Oklahoma Computer Science

Seventh Grade

Computing Systems 7.CS

D. Devices 7.CS.D

1 Evaluate existing computing devices and recommend improvements to the design based on how other users interact with the device. 7.CS.D.01

HS. Hardware & Software 7.CS.HS

1 Evaluate and recommend improvements to software and hardware combinations used to collect and exchange data. 7.CS.HS.01

T. Troubleshooting 7.CS.T

1 Identify and resolve complex software and hardware problems with computing devices and their components utilizing strategies such as developing and analyzing flow diagrams. 7.CS.T.01

Networks & The Internet 7.NI

NCO. Network Communication & Organization 7.NI.NCO

1 Explain protocols and their importance to data transmission; model how a system responds when a packet is lost and the effect it has on the transferred information. 7.NI.NCO.01

CY. Cybersecurity 7.NI.CY

1 Explain how to protect electronic information, both physical (e.g., hard drive) and digital; identify cybersecurity concerns and options to address issues with the Internet and the systems it uses. 7.NI.CY.01

2 Identify and explain methods of encryption used to ensure and secure the transmission of information. 7.NI.CY.02

Data Analysis 7.DA

S. Storage 7.DA.S

1 Create and compare multiple representations of the same data. 7.DA.S.01

CVT. Collection, Visualization, & Transformation 7.DA.CVT

1 Collect data using computational tools and transform the data to make it more useful and reliable. 7.DA.CVT.01

IM. Inference & Models 7.DA.IM

1 Discuss the accuracy of a model representing a system by comparing the model's generated results with observed data from the modeled system. 7.DA.IM.01

Algorithms & Programming 7.AP

A. Algorithms 7.AP.A

1 Select and modify an existing algorithm in natural language or pseudocode to solve complex problems. 7.AP.A.01

V. Variables 7.AP.V

Students will continue to apply the standards and practices from the previous grade levels.

C. Control 7.AP.C

1 Develop programs that utilize combinations of repetition, compound conditionals, and the manipulation of variables representing different data types. 7.AP.C.01

M. Modularity 7.AP.M

1 Decompose problems into parts to facilitate the design, implementation, and review of increasingly complex programs. 7.AP.M.01

PD. Program Development 7.AP.PD

1 Seek and incorporate feedback from team members and users to refine a solution to a problem. 7.AP.PD.01

2 Incorporate existing code, media, and libraries into original programs of increasing complexity and give attribution. 7.AP.PD.02

3 Test and refine programs using a variety of student created inputs. 7.AP.PD.03

4 Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. 7.AP.PD.04

Impacts of Computing 7.IC

CU. Culture 7.IC.CU

1 Describe the trade-offs associated with computing technologies (e.g., automation), explaining their effects on economies and society.. 7.IC.CU.01

2 Identify real-world problems in relation to the distribution of computing resources in society. 7.IC.CU.02

SI. Social Interactions 7.IC.SI

1 Describe and use safe, appropriate, and responsible practices (i.e., netiquette) when participating in online communities and evaluate how technology can be used to distort, exaggerate, and misrepresent information. 7.IC.SI.01

2 Individually and collaboratively use advanced tools to design and create online content (e.g., digital portfolio, multimedia, blog, web page). 7.IC.SI.02

SLE. Internet Safety, Law, & Ethics 7.IC.SLE

1 Model the connection between the longevity of data on the Internet, personal online identity, and personal privacy. 7.IC.SLE.01