



PROPOSED AGENDA ITEM RATIONALE

DATE: December 7, 2023

TO: Dr. Brian L. Maher
Commissioner of Education

FROM: Dr. Katie Graham
Administrator, Office of Career, Technical, & Adult Education

PROPOSED AGENDA ITEM: Discuss the proposed Computer Science and Technology standards.

AGENDA ITEM TYPE: Discussion Item

RATIONALE/BACKGROUND INFORMATION:

Background:

Nebraska Revised Statute 79-3301 to 79-3305, known and cited as the *Computer Science and Technology Act*, outlines the requirements for instruction in computer science and technology. Additionally, 79-729 specifies the Computer Science and Technology Act requirement for high school graduation.

The Nebraska legislature declared that it is the policy of the state to promote computer science and technology education in each school district in order to: (1) provide students the skills and competencies to compete in a twenty-first-century workforce, (2) develop skills that translate to high-skill, high-wage jobs, and (3) encourage the creation and retention of new, high-paying jobs in Nebraska.

Computer Science and Technology education includes, but is not limited to, knowledge and skills regarding computer literacy, educational technology, digital citizenship, information technology, and computer science.

Computer Science and Technology Act Implementation Timeline:

Academic Year 2025-2026	Each school district shall include computer science and technology education aligned to the academic content standards in the instructional program of its elementary, middle, and high schools.
On or Before December 1, 2026 And, On or Before Dec. 1 of each year thereafter	Each school district shall provide an annual computer science and technology education status report to its school board and the State Department of Education, including, but not limited to, student progress on the computer science and technology courses and other district-determined measures of computer science and technology education progress from the previous school year.
Academic Year 2027-2028	Each school district shall require each student to complete at least five high school credit hours in computer science and technology

	education prior to graduation (through a single course or a combination of courses that cover the computer science and technology academic standards).
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Duties of the State Board of Education:

With the passing of LB705 in June, 2023, Nebraska Revised Statute 79-760.01(2)(b) requires the State Board of Education to:

“On or before March 1, 2024, the board shall also adopt measurable academic content standards for computer science and technology education under the mathematics, science, or career and technical education standards.”

Content area standards that are measurable, appropriately rigorous, and scaffolded become the framework for locally determined curricula.

Existing Computer Science & Technology Standards:

In January of 2021 as a response to the strategic priorities outlined in Nebraska’s Perkins V State Plan, business and industry leaders and postsecondary educators were engaged to inform and recommend any needed updates or revisions to the existing Computer Science State Model Programs of Study and related CTE course-based standards to ensure alignment with the needs of Nebraska’s evolving workforce and postsecondary entrance requirements.

These recommendations were considered as groups of educators met to identify and carry out the needed revisions. The process in 2021 included: (1) an analysis of labor market information, high-wage, high-skill, and high-demand (H3) data, occupational projections, and secondary/postsecondary alignment of existing programs, (2) business and industry and secondary and postsecondary education engagement, futuring panels, and the completion of a statewide work-based learning landscape analysis, (3) convening educators to revise and update the existing programs of study and course-based standards based on the analyses and business and postsecondary engagement, and (4) implementation planning.

As a result of this process, standards for the high school Computer Science Program of Study and related courses were updated. These standards will be used as a foundation for the current revision process.

Proposed Standards Revision Process:

To address the specific requirements outlined in the Computer Science and Technology Act, including the timeline for the State Board of Education to adopt measurable content standards, the Offices of Career, Technical, and Adult Education and Teaching, Learning, and Assessment propose to update the existing Computer Science and Technology standards within the CTE Computer Science Program of Study. The 9-12 standards will identify the essential content students should know and be able to do relative to computer science and technology, will provide a coherent framing of content, and will require students to apply content knowledge in various contexts.

Scope of Revision: The standards will apply to grades 9-12, with supports created to support K-8 implementation aligned to the high school standards. This process is a bit atypical given the limited scope of the requirements set forth in legislation. Typically, a standards revision process takes 12-15 months to complete.

