Nebraska CTE

Foundations of Computing

Summarize computational problems. CIS.HS.8.1	**a** Identify component parts or subproblems of a simple problem. CIS.HS.8.1.A
	b Identify subproblems that make up a larger computational problem. CIS.HS.8.1.B
	c Explain how solutions to multiple subproblems work together to solve a larger problem. CIS.HS.8.1.C
	d Define the term algorithm and explain its relationship to computational solutions. CIS.HS.8.1.D
Develop and use abstractions in computational artifacts. CIS.HS.8.2	**a** Define abstraction in terms of computer science and provide an example of how abstraction is used to manage complexity. CIS.HS.8.2.A
	b Represent equivalent data using different encoding schemes (e.g., binary, unicode, Morse code, student-created codes). CIS.HS.8.2.B
	c Use abstraction to manage complexity or avoid duplication of effort. CIS.HS.8.2.C
	d Use and extend existing procedures within a program based on their documentation. CIS.HS.8.2.D
	e Identify repetitive elements of program code and develop functionally equivalent versions that reduce redundant code or hide the complexity of a task. CIS.HS.8.2.E
Create computational artifacts. CIS.HS.8.3	**a** Create variables to store data in a program. CIS.HS.8.3.A
	b Use and update data stored in variables. CIS.HS.8.3.B
	c Develop programs that use sequences of statements, loops, and conditional statements. CIS.HS.8.3.C
	d Design and develop computational artifacts that address personally- or socially relevant concerns. CIS.HS.8.3.D
Use data to understand and model real-world situations. CIS.HS.8.4	**a** Filter or transform data using a computational tool. CIS.HS.8.4.A
	b Explain the results of a data-driven investigation and a reproducible process for computing the results. CIS.HS.8.4.B

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	c Use and modify a computer simulation to understand a real-world system. CIS.HS.8.4.C
	d Adjust inputs to an existing simulation to gain additional insights. CIS.HS.8.4.D
Test and iteratively refine computational solutions CIS.HS.8.5	**a** Describe an iterative design process used in creating computational artifacts. CIS.HS.8.5.A
	b Apply an iterative design process to solve problems, both independently and collaboratively. CIS.HS.8.5.B
	c Locate and diagnose errors in program code. CIS.HS.8.5.C
	d Correct errors in program code. CIS.HS.8.5.D