

NEBRASKA CAREER AND TECHNICAL EDUCATION



COMPUTER SCIENCE AND TECHNOLOGY STANDARDS

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STANDARDS AND INDICATORS:

CS.HS.1 Demonstrate and describe best practices of computer literacy.

- CS.HS.1.a Interpret potential beneficial and harmful effects of computing innovations and emerging technologies, including artificial intelligence.
- CS.HS.1.b Identify and explain how hardware components and software applications meet the needs of the end user.
- CS.HS.1.c Demonstrate effective and efficient searches.
- CS.HS.1.d Select and use appropriate software to complete tasks in a variety of educational and professional settings.
- CS.HS.1.e Identify information technologies used in various industries and potential careers in those industries.

CS.HS.2 Analyze ethical practices and behaviors of digital citizenship.

- CS.HS.2.a Examine and evaluate cultural, social, and ethical issues associated with information technology.
- CS.HS.2.b Apply digital literacy by assessing the validity, accuracy, and appropriateness of information.
- CS.HS.2.c Describe how algorithms may result in both intentional and unintentional bias.
- CS.HS.2.d Investigate how applications of computing can have legal implications.
- CS.HS.2.e Evaluate safety and security measures for protecting information and managing digital footprints.

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CS.HS.3 Apply concepts of information technology.

- CS.HS.3.a Identify and describe computing hardware components.
- CS.HS.3.b Perform operations on digital files stored on local devices and remote/cloud storage.
- CS.HS.3.c Compare and contrast the functions, features, and limitations of different operating systems and utilities.
- CS.HS.3.d Troubleshoot computer hardware and software.
- CS.HS.3.e Define components of computer networks.
- CS.HS.3.f Explain how data is sent through the Internet.
- CS.HS.3.g Interpret and draw conclusions based on a data set.

CS.HS.4 Analyze the fundamentals of cybersecurity.

- CS.HS.4.a Describe cryptography, encryption, and ciphers.
- CS.HS.4.b Identify methods to protect personal devices, information, and systems.
- CS.HS.4.c Compare and contrast federal, state, local, and international cybersecurity policies.

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CS.HS.5 Apply concepts of computational thinking.

- CS.HS.5.a Define the term algorithm and explain its relationship to computational solutions.
- CS.HS.5.b Decompose a complex problem into distinct parts.
- CS.HS.5.c Identify and develop computational solutions to problems.
- CS.HS.5.d Define abstraction in terms of computer science and explain how it is used to manage complexity.
- CS.HS.5.e Represent equivalent data using different encoding schemes.

CS.HS.6 Implement programming literacy practices to create computational artifacts.

- CS.HS.6.a Predict the result or output of code execution.
- CS.HS.6.b Develop programs that use sequences of statements, variables, loops, and conditionals.
- CS.HS.6.c Design and develop computational artifacts that address personally- or socially relevant concerns.
- CS.HS.6.d Use abstraction to manage complexity or avoid duplication of effort.
- CS.HS.6.e Use existing procedures within a program or language based on documentation.
- CS.HS.6.f Write documentation describing the function of computational artifacts.