NATRONA COUNTY SCHOOLS

*The Natrona County School District empowers every learner to grow, excel, and be successful contributors to the local and global community.*

# Career and Vocational Education Curriculum

# Grades 9-12

# Agriculture & Natural Resources II

## August 2022

Including Grades 6-8 Computer Science Final Curriculum References to CVE Benchmarks

| Timeline of NCSD CVE Curriculum Versions | | |
|---|---|---|
| **Date** | **Version** | **Details** |
| May 2017 | Draft for Grades K-12 Curriculum | 2016-2017 School Year<br>● The CVE Subject Area Committee wrote the draft curriculum.<br>May 2015<br>● The draft version was published and open for validation comments. |
| May 2018 | Final for Grades K-12 Curriculum | 2017-2018 School Year<br>● Validation updates were made.<br>May 2018<br>● The final version was approved by the NCSD Board of Education. |
| August 2021 | Final for Grades K-12 Curriculum with notations to CTE Benchmarks in the 6-8 Computer Science Curriculum. | 2020-2021 School Year<br>● The Computer Science Subject Area Committee wrote the draft curriculum.<br>○ The 2014 CTE Benchmarks were referenced in the 6-8 CVE curriculum.<br>August 2021<br>● The Computer Science Draft Curriculum version was published and open for validation comments. |
| August 2022 | Grades K-12 Curriculum with notations to CTE Benchmarks in the 6-8 Computer Science Final Curriculum | 2021-2022 School Year<br>● The Computer Science Subject Area Committee validated the K-12 computer science draft curriculum (including CTE benchmarks referenced in the 6-8 computer science curriculum).<br>August 2022<br>● The NCSD Board of Education approved the K-12 computer science final curriculum.<br>○ Suggested CTE benchmark references were included in the 6-8 computer science curriculum. |

# Acknowledgements

Thank you to the members of the **Subject Area Committee** for your hard work on this curriculum:

| | | | | |
|---|---|---|---|---|
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# Table of Contents

# Introduction

## NCSD#1 Career and Vocational Education Mission Statement

NCSD Career and Vocational Education courses prepare students for opportunities to develop and strengthen skills that allow them to:

- Establish effective problem-solving skills
- Conduct themselves in a responsible, professional manner
- Contribute to their family, workplace and community
- Compete in an ever-changing technical workforce by continually learning

## Purpose

The purpose of this document is to communicate the guaranteed and viable curriculum for Career and Vocational Education in Natrona County School District. This document has been aligned with the 2014 Wyoming Career & Vocational Education Content & Performance Standards. However, our curriculum will continue to evolve as we work to ensure our students have the knowledge and skills they need to be successful in the 21st Century.

Rationale:

> As part of the 21st century workforce, college and career ready students will need to be equipped with knowledge, skills, and characteristics that allow them to be productive, contributing members of an innovative, dynamic global society. Schools today must assist students in developing the necessary skills, intellectual abilities, and personal traits that help them to secure and maintain meaningful employment in the world of work. Nearly eight in ten future job openings in the next decade in the U.S. will require postsecondary education or training. Forty-five percent will be in "middle skill" occupations, which require at least some postsecondary education and training, while 33% will be in high skilled occupations for which a Bachelor's degree or more is required. By contrast, only 22% of future job openings will be "low skill" and accessible to those with a high school diploma or less.
>
> *The American Diploma Project as cited in 2014 Wyoming Content and Performance Standards*

The foundation for rewarding careers and productive employment is built through exploration and understanding of career choices. Today's employers seek creative, critical thinkers who are able to access and use information from a variety of sources to assist them in solving problems and making informed workplace decisions. In order to secure career advancements, an employee must demonstrate a willingness to learn on the job by embracing lifelong learning, and exhibit initiative, productivity, and responsibility. Additionally, an employee must advocate and continually demonstrate safe work practices.

