



# 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 6-8

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.**

RST.6-8.1 Cite specific textual evidenced to support analysis of science and technical text.

WHST.6-8.1 Write arguments focused on discipline-specific content.

1a Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.

1b Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.

1c Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.

1d Establish and maintain a formal style.

1e Provide a concluding statement or section that follows from and supports the argument presented.

### Essential Skills and Knowledge

- Gather scientific and technical resources to develop an argument that addresses alternate claims within the context of a scientific or technical problem or question. (See MD SLM. 6-8. 2A1, as needed.)
- Use an established procedure to determine the accuracy and reliability of sources. (See CCSS W.8.8.)
- Demonstrate knowledge of a topic or text by selecting appropriate evidence to support a claim or claims. (See CCSS WHST6-8.8.)
- Organize reasons and evidence to show logical support for claim(s).
- Compare and contrast one’s own claim(s) to all other claims. (See CCSS RL.8.5.)
- Construct a draft that integrates key components of an argument and provides reinforcement for the argument: (See CCSS W.8.4.)
  - Introduction – features a claim(s) in opposition to any alternate claim(s)
  - body – introduce claims and supporting evidence
  - conclusion – integrates key components of the argument and provides reinforcement for the argument (See CCSS W.8.4.)
- Cite evidence accurately and appropriately. (See MD SLM3.c.3, SLM5.0.)
- Apply academic vocabulary to present an accurate argument.
- Use transition words and phrases to combine ideas, acknowledge alternate claims, and create cohesion and clarity in order to purposely formulate an argument. (See CCSS L.8.1a, L.8.3a)
- Apply the revision and editing stages of the writing process to the writing piece focusing on the audience and purpose. (See CCSS W.8.5.)
- Prepare the final product for presentation and/or publication. (See CCSS WHST.6-8.6.)

## **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.**

WHST.6-8.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

2a Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings) graphics (e.g., charts, tables) and multimedia when useful to aiding comprehension.

2b Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

2c Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

2d Use precise language and domain-specific vocabulary to inform about or explain the topic.

2e Establish and maintain a formal style.

2f Provide a concluding statement or section that follows from and supports the information or explanation presented.

### Essential Skills and Knowledge

- Gather and evaluate information about a science or technical problem or topic from a variety of reliable print and digital sources. (See CCSS RI.8.7, W.8.8 as needed.)
- Demonstrate understanding of a topic or text by selecting the most effective information gathered.
- Review the information for relevancy and accuracy.
- Analyze information selected to determine the ideas and concepts.
- Organize information effectively within an established structure.
  - Establish headings to support organization.
- Draft an explanation that integrates key components and provides reinforcement for the topic.
  - introduction – present the thesis clearly and establish the important concepts and ideas
  - body – explain the topic with attention to effective organization of information
  - conclusion – logically integrate and reinforce the main points of the informative/explanatory text
- Cite information from sources accurately and appropriately. (See MD SLM 3.c.2, SLM 5.0).
- Use discipline specific vocabulary words or phrases to support the explanation.
- Apply the revision and editing stages of the writing process to the writing piece focusing on the audience and purpose. (See CCSS W.8.5.)
- Prepare the final product for presentation and/or publication. (See CCSS WHST.6-8.6.)

## **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.**

WHST.6-8.3 Not applicable as a separate requirement.

(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 their investigations or technical work that others can replicate them and (possibly) reach the same results.)

## **Writing Standards for Literacy in Science and Technical Subjects**

### **Cluster: Production and Distribution of Writing**

#### **MCCR Anchor Standard 4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.**

WHST.6-8.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

##### Essential Skills and Knowledge

- Establish the purpose and audience of the writing piece.
- Apply and maintain an organization structure designed to clarify and connect complex ideas, concepts, and information.

## **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.**

WHST.6-8.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

#### Essential Skills and Knowledge

- Revise for clarity and effective organization of evidence and/or information.
- Edit for Standard English grammar and usage when writing and speaking. (See CCSS L.9-10.2; CCSS L.4.3.b\*.)
- spelling, capitalization, punctuation
- complete sentences (See CCSS L.4.1.f\*.)

## 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.

WHST.6-8.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

#### Essential Skills and Knowledge

- Apply and/or adapt the Maryland Technology Literacy State Standards to the writing process as appropriate for different writing tasks, purposes, and audiences.
- Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (See CCSS SL.8.5.)
- Apply computer literacy and keyboarding skills at the Intermediate level as defined in “A Companion to the Maryland Technology Literacy Standards for Students.”
- Use network resources effectively and efficiently. (See MTLSS 8 1A1.a.)
- Use technology responsibly to enhance learning, communication, and collaboration. (See MTLSS 8 2A1, 2B1, 2B2, 2B3, 83A1,3B1,3C1.)
- Use technology to:
  - locate, evaluate, and organize information (See MTLSS 8 5A1, 5B1.)
  - solve problems by strategizing, analyzing and communicating data, and examining solutions. (See M TLSS 8 6A1, 6A2, 6A3, 6A4, 6A5, 6B.)
- See also MD SLM2.0, SLM 3.0, SLM 4.0, SLM 5.0, MTLSS 5.0, MTLSS 6.0.

## **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.**

WHST.6-8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

##### Essential Skills and Knowledge

- Define a problem, formulate questions, and refine a problem and/or question as it relates to a particular issue or event.
- Locate and evaluate resources. (See MSLM. 6-8. 2A1, 2B1, 2B2.)
- Find data and/or information within a variety of print or digital sources.
- Use a variety of formats to prepare the findings/conclusions for sharing.
- Share findings and/or conclusions through a variety of print and multimedia venues.

## 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.**

WHST.6-8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

#### Essential Skills and Knowledge

- Locate and evaluate the appropriateness of scientific or technical sources. (See MD SLM.6-8. 2A1.a, 2A1.b, 2b1.c, 2B2.a, 3A1.a, 3A1.b, 3A2.b.)
- Develop search terms, vocabulary and searching strategies.
- Quote, paraphrase, or draw conclusions during research. (See MD SLM.6-8. 3C1.a, 3C1.b, 3C1. c, 3C1.d, 3C1.e, 3C1.f.)
- Evaluate and analyze the quality, accuracy, and sufficiency of research. (See MD SLM. 6-8. 4A1.a, 4A1.b, 4A1.c, 4A1.d, 4A1.e.)
- Use appropriate bibliographic information and format (such as APA). (See MD SLM. 6-8. 3C2.a, 3C2.b, 3C2.c.)

**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.**

WHST.6-8.9 Draw evidence from informational texts to support analysis reflection, and research.

Essential Skills and Knowledge

Write in response to grade-level print, non-print, and digital literary or informational text(s) with an emphasis on comparison and contrast, cause and effect, as well as contextual analysis in the science or technical fields.

## **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.**

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.

#### Essential Skills and Knowledge

- Adjust the writing process as necessary for different grade appropriate writing tasks, purposes, context, and audiences.
- Set and adjust personal goals and conference regularly with adults and peers to identify and address writing deficiencies.