Nevada Computer Science

Computer Science: Grades 6-8

Algorithms and Programming

1. Use flowcharts and/or pseudocode to address complex problems as algorithms. 6-8.AP.A.1
2. Create clearly named variables that represent different data types and perform operations on their values. 6-8.AP.V.1
3. Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. 6-8.AP.C.1
4. Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs. 6-8.AP.M.1
5. Create procedures with parameters to organize code and make it easier to reuse. 6-8.AP.M.2
6. Design meaningful solutions for others, incorporating data from collaborative team members and the end user, to meet the end user's needs. 6-8.AP.PD.1
7. Incorporate existing code, media, and libraries into original programs, and give attribution. 6-8.AP.PD.2
8. Systematically test and refine programs using a range of test cases. 6-8.AP.PD.3
9. Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. 6-8.AP.PD.4
10. Document programs (throughout the design, development, troubleshooting, and user experience phases) in order to make them easier to follow, test, and debug by others. 6-8.AP.PD.5

Computing Systems

1. Recommend improvements to the design of computing devices based on an analysis of how users interact with the devices, noting that advantages may have disadvantages and unintended consequences. 6-8.CS.D.1
2. Design and evaluate projects that combine hardware and software components to collect and exchange data. 6-8.CS.HS.1
3. Systematically identify and fix problems with computing devices and their components. 6-8.CS.T.1

Data and Analysis	1	**Model encoding schema used by software tools to access data, stored as bits, into forms more easily understood by people (e.g., encoding schema include binary and ASCII).** 6-8.DA.S.1
	2	**Collect data using computational tools and transform the data to make it more meaningful and useful.** 6-8.DA.CVT.1
	3	**Refine computational models based on the reliability and validity of the data they generate.** 6-8.DA.IM.1
Impacts of Computing	1	**Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options.** 6-8.IC.C.1
	2	**Discuss and evaluate issues of bias and accessibility in the design of existing technologies.** 6-8.IC.C.2
	3	**Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact.** 6-8.IC.SI.1
	4	**Identify risks associated with sharing information digitally (e.g., phishing, identity theft, hacking).** 6-8.IC.SLE.1
	5	**Evaluate how legal and ethical issues shape computing practices.** 6-8.IC.SLE.2
Networks and the Internet	1	**Compare and contrast modeled protocols used in transmitting data across networks and the Internet.** 6-8.NI.NCO.1
	2	**Explain how physical and digital security measures protect electronic information.** 6-8.NI.C.1
	3	**Apply multiple methods of encryption to model the secure transmission of information.** 6-8.NI.C.2