Students must demonstrate the collaborative skills that play a major role in personal and career success. An individual should have the ability to participate as a member of a diverse team, teach others new skills, exercise leadership, compromise, and serve clients and customers. A student must be able to acquire, evaluate, interpret, organize and maintain data, and process and communicate information. In order to be a productive member of society, students must be able to manage personal and workplace resources including time, materials and finances. In addition, they must be flexible and adaptive with technology in a dynamic and ever-changing digital world.

*Organization of standards:*

> The Wyoming Content and Performance Standards for Career and Vocational Education are identified for grade spans K-5, 6-8, 9-12 with benchmarks at grades five, eight, and eleven. The standards have not been assigned an order of importance.
>
> Kindergarten through fifth grade students, parents, and teachers work toward the achievement of the fifth grade benchmarks. Sixth grade through eighth grade students, parents, and teachers work toward the achievement of the eighth grade benchmarks. Ninth grade through eleventh grade students, parents, and teachers work toward the achievement of the eleventh grade benchmarks. Success at each benchmark level requires the effort and commitment of all who prepare for that level.
>
> *2014 Wyoming Career & Vocational Education Content and Performance Standards*

## *Introduction to the Standards*

CTE programs across the state of Wyoming are dynamic and diverse, encompassing the National 16 Career Clusters described by Advance CTE and their corresponding Career Pathways. The career clusters are:

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, A/V Technology & Communications
- Business Management & Administration
- Education & Training
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections & Security
- Manufacturing
- Marketing
- Science, Technology, Engineering & Mathematics
- Transportation, Distribution & Logistics

# Sequence of Standards and Benchmarks: Agriculture

| *Agriculture* | Course | **Standard 1** *Career Development and Readiness* | | | | **Standard 2** *Communication and Collaboration* | | | | **Standard 3** *Critical Thinking and Problem Solving* | | | | **Standard 4** *Technical Literacy* | | | | **Standard 5** *Technical Proficiency and Productivity* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.1 Set career goals | 1.2 Explore careers using mentors and industry experts | 1.3 Prepare educational and career plan | 1.4 Demonstrate employability skills | 2.1 Communicate clearly, effectively, and with reason | 2.2 Model integrity, ethical leadership and management skills | 2.3 Work productively in teams using cultural global competence | 2.4 Apply safe, legal, responsible use of information and technology | 3.1 Investigate authentic problems and significant questions | 3.2 Trends, forecast possibilities and explore complex systems and issues | 3.3 Valid and reliable research strategies to solve problems or complete projects | 3.4 Creativity and innovation considering impacts of decisions | 4.1 Produce clear and coherent writing | 4.2 Determine meaning of symbols, terms, and words in technical text | 4.3 Acquire, use, and report information using technology | 4.4 Follow complex multistep procedure | 5.1 Manage resources and implement systems | 5.2 Complete tasks taking into account constraints, priorities, and resources | 5.3 Safely and ethically use industry tools and technologies | 5.4 Utilize technology to develop innovate solutions or products |
| | 6th - 8th Grade Agriculture and Natural Resources | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ |
| | 9th - 12th Grade Agriculture Comprehensive I | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ |
| | 9th - 12th Grade Agriculture and Natural Resources II | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ★ |

# How to Read the NCSD #1 CVE Curriculum: Agriculture

The **Purpose Statement** describes the focus of the subject at this grade level or in this course; points out what is new or different at this level that the student will accomplish.

| | |
|---|---|
| Purpose Statement | Students will begin to demonstrate leadership and public speaking skills through the lens of the National FFA Organization. Students will begin to demonstrate critical thinking and problem solving through the exploration of comprehensive agricultural topics including horticulture, beef, sheep/goat, swine, horse, dairy and poultry industries, natural resources, agribusiness and career exploration. |

An **Outcome** is aligned to standards and benchmarks. Outcomes are the expected results of student learning for a grade level or course.

