandings, and knowledge related to the research purpose in an ethical manner. (See also MD SLM 4.0.) 	<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none"> Find, generate, record, and organize scientific and technical source material relevant to the research purpose in an ethical manner. (See also MD SLM 3.0.) Interpret recorded data/information to create new understandings, and knowledge related to the research purpose in an ethical manner. (See also MD SLM 4.0.)

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
<p>WHST.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p>	<p>WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.</p>
<ul style="list-style-type: none"> • Share findings/conclusions in an appropriate format to support written, oral, and multimedia information products and evaluate the product and the process in an ethical manner. (See also MD SLM 5.0.) • Cite evidence and information accurately and appropriately. (See CCSS L.9- 10.3a; See also MD SLM 5.0.) • See CCSS Grades 9-10: WHST1, WHST 2, WHST 7, SL2, RST8, and RST.9 for specific application. 	<ul style="list-style-type: none"> • Share findings/conclusions in an appropriate format to support written, oral, and multimedia information products and evaluate the product and the process in an ethical manner. (See also MD SLM 5.0.) • Cite evidence and information accurately and appropriately. (See CCSS L.9-10.3a; See also MD SLM 5.0.) • See CCSS Grades 11-12: WHST 1, WHST 2, WHST 7, SL2, RST.8, and RST .9 for specific application.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Research to Build and Present Knowledge

MCCR Anchor Standard 9: Draw evidence from literary or informational texts to support analysis, reflection and research.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
Draw evidence from informational texts to support analysis, reflection, and research.	WHST.11-12.9 Draw evidence from informational texts to support analysis, reflection, and research.
<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• Write in response to grade-level print, non-print, and digital informational text(s) with an emphasis on comparison and contrast, cause and effect, as well as contextual analysis in the scope of science and technical subjects.• Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.	<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• Write in response to grade-level print, non-print, and digital informational text(s) with an emphasis on comparison and contrast, cause and effect, as well as contextual analysis in the scope of science and technical subjects.• Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.

Writing Standards for Literacy in Science and Technical Subjects

Cluster: Range of Writing

MCCR Anchor Standard 10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

GRADE 9-10 STUDENTS	GRADE 11-12 STUDENTS
WHST.9-10.10 - Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	WHST.11-12.10 - Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• See CCSS Grades 9-10: WHST 1, WHST 2, WHST 3 and WHST 7.• With guidance and support, adjust the writing process as appropriate for different writing tasks, purposes, and audiences.• Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.	<p>Essential Skills and Knowledge</p> <ul style="list-style-type: none">• See CCSS Grades 11-12: WHST 1, WHST 2, WHST 3 and WHST 7.• With guidance and support, adjust the writing process as appropriate for different writing tasks, purposes, and audiences.• Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.