Revision Process: Given the recently updated computer science standards, this process will seek to engage additional stakeholders to ensure the knowledge, skills, and rigor of the standards are appropriate for Nebraska. Additionally, the State Board of Education is required to adopt measurable Computer Science and Technology standards. This process was developed based on the considerations presented to the State Board of Education as a result of the AIR report on Nebraska’s Standards Development process, and the State Board of Education’s Ad Hoc Committee on Standard’s Process, Policy, and Procedures Implementation. When adopted, the standards will create a framework for teaching and learning in computer science and technology and reflect the uniqueness of the content area while also fitting within the overall expectations for all content area standards (e.g. levels of specificity, numbering, quality components) for all schools in Nebraska. They will be updated along with all CTE standards based on a five-year revision cycle.

Engagement: Planned engagement includes geographically diverse representation from Nebraska K-12 educators, postsecondary faculty, the public, district administrators, district curriculum directors, ESUs, business and industry, national experts, students, and state computer science and technology experts. State computer science and technology experts are individuals with specialized training in computer science principles and who work closely and extensively with Nebraska educators. Additionally statewide computer science and technology groups will be engaged including the Nebraska Education Technology Association, the Nebraska Tech Collaborative, and the Nebraska Computer Science Teachers Association. Revised standards will be available on NDE and CTE’s websites with options to easily submit written feedback for 3.5 weeks. Engagement will be tailored for various audiences (e.g., educators, parents/students, business/industry). Through planned engagement across the state, feedback will also be solicited from computer science and technology and related educators in the Fall of 2023.

Tentative Timeline:

August, 2023	<ul style="list-style-type: none"> ● Identify current and emerging trends impacting students and NE businesses relative to computer science and technology, including other state and national approaches to developing computer science standards.
September, 2023	<ul style="list-style-type: none"> ● Public Input Survey #1 (3 weeks) – Introduce opportunity and solicit feedback about the current computer science standards including the knowledge and skills students are expected to learn relative to postsecondary and workplace expectations and the rigor of the standards. <ul style="list-style-type: none"> ○ The survey will be disseminated through the NDE’s website and directly to groups including the Nebraska Education Technology Association, the Nebraska Tech Collaborative, the Nebraska Computer Science Teacher’s Association, district administrators, district curriculum directors, ESUs, business and industry, national experts, postsecondary faculty, students, and state computer science experts. State computer science and technology experts are individuals with specialized training in computer science principles and who work closely and extensively with Nebraska educators.

October – Nov., 2023	<ul style="list-style-type: none"> • Analysis of Stakeholder Input • Convening process to select educators, as necessary, to revise existing computer science standards and indicators • Develop draft of updated computer science standards • Share embargoed draft with State Board of Education for review prior to public draft release (Nov. 15-30)
December, 2023	<ul style="list-style-type: none"> • Share embargoed draft standards early with ESUs, district computer science educators, district curriculum directors, and superintendents across the state • Public Input Survey #2 (3.5 weeks) – publish draft standards and solicit feedback directly from the public. The survey link will be made available via NDE’s main and CTE’s website, as well as shared directly with various stakeholder groups.
January, 2024	<ul style="list-style-type: none"> • Consider public input and revise, as necessary, based on Public Input Survey #2 • Develop Final Draft • Present final standards with an explanation and rationale for proposed updates to State Board of Education for 30 day review
February, 2024	<ul style="list-style-type: none"> • State Board of Education Approval

Implementation Planning

As recommended in the AIR report on Nebraska’s Standards Development process, the NDE will identify and develop implementation supports concurrently with the revision process to ensure timely technical assistance.

PROPOSED BOARD MEETING (MONTH/YEAR): January

ESTIMATED COST: N/A

FOR CONTRACTS AND GRANTS:

- Indicate the Funding Source: N/A
- New or Renewal: N/A
- If renewal, date of first approval: N/A

FOR NEW CONTRACTS OR OTHER CONTRACTS REQUIRING PROCUREMENT:

- Indicate the method of procurement: N/A

- Rationale for method of procurement: N/A
- Rationale for contractor selection: N/A

FOR GRANT SUBAWARDS:

- Describe the grantee selection process: N/A

**Updated 08.15.2023*