The **Components** are aligned to standards and benchmarks. Components are the specific concepts or skills necessary for students to know and do in order to meet and outcome.

| Outcome Cag.6.7 | Students will create argumentative writing where they establish a position and provide sequentially evidence-based claims as a premise for a coherent, logical argument around an issue. | |
|---|---|---|
| **NCSD Component Code** | **Component** | **WY CVE Benchmark Reference** |
| Cag6-8.1.1 | Plan, manage, and complete a project regarding the history of the National FFA Organization while demonstrating proficiency in utilizing technology to complete the project. | CV8.3.4<br>CV8.5.4 |
| Cag6-8.1.2 | Identify sources and locate, interpret, extract and summarize, key terms, and other content specific words and phrases (e.g., emblem, colors, motto, mission, official dress) as they relate to the National FFA Organization. | CV8.4.2 |
| Cag6-8.1.3 | Recite the FFA Creed. | CV8.2.1 |
| Cag6-8.1.4 | Demonstrate awareness of employability characteristics (e.g., punctuality, time management, preparedness, and other soft skills). | CV8.1.4 |

**NCSD Component Code**
**C**ag6-8.1.4 = Content Area
C**ag**6-8.1.4 = Course (Agriculture and Natural Resources)
Cag**6-8**.1.4 = Grade Span
Cag6-8.**1**.4 = Outcome
Cag6-8.1.**4** = Component

**Agriculture Course Key**
ag = Agriculture and Natural Resources
ac = Agriculture Comprehensive

**WY CVE Benchmark Reference**
**CV**8.1.4 = Content Area
CV.**8**.1.4 = End of Grade Span
CV.8.**1**.4 = Standard
CV.8.1.**4** = Benchmark

# Grades 9-12 Agriculture: Agriculture and Natural Resources II

| | |
|---|---|
| Purpose Statement | Students will refine leadership and public speaking skills. Students will demonstrate critical thinking and problem solving through the exploration of natural resource topics including aquaculture, wildlife and rangeland management, energy resources, agronomy, and environmental science. |

| Outcome Cag9-12.1 | Students will research, write, and present a six to eight minute prepared public speech on a current agricultural issue or topic utilizing APA citation and answer questions from a panel pertaining to the speech topic. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.1.1 | Employ valid and reliable research to write a six to eight minute speech script on a current agricultural issue or topic in which the development, organization, and style are appropriate to the task, purpose, and audience. | CV12.3.3<br>CV12.4.1<br>CV12.5.2 |
| Cag9-12.1.2 | Present the original speech communicating clearly, effectively, and with reason. | CV12.2.1<br>CV12.5.2 |
| Cag9-12.1.3 | Using valid and reliable research and applying prior knowledge, clearly and effectively answer questions from a panel pertaining to the speech. | CV12.2.1<br>CV12.3.3 |
| Cag9-12.1.4 | Apply safe, legal, and responsible use of information by using APA format in citing sources used in the manuscript and presentation. | CV12.2.4<br>CV12.4.1<br>CV12.5.3 |
| Cag9-12.1.5 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.2 | Students will identify and analyze aquaculture systems and organisms in order to implement a classroom system. Students will monitor, analyze, and maintain tank health and demonstrate industry standard harvesting methods. Students will investigate careers associated with aquaculture. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.2.1 | Utilize valid and reliable research strategies and prior knowledge to compare and contrast aquaculture systems. | CV12.3.3 |
| Cag9-12.2.2 | Identify and explore the complex aquaculture system in the classroom and the components within the system. | CV12.3.2 |
| Cag9-12.2.3 | Use the classroom aquaculture system manual or associated resources to analyze and implement the system, explain the functions of the system components, and describe how to maintain each. | CV12.3.2<br>CV12.5.1<br>CV12.5.3 |
| Cag9-12.2.4 | Compare and contrast aquatic species that can thrive in the classroom system, determine which species is best suited to the classroom, and explain the environmental and economic impacts. | CV12.3.1<br>CV12.3.3<br>CV12.3.4 |
| Cag9-12.2.5 | Work productively as a team to identify elements of tank health based on water quality, precisely perform the multistep tests associated with those elements, and report out the results. | CV12.2.3<br>CV12.4.2<br>CV12.4.3<br>CV12.4.4 |
| Cag9-12.2.6 | Analyze results from water quality tests, identify trends from past results, consider environmental impacts, and make recommendations for the health of the system. | CV12.3.2<br>CV12.3.4<br>CV12.4.3 |
| Cag9-12.2.7 | Identify and perform safe, ethical, and humane harvesting of system organisms, while considering the social and economic impacts. | CV12.3.4<br>CV12.5.3 |
| Cag9-12.2.8 | Explore possible careers in aquaculture based on personal interests. | CV12.1.1 |
| Cag9-12.2.9 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.3 | Students will identify Wyoming wildlife and analyze problems associated with population and predator management to offer solutions. Students will compare and contrast taxidermic methods and investigate wildlife management careers. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.3.1 | Employ valid and reliable research strategies and apply prior knowledge to identify Wyoming wildlife species within the designated hunting classifications according to their physical characteristics and habitat. | CV12.3.3 |
| Cag9-12.3.2 | Identify and define authentic problems and significant questions within Wyoming wildlife and predator population management. | CV12.3.1 |
| Cag9-12.3.3 | Employ valid research strategies, creativity, and innovation to offer solutions to wildlife and predator population management, while considering environmental, social, and economic impacts of these solutions. | CV12.3.3<br>CV12.3.4<br>CV12.5.4 |
| Cag9-12.3.4 | Work productively in teams while using global competence to identify, compare and contrast taxidermic methods. | CV12.2.3 |
| Cag9-12.3.5 | Explore possible careers in wildlife management based on personal interests. | CV12.1.1 |
| Cag9-12.3.6 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.4 | Students will identify, compare and contrast renewable and nonrenewable energy resources and determine the problems associated with each. Students will debate the advantages and disadvantages of renewable and nonrenewable resources. Students will evaluate careers in this industry. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.4.1 | Identify and define renewable and nonrenewable resources and determine the problems associated with each. | CV12.3.1 |
| Cag9-12.4.2 | Work as a team to communicate clearly, effectively, and with reason, the advantages and disadvantages of renewable and nonrenewable energy resources while modeling integrity, ethical leadership, and effective management skills. | CV12.2.1<br>CV12.2.2 |
| Cag9-12.4.3 | Evaluate possible careers in the energy industry based on personal interests. | CV12.1.1 |
| Cag9-12.4.4 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.5 | Students will identify rangeland plants, accurately calculate stocking rates and investigate rangeland management careers. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.5.1 | Analyze plant anatomical features to implement and use current industry-standard classification systems to identify Wyoming rangeland grasses, forbes, and shrubs. | CV12.5.1<br>CV12.5.3 |
| Cag9-12.5.2 | Explain the meaning of key terms and other content specific words and phrases as they are used in rangeland management materials and stocking rates. | CV12.4.2 |
| Cag9-12.5.3 | Precisely follow a complex multistep procedure when calculating stocking rates, while taking constraints, priorities and resources into account. | CV12.4.3<br>CV12.4.4 |
| Cag9-12.5.4 | Explore possible careers in rangeland management based on personal interests. | CV12.1.1 |
| Cag9-12.5.5 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.6 | Students will identify agronomic problem plants, debate herbicide/pesticide use, and investigate careers in the agronomy industry. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.6.1 | Identify and define plants that cause problems in agronomic systems. | CV12.3.1 |
| Cag9-12.6.2 | Work productively in teams while using global competence, and considering the environmental, social, and economic impacts of decisions to debate the use of herbicides and/or pesticides. | CV12.2.2<br>CV12.3.4 |
| Cag9-12.6.3 | Explore possible careers in the agronomy industry based on personal interests. | CV12.1.1 |
| Cag9-12.6.4 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.7 | Students will analyze and diagnose water channel health, utilize soil properties to define problems associated with soil, and analyze soil properties to determine land capability classifications. Students will investigate careers in environmental science. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.7.1 | Safely and ethically use current industry standard tools to follow a complex multistep procedure when performing technical tasks to evaluate the physical, biological, and chemical properties to diagnose the health of a local water channel. | CV12.2.4<br>CV12.4.4<br>CV12.5.3 |
| Cag9-12.7.2 | Identify and define authentic problems and significant questions in the agricultural industry when considering soil texture, color, profile, nutrient levels, and moisture-holding capacity. | CV12.3.1 |
| Cag9-12.7.3 | Productively complete soil texturing, percolation testing, and land capability classification tasks taking constraints, priorities, and resources into account. | CV12.5.2 |
| Cag9-12.7.4 | Explore possible careers in environmental science based on personal interests. | CV12.1.1 |
| Cag9-12.7.5 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

| Outcome Cag9-12.8 | Students will create a career plan for an agricultural and natural resource career that incorporates all aspects of the career based on their personal interests. | |
|---|---|---|
| NCSD Component Code | Component | WY CVE Benchmark Reference |
| Cag9-12.8.1 | Evaluate current interest in agricultural and natural resource careers to set career goals. | CV12.1.1 |
| Cag9-12.8.2 | Explore agricultural and natural resource career outlook potential utilizing all available resources. | CV12.1.2 |
| Cag9-12.8.3 | Create an educational and career plan based on an agricultural and natural resource career interest from the course. | CV12.1.3 |
| Cag9-12.8.4 | Demonstrate employability skills that enable students to be responsible and contributing citizens and employees (e.g., punctuality, time management, preparedness, and other soft skills). | CV12.1.4 |

NATRONA COUNTY SCHOOLS

# Long-Range Plan

*Reviewed & Revised Annually*

| **Subjects** | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ELA | C | VC | A/R | VA | | *C/VC | *VC | | | C | VC | A/R | VA | | |
| Health | C | VC | A/R | VA | | | | | C | VC | A/R | VA | | | |
| PE | | C | VC | A/R | VA | | | | C | VC | A/R | VA | | | |
| Social Studies | | C | VC | **VC | A/R | VA | VA | ***C/VC | | | | C | VC | A/R | VA |
| FPA | | C | VC | A/R | VA | | | | C | VC | A/R | VA | | | |
| Foreign Language | | | C | VC | A/R | VA | VA | | | C | VC | A/R | VA | | |
| CVE | | | C | VC | A/R | VA | VA | | | | | C | VC | A/R | VA |
| Science | | | | C | VC | A/R | VA | | | | | | C | VC | A/R |
| Math | *VC, VA* | *A* | *VA* | | | C | VC | A/R | VA | | | | | | C |
| Computer Science | | | | | | | C | VC | A/R | VA | | | | | |
| Math Extended Standards | | | | C/A | VA | | | C/A | VA | | | | C/A | VA | |
| ELA Extended Standards | | | | | C/A | | | VA | | | | | | C/A | VA |
| Science Extended Standards | | | | | | | C/A | VA | | | | | | | C/A |

Key

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C | Development of Draft Curriculum | VC | Implementation and Validation of Draft Curriculum | A/R | Development of Assessments / Resource Selection | *VA* | Implementation and Validation of Assessments |

*Reviewed and revised annually*
*Date(s): Developed 12.1.15, Updated 3.31.16, Updated 5.4.17, Updated 2.14.18, Updated 2.1.19, Updated 7.16.19, Updated 1.9.20, Updated 5.12.20, Updated 10.22.20, Updated 5.13.21, Updated 1.5.22*

*realignment of ELA curriculum grades 3-5
**addition of Native American Education for K-12
***realignment of SS curriculum grades 8-10

# NCSD Standards-Based Terminology

District Guaranteed and Viable Curriculum

Our district's guaranteed and viable curriculum is identified as the learning curriculum that guarantees an equal opportunity to learn for all students. It also guarantees adequate time for educators to teach the content and for students to learn it. It guarantees that the curriculum being taught is the same curriculum that will be assessed. It is viable when adequate time is ensured to teach all determined essential content. Our district's curriculum is composed of identified learning outcomes students must know or do in order to perform at the mastery level of the identified standards.

State and District Content Standards

Our state and district content standards are the minimum content expectations that students must meet as defined by the State Board of Education. The content standards provide a common understanding among educators as to what students should learn at particular grades. However, the standards are not the curriculum.

District Vertical Learning Progression

A district vertical learning progression is the purposeful sequencing of a subject area's route for teaching and learning expectations across multiple developmental stages, ages or vertical grade levels. The progressions illustrate progress toward the mastery of content skills as students move throughout their K-12 learning experience. The exiting stage is defined as college and career readiness for the graduate.

# NCSD Standards-Based Terminology

Pacing Guide

A pacing guide is a flexible timeline for logical and progressive sequencing of a content area over the course of an academic school year. Pacing guides may include the timeline for state, common, or classroom-level assessment.

Classroom Curriculum Map

A classroom curriculum map guides educators in planning the outcomes of their grade-level curriculum while differentiating to the needs of their students. It is designed to provide an overall picture of the what, the when, and the how content outcomes will be mastered during a school year.

Classroom Unit

A classroom unit targets the learning of outcomes and their components over a cycle/chunk of a few days to a few weeks. It contains all three stages for a learning cycle/chunk:

- Desired results/learning
- Assessment/evidence
- Learning plan

Classroom Lesson Plan

The classroom lesson plan is a detailed instructional lesson that is used to plan and guide the daily learning activities.

# NCSD Standards-Based Terminology

Key: **Bold** terms are important concepts in Unit and Lesson Planning.
Underlined terms are important concepts that will be requested for validation.
*Italicized* terms are important to our NCSD standards process.

**Component:** Aligned to standards and benchmarks, components are specific concepts and skills necessary for students to know and do in order to meet an outcome.

**Component Assessment:** Checks for understanding. May be oral, written, a product, and/or a performance.

**Component Evaluative Criteria:** Characteristics, qualities, or measures that are used to evaluate the student academic performance of the component.

*Curriculum Coordinating Council:* The governing body responsible for evaluating and making recommendations regarding curriculum, instruction, and assessment practices. Council is representative of all district educators and includes board, community and/or parent members.

**Date Instruction Begins:** The date instruction begins on a particular outcome.

**Date of Outcome Assessment:** Date a particular outcome is assessed.

**Differentiation:** Adaptations in content, processes, and/or products instructors make to meet the needs of a diverse group of students, with diverse learning needs, in the same learning environment.

**Instructional Strategies:** Classroom techniques that have research supporting their utility at enhancing student achievement. What the teacher is doing.

*Long-Range Plan:* A yearly timeline identifying when each content area will go through the curriculum, instruction, and assessment work. The Long-Range Plan is an 8-10 year projection and is re-evaluated each year by the Curriculum Coordinating Council.

**Outcome:** Aligned to standards and benchmarks, outcomes are the expected result of student learning for a grade level or course.

**Outcome Assessment:** Requires students to demonstrate proficiency/mastery of the outcome as measured by the outcome evaluative criteria. May be oral, written, a product, and/or a performance.

**Outcome Evaluative Criteria:** Characteristics, qualities, or measures that are used to evaluate the student academic performance of the outcome.

*Purpose Statement*: Describes the focus of the subject at this grade level or in this course; points out what is new or different at this level that the student will accomplish.

**Resources:** Used to support the curriculum such as materials, technology, field experiences, and community professionals.

*Standard Reference*: Standards specify the essential learning in a given content area in which students must demonstrate proficiency. Each component references specific standards and/or benchmarks.

**Student Engagement Strategies:** Techniques that help students be actively involved in their learning. What the students are doing.

*Subject Area Committee:* A representative team of district educators for a specific subject area who analyze and adjust the current curriculum, coordinate the validation process, and facilitate the creation of common assessments.

*Validation:* A process in which teacher feedback is gathered to ensure our curriculum is viable and to make adjustments as necessary.

## Reading Standards for Literacy in Science and Technical Subjects 6–12

RST

| Grades 6–8 students: | Grades 9–10 students: | Grades 11–12 students: |
|---|---|---|
| **Key Ideas and Details** | | |
| 1. Cite specific textual evidence to support analysis of science and technical texts. | 1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. | 1. Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. |
| 2. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. | 2. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. | 2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. |
| 3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. | 3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. | 3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. |
| **Craft and Structure** | | |
| 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6–8 texts and topics*. | 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 9–10 texts and topics*. | 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. |
| 5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic. | 5. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., *force, friction, reaction force, energy*). | 5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. |
| 6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text. | 6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. | 6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. |
| **Integration of Knowledge and Ideas** | | |
| 7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). | 7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. | 7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. |
| 8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. | 8. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. | 8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. |
| 9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. | 9. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. | 9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. |
| **Range of Reading and Level of Text Complexity** | | |
| 10. By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently. | 10. By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. | 10. By the end of grade 12, read and comprehend science/technical texts in the grades 11–CCR text complexity band independently and proficiently. |

# Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12

WHST

The standards below begin at grade 6; standards for K–5 writing in history/social studies, science, and technical subjects are integrated into the K–5 Writing standards. The CCR anchor standards and high school standards in literacy work in tandem to define college and career readiness expectations—the former providing broad standards, the latter providing additional specificity.

| Grades 6–8 students: | Grades 9–10 students: | Grades 11–12 students: |
|---|---|---|
| **Text Types and Purposes** | | |
| 1. Write arguments focused on *discipline-specific content*.<br>a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.<br>b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.<br>c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.<br>d. Establish and maintain a formal style.<br>e. Provide a concluding statement or section that follows from and supports the argument presented. | 1. Write arguments focused on *discipline-specific content.*<br>a. 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.<br>b. Develop claim(s) 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.<br>c. 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.<br>d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.<br>e. Provide a concluding statement or section that follows from or supports the argument presented. | 1. Write arguments focused on *discipline-specific content.*<br>a. 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 the claim(s), counterclaims, reasons, and evidence.<br>b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.<br>c. 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.<br>d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.<br>e. Provide a concluding statement or section that follows from or supports the argument presented. |

## Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12

WHST

| Grades 6–8 students: | Grades 9–10 students: | Grades 11–12 students: |
|---|---|---|
| **Text Types and Purposes (continued)** | | |
| 2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.<br>a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.<br>b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.<br>c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.<br>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.<br>e. Establish and maintain a formal style and objective tone.<br>f. Provide a concluding statement or section that follows from and supports the information or explanation presented. | 2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.<br>a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.<br>b. 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.<br>c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.<br>d. 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.<br>e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.<br>f. 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). | 2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.<br>a. Introduce a topic and 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.<br>b. 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.<br>c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.<br>d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.<br>e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). |
| 3. (See note; not applicable as a separate requirement) | 3. (See note; not applicable as a separate requirement) | 3. (See note; 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough 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 History/Social Studies, Science, and Technical Subjects 6–12

WHST

| Grades 6–8 students: | Grades 9–10 students: | Grades 11–12 students: |
|---|---|---|
| **Production and Distribution of Writing** | | |
| 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| 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. | 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. | 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. |
| 6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently. | 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. | 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. |
| **Research to Build and Present Knowledge** | | |
| 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. | 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. | 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. |
| 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. | 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. | 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. |
| 9. Draw evidence from informational texts to support analysis reflection, and research. | 9. Draw evidence from informational texts to support analysis, reflection, and research. | 9. Draw evidence from informational texts to support analysis, reflection, and research. |
| **Range of Writing** | | |
| 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. | 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. | 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. |